Appendix F

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 7/1/96	Supersedes SOP Dated: 3/1/10	Effective Date: 3/1/11	Procedure No.: TX035AF
Facility: AF	Approval Name & Signature: Tom Miazga		Revision No.: 14.0
Review Frequency: 1 Year	Approval Title: Director of Safety, Quality & Regulatory Affairs		Page 1 of 3
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			If this block is black, this is NOT a controlled document

I. **TITLE:** MANDATORY TRAINING REQUIREMENTS

II. **KEY WORDS:** Mandatory, Training

III. **PURPOSE:** To identify mandatory training requirements in order to comply with all applicable regulatory standards and Hydrite Systems Training requirements.

IV. **APPLICATION:** This procedure applies to all employees.

V. **DEFINITIONS:** Hydrite Systems Training: Required training that includes Hydrite's functions and operations of internal systems.

Mandatory Training - Training required by local, state & federal regulations, and what the organization has determined is needed for personnel performing work affecting product quality and customer satisfaction. Mandatory training is specified in the Mandatory Training Requirements List(s) attached to this SOP.

Web-Based Training – Otherwise known as WBT, a system of storing, scheduling and delivering training courses. Courses are completed on line at a computer terminal equipped with internet access. Course completion and comprehension is documented by Self Credit, a Final Test, Run Course (simply running the course and clicking through all of the screens), or Administrator Credit. The method of course delivery and comprehension documentation is determined by the course author and/or SQRA on a case by case basis depending on the regulatory or otherwise critical nature of the course material.

VI. **ASSOCIATED MATERIAL(S):**
Mandatory Training Requirements Spreadsheet TX035AFl (attached)
New & Reassigned Employee Training Requirements (SOP) TX043
Notification & Review of SOPP Manual Updates (SOP) TX037SF
Training Record for Class Training
Class Attendance List TX035AFm (attached)
Web-Based Training Program Summary TX068AF

VII. **PROCEDURE:**

1. Training Requirements

1.1. Regulatory Standards are reviewed regularly by the Safety, Quality & Regulatory Affairs (SQRA) Department to determine their applicability to Hydrite operations.

1.1.1. SQRA must provide written notification to Facility Management and the Quality Assurance Manager when a new regulatory standard, or revised standard, impacts Hydrite's training requirements.

1.2. All employees must receive the required training as identified on the respective facility's/department's Mandatory Training Requirements Lists.

1.3. It is the facility/department manager's responsibility to schedule and ensure that their employees receive all required training within the identified training frequency.

1.4. Training Evaluation:

1.4.1. The evaluation of the effectiveness of the training, i.e. employees' understanding and competency, is demonstrated by the completion of the training module's quiz.

2. The Mandatory Training Requirements Lists identify minimum Mandatory and Hydrite Systems Training requirements. The list includes:

2.1. Training Topic

2.3. Training Module Number or SOP Number

2.3.1. These documents must be used to train the required topic.

2.4. Training Frequency

2.4.1. I - Initial training of the topic is required. Initial training must occur before an employee may perform a task, function and/or operation, without supervision.

2.4.2. 12, 24, 36 - Retraining of the topic is required within 12, 24 or 36 months. This includes all make-up training.

2.4.3. Change - Retraining is required if a change in the standard occurs and/or the operation of the facility or process that is addressed by the training subject matter changes.

2.4.4. All SOPs, new or revised, that are required as part of Mandatory Training must be trained and/or reviewed per Notification & Review of SOPP Manual Updates TX037AF.

2.5. Training Groups

2.5.1. A - Administrative/Office positions, that include but are not limited to, Customer Service, Branch Buyers, Sales Secretaries, Engineers, Operation Managers & SQRA Coordinators

2.5.2. L – Laboratory & Technical Managers

2.5.3. M - Maintenance

2.5.4. P – Production and/or Process Operators

2.5.5. T – Transportation

2.5.6. W – Warehouse

2.5.7. Task - Training is required for employees who perform a specific task or function.

3 Required Trainer

3.1 The required trainer will be specified in the training module SOP, not on the Mandatory Training Requirements List.

4. All training must be documented within the Web Based Training system (WBT).

4.1. A copy of the class attendance sheet or other documentation of course completion must be scanned and uploaded to the employee's Web Based Training (WBT) account. If this is done, a hard copy need not be maintained unless otherwise required.

CHANGE HISTORY LOG		
Revision No.	**Date**	**Description**
14.0	01/29/11	1. Replaced facility specific matrices with an All Facility matrix that includes organizational changes. 2. Added Web-Based Training Program Summary TX068AF to associated materials. 3. Modified 2.2.1, 4. Removed 2.2.2, 5. Modified 2.4.4, 6. Added 2.5.6, 7. Removed 2.5.8, 8. Updated SOP to reflect web based system.

CLASS ATTENDANCE LIST

TRAINING MODULE# _____

TITLE: _____

SOP TITLE(S): _____

BRANCH: _____

DATE: _____ TOTAL TIME SPENT TRAINING: _____

TRAINERS: _____

NAME	SIGNATURE	DATE

This record should be used to provide employee's credit for training in the web based system.

Course Title	Course Code	Frequency (Years)	Wausau (WS)				SQRA Coordinators					
			Non-Office									
			Warehouse									
			Production	Trasportation	Other	Office	Cottage Grove	La Crosse & Waterloo	Lake Zurich	Milwaukee	Oshkosh & Wausau	University Park & Terra Haute
Back Safety	H801BACK	24	1	1	1	1	1	1	1	1	1	1
Slips, Trips, & Fall Protection	H-AF-SLIPTRIPFAL	24	1	1	1	1	1	1	2	1	1	1
Oxidizer Safety (SOP # TX015AF)	H-AF-OXIDIZERS	36	2	1	1	1	1	1	1	2	1	1
Flammable & Combustible Liquids (SOP # TX005AF)	H-AF-FLAMM	36		1	1	1	1	1	2	2	1	1
DOT Hazardous Materials (HazMat): Transportation Security [SOP # TX060AF]	810HAZMAT	36		1	1	1	1	1	3	1		1
Forklift Basics, Operation & Safety †	H354FLBAS	36	2	1	1	1	1	1	2	2	1	1
Written Security Plan (SOP # AD071AF)	H-AF-SECURITY	36	3	1	1	1	1		1		1	
Chlorine Safety (SOP # TX017AF)	H-AF-CHLORINE	36	1	1	1	1	1	1	1	1	1	1
Lockout / Tagout Awareness (For Affected Employees) [SOP # TX014AF]	H820LOCK	12	3	1	1	1	1	1	2	2	1	1
Acid / Base Safety (SOP # TX022AF)	H-AF-ACIDBASE	36	1	1	1	1	1	1	1	1	1	1
Lockout / Tagout Supplement (For Authorized Employees) [SOP # TX058AF]	H821LOCK	12				1	1		2	2	1	
Air Shipper (DOT Compliance 49 CFR 172.704)	H-AF-AIRSHIP	36	1	1	1	1	1	1	1	1	1	1
Bloodborne Pathogens (SOP # TX030AF)	H827BLOOD	12	1	1	1	1	1	1	1	1	1	1
Chemical Release Awareness (SOP # TX006AF)	H-AF-CHEMRELEA	12	1	1	1	1	1	1	1	1	1	1
Fire Prevention / Protection Plan (SOP # SF021AF)	H-AF-FIREPREV	24					1		1			1
Hearing Conservation (SOP # TX019AF)	H813HEAR	12	1	1	1	1	1	1	1	1	1	1
Fire Extinguisher Basics (SOP # TX010AF)	H814FIREX	12		1	2	2		1	2	2	2	2
Heat Stress (SOP # TX021AF)	H331HEAT	24	1	1	1	1	1	1	1	2	1	1
General Safety Rules (SOP # SF024AF)	H-AF-GENSAFE	24	1	1	1	1	1	1	1	1	1	1
HIPAA Privacy Policy for Hydrite Welfare Plan 502 (SOP# HR029AF)	HSOP-HR029AF	12	1	1	1	1	1	1	1	1	1	1
Hazardous Waste Awareness (HazWaste) [SOP # TX003AF]	H-AF-HAZWASTE	12	1				1	1		1	1	1
Confined Space Entry & Rescue (Authorized Employee Supplement) [SOP # TX029AF]	H811CNSP	12	1	1	1	1		1		2	1	1
Confined Space Awareness (For Affected Employees) [SOP # TX018AF]	H-AF-CSAWAR	36	*1*	*1*	*1*	*1*	1	1	1	1	1	1
Universal Waste (SOP # MN004AF) [Revision 9] (For 2008-10)	*HSOP-MN004AF-9*	12	1	1	1	1	1	1	1	1	1	1
Facility Contingency Plan (SOP # TX002AF) [Branch Specific]	H-xx-CPLAN	12					1	1	1	1	1	1
Hot Work Permit (SOP # SF027AF)	H809HOTWK	12	*1*	*1*	*1*	*1*	1	1	1	1	1	1
Crisis Management (SOP # ER013AF) [Revision 11] (For 2008-10)	*HSOP-ER013AF-11*	12	1	1	1	1	1	1	3	2	2	1
Hazard Communication (HazCom) [SOP # TX013AF]	H822HAZCM	3	2	1	2		1	1	2	1	1	1
Compressed Gas Safety (SOP # TX027AF)	H-AF-COMPGAS	3					2					
Rail Tank Cars (SOP # TX008AF)	631TANK	24	1	1	1	1	1	1			1	1
Formaldehyde Hazard Communication (SOP # TX020AF)	H-AF-FORMALDEH	1	3	1	3	3	3	3			2	2
Process Safety Management (PSM) [SOP # TX025AF]	H815PSM	3	1	1	1		1	1	1	1	1	1
Personal Protective Equipment (PPE)	H819PPE	1	1	1	1	1	1		1		1	1
Sulfur Dioxide Safety (SO2) [SOP # TX057AF]	H-AF-SO2	3	3	3	3	3	1	3	1		3	2
Anhydrous Ammonia Safety (NH3) [SOP # TX042AF]	H-AF-NH3	3	1	1	1		1	1	1	1	1	1
Voluntary Use of Dust Masks (OSHA 1910-134 Appendix D)	H-AF-DUSTMASK	1	1	1	1	1	1	1	1	1	1	1
Current Good Manufacturing Practices (cGMPs) [SOP # TX044AF]	H-AF-CGMP	1	2	1	2	2	2	2	2	2	2	2
Winter Safety Awareness	H-AF-WNTRSAFE	2										
Chemical Hygiene Plan (SOP # QC002AF)	HSOP-QC002AF-12	C	x	x	x	x						
Lot Number Assignment and Recording (SOP # QA011SF)	HSOP-QA011SF	C										
Office Hazard Recognition (SOP # SF001AF)	356OFFICE	C										
Visitor Policy (SOP # AD004xx)	HSOP-AD004xx-x	C	1	1			1	1	1	1	1	1
Air Purifying Respirator (SOP # TX004AF)	H821RESP	1	1	1			1	1	1	1	1	1
Air Purifying Respirator Fit Test	H-AF-FITTEST_PUR	1					1	1	1	1	1	1
Chlorine Emergency Kits (SOP # TX016AF)	H-AF-CHLORINEKIT	1										
Fire Extinguisher Hands-On Training	H-AF-FIREXHNDSON	1					1	1	1	1	1	1
Hazwoper Training 24 Hour Initial / 8 Hour Refresher (incl. HAZMAT field release activiti	H-AF-ERTI / H-AF-ERTR	1					1	1	1	1	1	
Self Contained Breathing Apparatus (SOP # TX039AF)	H821RESP	1					1	1	1	1	1	
Self Contained Breathing Apparatus Fit Test	H-AF-FITTEST_SCB	1	2	1	2	2	2	2	2	2	2	2
First Aid / CPR AHA Hands-On Training	H-AF-FACPR	2										
Hose Coupling / Disconnect (SOP # TX061CG)	H-CG- CHEMHOSES	2										
Control of Non-Conforming Materials (SOP # TX064CE)	HSOP-TX064CG	3	x	x	x	x						
DOT Hazardous Material Training Part I (SOP # TX036AF)	H-AF-HAZMAT1	3		x								
DOT Hazardous Material Training Part II (SOP # TX036AF)	H-AF-HAZMAT2	3	x	x								
Industrial Truck Operator Training (SOP # TX009AF)	HSOP-TX009AF	3										
Monomer Safety (SOP # TX034CG)	H-AF-MONOMAS	3										
PSM - Process Specifc SOPs		3										
Quality Awareness (SOP # TX062CE)	H-AF-QUALITY	3					1			1	1	
Overhead Cranes & Hoist Safety and Operation (SOP # TX040AF, TX042AF)	H-AF-CRANETRNG	1					1					
Rail Tank Car Hands-On (SOP # TX008AF)	H-AF-RAILHANDSON	2										
Shipping Document Signatures (SOP # TX066AF)	HSOP-TX066AF	On										
Spotting Tractor Driver Training Module (SOP # TX065CG)	HSOP-TX065CG-4											

HYDRITE CHEMICAL CO. TRAINING MODULE

Original Module Effective Date: 4/1/97	Supersedes Module Dated: 2/1/05	Effective Date: 1/1/09	Module No.: TX003AF
Facility: AF	Approval Name & Signature: Tom Miazga		Revision No.: 7
Review Frequency: 5 Years	Approval Title: Director of Safety, Quality & Regulatory Affairs		Page 1 of 5
Without a green control label to the right of this statement, this training module is a draft. A draft or an uncontrolled copy cannot be used to train a process or task.		If this block is black, this is NOT a controlled document	
Revised Section(s): Added WBT module to Training Aids. Self-review of this change is not needed.			

I. TITLE: HAZARDOUS WASTE – AWARENESS

II. KEY WORDS: Hazardous Waste, Training, Waste

III. TRAINING OBJECTIVE(S): To meet the basic requirements of the applicable regulatory standards, provide the employee with basic information related to hazardous waste regulation and basic technical information related to the safe handling, storage and disposal of hazardous wastes.

IV. QUALIFIED TRAINERS: SQRA Regional Coordinators, SQRA Specialists, SQRA Managers, Trained Facility Compliance Coordinators & Trainers or Web Based Training

V. APPLICATION: Laboratory, Maintenance, Operations, Transportation, Food Processing Sales, Distribution Sales, Waste Sales & Processing Sales

VI. TRAINING STATUS: Mandatory

VII. TRAINING STANDARD(S):
29 CFR 1910.1200 - Hazard Communication Standard
29 CFR 1910.120 - Hazardous Waste Operations & Emergency Response
40 CFR 260-264 and NR630 (and related parts) Solid and Hazardous Waste Regulations
ALL OTHER FEDERAL, STATE, AND LOCAL REGULATIONS WHICH APPLY.

VIII. TRAINING FREQUENCY: Initial/Annual

IX. TRAINING AIDS:

Mandatory:
ENU SOP PR003SF
Land Ban Form
MSDS
Non-Hazardous Waste Management Policy PR004AF
Obsolete Inventory & Hazardous Waste Management SOP PR029AF
Quiz (included)
OR-
WBT Module: Hazardous Waste Awareness H-AF-HAZWASTE; should be revised concurrently with revisions to this SOP.

Optional:
Video #250 - Small Quantity Generator & Hazardous Waste Regulations
Guidelines for Hazardous Waste Shippers wall chart (attached)

X. TRAINING OUTLINE:

1. Introduction of the Subject

1.1. Training objectives are to insure employees are capable of:

1.1.1. Identifying hazardous wastes from non hazardous wastes generated in their work area.

1.1.2. Managing hazardous waste properly in containers

1.1.3. Properly disposing of hazardous waste

1.2. The following Policy and Standard Operating Procedures will also be reviewed:

1.2.1. Obsolete Inventory and Hazardous Waste Management SOP

1.2.2. ENU SOP

1.2.3. Non-Hazardous Waste Management Policy

1.3. If it can be completed safely, it is advised to hold the majority of this training outside of the classroom in an area(s) where hazardous wastes are generated, stored or accumulated.

1.4. A quiz will be used to measure employee retention of this training.

2. Begin the training with the following:

2.1. Briefly give a history of the development of the Resource Conservation and Recovery Act (RCRA).

2.1.1. Explain to employees that this Act gives EPA the authority to make regulations covering the generation, storage, and disposal of hazardous waste. Inform the employees that violations of this act can result in monetary fines of up to $25,000 per day per occurrence; and/or imprisonment.

2.1.2. Congress passed RCRA in 1976, and amended the Act in 1980; after hazardous waste was discovered in a school yard in Love Canal, NY.

3. Define a waste and explain interrelationship between a non hazardous waste and hazardous waste.

3.1. A waste is any material which is discarded or has been used for it's intended purpose.

3.2. Elaborate on characteristic hazardous wastes. Explain how a waste is classified as ignitable, corrosive, reactive and toxic. (i.e. flashpoint < 140 F, pH $\leq$ 2 or $\geq$ 12.5, stability, TCLP)

3.2.1. Give examples of characteristic hazardous wastes generated at this facility (i.e. spent solvents, acids/caustics, spill clean-ups, heavy metals).

3.3. Inform the employees that EPA has also listed certain wastes as hazardous, and that these wastes/lists are referenced separately in the Code of Federal Regulations. Give facility examples (if possible) of listed hazardous wastes (i.e. spent solvents, cyanides, obsolete inventories).

3.4. Demonstrate "generator knowledge" by using an example MSDS for identifying a hazardous waste.

4. Describe the different hazardous waste management activities at this facility (i.e. storage, accumulation, treatment). Reference sections out of the Obsolete Inventory and Hazardous Waste Management SOP.

4.1. Explain the difference between collecting, accumulating, and storing hazardous waste.

4.1.1. Collection points - The point where wastes are initially collected from leaking equipment such as hoses, valves and pumps.

4.1.2. Satellite accumulation areas - Those areas at or near the point of waste generation where up to 55 gallons of hazardous waste may be accumulated before it must be moved to a designated hazardous waste storage area. Full containers must be moved to hazardous waste storage areas within 3 days of becoming full.

4.1.3. Hazardous waste storage areas - Those areas where wastes are stored up to 90 days in labeled/DOT-approved containers before the waste is shipped off-site to a permitted Treatment, Storage, or Disposal Facility.

4.2. Discuss container/receptacle selection for collecting, accumulating and storing various hazardous wastes.

4.3. Explain the hazardous waste "mixture rule" and why a spill residue of hazardous waste is also a hazardous waste.

4.3.1. The mixture rule states that if you have a spill of hazardous waste; the spill absorbent added to the spill is also a hazardous waste.

4.4. Discuss the ramifications (regulatory, safety and economic) of mixing hazardous wastes with other wastes.

4.5. Emphasize that proper PPE must be worn when handling different hazardous wastes.

4.5.1. This information can be obtained from MSDS's

4.6. Demonstrate proper labeling and marking of a container of hazardous waste.

4.6.1. Take a Hydrite hazardous waste label, DOT label and "this end up" label and properly label a 55 gallon drum.

4.7. Instruct employees on the proper segregation of collection containers, as well as storage containers.

4.7.1. Consider chemical compatibility

4.8. Explain which hazardous wastes are authorized for treatment in the ENU, and reference the facility ENU SOP

5. Show employees what a hazardous waste manifest looks like and explain that this document is the tracking mechanism from the site where hazardous wastes are generated to the location where these wastes will be disposed.

5.1. Mention that when a manifest is used, a land ban form is also required.

6. Define the recordkeeping requirements for manifests and land disposal forms.

6.1. EPA requires that manifests be retained by the facility for 3 years; and land disposal forms for 5 years. Hydrite policy is to retain these records permanently.

7. Questions

7.1. Ask for questions and provide answers or take notes and follow-up as needed.

8. Quiz

8.1. Allow employees a few minutes to complete the quiz

8.2. Ask employees to self-grade the quiz as you review each question. They are not to change their answers.

8.3. The purpose of the quiz is to emphasize training, your discussion of each question is important.

8.4. Collect the quizzes and give to the Facility's Recordkeeping Administrator to be filed in the employee's training file.

9. Recordkeeping

9.1. Everyone must sign a training record.

9.2. Completed training records are to be given to the Facility's Recordkeeping Administrator to be filed in the employee's training file and entered into the Software Recordkeeping System.

EMPLOYEE TRAINING RECORD SLIP
HAZARDOUS WASTE INTRODUCTION

EMPLOYEE NAME: _____

BRANCH: _____

DATE OF TRAINING: _____ **LENGTH OF TRAINING:** _____ **(MINUTES)**

TRAINERS: _____

TRAINING REQUIREMENTS

Training Objective: To meet the basic requirements of the applicable regulatory standards, provide the employee with basic information related to hazardous waste regulation and basic technical information related to the safe handling, storage and disposal of hazardous wastes. The training objective will be met by reviewing documents listed in the material section, discussion and completion of a quiz.

Standards:
29 CFR 1910.1200 - Hazard Communication Standard
29 CFR 1910.120 - Hazardous Waste Operations & Emergency Response
40 CFR 260-264 and NR630 (and related parts) Solid and Hazardous Waste Regulations
ALL OTHER FEDERAL, STATE, AND LOCAL REGULATIONS WHICH APPLY.

Materials:
ENU SOP
Land Ban Form
MSDS
Non-Hazardous Waste Management Policy
Obsolete Inventory & Hazardous Waste Mngt. SOP

I have completed the training outlined in the sections above.

EMPLOYEE SIGNATURE: _____

DATE: _____

Original: Employee's Training File

HAZARDOUS WASTE INTRODUCTION
QUIZ

EMPLOYEE NAME: _____

BRANCH: _____ **DATE OF TRAINING:** _____

1. All hazardous wastes are listed by the EPA as hazardous
   a. True b. False

2. The best method to recognize a hazardous waste is:
   a. Smell the waste with your nose
   b. Test or use knowledge from a MSDS or waste generating process
   c. Ask a co-worker

3. The characteristics of a hazardous waste include the following:
   a. Ignitable, Toxic, Soluble, and Reactive
   b. Ignitable, Corrosive, Toxic, and Insoluble
   c. Ignitable, Corrosive, Toxic, and Reactive

4. Containers used for temporarily collecting hazardous waste must be:
   a. DOT approved
   b. Labeled and closed when not in the direct control of an operator
   c. Disposed of in the normal trash

5. Designated storage areas for hazardous waste can be best identified by:
   a. Areas that are posted " Hazardous Waste Storage Area"
   b. Areas where drums have hazardous waste labels
   c. Areas that are posted with signs that say "Satellite Accumulation Area"

6. Up to 55 gallons of a hazardous waste may be accumulated in an area of close proximity to a waste generating process before it must be moved to a designated waste storage area.
   a. True b. False

7. The key document for shipping and tracking a hazardous waste is:
   a. the material safety data sheet
   b. the land ban
   c. the manifest

8. Aqueous corrosive hazardous wastes may be:
   a. Disposed directly into the sewer system
   b. Treated in the ENU and then discharged into the sewer system
   c. Taken to a local municipal waste collection center

9. Each hazardous waste shipment can be tracked to the generator because the manifest includes:
   a. description of the waste
   b. the name, address, EPA ID number of the generator
   c. the signature of the generator and the transporter

10. Improperly managing hazardous waste can result in fines of $27,500 per day and imprisonment
    a. True b. False

Original: Employee's Training File
Quiz Answers May be Obtaine1d from the RHS Department

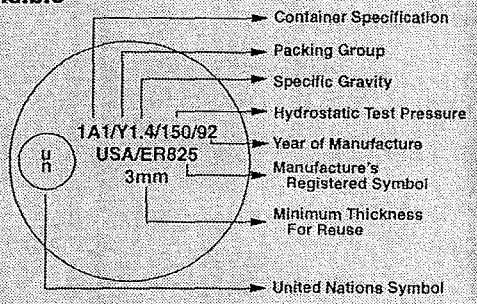
GUIDELINES FOR HAZARDOUS WASTE SHIPPERS

STORAGE

- Close container when not in use
- Maintain adequate aisle space
- Documented weekly drum inspection
- Containment/spill control equipment/absorbent near storage
- Ignitable waste stored outside must be located at least 50 feet from property line
- Follow proper grounding and bonding guidelines
- Mark package "HAZARDOUS WASTE" & accumulation start date

PACKAGING

- Packaging must display UN symbol on side or top of drum (see example below)
  - This may be a sticker and must be visible
- Shipment rejection may occur for any of the following:
  - Damaged package
  - Missing package components
    - Bungs and O-Rings
    - Gaskets
    - Top Rings
  - Leaking package
  - Residue on package
  - Bulging container



LABELING

- Hazardous waste label must contain the following:
  - Generator identification & EPA ID number
  - Manifest document number (state specific alpha prefix & numerical)
  - Primary EPA hazardous waste code
  - DOT proper shipping name (must include "Waste"; "RQ" if applicable)
  - Primary hazard label (diamond) & secondary hazard if applicable
  - Hydrite authorization number
- Remove/cover product label PRIOR to waste accumulation

SHIPPING PAPERS

- Hazardous Waste Manifest
  - Use destination state's manifest
  - Shipper responsible for the content of sections 1–16
  - Enter 24 hour response number
  - Enter Hydrite authorization number
  - Shipper & transporter sign/date
  - Shipper distributes copies as designated on manifest
  - Shipper retains copy for 3 years
- Land Disposal Notification Certification form
  - Must accompany hazardous waste shipment
  - Original copy to Hydrite
  - Shipper retains copy for 3 years

ENVIRONMENTAL POLICY STATEMENT

Hydrite Chemical Co. is committed to conducting all facets of its chemical distribution, processing, manufacturing and storage activities in a manner that ensures ongoing protection of the environment through the employment of the highest quality management practices and workplace operating standards in the chemical industry.

HYDRITE® CHEMICAL CO.

NACD Responsible Distribution Process

300 N. PATRICK BLVD.
BROOKFIELD, WI 53045-5816
262.792.1450

800 N. OAKWOOD ROAD
LAKE ZURICH, IL 60047-1522
888.310.9800

1330 LOCKPORT ROAD
TERRE HAUTE, IN 47802-3106
812.232.5411

7400 HIGHLAND DRIVE
WAUSAU, WI 54401-9060
800.395.3929

114 N. MAIN STREET
COTTAGE GROVE, WI 53527-9702
800.839.8199

7300 W. BRADLEY ROAD
MILWAUKEE, WI 53223-3336
888.509.2267

2545 BOND STREET
UNIVERSITY PARK, IL 60466-3103
708.534.9494

701 SUMNER STREET
LA CROSSE, WI 54603-2622
800.654.5371

191 W. 28TH AVENUE
OSHKOSH, WI 54901-7248
800.242.8270

2815 WCF & N. DRIVE
WATERLOO, IA 50703-9612
800.373.2925

www.hydrite.com

2-700-AH (2/1/05 REV.0)

Appendix G

Office Supervisor/Branch Buyer

PURPOSE OF POSITION

The primary purpose of this position is to maintain the Cottage Grove purchased inventory at levels to achieve maximum efficiency while maintaining full compliance with all applicable regulatory and safety laws, policies, and procedures. This includes the commitment to attain 100% customer satisfaction.

PRIMARY RESPONSIBILITIES

- Procurement of purchases chemical requirements and arrangements of inbound transportation services under the direction of the Corporate Purchasing and Transportation Departments.
- Process purchase orders as necessary.
- Responsible for the process area inter-branch purchasing.
- Process freight invoices.
- Maintain inventory balances at prescribed levels, through the analysis of PRISM reports and other documents.
- Maintain and report all BASIC reports, by the 15th day of the month.
- Prepare the "Pounds Produced and Pounds Shipped" reports on a monthly basis.
- Participate in regulatory and process training activities as required and review changes/additions with your supervisor. Must be RCRA compliance.
- Guides employee performance and development through the use of daily communication and annual performance evaluations.
- Uphold Hydrite's Standard of Excellence through a continuous commitment to maintain quality facilities and provide quality products and services to internal and external customers.
- Perform all duties outlined in relevant SOPs and all other duties to be assigned.

SECONDARY RESPONSIBILITIES

- Provide backup support for members of the administrative staff.
- Complete special assignments assigned by the management staff.
- Investigates, recommends, and/or implements alternative policies and procedures to improve branch performance.
- Completes employee time cards for East and West plant production personnel.
- Works with other staff members to maintain workload balances. Provides back-up support as necessary.
- Supports effective communication with all Hydrite departments where responsibilities overlap to ensure success of the branch team.

REPORTING STRUCTURE

- This position reports to Associate Operations Manager.
- This position oversees the Customer Service staff and Office Receptionist positions.

EXPERIENCE AND EDUCATIONAL CRITERIA

- A Bachelor's Degree or equivalent is required.
- Three to five years administrative management experience.
- Basic computer skills and knowledge of MS Office.
- Must have communication and interpersonal skills, along with the ability to read, write, and speak English.

Environmental Manager

PURPOSE OF POSITION

The primary purpose of this position is to ensure regulatory compliance at Cottage Grove facilities. Compliance contributes toward 100% Customer Satisfaction, both internal and external.

PRIMARY RESPONSIBILITIES

- Administer programs, policies, and procedures directed at ensuring regulatory compliance at Cottage Grove facilities. Policies and procedures are included in various SOPP Manuals.
- Facilitate inspections and record keeping required for compliance with Air Pollution permits at Cottage Grove facilities and facilitate prompt, appropriate reporting of air permit violations.
- Facilitate RCRA inspections and record keeping required for compliance with the Part B permit at Cottage Grove facilities and facilitate prompt, appropriate reporting of permit violations.
- Facilitate periodic audits of compliance with Air Pollution Permits.
- Document "New Process Reviews" and update reviews of existing processes at Cottage Grove facilities.
- Facilitate Regulatory evaluations of all proposed, new, or revised processes at the Cottage Grove facilities.
- Facilitate compliance with wastewater discharge requirements, working with operations, engineering, lab, Village, and MMSD personnel as needed to obtain analytical data and wastewater discharge approvals.
- Review, modify as necessary, and approve corporate SQRA SOPPs covering regulatory issues such as FIFRA, SPCC, Air, WPDES, etc).
- Calculate and report annual air emissions data as required for AEI and SARA reports.
- Manage SOCMA ChemStewards program.
- Assist with recommending, reviewing and tracking action items of all CG incident investigations relating to regulatory compliance.
- Assist with developing and maintaining programs to ensure compliance with the OSHA PSM standard, including attending PHA's and assigning/ranking MOC action items. This responsibility is shared with the CG Health and Safety Manager.
- Active member of the CGE and CGW "Safety Committee's". Assist CG Health and Safety Manager with performing periodic job safety analyses, facility 'walk-through' audits, emergency response drills, identify training needs, address safety items and assist with developing and tracking committee action items.
- Manage all CG mandatory training.
- Participate in regulatory and process training activities as required and review changes/additions with your supervisor. Must be RCRA compliance.
- Supervise Facility Compliance Coordinator, and Associate Environmental Manager. Perform annual performance reviews and annual review of job descriptions for direct reports.
- Uphold Hydrite's Standard of Excellence through a continuous commitment to maintain quality facilities and provide quality products and services to internal and external customers
- Perform all duties outlined in relevant SOPs and all other duties to be assigned.

SECONDARY RESPONSIBILITIES

- Implement facility compliance management plans and assist the branch management team in integrating compliant regulatory policies at the Cottage Grove facilities as directed by the General Manager – Process Organics.
- Interact and assist corporate SQRA with air and RCRA compliance programs, policies and procedures, including attendance at department meetings.
- Research requirements and complete all new CG air permit applications, including calculations (utilizing engineering as needed).
- Assist General Manager – Process Organics with implementing improvements to the administrative procedures(New Process Review, ISO, MOC, SOP management, etc.) and recordkeeping systems(PRISM implementation programs, inventory management, etc.) to ensure efficient data management needed to support permit and 'Process Business' needs.
- Represent Hydrite with Local Emergency Planning Committees. Assist CG Health and Safety Manager with developing an effective 24 hour/7day 'emergency response team'.
- Works with other staff members to maintain workload balances. Provides back-up support as necessary.
- Supports effective communication with all Hydrite departments where responsibilities overlap to ensure success of the branch team.

REPORTING STRUCTURE

- This position reports to the Director of SQRA.

EXPERIENCE AND EDUCATIONAL CRITERIA

- A Bachelor's degree is required. Preferably in engineering, chemistry, or natural sciences discipline.
- Five plus years of experience covering Chemical Process Operations, Process Engineering, Regulations, and Supervision.
- Must have skills adequate to facilitate employee and manager group meetings, conduct group training, and prepare written reports and procedures.
- Must have communication and interpersonal skills, along with the ability to read, write, and speak English.
- Strong computer skills and knowledge of Power Point, Word, and Excel required.

PHYSICAL REQUIREMENTS

- Must be capable of sitting and standing for up to one hour at a time.
- Must be capable of climbing ladders.
- Due to safety concerns, the wearing of contact lenses is prohibited.

Maintenance Mechanic

PURPOSE OF POSITION

The primary purpose of this position is to provide and maintain preventative maintenance schedule and records. Troubleshoot, diagnose and repair process and auxiliary equipment. Manage emissions and process control instrumentation including calibration, repairs, and records. This position must also maintain full compliance with applicable safety and regulatory policies and procedures.

PRIMARY RESPONSIBILITIES

- Comply with all safety and regulatory compliance programs.
- Maintain housekeeping in assigned areas.
- Work in safe manner & following all established SOP's
- Use the PPE as specified in the SOP's.
- Be an active member of the emergency response team and associated training.
- Fill out the regulatory paperwork, inspections, and checklists as assigned meeting the intent of the regulations.
- Maintain regulatory compliance (RCRA, Title V, Air Permits, and OSHA regulations) in assigned areas.
- Participate in mandatory Environmental, Health, & Safety and process specific training.
- Communicate to maintenance supervisor compliance, safety, and equipment needs as personally identified.
- Provide and maintain preventative maintenance schedule and records.
- Troubleshoot, diagnose and repair process and auxiliary equipment.
- Manage emissions and process control instrumentation including calibration, repairs, and records.
- Fill out the daily and weekly inspections check sheets as assigned.
- Participate in regulatory and process training activities as required and review changes/additions with your supervisor. Must be RCRA compliance.
- Uphold Hydrite's Standard of Excellence through a continuous commitment to maintain quality facilities and provide quality products and services to internal and external customers
- Perform all duties outlined in relevant SOPs and all other duties to be assigned.

SECONDARY RESPONSIBILITIES

- Perform new construction tasks, including equipment installation, piping, & electrical connection.
- Maintain Spare Parts List inventory for production equipment including "critical spares."
- Keep all equipment, processes and instrumentation files current and well organized, including manuals and parts information.
- Participate in training of production operators.
- Assist in production areas as needed as directed by maintenance supervisor, shift supervisor, and managers.
- Recommend changes in SOP's and process-related equipment.
- Works with other staff members to maintain workload balances. Provides back-up support as necessary.
- Supports effective communication with all Hydrite departments where responsibilities overlap to ensure success of the branch team.

REPORTING STRUCTURE

- This position reports to Maintenance Supervisor.

EXPERIENCE AND EDUCATIONAL CRITERIA

- High School diploma or equivalent; education in maintenance field is a plus.
- Ability to communicate effectively, both verbally and in writing.
- Ability to read and draw mechanical drawings or diagrams.
- Knowledge of proper electrical and instrumentation installation, calibration, and repair.
- Ability to learn and understand the plants distributed control system in troubleshooting, programming, and repair.
- Ability to learn and understand different production/technological processes and equipment.
- Ability to maintain the computerized Preventative Maintenance Program.
- Must have communication and interpersonal skills, along with the ability to read, write, and speak English.

PHYSICAL REQUIREMENTS

- Ability to wear a respirator for up to 4 hours a day. Please refer to the SOP for facial hair guidelines.
- Due to safety concerns, the wearing of contact lenses is prohibited.
- Ability to lift and carry up to 100 lbs. on occasion; ability to lift and carry up to 50 lbs. frequently.
- Able to stand for up to 12 hours per day.
- Able to climb ladders and work at heights up to 50 feet on occasion.
- Able to perform manual dexterity tasks.
- Ability to work in confined spaces.

Process Operator

PURPOSE OF POSITION

The primary purpose of this position is to be responsible for the operation of chemical processes (adjusting variables such as temperature, pressure, feed rate, sampling, etc.)

PRIMARY RESPONSIBILITIES

- Comply with all safety and regulatory compliance programs.
- Maintain housekeeping in assigned areas while working in a safe manner & following all established SOP's
- Use the PPE as specified in the SOP's.
- Be an active member of the emergency response team and associated training.
- Fill out the regulatory paperwork, inspections, and checklists as assigned meeting the intent of the regulations.
- Maintain regulatory compliance (RCRA, Title V, Air Permits, and OSHA regulations) in assigned areas.
- Participate in mandatory Environmental, Health, & Safety and process specific training.
- Communicate to shift supervisor or senior operator compliance, safety, and equipment needs as personally identified.
- Fill out the daily and weekly inspections check sheets as assigned.
- Fill out all vessel batch logs, reports, manifests, check sheets, etc. as assigned.
- Complete prism tasks for material transfers move tickets, material usage, prism logs, and work orders, raw material inventory, produced inventory, and ensure compliance to PRISM and ISO 9001:2000 SOP's and documentation as directed by the shift supervisor or senior operator.
- Operate processes (adjusting variables such as temperature, pressure, feed rate, sampling, etc.) in accordance with SOP's; notify shift supervisor or senior operator of deviations from the SOP's
- Perform auxiliary tasks such as tank transfers, bulk truck or railcar loading/unloading, container emptying and filling, dumping bags and supersacks, sampling, etc.
- Recommend changes in SOP's and process-related equipment.
- Participate in regulatory and process training activities as required and review changes/additions with your supervisor. Must be RCRA compliance.
- Uphold Hydrite's Standard of Excellence through a continuous commitment to maintain quality facilities and provide quality products and services to internal and external customers
- Perform all duties outlined in relevant SOPs and all other duties to be assigned.

SECONDARY RESPONSIBILITIES

- Assist in production areas as needed as directed by shift supervisor or senior operator, and building managers.
- Communicate production status, problems, and needs to shift supervisor or senior operator.
- Works with other staff members to maintain workload balances. Provides back-up support as necessary.
- Supports effective communication with all Hydrite departments where responsibilities overlap to ensure success of the branch team.

REPORTING STRUCTURE

- This position reports to Shift Supervisor.

EXPERIENCE AND EDUCATIONAL CRITERIA

- High school diploma or equivalent required.
- Basic computer skills and knowledge of MS Office.
- Ability to operate a forklift; previous experience preferred.
- Must have communication and interpersonal skills, along with the ability to read, write, and speak English.

PHYSICAL REQUIREMENTS

- Ability to lift and carry up to 100 lbs on occasion, 50 lbs. frequently.
- Able to stand for up to 12 hours per day.
- Able to climb ladders and work at heights up to 50 feet on occasion.
- Able to perform manual dexterity tasks.
- Due to safety concerns, the wearing of contact lenses is prohibited.
- Ability to wear a respirator for up to 4 hours a day. Please refer to the SOP for facial hair guidelines.

Process Project Engineer

PURPOSE OF POSITION

The primary purpose of this position is to improve existing production processes, introduce new production processes, and support plant operations. Also perform project engineering activities which include the design, procurement, installation, commissioning, and start-up of new processing equipment.

PRIMARY RESPONSIBILITIES

- Promote safety in all aspects of operations to improve the safety record at this facility and throughout the company; includes work performed by contractors.
- Promote the production of products that meet or exceed customer expectations, e.g., through participation in audits and investigations.
- Support daily production activities by monitoring process performance, trouble-shooting problems, and, as needed, implementing corrective actions.
- Execute activities to implement new chemical-processing and materials-handling processes.
- Continuously evaluate, recommend, and implement improvements to the plant processes and operating procedures.
- Support Sales and Marketing activities and provide technical assistance through interfaces with customers.
- Perform project-engineering activities as directed by the Engineering Manager; includes project management of these activities. Project-Engineering activities include the design, procurement, installation, commissioning, and start-up of new processing equipment.
- Utilize project-management skills and tools to efficiently perform duties, e.g., define project schedules, conduct project-review meetings, publish associated meeting minutes, and document project financial status.
- Execute improvement projects within financial, time, and quality constraints.
- Provide concise, accurate, and timely information to plant and senior management as requested or as required. At a minimum, provide written status reports on assignments on a monthly basis.
- Participate in the investigation and corrective actions efforts for your assigned manufacturing processes.
- Manage the change process for assignments by adhering to established policies and practices. Effectively review changes with impacted personnel prior to approval for implementation and during subsequent implementation.
- Participate in regulatory and process training activities as required and review changes/additions with your supervisor. Must be RCRA compliance.
- Uphold Hydrite's Standard of Excellence through a continuous commitment to maintain quality facilities and provide quality products and services to internal and external customers
- Perform all duties outlined in relevant SOPs and all other duties to be assigned.

SECONDARY RESPONSIBILITIES

- Assist in the proper maintenance of plant equipment as a technical resource.
- Work with the E.H.S. department to obtain safety and regulatory compliance.
- Works with other staff members to maintain workload balances. Provides back-up support as necessary.
- Supports effective communication with all Hydrite departments where responsibilities overlap to ensure success of the branch team.

REPORTING STRUCTURE

- This position reports to Engineering Manager.

EXPERIENCE AND EDUCATIONAL CRITERIA

- A Bachelor's degree is required; preferably in Chemical or Mechanical Engineering.
- Prefer to have additional education in Project Management.
- Must have at least five years of Process-Engineering and/or Project Engineering experience in chemical-processing industry.
- Must have two years experience interfacing with contractors.
- Strong computer skills and knowledge of Power Point, Word, and Excel required. As well as proficiency in AutoCAD and pipeline-sizing program.
- Must have communication and interpersonal skills, along with the ability to read, write, and speak English.

PHYSICAL REQUIREMENTS

- Sit and/or stand for up to ten hours per day.
- Ability to wear a respirator for up to 4 hours a day. Please refer to the SOP for facial hair guidelines.
- Be able to perform duties as a member of the Emergency Response Team.
- On an optional basis, be capable to operate a forklift.
- Climb ladders and work at heights up to 50 feet.
- Lift up to 50 pounds on an occasional basis.
- Travel domestically overnight via aircrafts, trains, or motor vehicles.
- As needed, work outside of normal business hours.
- Due to safety concerns, the wearing of contact lenses is prohibited.

QC Chemist

PURPOSE OF POSITION

The primary purpose of this position is to provide timely and accurate analytical results to internal and external customers by analyzing incoming, outgoing, and in-process samples.

PRIMARY RESPONSIBILITIES

- Maintain laboratory regulatory compliance (Waste Analysis Plan and Chemical Hygiene Plan) and housekeeping.
- Provide detailed analysis on incoming, outgoing, and in-process samples.
- Perform calibrations, quality control checks, solutions preparations and standardizations.
- Maintain accurate, legible, and complete laboratory records.
- Provide technical support as necessary to internal and external customers.
- Participate in regulatory and process training activities as required and review changes/additions with your supervisor. Must be RCRA compliance.
- Uphold Hydrite's Standard of Excellence through a continuous commitment to maintain quality facilities and provide quality products and services to internal and external customers
- Perform all duties outlined in relevant SOPs and all other duties to be assigned.

SECONDARY RESPONSIBILITIES

- Perform calibrations, quality control checks, and solution preparations and standardizations.
- Perform daily and periodic maintenance on instruments.
- Handle information requests for laboratory analyses, waste/product master information, and other requests from internal and external customers.
- Complete special assignments by laboratory management personnel on a timely basis.
- Works with other staff members to maintain workload balances. Provides back-up support as necessary.
- Supports effective communication with all Hydrite departments where responsibilities overlap to ensure success of the branch team.

REPORTING STRUCTURE

- This position reports to QA/QC Manager.

EXPERIENCE AND EDUCATIONAL CRITERIA

- A Bachelor's degree is required. Preferably with a natural science emphasis.
- Basic computer skills and knowledge of MS Office.
- Must have communication and interpersonal skills, along with the ability to read, write, and speak English.

PHYSICAL REQUIREMENTS

- Able to stand or walk for up to 12 hours during a work day.
- Able to perform tasks requiring good manual dexterity.
- Due to safety concerns, the wearing of contact lenses is prohibited.

Utility Operator

PURPOSE OF POSITION

The primary purpose of this position is to be responsible for the loading and unloading of all rail cars and bulk tankers, at the Cottage Grove East Facility during their shift coverage. In addition this position handles waste material and products associated with the disposal operations.

PRIMARY RESPONSIBILITIES

- Operates and performs other operations tasks for the chemical process as assigned by the shift supervisor and building mangers. Maintaining full compliance with applicable safety and regulatory policies and procedures.
- Comply with all safety and regulatory compliance programs and maintain housekeeping in assigned areas.
- Use the PPE as specified in the SOP's.
- Fill out the regulatory paperwork, inspections, and checklists as assigned meeting the intent of the regulations.
- Maintain regulatory compliance (RCRA, Title V, Air Permits, and OSHA regulations) in assigned areas.
- Move and spot tankers as necessary
- Load and Unload rail cars, bulk tankers, box trailers, pump drums, dump drums, 50-100 LB sacks and supersacks, and make tank to tank transfers according to established SOP's.
- Handle waste material and products associated with the disposal operations.
- Fill out the daily and weekly inspections check sheets as assigned.
- Complete prism tasks for material transfers move tickets, material usage, prism logs, and work orders, raw material inventory, produced inventory, and ensure compliance to PRISM and ISO 9001:2000 SOP's and documentation as directed by the shift supervisor or senior operator.
- Fill out all vessel batch logs, reports, manifests, check sheets, etc. as assigned.
- Operate processes (adjusting variables such as temperature, pressure, feed rate, sampling, etc.) in accordance with SOP's; notify shift supervisor or senior operator of deviations from the SOP's
- Recommend changes in SOP's and process-related equipment.
- Participate in regulatory and process training activities as required and review changes/additions with your supervisor. Must be RCRA compliance.
- Uphold Hydrite's Standard of Excellence through a continuous commitment to maintain quality facilities and provide quality products and services to internal and external customers
- Perform all duties outlined in relevant SOPs and all other duties to be assigned.

SECONDARY RESPONSIBILITIES

- Be an active member of the emergency response team and associated training.
- Participate in mandatory Environmental, Health, & Safety and process specific training.
- Communicate to shift supervisor or senior operator compliance, safety, and equipment needs as personally identified.
- Communicate production status, problems, and needs to shift supervisor or senior operator.
- Assist in production areas as needed as directed by shift supervisor or senior operator, and building managers.
- Works with other staff members to maintain workload balances. Provides back-up support as necessary.
- Supports effective communication with all Hydrite departments where responsibilities overlap to ensure success of the branch team.

REPORTING STRUCTURE

- This position reports to Shift Supervisor.

EXPERIENCE AND EDUCATIONAL CRITERIA

- High School diploma or equivalent required.
- Class A CDL required with acceptable Motor Vehicle Record; with Hazardous and tanker endorsements.
- Warehouse experience preferred.
- Forklift operation experience preferred.
- Basic computer skills and knowledge of MS Office.
- Must have communication and interpersonal skills, along with the ability to read, write, and speak English.

PHYSICAL REQUIREMENTS

- Ability to wear a respirator for up to 4 hours a day. Please refer to the SOP for facial hair guidelines.
- Ability to lift and carry up to 50 lbs. frequently.
- Able to stand for up to 12 hours per day.
- Able to climb ladders and work at heights up to 50 feet on occasion.
- Able to perform manual dexterity tasks.
- Due to safety concerns, the wearing of contact lenses is prohibited.

Warehouse Loader/Unloader

PURPOSE OF POSITION

The primary purpose of this position is to be responsible for the timely loading and unloading of all warehoused material while maintaining full compliance with all applicable regulatory and safety laws/policies/procedures in all associated warehouses. This includes the commitment to attain 100% customer satisfaction.

PRIMARY RESPONSIBILITIES

- Must be knowledgeable in all aspects of PRISM as it relates to this position.
- Loads and unloads warehouse materials in a timely and efficient manner that ensures that all packages are properly marked, labeled, palletized and banded as the case may be.
- Prepares shipping and receiving documents in accordance with applicable SOP's
- Completes shipping and receiving transactions timely and accurately.
- May be required to transport materials via truck between facility warehouses.
- Maintains the warehouse in a neat and organized manner and ensures that proper stock rotation, product compatibility and accessibility are maintained.
- Ensures facility housekeeping is maintained.
- Maintains an adequate supply of all materials necessary to carry out the warehousing functions.
- Reports all accidents and spills to management.
- Participate in regulatory and process training activities as required and review changes/additions with your supervisor.
- Communicate to management all special compliance, safety, equipment personnel, and transportation needs as personally identified.
- Communicate warehouse status, problems and needs to the Warehouse Supervisor and 2nd shift Warehouse Loader/Unloader. (i.e. 'turnover' of daily information).
- Participate in regulatory and process training activities as required and review changes/additions with your supervisor. Must be RCRA compliance.
- Uphold Hydrite's Standard of Excellence through a continuous commitment to maintain quality facilities and provide quality products and services to internal and external customers
- Perform all duties outlined in relevant SOPs and all other duties to be assigned.

SECONDARY RESPONSIBILITIES

- Complete forklift and spotting tractor inspections as required and assigned.
- Assist in the production areas as needed and assigned.
- Recommend changes in SOP's and processes.
- Communicate and coordinate needs and special requirements related to pickups and deliveries to/from Cottage Grove East.
- Complete special assignments as assigned by management and in the agreed upon time period.
- Works with other staff members to maintain workload balances. Provides back-up support as necessary.
- Supports effective communication with all Hydrite departments where responsibilities overlap to ensure success of the branch team.

REPORTING STRUCTURE

- This position reports to the Transportation/Warehouse Supervisor.
- This position provides back up to the other Warehouse Loader/Unloaders.

Appendix H

HYDRITE CHEMICAL CO. STANDARD POLICY

Original Policy Effective Date: 3/1/96	Supersedes Policy Dated: 7/1/10	Effective Date: 8/1/10	Policy No.: SF031AF
Facility: AF	Approval Name & Signature: Tom Miazga		Revision No.: 10
Review Frequency: 2 Years	Approval Title: Director of Safety, Quality & Regulatory Affairs		Page 1 of 10
Without a green control label to the right of this statement, this policy is a draft. A draft or an uncontrolled copy cannot be used as a guide in decisions and discussions relating to business.			If this block is black, this is NOT a controlled document
Revised Section(s): Modified 2.2.2.6.			

I. TITLE: FLAMMABLE AND COMBUSTIBLE LIQUIDS

II. KEY WORDS: Safety, Liquids, Flammable, Combustible, Non-Flammable

III. PURPOSE: Specifies safe practices to be followed relative to operations involving flammable and combustible liquids, including storage.

IV. APPLICATION: All Hydrite Chemical Facilities

V. DEFINITIONS:

Aerosol : a material which is dispensed from its container as a mist, spray, or foam by a propellant under pressure.

Basement : a story of a building or structure having one-half or more of its height below ground level.

Bulk Plant: that portion of a property where flammable or combustible liquids are received by tank vessel, pipelines, tank car, or tank vehicle, and are stored or blended in bulk for the purpose of distributing such liquids by tank vessel, pipeline, tank car, tank vehicle, or container.

Combustible Liquid: any liquid having a flashpoint at or above 100 deg. F. (37.8 deg. C.), but less than 200 deg. F. Combustible Liquids are also referred to as "Class II" (flash point over 100F but less than 140F) or "Class III" liquids (flash point over 140F, but less than 200F).

Fire Area: an area of a building separated from the remainder of the building by construction having a fire resistance of at least 1 hour and having all communicating openings properly protected by an assembly having a fire resistance rating of at least 1 hour.

Flammable Aerosol: an aerosol which is required to be labeled "Flammable" under the Federal Hazardous Substances Labeling Act (15 U.S.C. 1261). For the purposes of this SOP, such aerosols are considered Class IA liquids.

Flammable Liquid: any liquid having a flashpoint below 100 deg. F. (37.8 deg. C.), except any mixture having components with flashpoints of 100 deg. F. (37.8 deg. C.) or higher, the total of which make up 99 percent or more of the total volume of the mixture. Flammable liquids are also known as "Class I" liquids. Class I liquids are further subdivided into categories A (flashpoint below 73°F & boiling point below 100°F), category B (flashpoint below 73°F & boiling point above 100°F), and category C (flashpoint above 73°F & below 100°F).

Industrial Plant: a plant in which the use of flammable or combustible liquids is incidental to the principal business, or where flammable or combustible liquids

are handled or used only in unit physical operations such as mixing, drying, evaporating, filtering, distillation, and similar operations which do not involve chemical reaction.

Inside Storage Room: a room totally enclosed within a building and having no exterior walls and used for storage of flammable and combustible liquids.

Office Occupancy: shall mean the occupancy or use of a building or structure or any portion thereof for the transaction of business, or the rendering or receiving of professional services.

Portable Tank: a closed container having a liquid capacity over 60 U.S. gallons and not intended for fixed installation.

Pressure Vessel: a storage tank or vessel which has been designed to operate at pressures above 15 p.s.i.g.

Processing Plants: those plants or buildings which contain chemical operations such as oxidation, reduction, halogenation, hydrogenation, alkylation, polymerization, and other chemical processes.

Safety Can: an approved container, of not more than 5 gallons capacity, having a spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.

Tank: a storage tank which has been designed to operate at pressures from atmospheric through 0.5 p.s.i.g. having a capacity of more than 60 gallons.

Unstable (Reactive) Liquid: a liquid which in the pure state or as commercially produced or transported will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure, or temperature.

VI. ASSOCIATED MATERIAL(S):

Chemical Hygiene Plan SOP QC002AF
Personal Protective Equipment General Requirements SOP SF014AF
Respiratory Protection SOP SF041
Hot Work Permit SOP SF027AF
Tank Truck Bulk Unloading SOP RC003
Tank Truck Bulk Loading SOP SP003
Rail Car Unloading SOP RC004
Container Inspection and Filling SOP PR002
Internal Facility Compliance Inspection & Corrective Action SOP SF029
Grounding & Bonding SOP SF030AF
Tables A, B, C & D (included)

VII. POLICY:

1. Drumming, Blending, and Tank Transfer Operations

1.1. This section may apply in "Bulk Plants", "Industrial Plants", or "Processing Plants, as defined above. The requirements are the same for all types of facilities, unless otherwise specified.

1.2. All employees must be trained in emergency shutdown procedures before conducting operations in which flammable or combustible liquids are used.

1.3. All exit paths from the work area must be free of obstruction and allow quick exit in an emergency. All exit paths must be at least three feet wide.

1.4. Safety equipment such as fire extinguishers, safety showers, and eyewash facilities must be available and in good working condition. Paragraph 2.12 provides additional information regarding types and location of extinguishers.

1.5. Loose combustible materials (cardboard, rags, etc.) are not permitted in areas where flammable liquids are handled wherever provided for use.

1.6. Exhaust systems, vapor balance systems, and/or scrubbers must be in operation before starting transfer operations.

1.7. There may be no sources of ignition in the area in which flammable liquids are handled. Scales, containers, and transfer equipment must be grounded/bonded (electrically interconnected) while transferring liquids. The Grounding & Bonding SOP provides additional information on control of ignition sources.

1.7.1. (Only applicable at Cottage Grove and University Park) 55-gallon polyethylene containers may be used for filling Ethanol (CG & UP) and IPA (UP only) as long as:

1.7.1.1. The fill pipe extends to the bottom of the drum such that only submerged filling occurs.

1.7.1.2. The fill pipe is composed of metal and is individually grounded.

1.8. Each connection to a tank inside of buildings through which liquid can normally flow shall be provided with an internal or external valve located as close as practical to the shell of the tank. Valves must be made of a material compatible with the liquid and suitable for service conditions. When not in use, valves openings must be capped or plugged and liquid tight.

1.9. Containers must be attended while loading, unloading, or filling. This means that the person conducting the operation must be in direct sight of the container being filled and in a position to respond promptly to control any malfunction (spill, hose break, etc.).

1.10. Clean spillage from containers prior to storage or movement. Dispose of any spillage by placing spill residues in an appropriate waste container. Residues containing flammable materials must be considered as flammable.

1.11. Flammable liquids must be kept in covered containers when not actually in use.

1.12. For Industrial Plants, when handling liquids at the point of final use within a building, flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or portable tanks only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self-closing valve. Transferring by means of compressed air on the container or portable tanks shall be prohibited.

1.13. For Processing Plants, the transfer of large quantities of flammable or combustible liquids shall be through piping by means of pumps or water displacement. Except as required in process equipment, gravity flow shall not be used. The use of compressed air as a transferring medium is prohibited.

1.14. Compressed air may not be used for purposes of "blowing lines clear".

1.14.1 Exception: Compressed air may be used to blow lines used for transfer of reactive monomers such as glacial acrylic acid and glacial methacrylic acid. These materials are not flammable liquids and use of compressed air is recommended by the manufacturer.

1.15. Where flammable and combustible liquids are handled, spill control and clean up equipment and materials must be readily available.

2. Storage

2.1. The following general rules regarding storage of flammable and combustible liquids apply to all types of plants and are -- Bulk, Industrial, and Processing, except where specifically noted. The Chemical Hygiene Plan defines storage and handling requirements in the laboratory.

2.1.1. Storage areas, both indoor and outdoor, shall be:

2.1.1.1. Protected against tampering or trespassers where necessary and

2.1.1.2. Shall be kept free of weeds, debris and other combustible material not necessary to the storage.

2.1.2. Incompatible storage:

2.1.2.1. Materials which will react with water (as specified in the MSDS) may not be stored in the same room with flammable or combustible liquids.

2.1.2.2. Materials placarded as "Oxidizers" may not be stored within 10' of flammable liquids in processing areas or warehouses.

2.1.2.3. Class 4 oxidizers may not be stored in the same building as flammable or combustible liquids.

2.1.3. Cabinets established for storage of flammable/combustible liquids:

2.1.3.1. Not more than 60 gallons of Class I or Class II liquids, nor more than 120 gallons of Class III liquids may be stored in a "Flammable" storage cabinet.

2.1.3.2. Combustible materials may not be stored on top of cabinets designated for flammable storage.

2.1.4. Class I liquids must not be handled, used, or stored in basements.

2.1.5. Leaking containers shall be removed to a storage room established for storage of flammable liquids, or taken to a safe location outside the building and the contents transferred to an undamaged container (Does not apply to fixed tanks or contained tank farm areas).

2.1.6. Suitable fire control devices, such as small hose or portable fire extinguishers, shall be available at locations where flammable or combustible liquids are stored.

2.1.6.1. At least one portable fire extinguisher having a rating of not less than 12-B units shall be located outside of, but not more than 10 feet from, the door opening into any room used for storage.

2.1.6.2. At least one portable fire extinguisher having a rating of not less than 12-B units must be located not less than 10 feet, nor more than 25 feet, from any Class I or Class II liquid storage area located outside of a storage room but inside a building.

2.1.7. Storage in inside storage rooms, where so designated:

2.1.7.1. In every inside storage room there shall be maintained one clear aisle at least 3 feet wide.

2.1.7.2. Containers over 30 gallons capacity shall not be stacked one upon the other.

2.1.7.3. Dispensing of flammable and combustible liquids shall be by approved pump only.

2.1.7.4. The OSHA regulation on Flammable and Combustible Liquids provides additional details on construction of such rooms at 29CFR1910.106(d)(4).

2.1.8. Storage inside buildings: Flammable or combustible liquids shall not be stored so as to limit use of exits, stairways, or aisleways as normally used for the safe egress of people.

2.1.9. Storage outside buildings (Does not apply to tank farms)- Requirements are described in an attached table.

2.2. In addition to the above general rules, the following rules apply in the specified areas:

2.2.1. For storage in office occupancies:

2.2.1.1. Storage of flammable and combustible liquids, including flammable aerosols in containers, shall be prohibited except that which is required for maintenance and operation of building and operation of equipment.

2.2.1.2. Stored flammable and combustible liquids and flammable aerosols shall be kept in closed metal containers stored in a storage cabinet or in safety cans.

2.2.2. For storage in indoor warehouses (does not apply to office occupancies):

2.2.2.1. Containers in piles shall be separated by pallets or dunnage where necessary to provide stability and to prevent excessive stress on container walls.

2.2.2.2. Containers stored over one tier high shall be designed to nest securely, without dunnage, and adequate materials handing equipment shall be available to handle tanks safely at the upper tier level.

2.2.2.3. Each storage pile must be separated from the adjacent pile by at least 4', and the main aisle must be at least 8' wide.

2.2.2.4. No drum container may be more than 12' from an aisle.

2.2.2.5. No pile shall be closer than 3 feet to the nearest beam, chord, girder, or other obstruction, and shall be 3 feet below sprinkler deflectors or discharge orifices of water spray, or other overhead fire protection system.

2.2.2.6. At MK, metal drums or totes of flammable or combustible liquid will not be stored more than 1 high unless they are equipped with a nylon bung or fusible plug, respectively.

2.2.2.7. Aisles of at least 3 feet wide shall be provided where necessary for reasons of access to doors, windows, emergency equipment, or to conduct routine maintenance or inspections.

2.2.2.8. Storage pile sizes for various liquid classes are described in the attached table.

2.2.3. For storage in "Industrial Plants", other than in designated warehouse areas: The quantity of liquid that may be located outside of an inside storage room or rated storage cabinet in a building or in any one fire area of a building shall not exceed:

2.2.3.1. 25 gallons of Class IA liquids (Note: Flammable aerosols are Class 1A liquids);

2.2.3.2. 60 gallons of Class IB, or 90 gallons of class IC liquids in containers;

2.2.3.3. 120 gallons of Class I liquids (combined IA, IB, IC) or combined Class I and II liquids (within the constraints of the above paragraphs);

2.2.3.4. 330 gallons of Class IIIA or 13,200 gallons of Class IIIB liquids;

2.2.3.5. 660 Gallons of class I, II, or III liquids in a single portable tank;

2.2.3.6. Where large quantities of flammable or combustible liquids are necessary, storage may be in tanks designed for storage of such liquids.

2.2.3.7. Note: Basis for the above: Uniform Fire Code, 1991.

2.2.4. For storage in "Bulk plants":

2.2.4.1. Class I liquids shall be stored in closed containers, or in storage tanks above ground outside of buildings;

2.2.4.2. Class II and III liquids shall be stored in containers, or in tanks within buildings or above ground outside of buildings. Containers of flammable or combustible liquids when piled one upon the other shall be separated by dunnage sufficient to provide stability and to prevent excessive stress on container walls. The height of the pile shall be consistent with the stability and strength of containers.

2.2.5. For storage in "Processing Plants":

2.2.5.1. If the storage of flammable or combustible liquids in outside aboveground tanks is not practical because of temperature or production considerations, tanks may be permitted inside of buildings or structures. Such tanks may not be below grade level;

2.2.5.2. Storage of flammable or combustible liquids shall be consistent with information in the attached tables covering container size and indoor and outdoor storage.

2.2.6. For areas in which tanks or tank farms are present:

2.2.6.1. Product tank valves must be closed and facility entrance gates/doors, etc. must be locked when the facility is unattended.

2.2.6.2. No loose combustible material (trash) or drum containers are permitted within diked areas in which flammable or combustible liquids are stored (in tank farms).

2.2.6.3. Fixed tanks used for storage of flammable or combustible liquids must be grounded. Grounding procedures are specified in the Grounding & Bonding SOP.

3. Bulk Loading/Unloading (Shipping/Receiving)

3.1. The following applies to any loading or unloading of portable tanks. Refer to the SOPs covering Bulk Loading and Bulk Unloading for detailed instructions regarding such procedures. The following is intended to supplement information provided in the SOPs.

3.2. Grounding/Bonding facilities for protection against static sparks during the loading of portable tanks must be used:

3.2.1. Where flammable liquids are loaded;

3.2.2. Where combustible liquids are loaded into vehicles which may contain vapors from previous cargoes of Class I liquids;

3.2.3. Procedures to be used for control of ignition sources, such as grounding/bonding practices are specified in the Grounding & Bonding SOP.

3.3. Filling and emptying connections used for liquid transfers which are made and broken shall be located outside of buildings at a location free from any source of ignition and not less than 5 feet away from any building opening. Such connection shall be closed and liquid tight when not in use. The connection shall be properly identified.

3.4. Tank vehicle and tank car loading or unloading facilities shall be separated from aboveground tanks, warehouses, other plant buildings or nearest line of adjoining property that may be built upon by a distance of 25 feet for Class I liquids and 15 feet for Class II and Class III liquids measured from the nearest position of any fill spout. Buildings for pumps or shelters for personnel may be a part of the facility.

4. Primary Hazards

4.1. Health and physical hazards of flammable and combustible liquids are specified in the MSDSs for those materials.

4.2. PPE Specification- Personal Protective equipment requirements are specified in the Safety Manual, the task specific SOP, or the MSDS.

4.3.

Table A

Maximum Allowable Size Of Containers And Portable Tanks
Applies at all facilities

This table defines the maximum allowed size of containers and portable tanks that can be used to hold various classes of solvents.

Container Type	Flammable Liquids			Combustible Liquids	
	Class IA	Class IB	Class IC	Class II	Class III
Glass or approved plastic	1 pt	1 qt	1 gal		
Metal , other than DOT approved drums	1 gal	5 gal			
Safety Cans	2 gal	5 gal			
DOT Metal Drums*	60 gal				
DOT Portable Tanks	660 gal				

*** Storage in non-metal DOT Drums may also be permitted for Class IB liquids such as isopropyl alcohol/water blends.**

Table B

Indoor Drum Container Storage
Applies at all facilities

The total quantity of material which can be in any one pile depends on the type of material, where in the building the material is being stored and whether or not fire protection (an adequate automatic sprinkler or foam system) is provided for the storage area. There is no limit to the total quantity stored within a single building.

Class Liquid	Storage Level	Sprinklered* Storage: maximum per pile Gallons (Drums)	Unsprinklered storage maximum per pile Gallons (Drums)
IA	ground & upper floors	2,750 (50)	660 (12)
IA	basement	not permitted	not permitted
IB	ground & upper floors	5,500 (100)	1.375 (25)
IB	basement	not permitted	not permitted
IC	ground & upper floors	16,500 (300)	4,125 (75)
IC	basement	not permitted	not permitted
II	ground & upper floors	16,500 (300)	4,125 (75)
II	basement	5,500 (100)	not permitted
III	ground & upper floors	55,000 (1,000)	13,750 (250)
III	basement	8,250 (450)	not permitted

*** Other forms of fixed fire protection, such as deluge or CO2 systems are also acceptable protection.**

"Pile" Definitions/Regulations:

1. Each pile has to be separated from the adjacent pile by an aisle of at least 4', and there must be a main aisle at least 8' wide.
2. No drum is allowed to be more than 12' from an aisle.
3. Containers in piles shall be separated by pallets or dunnage to provide stability and prevent excessive stress on container walls.
4. To allow for inspection, no pile may be closer than 3' to the nearest beam, chord, girder or other structural member or obstruction.
5. Pile height shall be limited to no higher than a plane 3' below the automatic sprinkler deflectors or discharge orifice of water spray.

Table C
Indoor Portable Tank Storage- Applies at all facilities
(Portable Tank is a closed container of more than 60 Gallons)

Class Liquid	Storage Level	Sprinklered* storage areas, maximum per pile Gallons	Unsprinklered storage areas, maximum per pile Gallons
IA	ground & upper floors	not permitted	not permitted
IA	basement	not permitted	not permitted
IB	ground & upper floors	20,000	2,000
IB	basement	not permitted	not permitted
IC	ground & upper floors	40,000	5,500
IC	basement	not permitted	not permitted
II	ground & upper floors	40,000	5,500
II	basement	20,000	not permitted
III	ground & upper floors	60,000	22,000
III	basement	20,000	not permitted

*** Other forms of fixed fire protection, such as deluge or CO2 systems are also acceptable protection.**

"Pile Definitions" from Table B apply

Table D
Outside Storage - Applies at all facilities
(Portable Tank is a closed container of more than 60 Gallons)

Class of Liquid	Maximum per Pile, gallons		Distance between Piles, Feet	Distance to Property Line, Feet	Distance to Public Way, Feet
	Container	Portable Tank			
1A	1,100	2,200	5	20	10
1B	2,200	4,400	5	20	10
1C	4,400	8,800	5	20	10
II	8,800	17,600	5	10	5
III	22,000	44,000	5	10	5

"Pile Definitions" from Table B apply
A maximum of 1,100 gallons (20 drums) of flammable or combustible liquids may be stored adjacent to buildings.
When storage exceeds 1,100 gallons, a 10' clear space must separate the building and the storage.
Distance to Property Line refers to property line that can be built upon.
Public Way refers to any street, alleyway, public walkway.

Original SOP Effective Date: 2/31/88	Supersedes SOP Dated: 7/1/10	Effective Date: 8/1/10	Procedure No.: SF021AF
Facility: AF	Approval Name & Signature: Tom Miazga		Revision No.: 9
Review Frequency: 2 Years	Approval Title: Director of Safety, Quality & Regulatory Affairs		Page 1 of 6
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Revised Section(s): Removed 1.1.3 and 1.1.4.			

I. **TITLE:** FIRE PREVENTION/PROTECTION PLAN

II. **KEY WORDS:** Fire extinguishers; Fire prevention; Sprinkler systems

III. **PURPOSE:** To define procedures for preventing on-the-job fires in accordance with 29 CFR 1910.38 (b), 29 CFR 1910.155, 29 CFR 1910.157 through 29 CFR 1910.159 and 29 CFR 1910.163

IV. **APPLICATION:** This SOP applies to all facilities, employees, contractors, and visitors of Hydrite Chemical.

V. **DEFINITIONS:** N.A.

VI. **ASSOCIATED MATERIAL(S):**
Fire Extinguisher SOP TX010AF
Flammable and Combustible Liquids SOP SF031AF
Flammable and Combustible Liquids, Halogenated Solvents SOPTX005SF/CG
Grounding and Bonding SOP SF030AF
Hot Work Permit SOP SF027AF
Oxidizer Safety SOP TX015AF
Warehouse Product Location SOP WH001xx
29 CFR 1910.38 (b) - Fire Protection Plans
29 CFR 1910.106 – Flammable and Combustible Liquids
29 CFR 1910.155 - Scope, application and definitions
29 CFR 1910.157 - Portable Fire Extinguishers
29 CFR 1910.158 - Standpipe and Hose Systems
29 CFR 1910.159 - Automatic Sprinkler Systems
29 CFR 1910.163 - Fixed Extinguishing Systems, Water Spray and Foam
NFPA 10, Portable Fire Extinguishers
NFPA 13, Sprinkler Systems Installation
NFPA 13A, Sprinkler Systems, Care and Maintenance
NFPA 30, Flammable and Combustible Liquids Code
NFPA 70 - National Electrical Code
WBT module: H-AF-FIREPREV, Fire Prevention / Protection Plan; Revisions made to this SOP should be done concurrently with WBT module.

VII. **PROCEDURE:**

1. Fire Prevention Procedures

1.1. Chemical Storage and Use

1.1.1. Storage of Incompatible Chemicals. Warehouse storage of chemicals shall be in accordance with the "Warehouse Product Location SOP"

1.1.2 No containers of Flammable or Combustible liquids may be stored closer than 3 feet to any girder, chord, or other obstruction. 1910.106(d)(5)(vi)(e)

1.2. Ignition Sources

1.2.1. Smoking - Smoking is not permitted in Hydrite Chemical Co. facilities. Due to storage or process considerations, certain outdoor areas are also designated as non-smoking.

1.2.1.1. "No Smoking" signs shall be posted at all entryways to storage or processing buildings and at designated outdoor No Smoking areas.

1.2.1.2. Employees, contractors and visitors shall obey all "No Smoking" signs.

1.2.1.3. Specific areas may be designated for smoking.

1.2.1.3.1. Smoke only in designated areas, and dispose of all cigarette butts in the proper container.

1.2.1.3.2. Don't leave cigarettes burning unattended in ashtrays or on table edges.

1.2.2. Fixed Electrical Equipment

1.2.2.1. Facility management shall evaluate all chemical storage or processing areas to determine the Electrical Classification, as defined in NFPA 70, the National Electrical Code. A diagram or description of the facility with the corresponding electrical classification of each room or area shall be maintained in the facility legal file and accessible to all employees.

1.2.2.2. Electrical wiring, fixtures and outlets shall be suitable for the electrical classification of the area.

1.2.2.3. A clear space of at least 36" shall be maintained around all electrical panels which operate at 120VAC or higher.

1.2.3. Portable Electrical Equipment

1.2.3.1. Do not use adapters, or cheaters, which allow ordinary electrical equipment or tools to be connected to classified area outlets or fixtures except when specifically allowed on a Confined Space Entry Permit or a Hot Work Permit.

1.2.3.2. The user must inspect all electrical cords for frays or broken wires before using equipment. Don't use if the cords are defective.

1.2.3.3. The user must be on the lookout for electrical defects in equipment, such as exposed wires, overheating motors, faulty switches, lamps or heating elements.

1.2.3.4. The user must not overload circuits or bridge fuses.

1.2.4. Friction and Mechanical Sparking

1.2.4.1. The operator must watch for overheating bearings, misaligned or broken machine parts, choking or jamming materials, and poor adjustment of moving parts.

1.2.5. Cutting, Welding, Brazing and Soldering.

1.2.5.1. A Hot Work Permit must be obtained before introducing any ignition source. See the Hot Work SOP.

2. Control of Fuel Sources

2.1. Housekeeping - Practice GOOD HOUSEKEEPING at ALL times.

2.1.1. Keep fire doors, stairways, aisles and exits clear, and maintain a clean work area.

2.1.2. Do not block Fire Extinguishers.

2.1.3. Put all oil, paint and grease soaked rags, shavings and other flammable or combustible waste in the proper waste receptacles.

2.1.4. Don't allow empty boxes, cartons, packing materials or loose paper to accumulate. Dispose of them immediately.

2.2. Guard against exposure of flammables, explosives, and combustibles to furnaces, hot ducts or flues, static electricity, and electric lamps or heating elements. A minimum 36" clear space is to be maintained from hot surfaces.

2.3. Make sure that all flammable liquids in storage are stored away from direct heat and in proper containers.

2.4. Never use alcohol, gasoline, or other flammable liquid as a cleaning agent unless contained within process equipment or piping under the specifications of a written Standard Operating Procedure.

2.5. Spilled combustible or flammable chemicals are to be cleaned up immediately.

3. Fire Protection Equipment and Responsible Parties

3.1. Fire Extinguishers

3.1.1. Facility management shall be responsible to provide fire extinguishers appropriate to the fire classification in all areas. Fire extinguishers are rated based upon the type of materials and how large a fire involving that type of material they can extinguish.

3.1.1.1. Class A - Ordinary Combustibles

3.1.1.2. Class B - Flammable Liquids

3.1.1.3. Class C - Energized Electrical Equipment

3.1.1.4. Class D - Metals

Use of an inappropriate extinguisher can aggravate a fire and/or be hazardous to the operator.

3.1.2. Notify your supervisor of fire extinguishers which have been used.

3.1.3. Fire extinguishers shall be selected and located in accordance with NFPA 10, Portable Fire Extinguishers, guidelines.

3.1.3.1. Offices There shall be at least one extinguisher rated at least 2A for every 1,500 sq. ft. of building area (Ordinary Hazard Occupancy as defined in NFPA 10). Personnel should not have to travel more than 75' from any point in the area to obtain a fire extinguisher.

3.1.3.2. Warehouses, process areas and tank farms There shall be at least one extinguisher rated at least 40B in all warehouses, tank farms and processing areas for every 2,500 sq. ft. of floor area or portion thereof. Personnel should not have to travel more than 50' from any point in the area to obtain a fire extinguisher.

3.1.3.3. Electrical equipment rooms There shall be at least one 40C (may be a combined BC rating) dry chemical fire extinguisher located at each doorway into the room. Electrical equipment not located within a separate room in process areas, warehouses or tank farms may be protected by the same extinguisher provided the extinguisher carries a C rating. Personnel should not have to travel more than 50' from any point in the area to obtain a fire extinguisher.

3.1.3.4. In placing fire extinguishers, locations should be selected that will:

3.1.3.4.1. provide a uniform distribution in an area;

3.1.3.4.2. provide easy accessibility;

3.1.3.4.3. be relatively free from blocking by storage or equipment;

3.1.3.4.4. be near a normal path of travel;

3.1.3.4.5. be near entrance and exit doors;

3.1.3.4.6. be protected from potential for physical damage;

3.1.3.4.7. be readily visible

3.1.3.5. Mezzanines shall have at least one fire extinguisher at each stair access.

3.1.3.6. Multi-deck structures shall have at least one fire extinguisher on every deck.

3.1.4. Fire extinguishers shall not be stored on the floor.

3.1.5. The location of fire extinguishers shall be identified.

3.1.6. Employees who are expected to use a fire extinguisher will be trained annually on the proper use and limitations of fire extinguishers.

3.1.7. Fire extinguishers shall be inspected on a monthly basis. The inspection shall confirm that:

3.1.7.1. the extinguisher is in the designated location and properly placed on its bracket

3.1.7.2. there are no obstructions to block access to the extinguisher

3.1.7.3. the extinguisher does not have any visibly evident mechanical defects

3.1.7.4. seals and tamper indicators are not missing or broken

3.1.7.5. the extinguishing agent is ready for use

3.1.7.5.1. stored pressure type extinguishers are pressurized as indicated by the pressure gauge.

3.1.7.5.2. Ansul type extinguishers have not had the pressure canister punctured

3.1.7.5.3. carbon dioxide extinguishers still have the pin and seal in place

3.1.7.6. the inspector shall initial the tag indicating that the inspection has been performed. Written records of inspection shall be maintained in the facility legal file.

3.1.8. On an annual basis the extinguisher shall be fully inspected and serviced per the procedures published in NFPA 10, Portable Fire Extinguishers, Chapter 4-4, Maintenance *(Note that this is normally performed by an outside service)*

3.1.9. Periodic hydrostatic testing of fire extinguishers will be performed as specified in NFPA 10, Portable Fire Extinguishers, Chapter 5, Hydrostatic Testing *(Note that this is normally performed by an outside service)*. Time between tests for commonly used extinguishers is:

Extinguisher Type	Test Interval (years)
Stored Pressure Water and/or Antifreeze	5
Foam	5
AFFF	5
Dry Chemical with stainless steel shells	5
Carbon Dioxide	5
Dry Chemical, Stored Pressure	12
Dry Chemical, Cartridge (Ansul type)	12
Halon 1211	12
Halon 1301	12

3.2. Automatic Sprinklers

3.2.1. When installed, sprinkler systems shall conform with the requirements of NFPA 13, Installation of Sprinkler Systems.

3.2.2. The minimum vertical clearance between sprinkler heads and the material below is 18 inches. Storage in sprinklered areas must not be higher than 18" below the plane of the sprinkler heads.

3.2.2.1 The minimum vertical clearance between sprinkler deflectors or discharge orifices and the containers of Flammable or Combustible liquids below them is 3 feet. 1910.106(d)(5)(vi)(e)

3.2.3. Sprinkler systems shall be inspected and maintained in accordance with NFPA 13A, Care and Maintenance of Sprinkler Systems and the following table:

Type System	Item	Condition	Frequency
Dry Pipe Systems	System	Air pressure and supply	Weekly
Dry Pipe Systems	System	dry pipes verified dry	Weekly during freezing weather
Wet Pipe Systems	Control valves	inspect for open, leakage	Weekly
Wet Pipe Systems	System temperature	heating systems working, windows/doors closed	Weekly during freezing weather
Automatic Sprinklers	Water Motor Gong Alarm	operability and audibility 2" drain	Monthly
Wet Pipe Systems	Check valves	test for leakage	Monthly
Foam Sprinkler System	Water control valves and any automatic or manual trip controls	Trip test	Semi-annual
Automatic Sprinklers	Water Motor Gong Alarm	operability and audibility Inspectors Test Connection	Annual
Automatic Sprinklers	Control valves	operate, oil and grease	Annual
Automatic Sprinklers	Pressure gauges	calibrate	Annual
Automatic Sprinklers	System	Occupancy changed	Annual
Automatic Sprinklers	System	Loose hangers or unsupported piping	Annual
Automatic Sprinklers	System	Sprinklers corroded or painted	Annual
Automatic Sprinklers	System	Extra sprinkler heads: enough and proper type/temperature rating	Annual
Automatic Sprinklers	System	Sprinkler wrench available	Annual
Wet Pipe Systems	Check valves	clean and inspect	Annual
Foam Sprinkler System	Proportioners and strainers	service and clean	Annual
Foam Sprinkler System	Foam solution	Sample and test pre-mixed foam solution in distribution piping	Annual
Foam Sprinkler System	Foam Concentrate	Sample and test foam concentrate in storage tank	Five Year

3.2.4. Hoses are provided on some sprinkler systems, but no training provided on how to use them for interior fire fighting. Employees should not attempt to use hose lines inside of buildings except for a minor fire which could be extinguished with a portable extinguisher.

3.2.4.1 Fire hoses in Lake Zurich are inspected monthly.

3.2.4.2 Fire hoses in Lake Zurich are inspected, tested and re-racked annually by an outside contractor.

3.2.4.3 Fire hoses in Lake Zurich are to be used only for fire cleanup and not for fire prevention.

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Facility: AF	Approval Name & Signature: Tom Miazga		Revision No.: 7
Review Frequency: 2 Years	Approval Title: Director of Safety, Quality & Regulatory Affairs		Page 1 of 8
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Revised Section(s): Reviewed, no changes.			

I. **TITLE:** GROUNDING & BONDING

II. **KEY WORDS:** Bonding, Grounding, Hot Work, Ignition source

III. **PURPOSE:** Specifies procedures to be used to control ignition sources, including grounding/bonding, when working with flammable and combustible liquids, reducing risk of fire, explosion, and employee injury.

IV. **APPLICATION:** All Hydrite Chemical Employees, whenever handling solids or liquids with the ability to generate static charges in a potentially flammable environment.

V. **DEFINITIONS:**

Bonding System: a system connecting two or more pieces of equipment to keep the same electric potential among them (static sparking cannot take place between objects that have the same electric potential).

Conductive metal objects such as screens, rims of nonconductive drums, probes, spray nozzles, and high-pressure cleaning equipment can become statically charged. By bonding the metal objects, you can prevent them from becoming sufficiently charged to cause a static spark.

Ignition Source: any energy source that may cause ignition of flammable or combustible vapors, liquids, or solids.

Grounding System: a system that electrically connects equipment to ground, which has no electric potential. This prevents the equipment from becoming sufficiently charged to cause a static spark.

Grounding/Bonding: refers to practices used to dissipate static electricity which may be generated whenever liquids move in contact with other materials, such as when transferring liquids from one container, vessel, or tank into another, or any mixing, pouring, pumping, or agitating.

Portable Tank: a container having a liquid capacity over 60 U.S. gallons and not intended for fixed installation.

Tank : a storage tank which has been designed to operate at pressures from atmospheric through 0.5 p.s.i.g. having a capacity of more than 60 gallons.

VI. **ASSOCIATED MATERIAL(S):**

Flammable and Combustible Liquid SOP SF031AF
Chemical Hygiene Plan QC002AF
Internal Facility Compliance Inspection & Corrective Action SOP SF029
Grounding and Bonding Inspection form (included)
Hot Work Permit SOPs SF027AF and SF047CG
NFPA 77
OSHA 1910.106 and 1910.107

VII. **PROCEDURE:**

1. If a spark occurs in the presence of a flammable vapor-air mixture, or any flame is introduced in such an area, an ignition may result.

2. General policies and procedures applicable to control of ignition sources:

   2.1. Open flames and smoking shall not be permitted in flammable or combustible liquid storage areas.

   2.2. Hot work permits must be obtained according to the Hot Work Permit SOP.

3. Equipment safeguards applicable to control of ignition sources:

   3.1. Only lift trucks rated for service as "DY", "EE", or "EX" may be used in areas in which flammable liquids are used, with the hazardous liquids normally confined within containers or vessels, or where ventilation prevents the build up of hazardous vapors.

   3.2. Electrical equipment (pumps, lights, switches, heaters, fans, communications equipment/devices) used in areas in which Class I liquids are stored or handled, or combustible liquids are processed at temperatures within 30°F of the flash point, shall meet Class I, Division I or II requirements, as specified in NFPA 30.

4. Grounding/Bonding & Related Work Practices

   4.1. Grounding/Bonding refers to practices used to dissipate static electricity which may be generated whenever liquids move in contact with other materials, such as when transferring liquids from one container, vessel, or tank into another, or any mixing, pouring, pumping, or agitating.

      4.1.1. Static electricity may be safely dissipated by electrically grounding a conductive object or by electrically bonding it (interconnecting) with an electrically conductive material.

      4.1.2. Bonding is accomplished by joining the two containers involved in filling (metal surfaces) with a wire (in practice, a sheathed cable).

      4.1.3. Grounding occurs when an earth ground is used as the means to "electrically connect" the two containers involved in filling (metal surfaces).

      4.1.4. Connections for purpose of dissipating static must be made with ground clamps, or other fixtures that provide metal-to-metal contact (i.e. fully penetrate metal coatings on container to ensure metal to metal contact).

         4.1.4.1. The contact of a metal drum as it sits atop a grounded scale is NOT sufficient or reliable means of establishing a ground. Grounding between containers must be made with hand clamps and cables.

         4.1.4.2. Clamps should be attached to metal object that are part of the chassis or welded framework of the system. Except for grounding reels that are specially anchored to grounding posts, do not attach clamps to parts of a system that are bolted onto the system, as the connection is not reliable long term. This applies also to equipment on tanker wagons, do not attach clamps to fenders or other bolted accessories.

      4.1.5. Process equipment in which flammable liquids (or combustible liquids handled at temperatures within 30°F of the flash point) are mixed, poured, pumped, or agitated must be grounded.

         4.1.5.1. This also may apply to chlorinated or fluorinated solvents, whether or not they are combustible.

      4.1.6. Inspections

         4.1.6.1. Inspections of grounding and bonding cables and reels must be done at least quarterly.

         4.1.6.2. Inspections of permanently installed [fixed] grounded/bonded systems (e.g. vessels, scales, tanks, pumps, etc) must be done annually.

4.1.6.3. Bonding is considered adequate if the measured resistance between the container and the end point is <10K ohms.

4.1.6.4. The content of the attached inspection form should be replicated in a facility specific inspection form and added to the facility's Internal Facility Compliance Inspection & Corrective Action SOP.

4.1.6.5. Maintain copy of inspection in the facility legal file for 5 years, then destroy.

4.2. If filters are used in piping systems through which flammable or combustible liquids are transferred, they must be inserted as far upstream of a dispensing nozzle as possible. This allows "relaxation time" for dissipation of static charges.

4.3. In transferring flammable or combustible liquids, generation of static charges can be minimized by limiting liquid velocity through the fill pipelines, etc., to less than 3' per second initially and 15 to 20 feet per second after the fill wand/pipe is submerged. These flow velocities are equal to 30 gpm and 200 gpm, respectively, for a 2 inch fill pipe.

4.4. When loading tank wagons with a loading pipe or dip tube, the potential for static discharge can be minimized by allowing a one minute "relaxation period" after the tank wagon is filled and before the loading pipe or dip tube is withdrawn or sampling devices inserted.

4.4.1. Sample devices, loading pipes and dip tubes should be of metal composition and grounded. Move the sampler, loading pipe or dip tube slowly through the liquid to minimize static buildup.

4.4.2. If a non-metal sampler is used, move the sampler slowly through the liquid to minimize static buildup.

4.4.3. Non-metal loading pipes or dip tubes are not allowed.

4.5. When loading or unloading drums or smaller containers:

4.5.1. A bond must be established between the fill/unload connection and the container.

4.5.2. Containers of glass or other non-conducting materials of 5 gallons or less require no grounding/bonding.

4.5.3. It's not necessary to extend the fill pipe (wand) to the container bottom, but the end of the pipe should extend under the liquid level or the liquid should be dispensed at the wall of the container. Unless the system is inerted or being monitored for LEL or oxygen, flammable materials should not be allowed to free fall during a transfer.

4.5.4. Fill pipes (wands) of metal composition should be grounded.

4.5.5. Sample devices should be of metal composition and grounded. Move the sampler slowly through the liquid to minimize static buildup.

4.6 When loading 55-gallon polyethylene drums with Ethanol (only applicable at Cottage Grove and University Park) or Isopropanol (only applicable at University Park):

4.6.1 The fill pipe must extend to the bottom of the drum such that only submerged filling occurs.

4.6.2 The fill pipe must be of metal composition and be grounded.

4.6.3 Begin the filling slowly and gradually increase the flow rate.

4.7. When loading/unloading tank trucks or portable tanks through open domes, a bond must be established between the loading pipe and cargo tank before the dome is opened, and must remain in place until after the dome is closed. Where loading/unloading occurs through closed connections where there is no vapor release, such bonding is not required. Loading downspouts should reach the tank bottom, and the delivery outlet shall be cut at a 45 degree angle to minimize flow turbulence and static generation.

4.7.1. When loading/unloading tank cars through open domes, the downspout should reach the tank bottom. Grounding/Bonding connections for tank cars must be similar to that shown for tank wagons, except that at least one rail must be bonded to the fill

rack support structure, and the rail unloading "spot" must be "insulated" from the main line.

4.7.2. Spark ignitions inside tanks cannot be prevented by external grounding connections. Work practices such as locating inlet fill pipes near the tank bottom, avoiding entraining air with the liquid, and controlling liquid flow velocities (refer to the paragraph above) must be adhered to.

4.8. Emergency Response Procedure

4.8.1. For a speared or otherwise leaking container transfer:

4.8.1.1. Before initiating the transfer, first attach a bonding cable to the leaking container, then to the new container, and finally to the ground.

4.8.1.2. If both of the containers are not metal, insert a copper rod or transfer wand into the non-metal container and then attach the bonding cable to the rod or wand. Follow the connection sequence described in 4.8.1.1.

5. Use and Installation Instructions for Grounding and Bonding Cables and Reels

5.1. Installation

5.1.1. Use firm clamps on the ends of grounding and/or bonding cables; do not use the flimsy "alligator" clamps that come standard on most reel kits.

5.1.2. Use insulated wire (sheathed). This will ensure a charge (spark) does not jump off your cable as a path of least resistance.

5.1.3. When installing grounding and bonding equipment connections, make sure to use a crimp style lug (standard issue is made from copper or a copper alloy coated with another metal), do not use the screw type lug. Coat the wires with an anti-rust (de-oxidant) paste prior to inserting into the lug. Apply more anti-rust (de-oxidant) paste to the exterior of the lug after making the crimp connection.

5.1.4. When installing a grounding wire, make sure it's connected to the base of the reel with a non-reversible crimp lug (usually with a copper coating (standard issue). Put antioxidant paste on the wires before attaching crimp lug.

5.1.5. Reels should be installed to either a metal beam that functions as a ground or to one of the permanent building or tank farm grounding cables. Connection to a metal beam should be done at bare metal; if the beam is painted, scrape the paint off at the connection point and wipe on some anti-rust (de-oxidant) paste.

5.1.6. Test Resistivity after making changes to any Grounding and Bonding system.

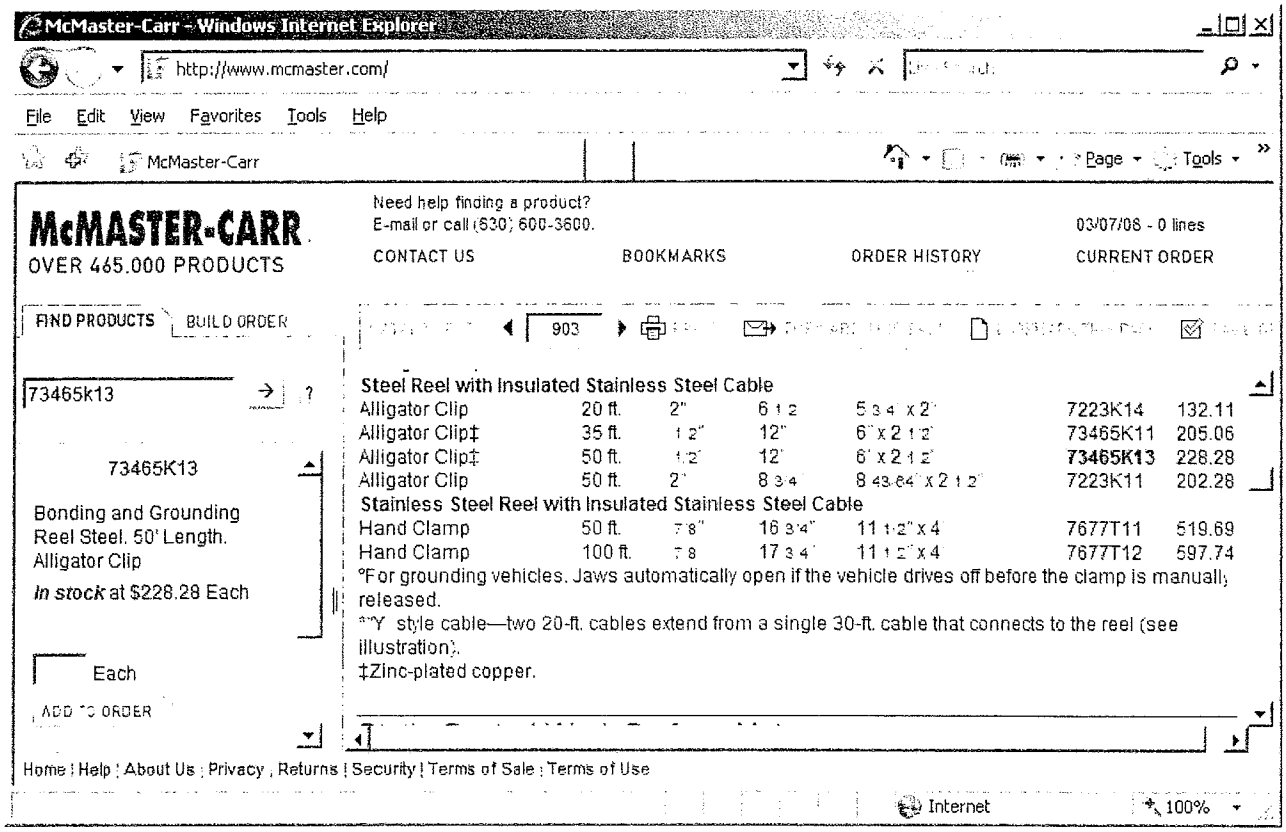
5.2. Using Grounding Reels

5.2.1. Fasten clamps to your container after the slack in the cable is taken up at the reel, but make sure the cable rests on the ground and the line is not taught. Do not move the reel or take up slack while a transfer is taking place because the connection to the ground is actually interrupted as the reel turns. The connection inside the reel is made when the reel stop is in place (the reel stop looks like a flapper or "dog paw.")

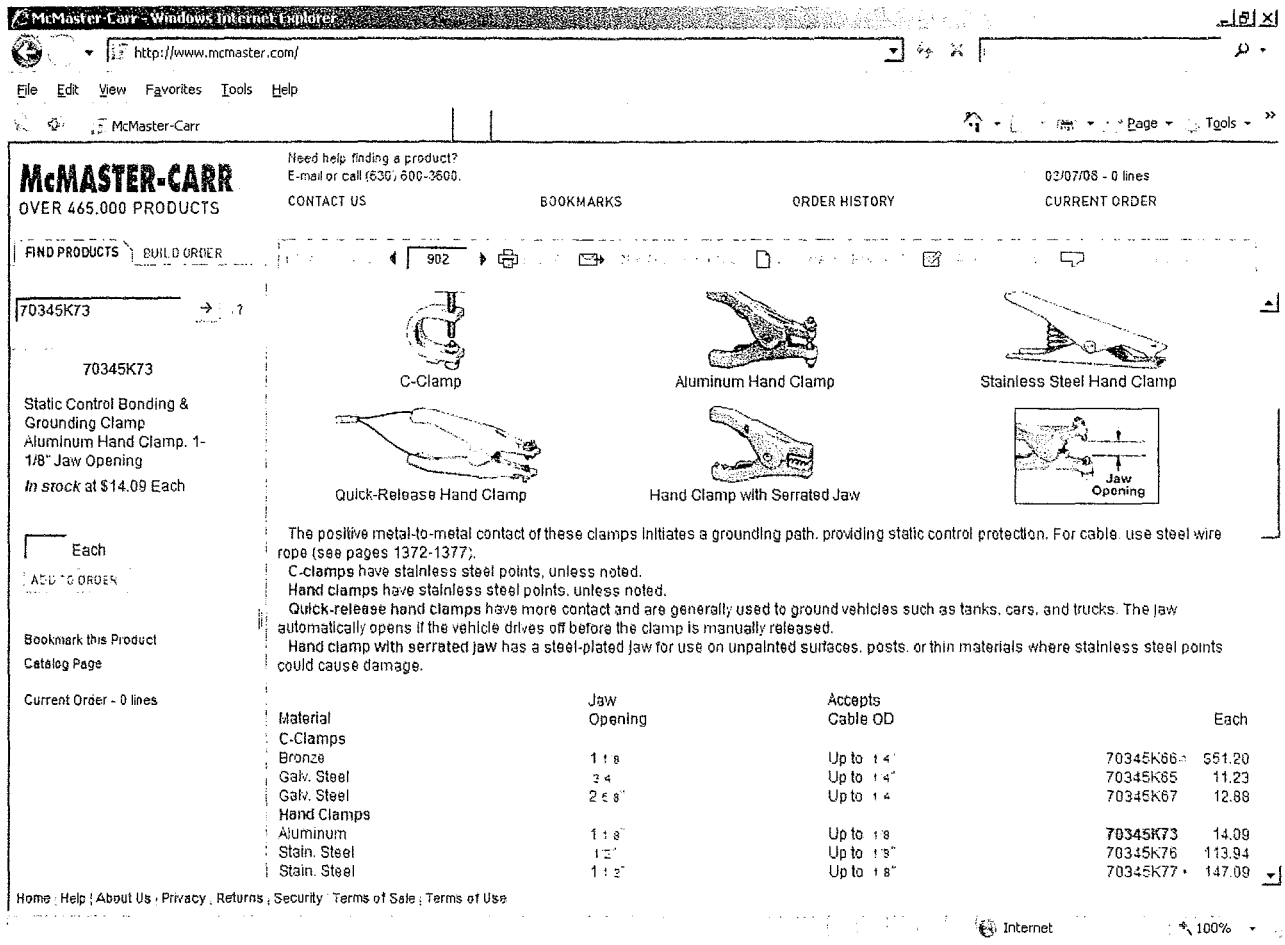
5.3. Equipment Specifications

5.3.1. The equipment specified below is intended to be used as a guide. Different equipment may be used as long as it is at least as suitable as the equipment below:

5.3.1.1. Reel and cable: COXREELS model number SD-50-1 (for 50' length). McMaster Carr order # 73465K13 (caution: do not use alligator clamp that comes standard with reel).



5.3.1.2. Clamp: Zinc Dye Cast Pliers Grounding Clamp, model # REB2960. Reference Stewart Browne Mfg., (770-993-9600) or McMaster Carr order # 70345K73.



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70345K73

70345K73

Static Control Bonding & Grounding Clamp
Aluminum Hand Clamp, 1-1/8" Jaw Opening

In stock at $14.09 Each

Each

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Current Order - 0 lines

C-Clamp | Aluminum Hand Clamp | Stainless Steel Hand Clamp

Quick-Release Hand Clamp | Hand Clamp with Serrated Jaw

Jaw Opening

The positive metal-to-metal contact of these clamps initiates a grounding path, providing static control protection. For cable, use steel wire rope (see pages 1372-1377).

C-clamps have stainless steel points, unless noted.

Hand clamps have stainless steel points, unless noted.

Quick-release hand clamps have more contact and are generally used to ground vehicles such as tanks, cars, and trucks. The jaw automatically opens if the vehicle drives off before the clamp is manually released.

Hand clamp with serrated jaw has a steel-plated jaw for use on unpainted surfaces, posts, or thin materials where stainless steel points could cause damage.

Material	Jaw Opening	Accepts Cable OD		Each
C-Clamps				
Bronze	1 1/8"	Up to 1/4"	70345K66	$51.20
Galv. Steel	3/4"	Up to 1/4"	70345K65	11.23
Galv. Steel	2 5/8"	Up to 1/4"	70345K67	12.88
Hand Clamps				
Aluminum	1 1/8"	Up to 1/8"	**70345K73**	14.09
Stain. Steel	1 1/8"	Up to 1/8"	70345K76	113.94
Stain. Steel	1 1/8"	Up to 1/8"	70345K77	147.09

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QUARTERLY GROUNDING AND BONDING INSPECTION FORM FOR REELS AND CLAMPS

Facility: _____ Date(s): _____

ID	Resistance Ω	Wire		Clamp		Internal Inspection of Reel	
		Connections tight, not loose or frayed	Sheath not cracked, wire not kinked or corroded	Makes firm connection, not spongy	Bonding points sharp enough to contact metal through paint	Coil and latching device not corroded	Reel able to recoil properly
1							
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3							
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26							
27							
28							

Instructions for completing the inspection:

- Complete the Quarterly Inspection at the same time as the Annual Inspection, when the Annual is performed.
- Mark N/A if item is nonexistent and not needed.
- Mark OK if proper operation is observed as described on table.
- Mark Not OK for noncompliant checks. Mark Grounding and Bonding system "Out of Service" until repair is complete and system is retested. Request repair with a Maintenance Work Order (MWO) and document follow up resistivity measurement on MWO. Attach copies of MWO to this inspection form.
- File completed forms in the facility legal file.

Signature of Inspector: _____ Date: _____

ANNUAL GROUNDING AND BONDING INSPECTION FORM FOR FIXED SYSTEMS

Facility: _____ Date(s): _____

ID	Resistance Ω	Wire or Exothermal Welding (e.g. CADWELD®)	
		Inspect wire and connections for corrosion, loose bolts, frayed wires, or otherwise damaged lines	Connect to the wire or exothermal welding at termination point(s) to ensure connection to ground
1			
2			
3			
4			
5			
6			
7			
8			
9			
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11			
12			
13			
14			
15			
16			
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28			

Instructions for completing the inspection:

- Complete the Quarterly Inspection at the same time as the Annual Inspection, when the Annual is performed.
- Mark N/A if item is nonexistent and not needed.
- Mark OK if proper operation is observed as described on table.
- Mark Not OK for noncompliant checks. Mark Grounding and Bonding system "Out of Service" until repair is complete and system is retested. Request repair with a Maintenance Work Order (MWO) and document follow up resistivity measurement on MWO. Attach copies of MWO to this inspection form.
- File completed forms in the facility legal file.

Signature of Inspector: _____ Date: _____

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 4/1/99	Supersedes SOP Dated: 12/1/05	Effective Date: 8/1/09	Procedure No.: SF047CG
Facility: CG	Approval Name & Signature: Dave Volenberg		Revision No.: 3
Review Frequency: 5 Years	Approval Title: Safety Manager		Page 1 of 3
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			If this block is black, this is NOT a controlled document
Revised Section(s): Updated approval name and title. Modified 3.2, 3.3, and added 3.6 (renumbered rest of section).			

I. **TITLE:** HOT WORK PERMITS - COTTAGE GROVE

II. **KEY WORDS:** Brazing, Cutting, Soldering, Welding, Grinding, Hot Work, Permit

III. **PURPOSE:** Define permit process and authorization procedure covering conduct of hot work activities.

IV. **APPLICATION:** Hydrite Chemical Co. Cottage Grove facilities.

V. **DEFINITIONS:**

Area Supervisor: A person designated by the Plant Manager as Lead Operator, or designated as a supervisor or manager. This includes Operations Manager, Plant Manager, Building Managers, Warehouse Supervisor, Maintenance Supervisor, and Shift Supervisors.

Contractor: Any non-employee entering a Hydrite facility to perform maintenance or repair, equipment installation, turn-around, major renovation, or specialty work. The term contractor does not include individuals conducting incidental services such as food and drink services, laundry, delivery or other supply services. The term contractor does not include employees hired from temporary agencies to perform work duties normally performed by Hydrite employees and supervised by Hydrite.

High Energy Source Work: work involving or producing

- Open flame from brazing or soldering with torch, welding, or
- An arc from welding, or
- Sparks from cutting, welding, or grinding.

Hot Work Permit: The permit required before performing any task which introduces a potential ignition source. Examples are open flame, spark, and electric current.

Low Energy Source Work: work involving low energy ignition sources such as cameras, cellular phones, pagers, radios, compressors, drills, saws, engine driven or electric or battery powered hand tools that are not considered High Energy Sources and are not rated as Intrinsically Safe for Class 1 Division 1 areas or Non Incendive for Class 1 Division 2 areas, as approved by UL, CE, FM, CSA or other 3rd party approval organization. Pagers, hearing aides, diabetic devices, and wrist watches are excluded from the Hot Work Program at the Cottage Grove facilities.

VI. **ASSOCIATED MATERIAL(S):** Hot Work Permits SF027AF

VII. PROCEDURE:

1. The Hot Work Permit SOP (SF027AF) specifies procedures related to issuing hot work permits whenever a permit is required.

2. A Hot Work Permit is always required for hot work that is:

   2.1. Performed on any vessel, including tanks that have been in process service, regardless of decontamination, and regardless of the area in which the hot work is performed,

   2.2. Performed in an area in which a release of flammable or combustible chemical vapors is possible.

3. Areas in which hot work may be performed without a permit: {Note that conditions in Paragraph 2 and 3.5 must be satisfied and Hot Work Permits may still be required for contractors.}

   3.1. Annex Bldg. #2, exclusive of offices, Motor Control Center, and Moisture Separator Room (Both high and low energy source work). A Hot Work Permit may be required for contractors conducting high energy hot work in these areas.

   3.2. Outdoor areas to the east of Annex Bldg #2. A Hot Work Permit may be required for contractors conducting high energy hot work in these areas.

   3.3. Cottage Grove East- North Boiler Rooms (Thermox Room, "Eclipse Room" and "Vapower Room") and Cottage Grove West – Boiler Room. Hot Work permits may be required for contractors performing high energy hot work in these areas.

   3.4. Cottage Grove East Office, Annex Bldg #1 Office and Lab areas, and Cottage Grove West Office areas. (Low energy source work only; permit required for high energy source work).

   3.5. For power washer diesel and gasoline powered generators (low energy source work), hot work permits are not required for the following locations:

      3.5.1. Outside building doors in breezeway near surge tank,

      3.5.2. In roadways between tank farms,

      3.5.3. Outside the NW Process building overhead door,

      3.5.4. In roadway on south side of 100 tank farm,

      3.5.5. Outside west overhead door of north warehouse.

   3.6. Cottage Grove West – Maintenance Room. A Hot Work Permit may be required for contractors conducting high energy hot work in this area.

   3.7. These areas must be free of ordinary combustibles, flammable liquids, vapors, and gases whenever hot work is performed.

4. Area Supervisor signature

   4.1. The intent of Area Supervisor sign-off is to ensure communication between operating and maintenance employees working in the Hot Work area.

   4.2. The supervisor or lead operator responsible for the area in which the Hot Work is performed is the "Area Supervisor".

   4.3. The Area Supervisor must sign the Area Supervisor line on the Hot Work Permit form before hot work activities may commence.

   4.4. In the absence of the Area Supervisor, another supervisor or manager familiar with area activities and hazards may sign as the Area Supervisor.

   4.5. If there is no supervisor present (example: during plant shutdown periods), another maintenance person on site must sign as the Area Supervisor.

5. The following individuals are authorized to issue Hot Work Permits:

   5.1. High Energy Source Work

5.1.1. Hydrite Employees perform the work: may be issued by any Maintenance Department employee, by the Hydrite Engineer, or by the Plant Manager.

5.1.2. Contractors perform the work: may be issued by the Cottage Grove Maintenance Department Manager, by the Hydrite Engineer, by the Plant Manager, by the Cottage Grove EHS Manager, or by the Operations Manager.

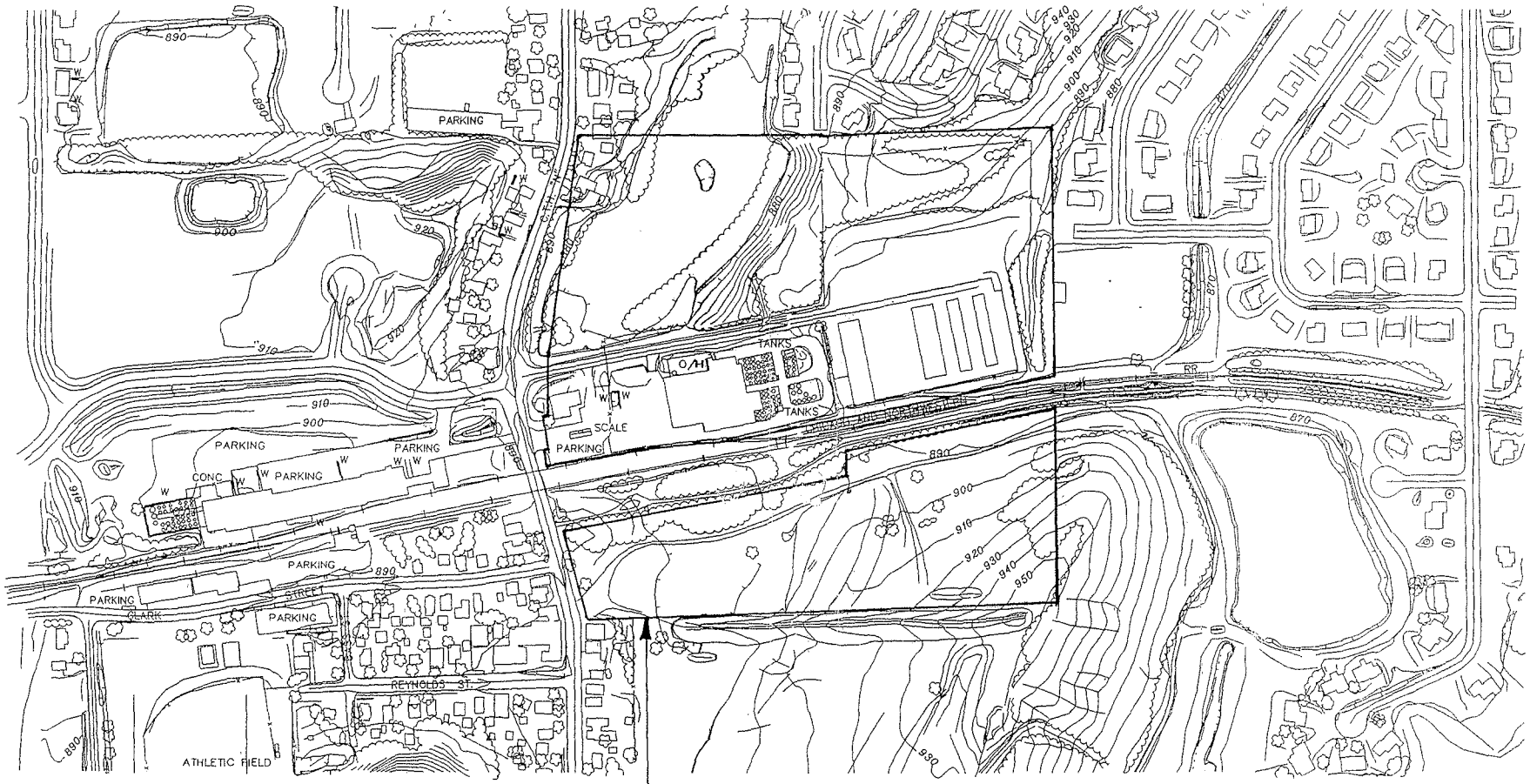
5.2. Low Energy Source Work

5.2.1. Hydrite Employees perform the work: may be issued by any Maintenance Department employee, any Area Supervisor (refer to Para.3), the Hydrite Engineer, or the Plant Manager.

5.2.2. Contractors perform the work: may be issued by any Cottage Grove Maintenance Department employee, by the Hydrite Engineer, or by the Plant Manager.

6. The person issuing the Hot Work permit must ensure that employees working in the hot work area are aware of the hazards. This can be accomplished by oral warnings, by posting caution tape or signs around the area, or by other means.

Appendix I



PROPERTY LINE

USGS ELEVATIONS

SCALE
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Feet

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APPENDIX T

TOPOGRAPHY MAP	DATE: 9-1-98
HYDRITE CHEMICAL CO. 114 N. MAIN STREET COTTAGE GROVE, WI	DESIGNED: CHECKED: APPROVED: DRAWN: PROJ.:
HSI GEOTRANS A TETRA TECH COMPANY	Figure

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 9/1/99	Supersedes SOP Dated: 10/1/10	Effective Date: 10/1/11	Procedure No.: RH014CE
Facility: CE	Approval Name & Signature: Angela Watry		Revision No.: 11.0
Review Frequency: 1 Year	Approval Title: Environmental Manager		Page 1 of 9
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			

I. TITLE: STORM WATER POLLUTION PREVENTION PLAN

II. KEY WORDS: Permit, Storm Water, SWPPP

III. PURPOSE: To insure compliance under WPDES Industrial Tier II General Storm Water Discharge Permit. This document represents the facility Storm Water Pollution Prevention Plan (SWPPP).

IV. APPLICATION: This procedure applies to all employees located at the Cottage Grove East facility, with specific duties assigned to some job titles.

Cottage Grove West operates under SIC code 5169 – Chemical Distribution, which is not included in the Storm Water Discharge Permit program.

V. DEFINITIONS:

AFSCI: Annual Facility Site Compliance Inspection

DNR: Wisconsin Department of Natural Resources

ENU: Elementary Neutralization Unit

MMSD: Madison Metropolitan Sewerage District

Plan: Storm Water Pollution Prevention Plan SOP

POTW: Public Owned Treatment Works

SOP: Standard Operating Procedure

SWPPP: Storm Water Pollution Prevention Plan

WPDES: Wisconsin Pollutant Discharge Elimination System

VI. ASSOCIATED MATERIAL(S):

Annual Facility Site Compliance Inspection Report, DNR Form 3400-176 (attached)
Facility Layout / Site Map (attached)
Quarterly Visual Inspection – Field Sheet, DNR Form 3400-176A (attached)
Non-Storm Water Inspection (RH014CEa, available on local network)
Annual Site Storm Water Inspection Checklist (RH014CEb, available on local network)
Wisconsin Department of Natural Resources Code Chapter NR 216
WPDES General Storm Water Permit No. WI-S067857-3 for Tier II Industrial Facilities

VII. PROCEDURE:

1. Responsible Position and Duties

1.1. The VP of Operations has primary responsibility for all aspects of the SWPPP, including development and implementation. This person is responsible for providing for the following activities.

1.2. Coordinate the development, evaluation, maintenance, and revisions of the Plan as necessary.

1.2.1. Environmental Manager

1.2.2. Compliance Coordinator

1.3. Coordinate specific management actions identified within the Plan including maintenance practices.

1.3.1. Plant Manager

1.4. Conduct or provide for monitoring and inspection activities as outline within the Plan.

1.4.1. Environmental Manager

1.5. Prepare and submit reports as listed within the Plan.

1.5.1. Environmental Manager

1.6. Act as facility contact for the DNR.

1.6.1. Environmental Manager

2. Summary of Major Activities

2.1. Major activities conducted at this facility include manufacturing and refining of organic chemicals, polymer manufacturing, product blending, waste solvent reclamation, and fuel blending. This is a RCRA part B permitted facility.

2.2. Equipment and activities that support these operations include reactors, distillation columns, thin film evaporators, storage tanks, bulk receiving and shipping equipment, warehouses and a quality control lab.

2.3. Raw materials are received in bulk tank trucks, totes, drums and/or rail form.

2.4. Materials received or shipped in other than bulk form are managed through a warehouse dock with a soft seal being developed between the dock bay and trailer. Materials are unloaded via forklift and stored in an indoor warehouse.

2.5. All production activities are performed indoors.

3. Site Map

3.1. A site drainage map is located at the back of the Plan.

4. Existing Sampling Data

4.1. Storm water runoff sampling has not been conducted at this facility.

4.2. Dry weather flow observations indicate no flow to waters of the state from the facility under normal operating conditions.

5. Potential Source Areas of Storm Water Contamination

5.1. This facility has no outdoor manufacturing areas.

5.2. Rooftop areas may be contaminated by industrial activity. Section 8 contains a best management plan to eliminate this potential.

5.3. Outdoor area around annex buildings #1 (laboratory) and #2 (maintenance) is utilized for storage of excess or unused equipment and temporary parking of bulk tanker trailers. No chemical storage is allowed on the impervious surface located to the north of the CE100 warehouse.

5.4. Storage and maintenance of material handling equipment will be performed indoors.

5.5. Primary access roads to the facility are impervious surfaces. Shipping and receiving of bulk material is conducted across these roads and incorporate the truck scale. Rail delivery occurs on the south side of the facility utilizing a siding track. The rail siding is on a grassy, generally level surface. The access way on the east side of the property, which is utilized only during emergency situations is covered with gravel.

5.6. Material handling areas with potential exposure include the bulk and container loading/unloading areas which are identified on the attached site map. Material handling, including tank to tank transfers operations, is conducted across impervious surfaces.

5.7. Bulk raw materials, finished and intermediate products, and hazardous waste are contained in outdoor bulk storage tanks. As noted on the site map, no chemical storage will take place on the impervious surface to the north of the CE100 warehouse. Empty containers may be stored outside only if new or after washing with the bung cap in place. Bags of salt are stored on pallets along the south wall of annex building #1 (laboratory) protected by a roof awning.

5.8. There is no application of wastewater on-site. Wastewater generated at the facility is either shipped off-site to a licensed treatment facility or, if qualified, discharged to the sanitary sewer district.

5.9. Past industrial activity has created residual contamination of area ground water. Contamination is subsurface and not expected to impact storm water runoff.

5.10. No significant soil erosion occurs on-site.

5.11. A dumpster is located on the northeast corner of annex building #2 for scrap metal collection.

5.12. All vehicle maintenance and cleaning is conducted off-site with the exception of forklift maintenance, which is conducted indoors.

5.13. Cleaning of process or material handling equipment occurs indoors or within containment areas. Containers and bulk tanker trailers are sent off-site for cleaning.

5.14. Shipping and receiving of bulk and containerized material occurs across impervious surfaces. Bulk and drum loading/unloading areas are identified on the attached site map.

5.15. Manufacturing buildings are enclosed with no potential for storm water contamination.

5.16. There are no residual treatment, storage or disposal activities conducted on-site.

6. Significant Materials

6.1. Significant materials that could be present in storm water include items stored in any of the areas identified in Section 5 which are exposed to storm water.

6.2. For a list of significant materials stored on-site contact the Systems Development Manager and request a report with the following information. All reports will be produced within 1 business day or less, when possible.

6.2.1. All bulk PO receipts with resource number, description, quantity and date for the location CE. A date range must be specified.

6.2.2. All bulk shipments with resource number, description, quantity and date for the location CE. A date range must be specified.

6.2.3. Pounds Produced report for the location CE.

6.3. Excess or unused equipment stored outdoors is typically constructed of various metals, including steel, stainless steel, iron or aluminum, and fabrication materials such as steel tubing or angle iron.

7. Non-storm Water Discharges

7.1. There are no non-storm water discharges from this facility either contaminated or uncontaminated which enter the waters of the state.

7.2. There are no WPDES permits currently issued for this location with the exception of the Storm Water Discharge permit.

8. Best Management Practices Used to Control Storm Water Contamination

8.1. Significant soil erosion does not occur at this facility. Areas that are not paved are generally level, and covered by grass or aggregate materials.

8.2. Vents and relief valves for all process equipment which vents through the roof are ducted to a receiver tank or containment area for liquid retention.

8.3. Excess and unused equipment stored around annex buildings #1 (laboratory) and #2 (maintenance) is placed on pallets to prevent run-on, and where possible, protected from precipitation by a roof. The dumpster used to collect scrap material is not covered, but is filled and removed from the site at least 6 times per year.

8.4. Loading and unloading of bulk materials occurs across an impervious surface. The truck scale located northeast of the tank farm is not considered a potential site for contamination because no material handling occurs at this location. When required, samples are drawn while the tank trailers are positioned inside truck dock locations which are within containment.

8.5. Employees are trained in bulk loading/unloading procedures that were designed to minimize the potential for releases. These procedures include steps to prevent unplanned releases and capture drips.

8.5.1. Tank Truck Bulk Loading SOP, SP003CG

8.5.2. Tank Truck Bulk Unloading SOP, RC003CG

8.5.3. Rail Car Loading SOP, SP012SF

8.5.4. Rail Car Unloading SOP, RC004SF

8.5.5. Non-Bulk Receiving SOP, RC005CG

8.6. Bulk materials that are located outside are stored on impervious surfaces within secondary containment.

8.6.1. Daily visual inspections are conducted of all tank farms to identify potential releases. Inspections are conducted by designated plant personnel in accordance with the Internal Facility Compliance Inspection and Corrective Action SOP, SF029CG. Inspection reports are kept in the legal file.

8.6.2. Storm water collected in the containment areas is analyzed and managed according to the Rainwater Sampling, Analysis, and Discharge SOP, PR034CG.

8.6.3. Storm water, which meets MMSD requirements and is approved for discharge is mechanically pumped into the sanitary sewer.

8.6.4. Storm water, which does not meet MMSD requirements is segregated and managed as hazardous waste.

8.7. Employees are trained in good-housekeeping methods under the Safety Manual, Volume 17.0 of the SOPP manual system.

8.8. Spill identification and spill response training is given to all employees in accordance with SOP's located in the Emergency Response Manual, Volume 7.0 and Chemical Release Reporting Manual, Volume 6.0 of the SOPP manual system.

8.8.1. There is an on-site Haz-Mat team trained to respond to releases that may occur.

8.8.2. Spill containment kits are located near all loading and unloading areas for quick response.

8.8.3. Any material released during handling will be contained and cleaned up according to the Facility Contingency Plan. As indicated on the site map, all material handling areas are designed to flow into containment where released

material can be captured and cleaned up. Material releases that occur during a storm event are covered by the same protection.

8.8.4. All unplanned release will be reported in accordance with the Chemical Release Reporting SOP, CR001AF.

8.9. There are no on-site salt storage piles.

8.10. Section 313 water priority chemicals potentially exposed to storm water are stored within containment and managed in the same manner as all other bulk materials.

8.11. Preventative maintenance is conducted in accordance with the Preventative Maintenance – Cottage Grove SOP, MN012CG.

9. Residual Pollutants Expected to Remain Following Implementation of Best Management Practices

9.1. Following implementation of the Section 8 Best Management Practices, additional pollutants are not expected to be found in the storm water runoff.

9.2. No specific unique effluent limitations have been imposed on this facility.

9.2.1. The discharge permit issued covers storm water runoff and does not include non-storm water discharges.

9.2.2. The storm water runoff permit does not contain specific unique effluent limits.

9.3. This facility is subject to the Organic Chemical Plastic Synthetic Fiber (OCPSF) categorical effluent limitations and pretreatment standards, but those discharges a strictly limited to sanitary sewer discharges. No categorical wastewater is discharged to waters of the State.

9.4. Section 313 water priority chemicals are not expected to be found in the storm water runoff, following implementation of the Best Management Practices outlined in Section 8.

9.5. No contamination is expected from excess equipment or containers stored in the plant yard. These items are frequently removed so excessive rust does not accumulate and contaminate storm water runoff.

9.6. Significant concentrations of oil and grease; acids or bases; total suspended solids; 5-day biological oxygen demand; or chemical oxygen demand are not expected to be found in the storm water runoff.

10. Treatment Practices

10.1. No storm water is treated on-site prior to being discharged to waters of the state.

10.2. Storm water collected in containment areas is analyzed following the Rainwater Sampling, Analysis, and Discharge SOP, PR034CG. Results from the analysis determine how the collected storm water will be managed. These source area controls are described in Section 8.

11. Monitoring and Inspection Requirements

11.1. Chemical monitoring is not required for Tier II facilities.

11.2. The Facility Site Compliance Inspection (AFSCI) shall be completed in August of each year.

11.2.1. The Environmental Manager is responsible for conducting the inspection.

11.2.2. The inspector will complete the Inspection Checklist, RH014CEb, and the attached AFSCI Report Form.

11.2.3. Any deficiencies noted in the AFSCI shall be corrected and the Plan amended as noted in Section 12. Site map changes should be communicated to the Engineering Department or onsite CAD operator.

11.3. Visual inspections of storm water runoff shall be conducted quarterly.

11.3.1. The Environmental Manager is responsible for conducting the visual inspections.

11.3.2. Visual inspections should be conducted within the first 30 minutes of a storm event, whenever possible, but no later than 60 minutes after runoff first occurs during daylight hours.

11.3.3. Visual inspection findings will be noted on the attached Quarterly Visual Inspection – Field Sheet.

11.3.4. Any contamination identified during the inspection should be corrected and the Plan amended as noted in Section 12.

11.4. Visual inspections of non-storm water discharges shall be conducted semi-annually.

11.4.1. The Environmental Manager is responsible for conducting the visual non-storm water discharge inspections.

11.4.2. Visual inspections of the outfall shall be conducted during dry periods and at times when non-storm water discharges from the facility are considered most likely to occur.

11.4.3. The inspector will document any observations, such as dry weather flow, stains, sludges, color, odor, or other indications of a non-storm water discharge on the Non-Storm Water Discharge Report form, RH014CEa.

11.4.4. Any contamination noted in the inspection shall be corrected and the Plan amended as noted in Section 12.

12. Plan Amendment

12.1. All modifications to the facility must be reviewed in accordance with the Management of Change (MOC) SOP, QA005AF, to assess impact to the permit and the Plan.

12.2. The Plan shall be kept current by amending to correct any deficiencies and include any changes that affect storm water run off patterns.

12.3. The Plan shall be amended if any of the following circumstances occur

12.3.1. When expansion, production increases, process modifications, changes in material handling or storage activities are planned which result in a significant increase in exposure of pollutants to storm water.

12.3.2. The facility finds through the AFSCI, quarterly visual inspection of storm water quality, or other means that the Plan is not effective in controlling storm water contamination.

12.3.3. Upon receiving written notice from the DNR that the Plan is ineffective in achieving the conditions of the storm water permit as issued.

12.4. The amendment shall contain the following information:

12.4.1. A description of the new activities that contribute to increased pollutant loading.

12.4.2. Activities and best management practices that will be used to control pollutant loads.

12.4.3. An estimate of the new or increased discharge of pollutants following treatment.

12.4.4. A description of the effect of the new or increased load on existing treatment facilities.

12.5. Any changes occurring at the facility that requires modification of the Plan also require notification to the DNR.

12.6. Plan amendments shall be completed by the Environmental Manager or Compliance Coordinator.

12.7. The Environmental Manager will notify the DNR in the event of any facility operational changes that could result in additional significant storm water contamination.

13. Compliance and Reporting Requirements

    13.1. The Plan must be kept on-site and made available to the DNR upon request.

    13.2. Reports required under the Plan must be signed by either a principle executive officer of at least the level of vice-president, or by an authorized representative responsible for overall operation of the site.

        13.2.1. The person holding the position of VP of Operations will sign all necessary permit applications, reports, and summaries.

    13.3. All required reports and inspection records will be maintained on-site in the legal file for 5 years after the original effective date of this SOP.

    13.4. All required reports and inspection records will be made available to the DNR upon request.

14. Permit Fee

    14.1. The fee for a storm water discharge permit will be paid in accordance with the schedule defined in Wisconsin Department of Natural Resources Code Chapter NR 216.30. The fee is included in the annual environmental fee sheet that is submitted to the Technical Regulatory Services Manager.

    14.2. Permit fee is due June 30 of each year.

    14.3. Tier II industrial general permit fee is $130.00.

15. Record Retention

    15.1. All records required within the Plan shall be maintained for 5 years beyond the original effective date of this SOP.

16. Noncompliance

    16.1. Any act that is in violation of this procedure or causes contamination of storm water is an act of noncompliance.

    16.2. Acts of noncompliance must be reported to the DNR, in writing, within 14 days of the occurrence. Reports of noncompliance must include the following information:

        16.2.1. Description of the noncompliance.

        16.2.2. Cause of the noncompliance.

        16.2.3. Steps taken to reduce, eliminate, and prevent a reoccurrence.

        16.2.4. Effect of the noncompliance on the facility's ability to meet other deadlines specified within the plan.

    16.3. Noncompliance reports will be completed by the Environmental Manager.

    16.4. Spills or accidental releases will be handled in accordance with the Emergency Response Manual, Volume 7.0 of the SOPP manual system.

    16.5. Spills or accidental releases will be reported in accordance with the Chemical Release Reporting Manual, Volume 6.0 of the SOPP manual system.

    16.6. Facility personnel shall take all reasonable steps to minimize or prevent adverse impacts on the waters of the state resulting from a noncompliance.

16. Certification

I certify under penalty of law that this document and attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information contained in the plan. Based upon my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information; the information contained in this document is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for providing false information, including the possibility of fine and imprisonment. In addition, I certify under penalty of law that, based upon inquiry of persons directly under my supervision, to the best of my knowledge and belief, the provisions of this document adhere to the provisions of the storm water permit for the development and implementation of a Storm Water Pollution Prevention Plan and that that plan will be complied with.

10/1/11

Joe Weishar — Date

CHANGE HISTORY LOG		
Revision No.	**Date**	**Description**
10.0	09/09/10	1. Updated SOP to incorporate the new CE100 warehouse. 2. Added requirements for conducting a semi-annual non-storm water discharge inspection. 3. Updated the attached drawing (plot plan) and DNR forms. 4. Added a reference to the non-storm water inspection record RH014CEa. 5. Adopted new SOP template.
11.0	09/01/11	1. Incorporated requirements of the new WPDES Tier II Industrial Permit (WI-S067857-3). 2. Updated applicable job titles. 3. Added references to the gravel emergency access road and the pallets of salt bags stored along annex #1. 4. Added description of waste water management practices and cleaning procedures. 5. Added reference to a new Annual Inspection Checklist, RH014CEb.

Original SOP Effective Date: 3/1/97	Supersedes SOP Dated: 5/1/09	Effective Date: 6/1/10	Procedure No.: PR034CG
Facility: CG	Approval Signature: Joe Weishar		Revision No.: 10
Review Frequency: 5 Years	Approval Title: General Manager – Process Organics		Page 1 of 6
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.		If this block is black, this is NOT a controlled document	
Revised Section(s): Revised 3.3.2.2, Added CE100 Unloading Chart 4.			

I. TITLE: RAINWATER SAMPLING, ANALYSIS & DISCHARGE

II. KEY WORDS: Analysis, Rainwater, Sampling

III. PURPOSE: Defines procedures for sampling, analyzing, discharging, and record keeping related to rainwater discharged from the Cottage Grove East and West Plant areas to the Madison Metropolitan Sewer.

IV. APPLICATION: This procedure applies to all plant and lab personnel involved in sampling, analyzing, and discharging rainwater from the Cottage Grove East and West Plant areas to the Madison Metropolitan Sewer and to personnel involved in record keeping for discharged rainwater.

V. DEFINITIONS: N/A

VI. ASSOCIATED MATERIAL(S):
Cottage Grove Containment Layout (included)
Rainwater Calibration Charts (included)
Containment Water Log (available on local network)
Containment Water Analysis SOP Q1010CA

VII. PROCEDURE:

1. Sampling

1.1. Plant personnel are responsible for sampling the rainwater to be discharged.

1.2. Sampling locations and calibrations for estimating rainwater volumes are described on the included Containment Layout and Calibration Charts.

1.2.1. Calibrated metal strips are affixed in the North Unloading Area.

1.2.2. The NW Unloading Area measurement should be taken along the north containment wall, at the trench grate.

1.2.3. All other areas should be measured using a ruler at the deepest point.

1.3. Obtain a 40ml EPA vial with cap and septum water sample vials from the lab.

1.4. Obtain a sample.

1.4.1. Put a clean, powder free, chemical resistant glove on the hand to be used for sampling.

1.4.2. Holding the sample container in your gloved hand, immerse the bottle in the rainwater allowing the bottle to fill. Do not "flush" the bottle.

1.4.3. Remove the bottle and quickly cap it.

1.4.3.1. There must not be any headspace or air bubbles in the sample bottle once the bottle is capped.

1.4.3.2. Repeat the sampling procedure if there are bubbles or headspace present.

1.4.4. Wipe off any liquid residue from the vial.

1.5. Label the sample with the following information.

1.5.1. Time and date sample was taken.

1.5.2. Initials of the person sampling.

1.5.3. Location of the sample.

1.5.3.1. Use the name for each area that is listed on the attached Containment Layout.

1.5.4. Estimate of total volume of water.

1.5.4.1. Refer to the attached Containment Layout and Calibration Charts for determining estimated volume.

1.5.5. Observation of Rainwater (normal, muddy, etc.).

1.6. Deliver the sample to the lab immediately.

1.6.1. Tell the lab staff member receiving the sample that it is rainwater from containment.

2. Analyzing

2.1. Lab personnel should inspect the sample upon receipt for complete information recording by the sampler. If an observation is missing, then the lab personnel will contact the sampler to request that recording of information be completed fully by said sampler.

2.2. Lab personnel are responsible for analyzing samples according to the SOP, Containment Water Analysis, Q1010CA.

2.3. Lab personnel are responsible for maintaining a monthly Containment Water Log that contains at a minimum the following information:

2.3.1. Date and time the sample arrived in the lab

2.3.2. Initials of lab analyst(s)

2.3.3. Sample source (include if from CE or CW)

2.3.4. Gallons discharged

2.3.5. pH test results

2.3.6. Amount of chlorinated contaminates

2.3.7. Amount of other contaminates

2.3.8. Sampler's observation of the appearance of the water sample

2.3.9. Whether the water is okay to discharge (yes or no)

3. Discharging

3.1. Receive authorization to discharge.

3.1.1. Lab personnel determine whether or not the rainwater can be discharged by comparing the sample results to the acceptance criteria listed in the SOP, Containment Water Analysis Q1010CA.

3.1.2. Lab personnel notify a plant Production Area Supervisor or Plant Manager that the water is approved and can be discharged or that the water did not meet the acceptance criteria and must be segregated as hazardous waste.

3.1.3. The Production Area Supervisor or Plant Manager notifies a plant employee regarding action to take to dispose of rainwater.

3.2. Rainwater will be discharged as soon as possible and as directed by the Village of Cottage Grove.

3.2.1. The Village of Cottage Grove prefers that discharges occur between 7 pm and 5 am.

3.2.2. The Village of Cottage Grove requests that discharges not occur during a rainfall event, however, authorization may be obtained to discharge when necessary.

3.2.3. Do not start discharging containment areas until 8 hours after the end of a rainfall event. Limit discharge to 50 gpm.

3.2.4. Do not discharge East Tank Farm and Front Containment areas simultaneously.

3.2.5. In the event of extreme rainfall where the water level will get into the motors, discharge as needed to prevent motor loss.

3.2.5.1. Water must first be approved by lab and Village of Cottage Grove notified by the EHS Manager or designee.

3.3. Discharge the rainwater.

3.3.1. Hose and portable pump

3.3.1.1. Safety issues: If using an electric powered pump, it must be connected to an outlet rated for Class 1 Division 2 and the cord must be rated for wet areas. (Make sure labeling is still legible. If it is not, contact maintenance for repair. Label "out of service" until fixed.)

3.3.1.2. Hoses are trip hazards: If a hose must be laid across a walkway, make sure it is clearly marked (red cone, etc.).

3.3.1.3. There is a light on the Front Pit pump to indicate if it is ON.

3.3.2. Drain locations CGE

3.3.2.1. Back pits - to floor drain in boiler room.

3.3.2.2. NW & CE100 Unloading Areas – to drain in process room.

3.3.3. Drain location CGW

3.3.3.1. North east sump of containment area - to sewer.

3.3.3.2. CGW Unloading Area sump to sewer.

4. Disposal

4.1. Rainwater meeting MMSD requirements may be disposed into the sewer.

4.1.1. Acceptance criteria are listed in the SOP, Containment Water Analysis Q1010CA.

4.2. Rainwater not meeting MMSD requirements must be segregated and may need to be disposed offsite.

5. Reporting & Record Keeping

5.1. Lab personnel are responsible for documenting the sample analysis on the Containment Water Worksheet and in the Containment Water log.

5.2. The Manager of QC/QA is responsible for formulating a quarterly report for both CGE and CGW that lists the following information and forwarding reports to the EHS Department personnel:

5.2.1. Containment Area Name

5.2.2. Date and Time of sample

5.2.3. Analytical results for pH, Chlorinated Contaminates (ppm), Other Contaminates (ppm)

5.2.4. Quantity in gallons for each rainwater discharge

5.3. The quarterly report is submitted to the following agencies by the EHS Department:

5.3.1. Village of Cottage Grove
221 E. Cottage Grove Road
Cottage Grove, WI 53527

5.3.2. Madison Metropolitan Sewerage District
1610 Moorland Road
Madison, WI 53713-3398

5.4. If necessary, contact the Village of Cottage Grove Waterworks Department at 608-839-5813. Ask for Jim Hessling or Marty Groskreutz.

5.4.1. If no answer during business hours, you may call Jim Hessling's cell phone at 608-209-8920 or Marty Groskreutz at 209-8919. Off hours you may call these cell phones with emergencies only.

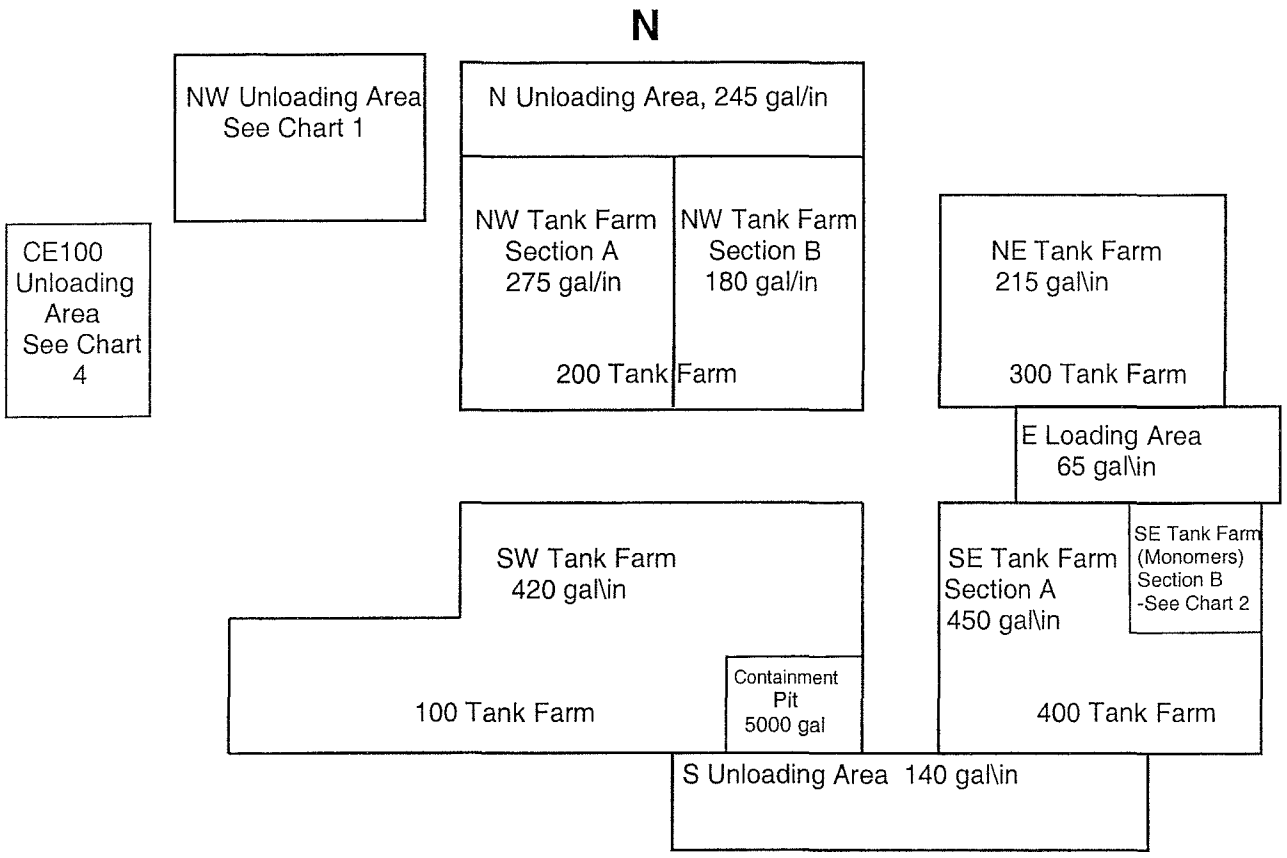
5.5. EHS Department personnel file a copy of all reports in the CGE Legal File. Separate files are kept for the east side and west side.

6. Personal Protective Equipment (PPE)

6.1. Normal plant work uniform, plus gloves and rubber boots (if chance of getting boots wet) when sampling and discharging rainwater.

6.2. PPE for lab personnel is specified in the SOP, Containment Water Analysis Q1010CA.

Cottage Grove East
Containment Layout

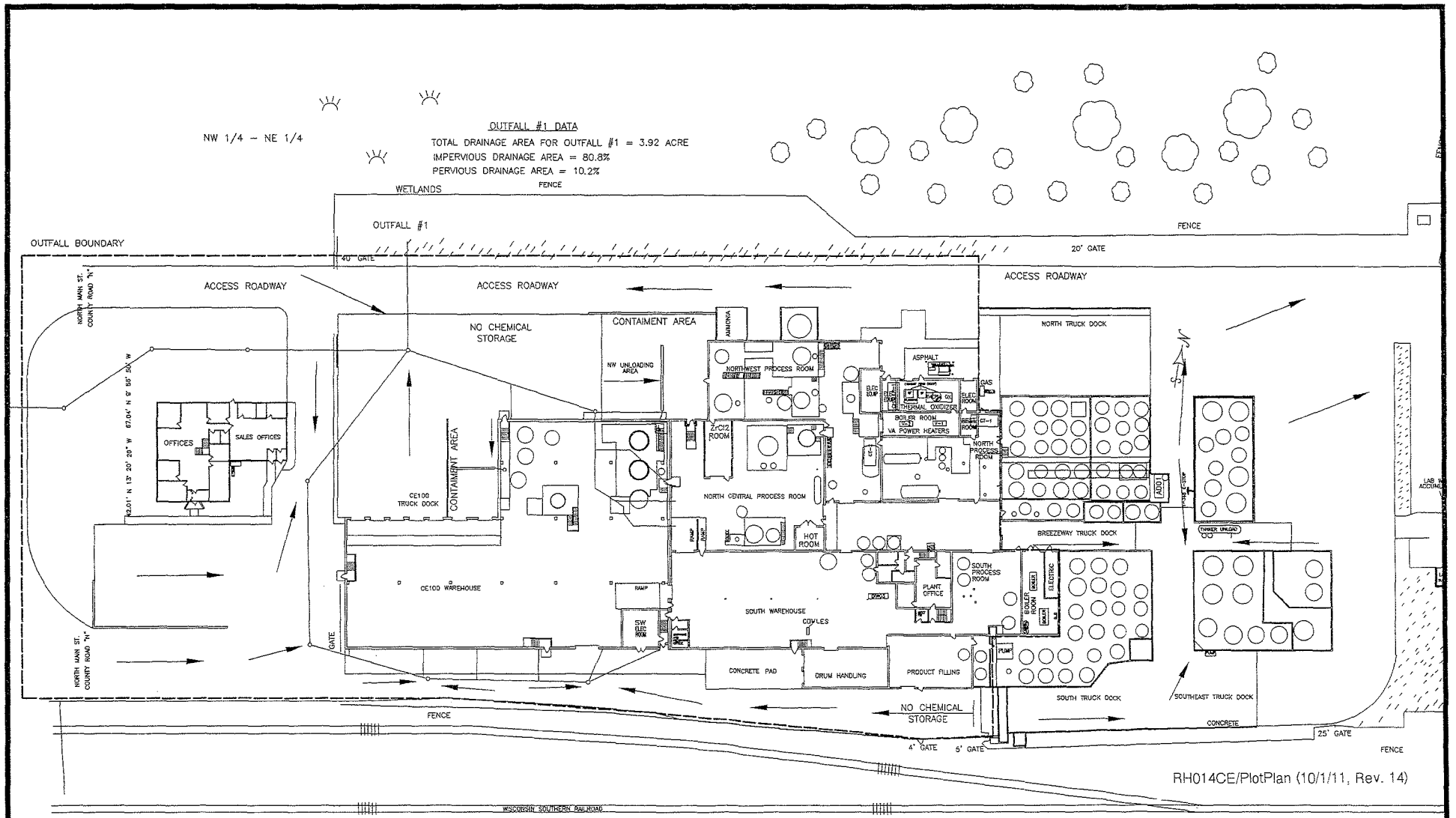


NW Unloading Area Chart 1 Trench Cap. = 1,352 gal	
Inches (above trench)	Gallons
2	1,611
4	2,386
6	3,680
8	5,490
10	7,818
11	9,175
12.5	12,003

Monomer Tank Area Chart 2	
Inches	Gallons
First 3 Inches	883 Gallons
Every inch after wards:	590 gal/inch

CE100 Unloading Area Chart 4 Trench Cap. = 200 gal	
Inches (above trench)	Gallons
2	341
4	766
6	1,474
8	2,464
10	3,738
12	5,296
13.125	6,296

Note: If actual depth is between the chart inches, estimate gallons based on two amounts. For example, if the depth for the NW Unloading Area is 9 inches, the amount would be 5,490 gal. (8 inches) + [1/2 x (7,818 – 5,490)] or a total of 6,654 gallons.



RH014CE/PlotPlan (10/1/11, Rev. 14)

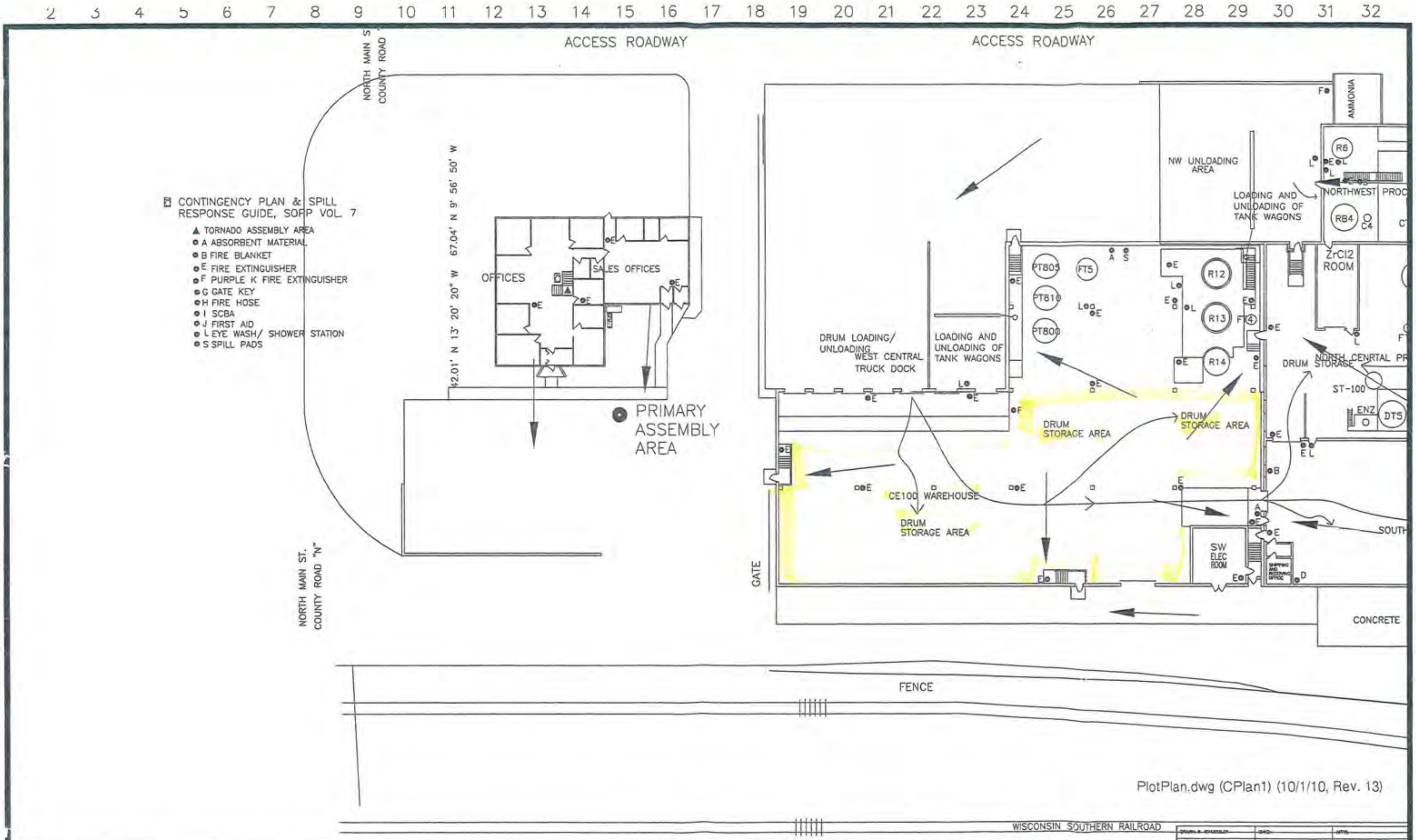
REV. #	DATE	DESCRIPTION	DRAWN
**	**	** – See Layout "Conifpln" for a description of the various revisions.	**

HYDRITE CHEMICAL CO.
114 N. MAIN STREET
COTTAGE GROVE, WI
COTTAGE GROVE WISCONSIN

HYDRITE CHEMICAL CO.

DRAWN: B. SCHOESSLER	CHKD:	APPR:
DATE: 08/20/08	DATE:	DATE:
SCALE: NONE	CAD: PLOTPLAN	
FOR: RH014CE		
CONTRACT NO.	DRAWING NO. StormWater	REVISION 14

Appendix J



REV. #	DATE	DESCRIPTION	DRAWN
**	**	** – See Layout "ConPlan" for a description of the various revisions.	**

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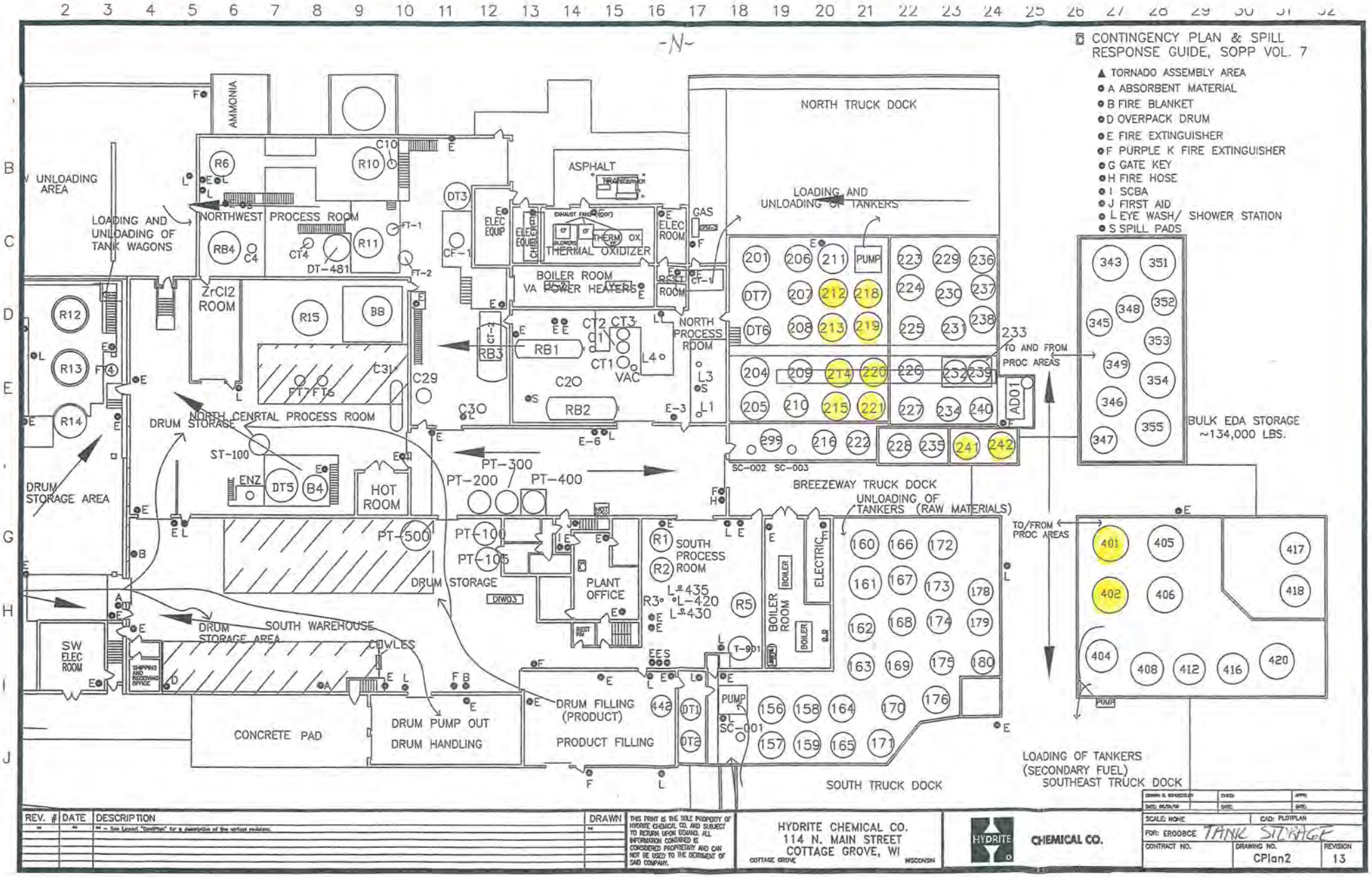
HYDRITE CHEMICAL CO.
114 N. MAIN STREET
COTTAGE GROVE, WI
COTTAGE GROVE WISCONSIN

HYDRITE CHEMICAL CO.

SCALE: NONE | CAD: PLOTPLAN
FOR: ER008CE Container Storage
CONTRACT NO. | DRAWING NO. CPlan1 | REVISION 13

DIMENSIONS AND CAPACITYOF EACH TANK PERMITTED FOR OFF-SITE WASTE

PERMIT TANK NO.	HYDRITE POSITION NO.	CAPACITY (GALLONS)	CONSTRUCTION MATERIAL	DIMENTIONS
D-5	212	6650	CARBON STEEL	9'6" X 14'
D-4	213	6650	CARBON STEEL	9'6" X 14'
D-3	214	6650	CARBON STEEL	9'6" X 14'
D-2	215	6650	CARBON STEEL	9'6" X 14'
D-6	218	6650	CARBON STEEL	9'6" X 14'
C-8	219	6650	CARBON STEEL	9'6" X 14'
C-9	220	6650	CARBON STEEL	9'6" X 14'
C-7	221	6650	CARBON STEEL	9'6" X 14'
D-102	241	6650	CARBON STEEL	9'6" X 14'
D-101	242	6650	CARBON STEEL	9'6" X 14'
T-403	401**	19750	STAINLESS STEEL	12' X 18'
T-404	402**	19750	STAINLESS STEEL	12' X 18'
	** Fuel Blending Tanks (<90 day storage			



PlotPlan.dwg (CPlan2) (10/1/10, Rev. 13)

Appendix K

HYDRITE CHEMICAL CO.

114 N. MAIN STREET
COTTAGE GROVE, WI 53527
OFFICE: 608-839-4571
FACSIMILE: 608-839-4293

DATE:

Generator:
Attn:

This letter will serve to notify you of the following discrepancies on Manifest No. _____, received at Hydrite Chemical Co., Cottage Grove, WI on _____.

___ Generator's EPA ID No. is Incorrect/Missing _____
___ Generator's Phone No. is Missing
___ Transporter EPA ID No. is Incorrect/Missing _____
___ TSD Name/Address is Incorrect/Missing _____
___ TSD EPA ID No. is Incorrect/Missing _____
___ DOT Proper Shipping Description is Incorrect
___ Container No. and/or Total Quantity was changed to:
___ EPA Waste Codes Missing/Incorrect _____
___ No Generator's Signature
___ Not manually dated by Generator
___ Emergency Phone No. Missing and/or Service Name or Contract No. Missing
___ Landban Certification Form is needed for initial \ Change in shipment
___ Other _____
___ Additional Comments:

This letter is being used to fulfill Hydrite's obligation to resolve this discrepancy. Please return a signed copy of this letter within fifteen days of receipt to ensure that you as the generator have made corrective actions on your held manifest copies. Please keep a copy of this letter for your records.

Janice K. Housley; Regulatory Compliance

Hydrite Chemical Co. Representative Date

Generator's Signature Date

CC: Sales

NON-CONFORMING WASTE SHIPMENT REPORT

DATE: _____

TO: _____ **(Salesperson)**

_____ **(Transportation Supervisor)**

BRANCH: CW MK LX LZ OS UP WL WS TH

FROM: HYDRITE COTTAGE GROVE EAST

RE: NON-CONFORMING WASTE SHIPMENT TO CGE

GENERATOR: _____ **TRANSPORTER:** _____

MANIFEST NO.: _____ **AUTHORIZATION NO.:**_____

On (date) _____, the CGE facility received s shipment of _____ drums/containers, which did not comply with applicable DOT / EPA / WI container, labeling, marking or manifest shipment standards.

I. **MANIFEST** Requirements. Shipment did not have:
_____ Proper shipping document (Manifest for all hazardous waste, unless VSQG)

II. **MARKING** Requirements. Containers did not have:
_____ The words, "Hazardous Waste – State and Federal law prohibits improper disposal." (NR615.10(2)(b))
_____ DOT Proper Shipping name and UN/NA ID number (49 CFR 172.301(a))
_____ Generator's name and Address (49 CFR 172.301(d))
_____ Generator's EPA Identification Number (40 CFR 262.32)
_____ Manifest Tracking Number (40 CFR 262.32)
_____ Manufacturer's Mark (i.e. 'UN 1A1 or 1A2' for steel drums) missing or illegible (49 CFR 178.503(a))
_____ All previous non-applicable labels and markings obliterated (49 CFR 172.401(b))

III. **LABEL** Requirements: Containers did not have:
_____ DOT Hazard Class Diamond (49 CFR 172.407) Matches Hazard Class on Manifest

IV. **DRUM / CONTAINER.** The following were not approved DOT containers:
_____ Closed head (49 CFR 178.504)
_____ Open head (49 CFR 178.504)
_____ Leaking / Waste on the exterior (49 CFR 173.24(b)(5))
_____ Bulging / Rusted Drums
_____ Closing devices: ___ Bung cap ___ Closing ring ___ Retaining bolt ___ Gaskets
_____ Other _____

V. **LOAD SECURITY.**
_____ The load was not secured against movement within the vehicle.

Original SOP Effective Date: 3/1/96	Supersedes SOP Dated: 10/1/09	Effective Date: 9/1/10	Procedure No.: RC011CE
Facility: CE	Approval Name & Signature: Kori Brandl Kori Brandl		Revision No.: 5
Review Frequency: 5 Years	Approval Title: Associate Lab Manager/ISO Project Manager		Page 1 of 4
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			If this block is black, this is NOT a controlled document
Revised Section(s): Added reference to Analysis and Documentation of Incoming Crude, Q1024CA to the body of the SOP.			

I. **TITLE:** NONCONFORMING PROCEDURE FOR INCOMING MATERIAL

II. **KEY WORDS:** Incoming, Nonconforming

III. **PURPOSE:** To provide a procedure for properly handling nonconforming incoming materials.

IV. **APPLICATION:** This procedure applies to all personnel, or their designees involved in the procedure for handling non-conforming incoming materials, to include Receiving Personnel, EHS Personnel, QC Laboratory Staff, Plant Manager, Building Managers, Shift Supervisors, Branch Buyer, Sales Personnel, Toll Coordinators

V. **DEFINITIONS:**

Crude Material: Materials requiring further processing to meet customer specifications. These materials are not waste and therefore are not covered under the Part B permit requirements. An example of a crude material is BHMT.

Nonconforming Incoming Material: Material received by Hydrite that deviates from a specification or requirement established by Hydrite Chemical Co., a governmental agency, a supplier or a customer.

Raw Material: Hydrite purchased or customer owned materials used in manufacturing of toll or Hydrite products. Additionally, this definition includes clean (non-waste) materials acquired as program feedstocks or cleanout material.

Waste: RCRA hazardous wastes and spent materials that are solid waste. These materials are covered by the Part B permit requirements. Examples of incoming waste include materials that are typically referred to as recycles, disposals, program materials, spent materials. Examples of solid waste spent materials are: CPFilms NMP, 3M DEP, DuPont BDO, McIntyre and Rhodia AEEA.

VI. **ASSOCIATED MATERIAL(S):**

Analysis and Documentation of Incoming Crude (Q1024CA)
Analysis and Documentation of Incoming Recycles (Q1005CA)
Analysis and Documentation of Incoming Program Materials (Q1030CA)
Analysis and Documentation of Incoming Waste Disposals (Q1022CA)
Nonconforming Waste Shipment Report
Nonconforming Procedure for Incoming Waste table RC011CEa.xls (attached)
Nonconforming Procedure for Incoming Crude table RC011CEb.xls (attached)
Nonconforming Procedure for Incoming Raw Materials table RC011CEc.xls (attached)
Receipt Authorization Form
Incoming Material Non-Conformance Form
Supplier Conformance and Corrective Action (PU015AF)
Shipping Discrepancy Letter example (attached)

Using the AS400/PRISM Interface for Accessing Waste Masters and other Product Related Information (QC032CE)
Waste Profile

VII. PROCEDURE:

1. Overview

   1.1. There are different types of nonconformances dependent on the type of incoming material (Waste, Crude, Raw Material). Refer to the attached tables for Waste RC011CEa.xls, Crude RC011CEb.xls and Raw Materials RC011CEc.xls for the notification, documentation and disposition responsibilities for each type of nonconformance.

   1.2. The SOP sections below provide additional information in support of the attached tables.

2. Nonconformance of Waste (Waste Disposals, Recycles, Program Materials and Spent Streams)

   2.1. Refer to the attached table for Nonconforming Procedure for Incoming Waste RC011CEa.xls for notification, documentation and disposition responsibilities.

   2.2. Materials that are nonconforming for a physical irregularity (i.e. pumpable vs. solid) will not be held for resampling and will continue through processing per the disposition determination of Receiving personnel.

   2.3. Receiving personnel will identify, communicate and document an incoming non-bulk material nonconformance according to the Waste Drum Sampling and Classification Procedure RC009CE SOP.

   2.4. Receiving personnel will identify, communicate and document an incoming bulk material nonconformance according to the Tank Truck Bulk Unloading RC003CG SOP.

   2.5. Bulk materials may be resampled as an internal expense.

      2.5.1. Lab, plant, EHS, sales personnel or the customer may request bulk resamples.

   2.6. There will not be an automatic resample of drum material.

      2.6.1. If the customer requests a resample of drum material, the resample will be expensed to the sales branch or Generator per salesperson discretion.

   2.7. Lab personnel will identify, communicate and document an incoming material nonconformance according to the following SOPs:

      2.7.1. Analysis and Documentation of Incoming Recycles Q1005CA.

      2.7.2. Analysis and Documentation of Incoming Waste Disposals Q1022CA.

      2.7.3. Analysis and Documentation of Incoming Program Materials Q1030CA.

      2.7.4. Analysis and Documentation of Incoming Crude Q1024CA.

   2.8. If there is uncertainty regarding Hydrite's ability to meet the customer's outgoing specifications via the original processing plan, the Building Manager will consult with Sales or directly with the customer when determining the disposition of nonconforming waste.

   2.9. Disposition Options for Waste

      2.9.1. Process the material per the original processing plan (management code).

      2.9.2. Process the material according to a different processing plan (management code) (i.e. fuel blend vs. recycle).

      2.9.3. Reject the material back to the Generator.

      2.9.4. Redirect the material to another TS&D facility per Generator's instructions.

   2.10. EHS personnel will retain nonconforming documentation with the associated manifest and/or operational record.

   2.11. EHS personnel will review all nonconformings to determine if any regulatory impact exists.

3. Distributor Nonconforming

3.1. Nonconforming waste from distributors will be handled like any other customer with the exception that the distributor will also be notified of the nonconforming per the notification, documentation and disposition responsibilities in the attached table RC011CEa.xls.

4. Nonconformance of Crude Materials

4.1. Refer to the attached table for Nonconforming Procedure for Incoming Crude RC011CEb.xls for notification, documentation and disposition responsibilities.

4.2. Receiving personnel will identify, communicate and document an incoming non-bulk material nonconformance according to the Non-Bulk Receiving RC005CG SOP.

4.3. Receiving personnel will identify, communicate and document an incoming bulk material nonconformance according to the Tank Truck Bulk Unloading RC003CG SOP.

4.4. Lab personnel will identify, communicate and document an incoming material nonconformance according to the Analysis and Documentation of Incoming Crude Q1024CA SOP.

4.5. If there is uncertainty regarding Hydrite's ability to meet the customer's outgoing specifications via the original processing plan, the Building Manager will consult with Sales or directly with the customer when determining the disposition of nonconforming crude.

4.6. The Toll Coordinator will retain nonconforming documentation with the associated inbound shipping documents.

5. Nonconformance of Raw Materials

5.1. Refer to the attached table for Nonconforming Procedure for Incoming Raw Materials RC011CEc.xls for notification, documentation and disposition responsibilities.

5.2. Receiving personnel will identify, communicate and document an incoming non-bulk material nonconformance according to the Non-Bulk Receiving RC005CG SOP.

5.3. Receiving personnel will identify, communicate and document an incoming bulk material nonconformance according to the Tank Truck Bulk Unloading RC003CG SOP.

5.4. Lab personnel will identify, communicate and document an incoming material nonconformance according to Verification of Incoming Raw Materials Q1020CA SOP.

5.5. The Branch Buyer is the contact for all Hydrite purchased raw materials and Rohm and Haas/Dow Chemical customer owned raw materials.

5.6. The Toll Coordinators are the contacts for all customer owned raw materials, with the exception of Rohm and Haas/Dow Chemical owned raw materials.

5.7. Emergency Receipt

5.7.1. Every effort must be made to correct a nonconforming raw material situation. However, if incoming material is required to be released for urgent production purposes prior to verification, it shall be positively identified and the lot number recorded in order to permit immediate recall and replacement in the event of non-conformity to specified requirements.

5.8. When determining the disposition of nonconforming raw materials (for lack of COA, nonconforming COA, nonconforming identity/product quality), the Plant and Lab Managers will review together the information available and make a mutual determination.

5.9. If the disposition of a nonconforming Hydrite purchased material is to use the product in the manufacturing of a toll product, the Plant Manager or Building Manager must notify the customer.

5.10. Generation of SCARs

5.10.1. The Branch Buyer or Toll Coordinator will generate a Supplier Corrective Action Request (SCAR) according to the Supplier Conformance and Corrective Action

PU015AF SOP for nonconformances that are identified by Receiving personnel (nonconforming container/condition, lack of COA).

5.10.2. QC Laboratory staff will generate a Supplier Corrective Action Request (SCAR) according to the Supplier Conformance and Corrective Action PU015AF SOP for nonconformances that they identify (nonconforming COA, nonconforming identity/product quality).

5.11. Documentation of Nonconformances and Dispositions

5.11.1. QC Laboratory staff will update appropriate lab logs with the final disposition of the raw materials that were nonconforming for issues that they identified (nonconforming COA, nonconforming identity/product quality) and attach the written disposition correspondence received to the original analytical paperwork.

5.11.2. The Branch Buyer or Toll Coordinator will update the purchase order/inbound shipping paperwork with the final disposition and attach written correspondence.

5.11.3. QC Laboratory staff will change the PRISM classification of material according to final disposition.

5.11.3.1. Refer to Using the AS400/PRISM Interface for Accessing Waste Masters and other Product Related Information QC032CE.

5.12. The Branch Buyer or Toll Coordinator will:

5.12.1. Contact the supplier or customer to request a COA, as required.

5.12.2. Arrange for raw material to be shipped back to the supplier or customer, as required.

NONCONFORMING PROCEDURE FOR WASTE

	Who identifies Nonconformance?	Who is notified of nonconformance?	Who does the notifying?	What is the method of notification?	Who Determines Disposition?	Who does the notifying of the disposition?	Who is notified of disposition?	What documents the disposition?
RCRA Nonconforming resulting om EHS Review (ex. missing aste codes, material does not match approval letter)	Facility Compliance Coordinator	Customer, cc Sales (Facility Compliance Coordinator discussion with customer to determine if this was a 1-time change/error or ongoing; may result in a new profile being set up)	Facility Compliance Coordinator via verbal or email	Facility Compliance Coordinator verbal or email and notes	Facility Compliance Coordinator (Customer or Sales can request a disposition different than EHS's recommendation)	Facility Compliance Coordinator	1) Customer, cc sales via verbal or email 2) Building Manager, if disposition is different than the original plan via verbal or email 3) Customer Service, via updated Receipt Authorization form 4) Customer via invoice	1) Manifest updated with final management code, if disposition is different than originally planned 2) Invoice
Waste Type Difference (subset of RCRA Nonconforming) (ex. rags vs. liquid, oil vs. solvent)	1) Receiving or 2) Lab	1) From Receiving: Facility Compliance Coordinator via Receipt Authorization form 2) From Lab: Facility Compliance Coordinator and Building Manager via Incoming Material Nonconformance form	1) Receiving or 2) Lab	1) Receiving writes on Receipt Authorization form 2) Lab generates Incoming Material Nonconformance form	Facility Compliance Coordinator (Customer or Sales can request a disposition different than EHS recommendation)	Facility Compliance Coordinator via verbal or email	1) Customer, cc sales via verbal or email 2) Building Manager, if disposition is different than the original plan via verbal or email (updates Receipt Authorization form with final disposition) 3) Toll Coordinator, via updated Receipt Authorization form 4) Customer via invoice	1) Manifest updated with final management code, if disposition is different than originally planned 2) Invoice
Physical Irregularity (ex. solid vs. pumpable)	Receiving	1) Facility Compliance Coordinator via Receipt Authorization form 2) Toll Coordinator via Receipt Authorization form	Receiving	Receiving writes on Receipt Authorization form	Receiving per RC009CE	1) Receiving 2) Toll Coordinator	1) Facility Compliance Coordinator via Receipt Authorization form 2) Toll Coordinator via Receipt Authorization form 3) Customer via invoice	1) Manifest updated with final management code 2) Invoice
DOT Noncompliance (ex. ıanifest errors, marking, ıbeling, drum security, quantity)	1) Receiving or 2) Facility Compliance Coordinator	1) Facility Compliance Coordinator 2) Customer 3) Possibly WDNR if customer response to the discrepancy is not received within 15 days	1) Receiving or 2) Facility Compliance Coordinator	1) Receiving generates Nonconforming Waste Shipment Report 2) Facility Compliance Coordinator generates Letter of shipping discrepancies to Customer 3) Facility Compliance Coordinator possibly generates letter of shipping discrepancies to WDNR if customer response to the discrepancy is not received within 15 days	Unless there is another type of NC that applies, Hydrite will continue with original processing plan for waste. If another type of NC applies, the procedure for determining disposition in that situation will also apply to waste loads that have a DOT noncompliance. Hydrite may proceed with processing before DOT noncompliance is resolved.	See 'Who determines disposition?'	See 'Who determines disposition?'	See 'Who determines disposition?'
Does not meet incoming Hydrite Processing Specifications (ex. 5% max solids, 1% max water)	Lab	1) Building Manager 2) Facility Compliance Coordinator	Lab	Lab generates Incoming Material Nonconformance form	Building Manager (may consult with Sales and/or the Customer)	Building Manager	1) Facility Compliance Coordinator and Toll Coordinator via updated Receipt Authorization form from Building Manager 2) Customer via invoice	1) Updated Receipt Authorization form, manifest (if manifest has already been mailed, correction is sent to WDNR and Generator) 2) Invoice
Does not meet incoming Customer Specifications (ex. 5% max solids, 1% max water)	Lab	Building Manager	Lab	Lab enters in Incoming Recycles, Disposals and Crude log	N/A - not needed, automatically accepted for original processing plan	N/A - handled same as in-spec material	N/A - handled same as in-spec material	N/A - handled same as in-spec material

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 3/1/96	Supersedes SOP Dated: 12/1/07	Effective Date: 7/1/10	Procedure No.: RC009CE
Facility: CE	Approval Name & Signature: Joe Weishar		Revision No.: 6
Review Frequency: 2 Years	Approval Title: General Manager - Process Organics		Page 1 of 3
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			**If this block is black, this is NOT a controlled document**
Revised Section(s): Approval Title. Associated Materials. Line 1.16 removed instruction to bring copy of waste master to lab with sample. Added Section 3 and updated the Purpose by adding retention/disposal of incoming waste samples.			

I. TITLE: WASTE DRUM SAMPLING AND CLASSIFICATION PROCEDURE

II. KEY WORDS: Classification, Sample, Waste

III. PURPOSE: To provide instructions on obtaining a representative waste sample from incoming drums, classification of those drums and retention/disposal of incoming waste samples.

IV. APPLICATION: Waste Utility Operators & Waste Disposal Supervisor

V. DEFINITIONS: N/A

VI. ASSOCIATED MATERIAL(S):
Receipt Authorization Report (a.k.a. Green Sheets)
Sample Retention (QC006CE)
Waste Master

VII. PROCEDURE:

1. Sampling

1.1. Obtain the Receipt Authorization Report for the incoming waste material and two copies of the Waste Master (generated by Administration when the Authorization No. is issued).

1.2. Date stamp the receipt date on each drum.

1.3. Read the Waste Master for the necessary information and any special receiving instructions.

1.4. Put on any required protective equipment per the Waste Master, Receipt Ticket or SOP, in additional to the normal work uniform.

1.5. Open the bungs on all the drums.

1.6. Obtain 1 sample container for each drum lot (authorization number).

1.6.1. Obtain a sample wand.

1.6.1.1. Use separate wands for each different hazardous and nonhazardous waste. Some Process SOPs will require designated wands.

1.7. Insert the sample wand into the bung opening of the drum.

1.7.1. Place thumb over the end of the sample wand.

1.7.2. Withdraw the wand and insert the end into the sampling container.

1.7.3. Remove thumb from the end of the wand allowing the sample to flow into the sampling container.

1.8. Obtain the core sample of the first drum in the lot and rinse the sampling container with it.

1.9. Proceed with extracting a core sample from each drum in the lot and placing it in the sampling container.

1.10. Continue process until the sampling container holds a representative sample of the incoming waste lot (i.e. solids, solvent and/or water).

1.11. Transfer representative sample into a 2oz or 4oz sample container.

1.12. Label the sample containers with the preprinted label found on the Receipt Authorization Report ("green sheet"). This label contains the Customer Name and Authorization Number.

1.12.1. Add date sample obtained.

1.12.2. Add the number of drums for this authorization number.

1.12.3. Add the initials of the individual withdrawing the sample.

1.13. Estimate the total gallons for recycle and record on Receipt Authorization Report.

1.14. Tighten all drum bungs. Replace bungs, if needed.

1.15. Clean any liquid accumulated on the drum tops from sampling with rags or PIG pads.

1.16. Take sample containers to the lab for analysis.

2. Classifying

2.1. All drums are to be classified as either a 1, 2A, 2B, 3, Processable Solid, Rags & Filters, or Low BTU

2.2. Drums classified as a number 1 will typically have the following characteristics:

2.2.1. Low viscosity material

2.2.2. No more than two inches of unpumpable solids or sludge will exist.

2.2.3. Material should be able to be pumped from drums freely and completely.

2.2.4. Drum generally processed on site.

2.2.5. Drum top does not need to come off to evacuate drum.

2.3. Drums classified as a number 2A will typically have the following characteristics:

2.3.1. Medium viscosity material.

2.3.2. Material is stirable.

2.3.3. Contains 4 – 25% unpumpable solids or sludge

2.3.4. Remove drum top in order to completely evacuate drum, when necessary.

2.3.5. Drum will be sent off site for disposal.

2.4 Drums classified as a number 2B will typically have the following characteristics:

2.4.1. Contains 25 - 50% unpumpable solids or sludge.

2.4.2. Drum top must be removed in order to completely evacuate drum.

2.4.3. Drum will be sent off site for disposal.

2.4. Drums classified as a number 3 will typically have the following characteristics:

2.4.1. Semi-solid or solid material; non-fuel compatible - pasty.

2.4.2. Foreign material present (rags, pails, cans, gloves, etc.).

2.4.3. Solid material cannot be solubilized.

2.4.5. Drums containing General Cleanup Solids.

2.4.6. Drum will be sent off site for disposal.

2.5. Drums classified as a processable solid will typically have the following characteristics:

2.5.1. Semi-solid or solid material.

2.5.2. No foreign material (rags, pails, cans, gloves, etc.)

2.5.3. Solid material can be shredded and solubilized by adding solvent.

2.5.4. Organic based material (e.g., paint solids, ink solids) > 5000 BTU.

2.5.5. Drum will be sent off site for disposal.

2.6. Drums classified as a Rags and Filter (R&F) will typically be paint related rags and filters and/or have a Rags and Filter Resource No.

2.7. Drums classified as Low BTU will water or organic based material with <5000 BTU and/or have a Low BTU Resource No.

2.8. Drums sent off site for disposal will be sent to Pollution Control Industries unless otherwise specified by Customer or Management.

3. Incoming Waste Sample Retention and Disposal

3.1. Once the lab has completed all tests on the incoming waste samples, the Waste Utility Operator will:

3.1.1. Pick up the samples from the lab.

3.1.2. Retain the samples in the designated storage location for a retention period of 1 month.

3.1.2.1. For example, samples received during August 2009, would be disposed of during the month of October 2009, preferably during the first half of the month.

3.1.3. Dispose of the samples into a flammable waste satellite accumulation drum.

3.2. Sample retention periods are determined by the Sample Retention SOP QC006CE.

Appendix L

Emergency Coordinators

Cottage Grove

		Home	*Pager/Cell*	*Office*	*Address*	
Primary						
Nate	Harshbarger		608-393-0149 C	608-839-8147	130 N. Oak Street	Reedsburg, WI
Mike	LaSchiava	608-868-1581	608-359-3402 C			
Rich	Nolan	608-554-7481		608-839-8147	221 Noahs Arc Court	Evansville, WI
Todd	Wangerin		608-358-9852 C	608-839-8147	377 Sunnyview Lane	Marshall, WI
Secondary						
Rod	Brandenburg		303-842-2444 C		889 Hickory Creek Dr.	Oconomowoc, WI
Jason	Kundinger	608-223-0839	608-376-0236 P	608-839-8160	2 Harrington Court	Madison, WI
Jason	Kundinger		608-334-4604 C			
Brian	Poehnelt	920-648-7776	920-222-9422	608-839-8129	220 Louise Street	Lake Mills, WI
Dave	Volenberg	608-877-1296	608-376-0231 P		2334 Washington Road	Stoughton, WI
Tertiary						
Andy	Schertz	920-394-9954			240 N. Forest Street	Dalton, WI

Emergency Responders

Cottage Grove		*Home Telephone*	*Pager/Cell:*
Jim	Apitz	920-213-1357	
John	Arcadipone	608-469-0046	
Jeff	Austin	608-692-0440	
Robert	Bailey		608-320-9542 C
Mike	Bartelt	608-325-6774	608-558-8775
Rod	Brandenburg		303-842-2444 C
Lawrence	Butcher		608-295-0120
Jerrod	Copus		608-239-9650
Lee	Dahl	608-764-5064	
John	Fetterer		608-669-8837
Jason	Glover		608-487-1914
Jason	Gust	608-320-4801	
Jerry A.	Gust	608-235-7137	
Nate	Harshbarger		608-393-0149 C
Brian	Jacque	608-314-0095	
Todd	Kaun		608-289-3234
Steve	Kuhse	608-897-4459	608-718-1135
Jason	Kundinger	608-223-0839	608-376-0236 P
Jason	Kundinger		608-334-4604 C
Mike	LaSchiava	608-868-1581	608-359-3402 C
Jamie	Leverton	608-214-0288	
Scott	Lindemann	608-842-0088	
Spencer	Lowery		608-443-8064

John	Lupiezowiec	920-563-4728	
Dale	Mueller	920-207-3279	
Rich	Nolan	608-554-7481	
Will	O'Connell	608-884-6582	
Brian	Poehnelt	920-648-7776	920-222-9422
Andy	Riggins	608-886-3212	
Luke	Roemer		608-228-6684
Patrick	Ruhnke	608-774-2467	
Andy	Schertz	920-394-9954	
Brian	Schuessler		608-334-0571 C
Jay	Sitts	608-839-5396	
Rob	Tuebert		608-295-9528
Chuck	Tun	608-698-5077	
Dave	Volenberg	608-877-1296	608-698-1296
Jason	Waldner		608-698-5027
Todd	Wangerin		608-358-9852 C
Josh	Waraczynski		608-628-0454

Medical Emergency Personnel

Cottage Grove

Lawrence	Butcher
Ken	Craig
Lee	Dahl
John	Fetterer
Jerry A.	Gust
Nate	Harshbarger
Ivan	Kubly
Jason	Kundinger
Mike	LaSchiava
John	Lupiezowiec
Rich	Nolan
Mike	Oestriech
Brian	Poehnelt
Andy	Schertz
Jay	Sitts
Dave	Volenberg
Jason	Waldner

Emergency Communication Coordinators

Cottage Grove

		Home Phone	*Pager/Cell:*
Michelle	Champagne		337-298-9498
Tim	Hebgen	608-834-1365	
Riley	Houston	608-228-8823	
Erin	Kahley		815-621-0997
Gaye	Lehman		608-843-3857
Mike	Milbradt	608-839-4376	
Sujoy	Nag	608-231-9094	
Crystal	Nipp	608-839-9859	
Paul	Norland	608-741-0977	
Davis	Peterson		314-435-6360
Erik	Reinhard	920-420-3950	
Amy	Stueck		715-323-4219

Original SOP Effective Date: 9/1/96	Supersedes SOP Dated: 6/1/09	Effective Date: 5/1/11	Procedure No.: ER001AF
Facility: AF	Approval Name & Signature: Catherine Hay-Bassett		Revision No.: 9.1
Review Frequency: 2 Years	Approval Title: Manager, Technical Regulatory Services		Page 1 of 3
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I. **TITLE:** CONTINGENCY PLAN: OVERVIEW

II. **KEY WORDS:** Emergency, Emergency Response, Fire, Injury, Release

III. **PURPOSE:** To provide personnel, emergency responders, and other public safety officials listed in this plan a general overview of the facility's on-site contingency plan.

IV. **APPLICATION:** All Hydrite Chemical Co. employees.

V. **DEFINITIONS:**

Emergency Coordinator: For the purpose of these plans, the Emergency Coordinator shall have the same meaning as the Incident Commander for Hydrite personnel until the situation passes out of Hydrite control.

Incident: Any event which occurs which has the potential to significantly impact the operability of an individual facility or the company as a whole, or to pose a significant health, environmental, financial or legal threat.

VI. **ASSOCIATED MATERIAL(S):**

Contingency Plan: Plan Implementation, Emergency Equipment and Personnel Responsibilities SOP (ER006)
Contingency Plan: Facility Layout and Drawings SOP (ER008)
Contingency Plan: Emergency Procedures SOP (ER009)
Contingency Plan: Spill Management Plan (ER010AF)
40 CFR Part 264.51 Contingency Plan Implementation
Telephone List (ER007)

VII. **PROCEDURE:**

1. The Contingency Plan is composed of five (5) separate SOPs which are listed above. The Contingency Plan will be utilized to provide guidance in responding to all incidents.

2. The Contingency Plan will be implemented in the following situations:

   2.1. HAZARDOUS WASTE

      2.1.1. This plan must be implemented immediately whenever there is fire, explosion, or release of hazardous waste or hazardous waste constituent which could threaten human health or the environment.

      2.1.2. Incidents which involve hazardous waste, or affect hazardous waste operations require additional reporting as specified within the Chemical Release Reporting Manual.

   2.2. FIRE AND/OR EXPLOSION:

      2.2.1. A fire causes the release of toxic fumes.

      2.2.2. The fire spreads and could possibly ignite materials at other locations on-site or could cause heat-induced explosions.

      2.2.3. The fire could possibly spread to off-site areas.

      2.2.4. Use of water or water and chemical fire suppressant could result in contaminated runoff.

2.2.5. An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.

2.2.6. An imminent danger exists that an explosion could ignite other hazardous waste at the facility.

2.2.7. An imminent danger exists that an explosion could result in release of toxic materials.

2.2.8. An explosion has occurred.

2.3. SPILLS OR MATERIAL RELEASE:

2.3.1. The spill could result in release of flammable liquids or vapors, thus causing a fire or gas explosion hazard.

2.3.2. The spill could cause the release of toxic liquids or fumes.

2.3.3. The spill can be contained on-site, but the potential exists for ground water contamination.

2.3.4. The spill cannot be contained on-site, resulting in off-site soil contamination and/or ground or surface water pollution.

3. Facility personnel must be familiar with the content of each SOP that in the event of an emergency, the appropriate SOP is referenced.

3.1. The Plan Implementation, Emergency Equipment and Personnel Responsibilities SOP describe those events which require plan implementation, the facility's emergency equipment, and the responsibilities of personnel during and after emergency events.

3.2. The Telephone List of Emergency Contacts SOP identifies those agencies and individuals who should be contacted for immediate support in response efforts, technical assistance, and coordination efforts to protect human health and the environment.

3.3. The Facility Layout and Drawings SOP show the location of emergency equipment, hazardous materials and evacuation routes in the facility.

3.4. The Emergency Procedures SOP provides specific procedures for evacuating the facility, responding to fires and medical emergencies. This SOP also addresses tornadoes and earthquakes.

3.5. The Spill Management Plan provides specific methods for controlling, cleaning and disposing of hazardous materials spilled within the facility.

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 2/1/96	Supersedes SOP Dated: 7/1/08	Effective Date: 8/1/10	Procedure No.: ER003CE
Facility: CE	Approval Name & Signature: Angela Watry		Revision No.: 6
Review Frequency: 5 Years	Approval Title: EHS Manager		Page 1 of 16
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Revised Section(s): Added new CE100 warehouse; reviewed and updated entire Plan.			

I. TITLE: SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN

II. KEY WORDS: Oil, Containment, Release

III. PURPOSE: Provide company compliance with the Oil Pollution Act (40 CFR Part 112) under Sec. 311 of the Clean water Act.

IV. APPLICATION: Facilities storing, distributing, processing, or transferring oil or oil products, in a quantity greater than 1,320 gallons, which due to their location, could reasonably be expected to discharge oil in harmful quantities as defined in 40 CFR Part 110, into or upon the navigable waters of the United States or adjoining shorelines.

V. DEFINITIONS: N/A

VI. ASSOCIATED MATERIAL(S):
Clean Water Act Sec. 311
Code of Federal Regulations 40 CFR Part 110 and 112
Contingency Plan
(ER001AF, ER006CE, ER007, ER008CE, ER009CG, ER010AF)
Facility Diagram Figures 1 – 4 (attached)
Internal Facility Inspection SOP (SF029CG)
List of oil products from the United States Coast Guard
CGE Oil Storage Containers (ER003CEa, attached)
SPCC Plan Cross-Referencing Checklist (included)
Tank Truck Bulk Loading SOP (SP003CG)
Tank Truck Bulk Unloading SOP (RC003CG)
Container Inspection and Filling SOP (PR002AF)
Chemical Release Reporting (CR001AF)
Spill Response SOP Manual
Rainwater Sampling, Analysis & Discharge (PR034CG)

VII. PROCEDURE:

1. Introduction and conformance [112.7a)(1)]

1.1. Hydrite Chemical Co. (Hydrite) located at 114 North Main St., Cottage Grove, Wisconsin, operates and maintains a chemical manufacturing facility that has been designed to minimize the threat of unplanned releases and discharges of oil products into the environment.

1.2 This effort is documented in a Spill Prevention, Control, and Countermeasure Plan (SPCC) written in accordance with 40 CFR Part 112

1.3 The SPCC Plan describes the facility's preventive equipment and capacity to contain an unplanned release of oil or other petroleum product that could be caused by a tank/equipment

failure, tank overflow, or chemical spill. It is maintained at the facility in the Hydrite Standard Operating Procedures Manuals.

1.4 Spill History

1.4.1. In the past 12 months, there have been no recorded discharges of oil into navigable waters, contiguous zones or beyond contiguous zones from this site that may have been harmful to public health or the environment.

2. Deviations from the requirements [112.7(a)(2)]

2.1. No deviations were employed or claimed in this plan.

3. Plant Physical Layout [112.7(a)(3)]

3.1. Hydrite Chemical Co. operates a chemical blending/manufacturing facility and permitted hazardous waste storage and solvent recovery facility at this location. A facility diagram is attached that depicts the location of storage tanks and containers, transfer locations, drainage directions and potential spill paths, and spill response materials (see Figures 1 – 4). Transfer locations occur at the loading docks. There are no storm sewers on the property. All storm water is collected by the facility's containment system. The physical layout of the plant is designed so that any spills of oil products will be collected and contained. [112.7(a)(3)(i)]

3.2. Oil products are stored in 55-gallon drums, totes, and aboveground storage tanks.

3.2.1. Due to the diverse nature of operations at Hydrite, the contents of storage containers can vary. Table 1 - Cottage Grove East Oil Storage Containers identifies which storage tanks, drums, or totes could potentially contain oil, although they may also contain non-oil products at various times. Examples of oil products include waste containing mineral spirits, paints/varnishes, waste oil, and other flammable liquids that could be considered to be an oil. Hydrite can store a maximum of 2,000 55-gallon drums in the south warehouse and 4,368 55-gallon drums in the CE100 warehouse. These drums could potentially contain oil products as part of Hydrite's waste reclamation process. Hydrite also has approximately eight 55-gallon drums and one 360-gallon tote containing new and used oil for equipment maintenance.

3.2.2. The maximum volume of a single storage container for oil products is 25,000 gallons.

3.2.3. The types and capacities of oil storage containers can be found in Table 1 – Cottage Grove East Oil Storage Containers.

3.2.4. The total oil storage capacity for the facility, including tanks, drums, and totes is approximately 881,100 gallons.

3.3. Bulk Loading/unloading occurs in areas that are constructed with concrete floors and dikes to prevent spilled material from reaching non-contained areas. The entire operating area of the plant is paved and diked and provides containment to prevent releases to waters of the State.

3.4. The facility and associated buildings occupy approximately 32 acres of land within the Village limits of Cottage Grove.

3.4.1. The property is bounded on the north by an area designated as a wetland, on the east by an area zoned residential, on the south by a railroad right-of-way, and on the west by County Highway N (North Main Street).

3.4.2. The site itself is not located on a wetland or in a habitat presently determined by the Wisconsin Department of Natural Resources as being critical to the continuous existence of any endangered species.

3.4.3. A steel security fence surrounds the facility, and entrance gates are controlled by a security card system to prevent unauthorized entry.

3.4.4. Drainage is depicted on Figure 1. Any spilled oil products would be contained either inside the building, or within the containment around the tank farms and unloading areas.

3.5. Discharge Prevention [40 CFR 112.7(a)(3)(ii)]

3.5.1. Routine operations are conducted in accordance with documented procedures developed in Hydrite's Standard Operation Policy and Procedures Manual. These procedures include the following:

3.5.1.1. Bulk unloading/loading operations must be attended by a Hydrite employee or driver who is capable of shutting equipment off should equipment fail. All unloading/loading activities follow the Hydrite Tank Truck Bulk Unloading and Tank Truck Bulk Loading SOPs (RC003CE and SP003CE), including completion of the loading/unloading checklist.

3.5.1.2. Container filling (drums and totes) is performed in accordance with the Container Inspection and filling SOP (PR002AF). Drums and totes are filled on a calibrated scale in a containment area.

3.5.1.3. Piping is located out of the line of the traffic way, in some cases above the traffic way, and is supported to minimize damage, contact, and abrasion. [112.8(d)(3)]

3.5.1.4. Tanks are equipped with overfill alarms or level gauges, which are visually inspected prior to beginning transfer operations.

3.5.1.5. Starter Controls for pumps for loading/unloading storage tanks and tankers are locked in their off position when not in use. The controls are energized at the motor control center, which is located in a secure area that is not accessible to the general public and will be locked out when the facility is not in use. [112.7(g)(3)]

3.5.1.6. All pipelines are capped when not in service or when in standby service for 3 months or more. [112.8(d)(2). This means that the pipelines are capped at the bulk transfer location and at the tank/vessel discharge. Filling lines must be capped if not in use for 3 months or more (standby service).

3.5.1.7. Pipelines are located within the operating plant buildings or above the tank farm containment areas.

3.5.2. All containers (drums and totes) used for oil storage are UL approved, are compatible with their contents, and be stored in designated storage areas away from lift truck traffic and other moving equipment.

3.5.2.1. Containers are stored in a warehouse and protected from the outside environment. Containers are stored and arranged in rows and racks with proper spacing and aisles to permit inspection and access.

3.5.2.2. Employees will perform work in a manner that will not cause containers to rupture or leak.

3.6. Facility Drainage and Discharge Control [112.7(a)(3)(iii) and 112.8(b)]

3.6.1. The facility's drainage is designed and operated so that spills and leaks can be controlled and contained within the plant's property line.

3.6.1.1. Spills or leaks within the facility will be collected into one of the facility's sumps, tank secondary containment areas, or the facility's curbed areas.

3.6.1.1.1. There are no storm sewers in oil product storage or processing areas, so no discharges to the storm sewers should occur.

3.6.1.1.2. Spill response and cleanup equipment is located throughout the plant, as noted in the Contingency Plan (ER006CE). Much of the equipment can be found in the drum filling room.

3.6.1.1.3. Transport trucks also carry spill kits.

3.6.1.1.4. Drainage from diked areas is controlled manually by using closed gate valves.

3.6.1.1.5. Collection systems must be manually pumped to tank or container storage, or if the material has been tested and found to uncontaminated, to the sanitary sewer.

3.6.2. The tank farms have a containment capacity of at least 125 percent of the volume of the largest tank in each tank farm. The containment is adequate to control the loss of the contents of the largest storage tank plus runoff from firefighters for approximately 15-20 minutes. The specific containment is summarized below.

3.6.2.1. Tank farm 100 provides 78,300 gallons containment

3.6.2.2. Tank farm 200 provides 54,000 gallons of containment

3.6.2.3. Tank farm 300 provides 24,000 gallons of containment

3.6.2.4. Tank farm 400 provides 109,900 gallons of containment

3.6.3. Drums containing oil products are United States Department of Transportation (U.S. DOT) approved, stored in warehouses, and protected from the outside environment.

3.6.3.1. Warehouse floors are constructed of high-density concrete sloped to provide adequate movement of leaked or spilled material into catch basins away from the base of the containers.

3.6.3.2. Warehouses have 6-inch–high concrete curbs at all wall openings. The south warehouse provides 15,800 gallons of containment, and the CE100 warehouse 80,761 gallons of containment. It is assumed that a catastrophic failure of all drums at the same time would be very unlikely.

3.6.4. Bulk truck loading/unloading areas are underlain by concrete and are designed to collect precipitation and potential spills in containment pits. The north loading dock is designed to contain 8,100 gallons. There is also containment around other truck loading/unloading areas, including the CE100 truck dock and the northwest unloading area. The containment areas may only be pumped using a manually controlled pump.

3.6.5. The dock used for loading/unloading drums and totes of oil products (the CE100 truck dock) is made of high-density concrete and is sloped to provide primary containment of several hundred gallons.

3.7. Countermeasures, Control, and Discharge Procedures [112.7(a)(3)iv & v]

3.7.1. Collection systems may only be pumped out using manually controlled pumps. Collected material will be pumped to tanks or container storage. Contaminated water will be hauled off-site for proper treatment and/or disposal.

3.7.2. Hydrite has an on-site emergency response team and equipment to contain and remediate spills of oil products.

3.7.2.1. Spilled material will be managed as usable product, hazardous waste or non-hazardous waste, depending on use and chemical characterization. Hydrite has the capability of collecting discharged liquids and pumping them into containers or tankers. The facility is also licensed as a hazardous waste treatment and storage facility and has been approved for RCRA fuel blending. Any contaminated soils may be collected, drummed, profiled, and disposed of properly. The facility has a team of on-site emergency responders who are all trained for emergency response.

3.7.2.2. In the event of a large oil spill in on-site transit, earthmoving equipment may be utilized by Emergency Response Team members to create earthen dikes. This would only be necessary if there was a failure on the equipment at the same time as failure of the secondary containment systems and the on-site surface containment system.

3.8. Contact List [112.7(a)(3)(vi)]

3.8.1. A list of emergency response coordinators, responders, the Nation Response Center, reporting phone numbers, and the phone number of any response contractors can be found in the Emergency Response and Chemical Release Reporting SOPP Manuals (volumes 6.0 and 7.0).

4. Release Reporting [112.7(a)(4)]

4.1. In the event that a release of oil product occurs that could reasonably be expected to be harmful into or upon waters of the United States, the release will be reported in accordance with the facility's Chemical Release Reporting Procedures (Hydrite SOP CR001AF). The list includes phone numbers for emergency coordinators, the National Response Center, and various state and local regulatory agency contacts.

5. Emergency Response Procedures [112.7(a)(5)]

5.1. Releases are not expected to occur to waters of the State (or United States). Measures of prevention include containment, unloading, loading and filling procedures, inspection, and preventive maintenance. The facility has comprehensive Emergency Response procedures documented in Volume 7.0 (Emergency Procedures) of the SOP Manual.

5.1.1. Hydrite personnel will follow the spill response procedure for oil spills as prescribed in the facility's contingency plan.

5.2. Spill equipment is maintained throughout the site. Each working area has a supply of equipment, with a substantial amount in the drum filling room. Equipment is identified in the Contingency Plan (ER006CE).

5.3. Specific containment and controls are described in Subsection 3.7 and Section 7.

6. Potential Equipment Failures Resulting in Spills [112.7(b)]

6.1. Spills are expected to be contained on-site. Potential failures at the Hydrite facility are as follows:

Potential Failure	Spill Direction	Volume Released	Spill Rate
Complete failure of a tank (full or partially full)	Contained in containment dike	25,000 gallons (maximum tank volume)	Instantaneous
Tank overfill	Contained in containment dike	600 gallons	Up to 100 gallons per minute (gpm)
Pipe failure	Contained in dike	25,000 gallons	Up to 100 gpm
Leaking pipe/valve	Contained in tank dike, warehouse, or surface dike	Up to several gallons	Drip to slow rate
Tank truck leak or failure	Contained in dike.	7,000 gallons	Gradual to instantaneous
Hose leak during transfer to drum/tote	Contained in warehouse	Up to 300 gallons	Up to 60 gpm
Pump failure	Contained in dike or warehouse	Up to 500 gallons	Up to 100 gpm
Tote/Drum failure during storage	Contained in warehouse	Up to 360 gallons	60 gpm to instantaneous
Tote/Drum failure during loading	Contained in warehouse	Up to 360 gallons	Up to 60 gpm
Tote/drum failure when loading into trailer	Dock containment	Up to 360 gallons	Gradual to instantaneous

7. Containment and diversionary structures [112.7(c)(1)]

7.1. Containment is described in Subsection 3.6.

7.2. Dikes, surface containment and pitched docks are used to contain storage tanks and piping. They are impervious and have adequate capacity to contain the largest tank located within each area. [112.7(c)(i)]

7.3. Surface drainage (over impervious surfaces) is used to contain any potential releases within the warehouse. Any release in the warehouse or container loading dock would be contained to prevent runoff to the environment. [112.7(c)(1)iii]

8. Demonstration of Practicability [40 CFR 112.7(d)]

8.1. Hydrite has determined that the use of the containment and diversionary structures and the use of readily available spill equipment to prevent discharged oil from reaching navigable water are practical and effective at this facility.

9. Inspection and Records for Bulk Storage Containers (55 gallons and greater) - [40 CFR 112.7(e), 112.7(a)(5) and 112.8(c)]

9.1. Hydrite personnel maintain a comprehensive inspection schedule for inspecting tanks and containers for evidence of leakage, corrosion, and deterioration of the containers or secondary containment structures, which is included in the Internal Facility Inspection SOP (SF029CG). All inspections will be signed by the inspector and kept for 3 years. [112.7 (e)]

9.1.1. Containers of oil products will be stored in DOT-approved containers to ensure their structural quality. These containers are tested to demonstrate compliance with the U.S. DOT regulations (49 CFR 178). Prior to filling, containers are visually inspected in accordance with Hydrite's Container Inspection and Filling SOP (PR002AF).

9.1.1.1. The U.S. EPA recognizes that the DOT-approved containers are adequate to demonstrate control of releases compliant with the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) standard for Off-site containerization under the hazardous waste regulations (40 CFR 265 subpart CC).

9.1.2. The scale used for filling portable containers of oil products will provide the code (signal) for preventing overfilling and discharge. The scale is calibrated quarterly by a service technician using certified standard weights per National Institute of Standards and Technology (NIST) methods.

9.1.3. Inspection of the level gauges is conducted monthly. Inspection of overfill alarms will be conducted monthly. This will include testing of the alarm monthly.

9.1.4. Visual inspections of the storage tanks and the containment area will be conducted monthly and recorded on inspection form SF029CGc.doc-CE. Inspections will include tank condition, including signs of corrosion, deterioration, discharges and collection of material inside and outside the storage tank containment area. Piping will be inspected, including flange joints, expansion joints, valve bodies, pipeline supports, locking of valves, and metal surfaces, as accessible per SOP SF029CG. [112.8(d)(4)]

9.1.5. Tank walls, seams, and flanges will also be inspected for excessive corrosion.

9.1.6. Storage Tank Integrity [112.8(c)(6)]

9.1.6.1. Storage tanks are tested every 5 years for wall thickness. All storage tanks are vertical fixed-roof tanks. Testing will be performed ultrasonically per applicable sections of API 653, and results will be compared to previous readings.

9.1.6.2. Ultrasonic roof thickness will be measured every 5 years per API 653 to establish roof thickness and to compare with previous readings.

9.1.6.3. Inspections will be signed, dated, and maintained for 5 years, or for the last two measurements.

9.1.6.4. Hydrite shall develop and maintain a schedule for ensuring that storage tanks are tested every 5 years.

10. Personnel Training and Discharge Prevention Procedures [112.7(f)]

10.1. Preventive and routine maintenance programs are used to preclude equipment failures. These programs are supported by employee training, which emphasizes standard operating procedures and safe work practices. [112.7(f)(1)]

10.1.1. Facility personnel have been instructed by management in discharge prevention, the operation and maintenance of oil pollution prevention equipment, and pollution control laws and regulations. Specific annual training includes the following:

10.1.1.1. Tank Truck Bulk Unloading Procedures (RC003CG) - affected employees

10.1.1.2. Tank Truck Bulk Loading Procedures (SP003CG) - affected employees

10.1.1.3. Container Inspection and Filling Operations (PR002AF) - affected employees

10.1.1.4. Lock-Out/Tag-out (TX014AF) - affected employees

10.1.1.5. Facility Contingency Plan (ER006 - 010) - all employees

10.1.1.6. Emergency Response Procedures (SOP Vol. 7.0) - affected employees

10.1.1.7. Chemical Release Reporting (CR001AF) - all employees

10.1.1.8. Review of the SPCC Plan will be completed for facility personnel involved with handling oil products. (ER003CE) all employees.

10.1.1.9. Employees will be trained within 30 days of starting work.

10.1.2. Training records are maintained at the facility in individual employee training records.

10.1.3. Joe Weishar, Operations Manager, is responsible for the facility's Oil Spill Prevention and reports to Corporate Management. [112.7(f)(2)]

10.1.4. During annual SPCC training, any known discharges, failures, or malfunctions or changes will be discussed. [112.7(f)(3)]

11. Security [112.7(g)]

11.1. All active portions of the facility involved with handling, processing or storing oil are fenced and locked when the facility is not in production. [112.7(g)(1)]

11.2. All master flow and drain valves on the tanks and transfer systems are locked in the closed position when the facility is not in use. [112.7(g)(2)]

11.3. The pump controls are all locked out when the facility is not in use. This is accomplished by redundant locking of the motor room and the plant security locks. Only trained (authorized) personnel may operate the pump controls. Controls are located within the secured portion of the property. [112.7(g)(3)]

11.4. All loading/unloading connections are capped when the piping is not in service or in standby service for an extended period of time. The transfer point is marked with the origin of the terminal connection. [112.7(g)(4) and 112.8(d)(2)]

11.5. The facility has adequate lighting to allow visual inspection for discovery of releases. Lighting is located in the tanker loading/unloading dock, the storage tank dike areas, transfer areas, and throughout the property to discourage acts of vandalism. [112.7(g)(5)]

12. Tank Truck Loading/Unloading requirements [112.7(h)]

12.1. Tanker trucks of oil products are loaded/unloaded at one of multiple loading docks, as noted on the facility diagram. The largest compartment of oil products to be unloaded is 7,000 gallons, and 8,100 gallons of containment at the north loading dock, and the containment for the rest of the facility provides adequate containment as described in Subsection 3.6. [112.7(h)(1)]

12.2. Loading of containers of oil products occurs at the west-central loading dock. The dock provides several hundred gallons of primary containment, which could then discharge off the northwest containment area as described in Subsection 3.6. [112.7(h)(1)]

12.3. Hydrite uses physical barriers/controls to prevent vehicles from departing before a complete disconnection of transfer lines has occurred. Hydrite requires the use of wheel chocks for all loading/unloading activities, and has posted signs to that effect at the south loading dock. [112.7 (h)(2)]

12.4. Prior to filling and departure, tankers will be inspected for leaks and fitness of use, and to ensure that valves are in the closed position, and that transfer hoses are capped. Specific items are detailed in the Hydrite Tank Truck Bulk Loading SOP (SP003AF) and Tank Truck Bulk Unloading SOP (RC003AF). No railcars containing oil products are handled at this facility. [112.7(h)(3)]

13. Repair, alteration, or change in service of field-constructed containers (including tanks) [112.7(i)]

13.1. If a field constructed container/tank undergoes repair, alteration, reconstruction, or a change in service that might affect the risk of failure due to brittle fracture or other catastrophe, the container (tank) will be inspected and evaluated for risk of discharge or failure.

13.1.1. There are no field-constructed containers/tanks for oil products at the facility.

14. Other Prevention Standards [112.7(j)]

14.1. There are no other prevention standards that are required to be followed. However, the Wisconsin Department of Commerce requires secondary containment of tanks storing flammable or combustible materials to contain at least 125 percent of the volume of the largest tank.

14.2. The facility is covered under the Occupational Safety and Health Administration (OSHA) Process Safety Management regulation for processing flammable materials under temperature and pressure. In those cases, a hazard operability study (HAZOP) is performed prior to initiating any process.

15. General Requirements

15.1. Facility drainage [112.8(b)(1-3)]

15.1.1. Drainage from the diked tank areas is designed to have a capacity to contain releases and rainwater. The diked areas are equipped with gravity drains which allow all containment areas to be drained to the south containment area. The south containment area requires a manual pump to empty it, and has no valves, weirs, or gates to allow for run-off.

15.1.2. 40 CFR 112.8(b)(4-5) not applicable.

15.2. Bulk storage containers [112.8(c)(1)]

15.2.1. All oil product storage tanks and associated piping and transfer pumps are aboveground and are made of carbon or stainless steel.

15.2.2. These tanks are compatible for the oil products they contain.

15.2.3. Tanks are equipped with conservation and emergency escapement vents.

15.2.3.1. These vents are suitable for normal fill and withdrawal rates.

15.2.4. Liquid that may be discharged through a vent is captured in the tank farm's secondary containment and is prevented from overflowing into non-contained areas.

15.3. Containment

15.3.1. Tanks are located in the tank farms surrounded by sealed concrete dikes to contain any leaks. Transfer lines run above either the tank containment or over the plant surface drainage system that is contained, so any releases from bulk loading/unloading would be captured within the containment areas. [112.8(c)(2)] The plant is not located in an area subject to periodic flooding.

15.3.1.1. This areas are capable of holding the volume of the largest tank, runon within the dike, as well as expected precipitation. The area has been sized to contain at least 125 percent of the volume of the largest storage tank per Wisconsin Department of Commerce requirements.

15.3.1.2. Containers (drums and totes) are stored within the facility on an impervious floor that will contain the release of the largest container (360 gallons).

15.4 The containment area may only be pumped out manually. [112.8(c)(3)]

15.4.1. Whenever rainwater has collect in the containment dikes, it is visually inspected for visual signs of contamination.

15.4.1.1. If oil products are known to be present in rainwater, the rainwater will be pumped into containers for treatment and/or off-site disposal. There is no bypass valve.

15.4.1.2. If visible inspection reveals the potential presence of oil products, the rainwater (wastewater) will be sampled and analyzed to determine if any solvents are present. All rainwater collected in the oil tank containment will be analyzed for the presence of solvents per the rainwater sampling analysis and discharge SOP (PR034CG). Should the water meet the requirements of the Madison Metropolitan Sewerage District (MMSD), the rainwater will be discharged in accordance with the approval from the MMSD.

15.5. No buried or partially buried oil storage tanks are used on-site. [112.8(c)(4) & (5)]

15.6. Container testing will be performed routinely. [112.8(c)(6)] Portable containers will be inspected as described in Subsection 9.1.1., and bulk storage tanks will be inspected as described in Subsection 9.1.6.

15.7. No internal heating coils are used for oil products. [112.8(c)(7)]

15.8. Overflow Prevention [112.8(c)(8)]

15.8.1. All bulk oil product storage tanks will be equipped with a high level alarm or level gauge to prevent overfilling. The alarms will be tested monthly.

15.8.1.1. The ASTs located in the tank farm are equipped with high level alarms or level gauges. The level gauge of each tank will be checked prior to filling, to ensure that each storage tank has adequate capacity for the delivery.

15.8.2. Container (drum and tote) overfilling will be prevented by use of the scale as described in Subsection 9.1.2. The unit provides a direct reading output to the filler to ensure that they do not overfill the containers.

15.8.2.1. The scale is calibrated per Subsection 9.1.2. and is monitored during filling.

15.9 Effluent treatment [112.8(c)(9)]

15.9.1. There is no effluent treatment of oil products or rainwater containing oil products on-site for discharge to the wastewater treatment system or discharge to waters of the State. No oil products can discharge in the wastewater treatment elementary neutralization system. Collected material in the oil product containment areas may only be removed using manual pumps.

15.10. Spill Response [112.8(c)(10)]

15.10.1. Hydrite personnel will follow the spill response procedure as prescribed in the facility's contingency plan and Chemical Release Response SOPs. This shall provide for promptly removing accumulations of oil from diked areas. Spill response kits, pumps and containers may be used for these operations. The plant has their own trained emergency response team.

15.10.2. In addition to responding to actual releases, the facility will promptly respond to irregularities that are detected during the course of inspections. These may include repair or replacement, or additional testing of on-site equipment.

15.11. Containment of Mobile or Portable Containers [112.8(c)(11)]

15.11.1. Portable containers (drums and totes) are stored inside of the concrete buildings, and the largest unit is 360 gallons. These containers are used to store new and used oil for maintaining pumps and other equipment.

15.11.2. Additional containment may also be obtained by using sorbent materials, sumps, curbing, or booms.

15.12. Transfer Operations [112.8(d)]

15.12.1. There is no buried piping associated with oil products at this site. [112.8(d)(1)]

15.12.2. [112.8(d)(2)] See Subsection 3.5.1.6.

15.12.3. [112.8(d)(3)] See Subsection 3.5.1.3.

15.12.4. [112.8(d)(4)] See Subsection 9.1.4.

15.12.5. [112.8(d)(5)] The plant is laid out in such a manner that vehicular traffic would not contact aboveground pipelines.

16. This facility is not subject to 40 CFR 112.10, 112.11, and 112.12.

17. Plan Updates and Certifications

17.1. The SPCC Plan must be amended whenever there is a change in facility design, construction, operation, or maintenance that materially affects the facility's potential for the discharge of oil into or upon navigable waters or adjoining shorelines.

17.2. The SPCC Plan must be reviewed and evaluated every 5 years for more effective prevention and control technology that would significantly reduce the likelihood of a spill event. Changes to the Plan should be submitted to the Regulatory Specialist II to be incorporated into the existing Plan.

17.3. All technical amendments to the SPCC Plan must be reviewed and certified by a Professional Engineer (P.E.). Technical amendments include the replacement, reconstruction, or movement of containers; replacement, reconstruction, or installation of piping systems; or construction or demolition that might alter secondary containment structures. These amendments must be made within six months of the change occurring, and must be implemented as soon as possible, but not later than six months following preparation of the amendment. Non-technical amendments, such as updating contact information, do not need to be certified by a P.E.

17.4. The Certification of Substantial Harm Determination Form should be signed by the Operation Manager of the facility or a person of equal responsibility. This certification is incorporated into the SPCC Plan and should be maintained in the Emergency Response Manual.

18. CERTIFICATION: I hereby certify that I have examined the facility and, being familiar with the provisions of 40 CFR Part 112, including the August 17, 2002, rule change, that I or my designated agent have visited and examined the facility, that this SPCC Plan has been prepared in accordance with good engineering practices, including consideration of applicable industry standard, and with the requirements of the Part, that procedures for required inspections and testing have been established, and that the Plan is adequate for the facility.

I have completed my review and evaluation of the SPCC Plan for the Hydrite Chemical Co., facility located at 144 N. Main Street, Cottage Grove, Wisconsin, and have amended the plan as a result.

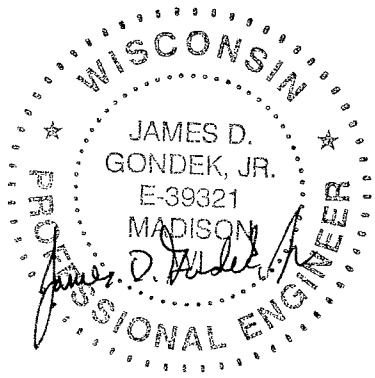
Engineer: James D. Gondek, Jr.

Signature: James D. Gondek, Jr

Registration Number: 39321

State: Wisconsin

Date: 7/19/10



SPILL PREVENTION, CONTROL AND COUNTERMEASURE PLAN MANAGEMENT APPROVAL [40 CFR 112.7]

I hereby certify that the necessary resources to implement this Plan have been committed.

Paul F. Honkamp
Paul F. Honkamp, Vice-President/Gen. Mgr.

8/23/10
Date

CERTIFICATION OF SUBSTANTIAL HARM DETERMINATION FORM

Facility Name: Hydrite Chemical Co.
Facility Address: 114 North Main St.
Cottage Grove, WI 53527

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 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*) 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 10, 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*) such that a discharge from the facility would shut down a public drinking water intake**?

   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 spill 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.

Signature _____ Title General Manager - Process Organics

Joseph J. Weishar 7/15/10

Name (please type or print) Date

* If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

** 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 Cross-Referencing Checklist [40 CFR 112.7]

Section	Item	Citation	Description
SOP ER007	1.	--	Provide operator and owner names, addresses, and telephone numbers.
SOP ER007	2.	--	Provide the names and telephone numbers of facility contacts.
3	3.	--	Describe the day-to-day operations and facility background.
3, Figure 1	4.	--	Describe receiving water/probable flow paths.
1	5.	--	Comply with Part 112.
1.1	6.	§112.3	Prepare a written Spill Prevention, Control, and Countermeasure Plan.
18	7.	§112.3(d)	Have a licensed Professional Engineer review and certify the Spill Prevention, Control, and Countermeasure Plan.
18	8.	§112.3(d)(1)(i)	Professional Engineer certification; attest familiarity with requirements of Part 112.
18	9.	§112.3(d)(1)(ii)	Professional Engineer certification; attest that engineer or an authorized agent has visited and examined the facility.
18	10.	§112.3(d)(1)(iii)	Professional Engineer certification; attest that the Plan has been prepared in accordance with good engineering practices.
18	11.	§112.3(d)(1)(iv)	Professional Engineer certification; attest that procedures for inspections and testing have been established.
18	12.	§112.3(d)(1)(v)	Professional Engineer certification; attest that the Plan is adequate for the facility.
1.3	13.	§112.3(e)(1)	Keep a copy of the Plan at the facility.
SOP ER007	14.	§112.3(e)(2)	Make a copy of the Plan available to the Regional Administrator for review.
1.2	15.	§112.7(a)(1)	Provide a discussion of the facility's conformance with Part 112.
1.2	16.	§112.7(a)(2)	Comply with the requirements of Part 112.
3 Figure 1	17.	§112.7(a)(3)	Describe physical layout (with diagram), which marks the location and contents of each container, and includes transfer stations.
Table 1	18.	§112.7(a)(3)(i)	Address type of oil in each container and its storage capacity.
3.5	19.	§112.7(a)(3)(ii)	Address discharge prevention measures, including procedures for the routine handling of products.
3.6	20.	§112.7(a)(3)(iii)	Address discharge and drainage physical controls (secondary containment) around containers and procedures for the control of discharge.
3.7	21.	§112.7(a)(3)(iv)	Address countermeasures for discharge discovery, response, and cleanup.
3.7	22.	§112.7(a)(3)(v)	Address methods of disposal of recovered materials.
SOP ER007	23.	§112.7(a)(3)(vi)	Include contact list and telephone numbers for the facility response coordinator; NRC; cleanup contractors; and all appropriate federal, state, and local agencies who must be contacted in case of a discharge.
SOP CR001-AF	24.	§112.7(a)(4)	Provide information and procedures for reporting a discharge.
SOP CR001-AF	25.	§112.7(a)(5)	Organize discharge procedures in a way that will make them readily available in case of an emergency.
6	26.	§112.7(b)	Include a prediction of the direction, rate of flow, and total quantity of oil that could be released as a result of each type of major equipment failure.

Section	Item	Citation	Description
7	27.	§112.7(c)	Provide appropriate containment and/or diversionary structures.
8	28.	§112.7(d)	Provide a description and justification for not meeting the containment requirements.
SOP ER006-10CE	29.	§112.7(d)(1)	Include oil spill contingency plan.
18	30.	§112.7(d)(2)	Include a written commitment of manpower, equipment, and materials to control a discharge.
9, SOP SF029-CE	31.	§112.7(e)	Conduct inspections and tests required, and maintain records.
10	32.	§112.7(f)(1)	Train oil-handling personnel in operations and maintenance to prevent discharge.
10.1.3	33.	§112.7(f)(2)	Designate a person who will be responsible for preventing discharges and reporting to management.
10.1.4	34.	§112.7(f)(3)	Schedule and conduct discharge prevention briefings for oil-handlers.
11.1	35.	§112.7(g)(1)	Fully fence each facility handling, processing, or storing oil; and lock/guard the facility entrance when not in operation.
11.2	36.	§112.7(g)(2)	Ensure that master flow and drain valves have adequate security measures and are in the closed position when not in use.
11.3	37.	§112.7(g)(3)	Lock the "start" control on each oil pump, and make it accessible to only authorized personnel.
11.4	38.	§112.7(g)(4)	Securely cap or blank-flange loading/unloading connections, oil pipelines, or facility piping.
11.5	39.	§112.7(g)(5)	Provide adequate facility lighting.
12	40.	§112.7(h)(1)	Design and install sufficient secondary containment for loading/unloading operations.
12.3	41.	§112.7(h)(2)	Provide adequate warning/prevention systems at loading/unloading area to prevent vehicles from departing before transfer lines are disconnected.
12.4, SOP SP003 AF, RC003 AF	42.	§112.7(h)(3)	Prior to the filling and departure of the tank car/truck, inspect for discharges at all outlets to prevent liquid discharge during transit.
13	43.	§112.7(i)	Evaluate field-constructed aboveground containers that undergo maintenance for risk of discharge or failure.
1	44.	§112.7(j)	Include a complete discussion on conformance with these regulations.
3.2.1	45.	§112.7(k)	Oil-filled operational equipment
15	45.	§112.8(b)(1)	Restrain drainage from diked areas by valves to prevent discharge.
15	46.	§112.8(b)(2)	Use valves of manual, open-and-closed design, for drainage of diked areas.
15	47.	§112.8(b)(3)	Design facility drainage systems from undiked areas to flow into ponds, lagoons, or catch basins.
NA	48.	§112.8(b)(4)	If facility drainage does not meet (b)(3), then design to contain oil on-site.
NA	49.	§112.8(b)(5)	Use lift pumps, if pumps are needed, for continuous treatment systems.
15.2	50.	§112.8(c)(1)	Ensure that oil storage container material is compatible with container contents under operating pressure and temperature.
15.3	51.	§112.8(c)(2)	Provide secondary containment for the entire contents of largest tank and sufficient freeboard to contain precipitation.
15.3	52.	§112.8(c)(3)	Do not allow drainage of uncontaminated rainwater from diked areas into a storm drain or other surface water system unless requirements of (i)–(iv) are met.
15.5	53.	§112.8(c)(4)	Protect any completely buried metal tank from corrosion.
15.5	54.	§112.8(c)(5)	Protect any partially buried metal tank from corrosion.

Section	Item	Citation	Description
15.6, 9.1	55.	§112.8(c)(6)	Test each aboveground container on a regular schedule and when material repairs are made.
15.7	56.	§112.8(c)(7)	Control leakage through internal coils by monitoring.
15.8	57.	§112.8(c)(8)	Engineer or update each container installation in accordance with good engineering practice to avoid discharge by providing (i) high liquid level alarm, (ii) high liquid level pump cutoff, (iii) direct audible or code signal, (iv) a fast response system, or (v) regular testing of liquid level sensing devices.
15.9	58.	§112.8(c)(9)	Observe effluent treatment facilities frequently enough to detect possible system upsets.
15.9	59.	§112.8(c)(10)	Promptly correct observed discharges.
15.11	60.	§112.8(c)(11)	Position or locate mobile or portable oil storage containers to prevent a discharge.
15.12	61.	§112.8(d)(1)	Provide protective coating and wrapping for buried pipes.
3.5.1.6	62.	§112.8(d)(2)	Cap or blind-flange the terminal connection at the transfer point.
3.5.1.3	63.	§112.8(d)(3)	Properly design pipe supports and joints.
9.1.4	64.	§112.8(d)(4)	Regularly inspect all aboveground valves, piping, and appurtenances.
15.12.5	65.	§112.8(d)(5)	Caution all vehicle drivers entering the facility about aboveground piping and other oil transfer operations.
18	66.	§112.20(e)	Certification of the applicability of Substantial Harm Criteria Checklist.

Table 1 -- Cottage Grove East Oil Storage Containers

Aboveground Storage Tanks				
Tank #	Location	Material of Construction	Volume (gallons)	Contents
159	100 Tank Farm	SS	7,500	Laquer Thinner
160	100 Tank Farm	CS	15,545	Various
163	100 Tank Farm	SS	15,000	Various
170	100 Tank Farm	SS	4,500	Laquer Thinner
171	100 Tank Farm	SS	7,500	Various
172	100 Tank Farm	CS	15,545	Acetone
173	100 Tank Farm	CS	15,545	Methanol
175	100 Tank Farm	CS	6,000	Toluene
176	100 Tank Farm	SS	15,000	Various
180	100 Tank Farm	SS	4,500	Lacquer Thinner
201	200 Tank Farm	SS	7,500	Process Distillate
202**	200 Tank Farm	SS	6,650	Crude Recycle Solvent
203**	200 Tank Farm	SS	6,650	Crude Recycle Solvent
204**	200 Tank Farm	CS	6,650	Hazardous Waste Storage
205**	200 Tank Farm	CS	6,650	Hazardous Waste Storage
207	200 Tank Farm	SS	5,000	Various
209	200 Tank Farm	SS	4,500	Finished Recycled Solvent
210	200 Tank Farm	SS	5,000	Finished Recycled Solvent
212**	200 Tank Farm	CS	6,650	Crude Recycle Solvent
213**	200 Tank Farm	CS	6,650	Crude Recycle Solvent
214**	200 Tank Farm	CS	6,650	Crude Recycle Solvent
215**	200 Tank Farm	CS	6,650	Crude Recycle Solvent
218**	200 Tank Farm	CS	6,650	Crude Recycle Solvent
219	200 Tank Farm	CS	6,650	Crude Recycle Solvent
220	200 Tank Farm	CS	6,650	Crude Recycle Solvent
221**	200 Tank Farm	CS	6,650	Crude Recycle Solvent
222**	200 Tank Farm	CS	6,200	Waste Water
223	200 Tank Farm	SS	5,264	Finished Recycled Solvent
224	200 Tank Farm	SS	15,000	Methanol
225	200 Tank Farm	SS	4,600	Finished Recycled Solvent
226	200 Tank Farm	SS	4,600	Finished Recycled Solvent
227	200 Tank Farm	SS	4,600	Finished Recycled Solvent
228**	200 Tank Farm	CS	7,500	Waste Water
229	200 Tank Farm	CS	7,500	Finished Recycled Solvent
230	200 Tank Farm	SS	7,800	Various
231	200 Tank Farm	SS	3,650	Finished Recycled Solvent
232	200 Tank Farm	SS	3,650	Finished Recycled Solvent
233	200 Tank Farm	SS	10,000	Lacquer Thinner
234	200 Tank Farm	SS	4,135	Finished Recycled Solvent
235**	200 Tank Farm	CS	7,500	Waste Water
236	200 Tank Farm	SS	7,500	Finished Recycled Solvent
237	200 Tank Farm	CS	5,942	Heptane
239	200 Tank Farm	SS	3,650	Finished Recycled Solvent
240	200 Tank Farm	SS	5,264	Various

Table 1 -- Cottage Grove East Oil Storage Containers

Aboveground Storage Tanks				
Tank #	**Location**	**Material of Construction**	**Volume (gallons)**	**Contents**
241**	200 Tank Farm	CS	6,650	Crude Recycle Solvent
242**	200 Tank Farm	CS	6,650	Crude Recycle Solvent
345	300 Tank Farm	CS	10,000	n-Butyl Acetate
349	300 Tank Farm	CS	5,093	Various
352	300 Tank Farm	CS	5,093	Lacquer Thinner
353	300 Tank Farm	CS	10,000	Waste Water
354	300 Tank Farm	CS	20,151	Waste Water
401	400 Tank Farm	SS	19,750	Waste Fuel
402	400 Tank Farm	SS	19,750	Waste Fuel
404	400 Tank Farm	SS	25,000	Various
405	400 Tank Farm	CS	16,000	Flammable Waste Water
406	400 Tank Farm	CS	16,000	Flammable Waste Water
412	400 Tank Farm	CS	14,980	Methanol
418	400 Tank Farm	SS	12,000	Styrene
420	400 Tank Farm	CS	20,151	Various
		TOTAL =	530,058	gallons

Drum / Tote Containers				
Quantity / Size	**Location**	**Material of Construction**	**Volume (gallons)**	**Contents**
2,000 (max) 55-gal Drums	South Warehouse	Steel	110,000	Hazardous Waste Storage
~8 55-gal Drums	Maintenance	Steel	440	New and used hydraulic and lubrication oil for equipment maintenance
360-gal Tote	Maintenance	Steel	360	New and used hydraulic and lubrication oil for equipment maintenance
4,368 (max) 55-gal Drums	CE100 Warehouse	Steel	240,240	Hazardous Waste Storage in the West Warehouse
		TOTAL =	351,040	gallons
		FACILITY OIL STORAGE =	**881,098**	**gallons**

Notes:

1. CS = carbon steel; SS = stainless steel
2. ** Indicates the storage tank is RCRA permitted to contain hazardous waste.
3. The contents of the tanks can vary over time. Examples of oil products included by the categories listed above include waste containing mineral spirits, paints/varnishes, waste oil, and other flammable liquids which could be considered an oil.

HYDRITE CHEMICAL CO. STANDARD POLICY

Original Policy Effective Date: 3/1/96	Supersedes Policy Dated: 5/1/08	Effective Date: 4/1/10	Policy No.: ER004AF
Facility: AF	Approval Name & Signature: Catherine Hay-Bassett		Revision No.: 6
Review Frequency: 2 Years	Approval Title: Manager, Technical Regulatory Services		Page 1 of 2
Without a green control label to the right of this statement, this policy is a draft. A draft or an uncontrolled copy cannot be used as a guide in decisions and discussions relating to business.			If this block is black, this is NOT a controlled document
Revised Section(s): Associated materials, changed title of preparer of quarterly spill summaries.			

I. **TITLE:** SPILL ELIMINATION POLICY

II. **KEY WORDS:** Spill, Release, Elimination

III. **PURPOSE:** The goal is to completely eliminate chemical releases, whether incidental or a emergency response, within the operating facilities.

IV. **APPLICATION:** This policy applies to any employee who recognizes, evaluates, or controls the release of chemicals as a result of chemical handling operations.

V. **DEFINITIONS:** Chemical Release: The "spilling, leaking, pumping, pouring, emitting, emptying, or dumping" of a hazardous substance. As a rule of thumb, if a substance has come out of the container in which it was stored, and it is not part of the process, a spill has occurred.

VI. **ASSOCIATED MATERIAL(S):**
Spill Management Plan in Emergency Response Manual (Volume 7.0)
Chemical Release Reporting Manual (Volume 6.0)
Corrective o& Preventive Action SOP (QA008AF)
Management of Change SOP (QA005AF)

VII. **POLICY:**

1. Policy

1.1. The occurrence of a chemical release has a negative impact in several areas including:

1.1.1. Unnecessary exposure to chemicals by Hydrite Chemical Co. employees, as well as by outside responders.

1.1.2. Loss of production time during spill cleanup and reporting.

1.1.3. Unnecessary waste generation, handling, disposal expense and disposal liability.

1.1.4. Loss of inventory/production capital.

1.1.5. Potential environmental damage.

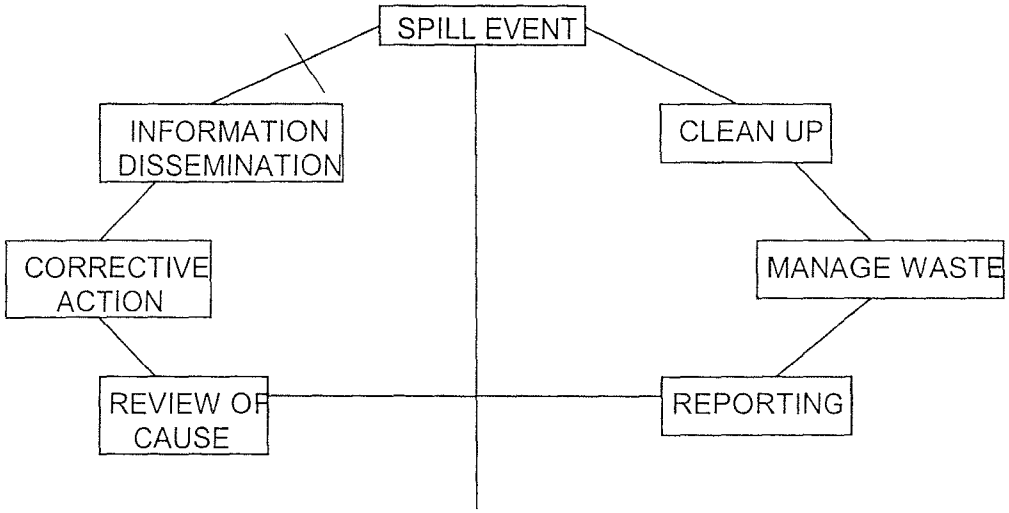
1.2. The goal of spill elimination will be achieved by "closing the loop" on spill management. Traditional spill response involved cleaning up the spilled material, managing the waste, and reporting to government agencies.

1.3. Spill management will become a closed loop process by incorporating a review of the cause of the incident, followed by implementation of an appropriate corrective action strategy. The Chemical Release Reporting Manual includes procedures for reviewing the cause of spills and determining appropriate corrective action. Corrective actions are tracked by one of three methods, depending on the extent of the action required. In increasing order of severity, these procedures are as follows: Maintenance work order system, Corrective or Preventive Action Procedure and Management of Change.

1.4. By correcting the problem, the potential for a reoccurrence of such an incident will be substantially reduced.

1.5. Finally, information must be disseminated throughout the company in an attempt to preclude a chemical release as a result of equipment or operating procedures used in other similar processes.

1.5.1. This process is illustrated below:



1.6. Additional measures that are taken to prevent chemical releases include hazard analyses of processes involving highly hazardous materials, preventive and routine maintenance programs to preclude equipment failures, and on-going employee training programs emphasizing standard operating procedures and safe work practices.

1.7. Progress made toward the attainment of the goal of eliminating chemical releases is assessed quarterly by the Manager, Technical Regulatory Services. The report will include a summary of the amount spilled, cost to the company and cause of each release. Any trends or similarities in recent spill activity will be noted. This report will be provided to branch and corporate operations management, regional SQRA coordinators and SQRA management.

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 5/1/95	Supersedes SOP Dated: 8/1/09	Effective Date: 6/1/11	Procedure No.: ER006CE
Facility: CE	Approval Name & Signature: Dave Volenberg Dave Volenberg		Revision No.: 15.1
Review Frequency: 1 Year	Approval Title: Safety Manager		Page 1 of 31
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			If this block is black, this is NOT a controlled document

I. **TITLE:** CONTINGENCY PLAN: EMERGENCY EQUIPMENT AND PERSONNEL RESPONSIBILITIES

II. **KEY WORDS:** Amendments, Equipment, Facility Description, Fire, Hazards, Maintenance, Personnel, Spills

III. **PURPOSE:** The purpose of this SOP is to provide facility personnel with specific information as it relates to implementing the contingency plan, describing facility emergency equipment, and designating personnel responsibilities in the event of an emergency.

IV. **APPLICATION:** This SOP applies to all personnel who work at the Cottage Grove East facility.

V. **DEFINITIONS:**

Combustible Gas Indicator: A detector indicating 10% of the lower explosive limit of airborne materials. Also known as an LEL Meter or a Multigas Meter.

Crisis: An event that has or exhibits the potential to significantly impact the operability of an individual facility or the company as a whole, or, to pose a significant health, environmental, financial or legal threat.

Incident: Any event which occurs which has the potential to cause an injury, environmental release or property damage, regardless of whether any injury, release or property damage actually occurred.

Incident Commander: The person who directs operations during an incident; may be referenced as "Emergency Coordinator" in associated SOP's

Spill Response Q-Card: The Spill Response Q-Card attached to this document serves as the Chemical Release Worksheet referenced in the Contingency Plan: Spill Management Plan SOP.

VI. **ASSOCIATED MATERIAL(S):**

Calibration of MSA Passport And Solaris Multi Gas Meters (MN016AF)
Calibration of Photovac 2020 Photo Ionization Detector (MN014AF)
Crisis Management Plan SOP (ER013AF)
Contingency Plan: Overview (ER001SF)
Contingency Plan: Emergency Procedures SOP (ER009CE)
Contingency Plan: Spill Management Plan (ER010AF)
Spill Prevention, Control and Countermeasure Plan SOP (ER03CE)
Emergency Response Plan (ER002AF)
Spill Elimination Policy (ER004AF)
Mandatory Training Requirements SOP (TX035AF)
Facility Contingency Plan (TX002AF)
Chemical Release Reporting Manual (CR001AF)
Internal Facility Compliance Inspection & Corrective Action Procedure (SF029CG)
Emergency Response – Initial and 8 Hour Refresher Training (TX041AF)
Spill Response Q-Card (included)
Incident Command Structure for Emergency Response Team (included)
Checklists for Incident Commander & Emergency Response Team Members (included)

VII. PROCEDURE:

1. SITE DESCRIPTION

1.1 Hydrite Chemical Co. is located at 114 North Main Street, Cottage Grove, WI 53527.

1.2 The facility telephone number is (608) 839-4571 or (60) 839-8100.

1.3 The primary business at this facility is chemical manufacturing and distribution and hazardous waste treatment, storage, and disposal. Site also contains a laboratory annex and warehouses.

1.4 Primary Designated Assembly Area: Fire/Spill –Southwest corner of parking area south of Cottage Grove East office.

1.5 Secondary Designated Assembly Area: (Fire/Spill—when the primary area is obstructed by fire, spill, or fumes, or when wind is blowing N/NE to W/SW) – Northeast corner of the Employee Center Parking Lot. Key to gate is posted in Annex 3.

1.6 Designated Assembly Area for Plant & Office: Tornado – Basement, office building.

1.7 Designated Assembly Area for Laboratory Annex: Tornado – Interior office and bathrooms in North office area of Annex Building A.

2. PURPOSE

2.1. The purpose of this contingency plan is to minimize hazards to human health and the environment from fires, explosions, or any unplanned release of hazardous materials or hazardous waste to air, soil or surface water, in accordance with 40 CFR 264.56, Wis. Adm. Code NR630.22 and CFR 1910.120 (q). Any incident of fire, medical emergency or chemical spill in the facility shall be handled as required by this document. In all cases, the Incident Commander shall be responsible for emergency procedures outlined in 40 CFR Part 264.56 and Wis. Adm. Code NR 630.22(2).

2.2. The local fire department will be routinely invited to visit the facility to familiarize themselves with the layout of the facility, associated hazards, and entrances to the facility.

2.3. This facility may have the following hazardous wastes on-site:

Waste Description	EPA Code
Ignitable waste solvents (flash point less than 140 degrees F)	D001
Corrosive liquids (pH $\leq$ 2 or $\geq$ 12.5)	D002
Reactive waste	D003
Toxic metals and organic compounds	D004 - D011, D018, D019, D021 - D026, D028, D029, D035, D036, D038 - D040, D043F
Spent halogenated and non halogenated solvents	F001 - F003, F005
Halogenated and non halogenated sludges and still bottoms	K024, K049, K050, K052, K086, K087, K093 – K096
Other toxic and/or ignitable organic compounds	U002, U003, U008, U057, U079, U080, U123, U154, U190, U210, U213, U220, U226, U228, U239

Note: Small quantities of various other hazardous chemicals may be present in the lab.

3. EMERGENCY EQUIPMENT

3.1 The emergency equipment for Hydrite Chemical Co. must comply with the requirements of 40 CFR Part 264.32. These requirements will be exceeded when deemed necessary by the Incident Commander. The emergency equipment and their respective categories are shown below. A facility layout indicating the equipment location is included in the "Facility Layout and Drawings" SOP.

3.1.1. TELEPHONE SYSTEM

3.1.1.1. The complete telephone system will have several telephones located throughout the facility, each with the capability of dialing for internal or external emergency assistance. These phones are also equipped with a plant-wide intercom system, to directly notify plant personnel of any accident.

3.1.2. ALARM SYSTEM

3.1.2.1. There is an air horn alarm located in the plant to alert employees of immediate danger. This system can be activated at various stations throughout the plant to alert employees of immediate danger.

3.1.2.2. Drawings posted on the control room exit doors show the location of manual alarm activation sites.

3.1.2.3. There is also an overhead paging alarm system that can be activated at any phone station throughout the facility by the employees.

3.1.3. AIR MONITORING EQUIPMENT

3.1.3.1. To estimate the airborne concentrations of specific gases and vapors before a response, or to monitor the concentrations during a response, Draeger air sampling tubes (short-term colorimetric tubes) may be employed. The supply of Draeger tubes, corresponding equipment, and instructions for use are kept in the plant office. The inventory of Draeger tubes will be maintained so that, at a minimum, the following gases/vapors can be detected:

3.1.3.1.1. acetic acid, acetic anhydride, acetone, ammonia, n-butyl alcohol, butyl acrylate, carbon monoxide, chlorine, diethylamine, dimethylamine, ethyl alcohol, ethyl acrylate, ethylamine, ethylenediamine, formaldehyde, heptane, hexane, hydrochloric acid, hydrogen fluoride, hydrogen peroxide, isopropyl alcohol, isopropylamine, methanol, methylene chloride, methyl ethyl ketone, nitric acid, phenol, n-propyl alcohol, styrene, sulfur dioxide, sulfuric acid, toluene, trichloroethylene, triethylamine, vinyl acetate, and xylene

3.1.3.2. To determine if airborne vapors are present in concentrations above 10% of the lower explosive limit (LEL), a combustible gas indicator (LEL or multigas meter) may be used.

3.1.3.3. To estimate the presence of volatile organic compounds, a photo ionization detector (PID) may also be employed.

3.1.4. SPILL CONTROL AND CLEAN-UP EQUIPMENT

3.1.4.1. VACUUM TRUCK: Vacuum trucks are available from outside contractors. These trucks are capable of pumping up any spilled liquids.

3.1.4.2. ABSORBENT/DAMMING MATERIAL: Various materials such as pig pads and other inert, nonflammable absorbents are on-site at designated stations for spill control. This material is capable of absorbing small liquid spills, thereby allowing cleanup of solid phase material rather than liquid.

3.1.4.3. EXPLOSION-PROOF PUMPS: These portable pumps are used for pumping up large liquid spills. The pumps are safe for use with flammable materials.

3.1.4.4. TOOLS: Crescent wrenches, vise grips, pliers, tin snips, pipe wrenches, channel locks, screwdrivers, shovels, etc. are kept in the Maintenance area. Hand tools can be used to make equipment repairs.

3.1.4.5. BOBCAT (Front-end loader): The bobcat is kept in the Maintenance area, and can be used for shoveling up large spills of dry material, or to remove contaminated soil. Before the Bobcat is used where vapors may be present, the area should be tested using a combustible gas indicator to determine that the vapors are not within the explosive range.

3.1.4.6. DECONTAMINATION EQUIPMENT: Tools and materials needed for cleaning spill response equipment and personal protective equipment following a spill cleanup are kept in the plant.

3.1.4.7. OVERPACK DRUMS: These drums are kept near the indoor truck dock and near the solvent drum filling area, and may be used for secondary containment of a leaking drum.

3.1.5. FIRE PROTECTION EQUIPMENT

3.1.5.1. HAND-HELD PORTABLE FIRE EXTINGUISHERS (Dry Chemical): Portable fire extinguishers are strategically located throughout the plant and office. These extinguishers can be used to put out incipient fires.

3.1.5.2. 150-LB. PURPLE K WHEELED FIRE EXTINGUISHERS: These extinguishers are to be used for responding to incipient fires.

3.1.5.3. WATER: The plant is supplied with water by an 8-inch city water main transversing the property from east to west. On the east, it serves two fire hydrants directly. (One hydrant is located approximately in the Northeast corner of the property, the other is located on the West/Central side of the property.)

3.1.5.4. FOAM SPRINKLING SYSTEM: The plant warehouses and production areas have a foam sprinkler system supplied by the 6-inch pipe from the 8-inch city water main.

3.1.5.5. FORKLIFT TRUCKS: These trucks are equipped with special drum handling forks capable of moving hazardous or flammable materials quickly to a safe location. Refer to the Powered Industrial Truck Safety SOP, SF017AF, and the Grounding and Bonding SOP, SF030AF, to determine grounding/bonding requirements and whether the forklift is rated for use under the area conditions. It may be necessary to use a combustible gas indicator to determine if area vapors are within the explosive range before using the forklift.

3.1.6. SAFETY PROTECTION EQUIPMENT

3.1.6.1. SELF-CONTAINED BREATHING APPARATUS (SCBA): These units are pressure-demand respirators with self-contained air supply. The SCBA's are stored in the plant office area and the Hazardous Response Team (HRT) Trailer. The self-contained breathing apparatus are to be used by trained Emergency Response Team members for respiratory protection during response efforts in hazardous atmospheres, including those identified as Immediately Dangerous to Life or Health (IDLH) due to either oxygen deficiency or the presence of hazardous gases, vapors, smoke, or fumes.

3.1.6.2. CARTRIDGE/AIR-PURIFYING RESPIRATORS: These respirators are designed for atmospheres which are NOT Immediately Dangerous to Life or Health. The concentration of the contaminant must be below the maximum concentration recommended for the particular cartridge. Personal protective equipment is stored in the plant office and the HRT Trailer.

3.1.6.3. OTHER PERSONAL PROTECTIVE EQUIPMENT (PPE): Equipment such as chemical-resistant rain suits or one-piece coveralls, rubber boots, chemical-resistant and heat-resistant gloves, goggles, safety glasses, hard hats, etc., are to be used for protection against chemical and some thermal/mechanical hazards during emergency response activities. Personal protective equipment is stored in the north warehouse near the lockers; additional PPE intended for emergency response only is located in the ERT trailer.

3.1.6.4. RESCUE EQUIPMENT: Rescue equipment such as lifelines, ropes, climbing helmets, harnesses, straps, pulleys and backboards will be kept in one or more portable lockers.

3.1.6.5. FIRST AID KITS: These kits contain supplies such as bandages and aspirin needed for treatment of minor medical problems.

3.1.6.6. OXYGEN RESUSCITATOR: The resuscitator is located near the plant office. This unit is capable of providing supplemental oxygen or mouth-to-mask resuscitation.

3.1.6.7. EMERGENCY EYE WASH AND SHOWER STATIONS: Eye wash and shower stations are located throughout all operating areas of the plant, and are used to flush eyes or skin with water following chemical exposures.

3.1.6.8. FIRE BLANKET: The fire blanket located near the plant office can be used to smother flames on an individual's clothes or to smother other small fires.

3.1.7. TESTING AND MAINTENANCE OF EMERGENCY EQUIPMENT

3.1.7.1. Hydrite Chemical Co. will inspect on a monthly basis all facility communication systems and alarm systems; ~~and~~ air monitoring devices; and spill control, fire protection, and safety protection equipment. The purpose of these inspections is to ensure that the equipment is in proper operating condition. Checklists identify each item and list specific types of problems to be looked for when inspecting the equipment. All checklists are to be dated and signed by the inspector. If any problems are discovered, this will be documented on the checklists in such a way as to give information for further investigation.

3.1.7.2. Some of the emergency equipment is used on a daily basis and therefore does not require monthly inspection. These items include forklift trucks, telephone systems, and regular hand tools.

3.1.7.3. On an annual basis, the Incident Commander will review the checklists for content, completeness, clarity, and corrective action.

3.1.7.4. All checklists will be filed and stored so as to be easily accessible for study. These documents will be maintained in accordance with the Records Retention and Schedule SOP.

4. PERSONNEL RESPONSIBILTIES

4.1 INCIDENT COMMANDER

4.1.1. The primary responsibility of the Incident Commander is to

4.1.1.1. Direct operations to control and contain any release without endangering employees, emergency response personnel, on-site contractors or other visitors, or the community. The Incident Commander is responsible for coordinating all emergency response activities. See the attached Incident Command Structure for Emergency Response Team.

4.1.2. The individuals designated as Incident Commanders have the authority to commit the resources needed to carry out this Contingency Plan.

4.1.3. The Incident Commanders must be knowledgeable about all aspects of this Contingency Plan, operations and activities of the facility, the location and characteristics of chemicals handled, and the location of all records within the facility.

4.1.4. Incident Commanders shall receive training in accordance with the Mandatory Training SOP.

4.1.5. Specific requirements in the event of an emergency are:

4.1.5.1. Whenever there is a release, fire, or explosion, the Incident Commander must immediately identify (by observation or review of facility records or manifests, and, if necessary, by chemical analysis):

4.1.5.1.1. any released material(s);

4.1.5.1.2. the physical/chemical properties of the material(s) involved;

4.1.5.1.3. the exact source;

4.1.5.1.4. the amount of material released or magnitude of the fire/explosion; and

4.1.5.1.5. area extent of the release, fire or explosion.

4.1.5.2. The Incident Commander shall appoint a Safety Officer.

4.1.5.3. Before allowing any action other than a facility evacuation, the Incident Commander must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. As part of the assessment, it is expected that the Incident Commander will review the completed Spill Response Q-Card (located in this SOP) from the Safety Officer. This assessment must consider:

4.1.5.3.1. Direct and indirect effects of the release, fire, or explosion;

4.1.5.3.2. The potential for subsequent fire or explosion;

4.1.5.3.3. The effects of any toxic, irritating or asphyxiating gases that are or may be generated; or

4.1.5.3.4. The effect of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosions.

4.1.5.4. If the Incident Commander determines that the incident threatens human health within the facility, the Incident Commander shall order an evacuation.

4.1.5.4.1. He/she will activate the alarm (if it is not already activated) and the evacuation will commence as outlined in the Contingency Plan: Emergency Procedures SOP.

4.1.5.4.2. The Incident Commander is responsible for determining whether there are any visitors on the property-The Office Staff (or Lab Staff during "off-hours") is will notify the Incident Commander of any visitor on the property The Incident Commander must determine whom the visitor is with, so that his/her whereabouts can be determined, and thereby ascertain that all visitors are accounted for. Accounting for visitors will commence as outlined in the Contingency Plan: Emergency Procedures SOP.

4.1.5.4.3. He/she will notify local authorities, or request that the Emergency Communications Coordinator do so. In either event, the Emergency Communications Coordinator must be immediately informed of the situation to determine whether any additional government agencies need to be notified.

4.1.5.4.4. In the event of an evacuation, the Incident Commander shall coordinate the Emergency Response Team and appoint members of that team to take on certain responsibilities (see Section 4.3 and Incident Command Structure for Emergency Response Team).

4.1.5.5. If it is determined that an evacuation of local neighborhood areas may be advisable, or if potentially hazardous concentrations of smoke or chemicals will reach the plant border, the Incident Commander must determine whether any additional government agencies need to be notified.

4.1.5.6. The Incident Commander shall direct the Emergency Response Team members in their efforts to ensure that fires, explosions, and releases do not recur or spread to other hazardous materials or waste at the facility. This includes stopping processes and operations, removing or isolating containers, and applying spill response techniques.

4.1.5.6.1. Emergency procedures within the process-specific SOP's shall be followed

4.1.5.6.2. Procedures in the Monomer Safety SOP shall be followed

4.1.5.6.3. Process equipment that has been stopped will be monitored for leaks, pressure buildup, or ruptures

4.1.5.7. The arrival of the Fire Department onto Hydrite property will transfer control and responsibility from the Incident Commander to the Fire Chief. The Incident Commander will remain with the Fire Chief and act as an advisor and liaison between the Fire Department and Hydrite Response Team members.

4.1.5.8. Following response operations, the Incident Commander shall ensure that exposure assessments and post-emergency medical observations of the responders are conducted.

4.1.6. The Incident Commander or his/her designee is responsible for ensuring that any waste generated from the emergency response is handled and disposed of in accordance with the facility Spill Management SOP and the Obsolete Inventory and Waste Management SOP.

4.1.7. Immediately following an emergency response, the Incident Commander or his/her designee must ensure that all emergency equipment listed in the Contingency Plan is cleaned and fit for its intended use before normal operations are resumed.

4.1.8. The Incident Commander should inform the EHS Manager of any proposed changes to the facility that could affect any provisions of this Contingency Plan.

4.2 SAFETY OFFICER

4.2.1. The Safety Officer is appointed at the time of the incident by the Incident Commander.

4.2.2. The duty of the Safety Officer is to minimize the potential for injury to personnel as a result of responding to a release, fire, or explosion. The Safety Officer has the authority to stop any response activity which, in his/her opinion, presents a risk of injury.

4.2.3. The Safety Officer should complete the Spill Response Q-Card (located at the end of this SOP) and provide the completed forms to the Incident Commander to use in planning a response.

4.2.3.1. He/she should fill out the personal protective equipment assessment located on the Spill Response Q-Card.

4.2.4. The Safety Officer may gather air monitoring equipment such as a combustible gas indicator or Draeger tubes, perform monitoring, and document monitoring equipment readings about every 15 minutes.

4.2.5. Any properly trained and qualified Emergency Response Team member may assist or conduct these duties as directed by the Incident Commander.

4.3. EMERGENCY RESPONSE TEAM

4.3.1. The Emergency Response Team is a pre-assigned group of employees that has completed the requisite training.

4.3.1.1. Candidates for the Response Team shall receive 24 hours of training consisting of classroom and drills before being assigned to the Response Team. The training shall be in accordance with the Mandatory Training SOP.

4.3.1.2. The Response Team members shall receive not less than 8 hours of annual refresher training in accordance with the Mandatory Training SOP.

4.3.1.3. Credit shall be given for those portions of the initial and annual refresher training which is covered in normal training programs provided by Hydrite Chemical Company.

4.3.2. Some Emergency Response Team Members are equipped with pagers. The "All Pagers" number may be dialed 24 hours a day in order to page Response Team members who are not on site. The number is located on the Emergency Response Quick Reference Card next to every phone and also at the end of ER007CE.

4.3.3. The primary objectives of the Response Team are the following. The objectives shall be carried out as appropriate, by properly trained emergency responders.

4.3.3.1. Aid in evacuating non-Emergency Response personnel,

4.3.3.2. Assist in fighting incipient fires,

4.3.3.3. Assist in rescue activities,

4.3.3.4. Assist in decontamination activities,

4.3.3.5. Provide medical assistance to injured personnel

4.3.3.6. Attempt to control a chemical release immediately after it has been detected.

4.3.3.7. Assist in cleanup after the incident

4.3.4. An immediate response to a release or incipient fire by the Emergency Response Team may result in the incident being contained and controlled.

4.3.5. The Response Team will not deviate or take unassigned risks beyond those which were discussed or practiced during the training program.

4.3.6. Upon the arrival of the Fire Department to the scene, the Response Team will stand by in an advisory capacity or to assist as needed.

4.3.7. The Incident Command Structure for Emergency Response Team is attached to this SOP. See Checklist at the end of this SOP for responsibilities of individual Emergency Response Team Members.

4.3.7.1. COMMUNICATIONS LIAISON (not to be confused with the pre-appointed Emergency Communications Coordinator)

4.3.7.1.1. The Communications Liaison is responsible for the distribution of radios, the radio frequency, radio traffic, and assisting the Emergency Communications Coordinator with telephone communications.

4.3.7.1.2. He/she will obtain the MSDS's of the chemicals that are involved or potentially involved in the incident and share information with the Safety Officer and Incident Commander.

4.3.7.1.3. He/she will dial the All Pagers number to contact additional Emergency Response Team members if necessary.

4.3.7.1.4. See Communications Liaison Checklist at the end of this SOP for complete list of responsibilities.

4.3.7.2. NOTETAKER

4.3.7.2.1. The Notetaker is responsible for recording the incident, chronologically, in log-style formatHe/she may record the main events during the incident as well as events that occur at the assembly area, entry station, and decon area.

4.3.7.3. SECURITY TEAM LEADER

4.3.7.3.1. The primary responsibilities of the Security Team Leader are to:

4.3.7.3.1.1. Account for every employee and visitor onsite

4.3.7.3.1.2. Ensure that emergency response personnel and local authorities are directed to the Incident Command Station upon arrival

4.3.7.3.1.3. Ensure that unauthorized personnel are kept off-site and that the media is directed to the Media Spokesperson

4.3.7.3.1.4. To fulfill these responsibilities, the Security Team Leader shall appoint the following personnel:

4.3.7.3.1.5. HEADCOUNTER

4.3.7.3.1.5.1.1. The primary responsibility of the Headcounter(s) is the counting of and accounting for, at the designated assembly areas, every person on the premises.

4.3.7.3.1.5.1.2. The headcount will be taken using the employee roster (from the lab) and the visitor log (from either the front office or the lab)

4.3.7.3.2.1.1. The Shift Supervisors will coordinate with the Headcounter to account for all employees on their shifts.

4.3.7.3.2.1.2. The Headcounter will inform the Incident Commander of missing persons and the location at which they were last seen.

4.3.7.3.2.1.3. The Headcounter will inform the Incident Commander of any employees requiring EMS treatment

4.3.7.3.2.1.4. He/she will also oversee evacuee safety—ensure that the meeting area is in a safe location, provide first aid and decon for evacuees, etc.

4.3.7.3.2.1.5. See Headcounter Checklist at the end of this SOP for complete list of responsibilities.

4.3.7.3.1.6. GREETER

4.3.7.3.2.2.1. The primary responsibility of the Greeter is to Direct police, fire and EMS to Incident Command Station, and to

4.3.7.3.2.2.2. Keep all unauthorized personnel off-site. (Authorized personnel are community emergency responders, government officials, Hydrite Management, Hydrite Emergency Response Team members.

4.3.7.3.2.2.3. See Greeter Checklist at the end of this SOP for complete list of responsibilities.

4.3.7.4. Decon Team/MEDICALTEAM, TEAM LEADER(s)

4.3.7.3.1. The primary responsibilities of the Decon Team are to: immediately perform decon or first aid on evacuees if there are injuries resulting from the incident or evacuation, and to

4.3.7.3.2. Aid the Entry Team in taking off their PPE after they return from an entry, decontaminate the personnel, and dispose of dirty PPE.

4.3.7.3.3. The Decon (Decontamination) Team Leader may also coordinate a Medical Team, whose members must be trained Medical Responders..

4.3.7.3.4. The Decon Team and Medical Team may wear PPE themselves if it is assigned by the Safety Officer.

4.3.7.3.5. The Decon Team or Medical Team shall perform the pre- and post-entry medical monitoring required for any response requiring Level A or Level B protective clothing and shall maintain the records of such monitoring on the Decon Team Checklist in accordance with the Contingency Plan: Emergency Procedures SOP.

4.3.7.3.6. See Decon Team/Team Leader Checklist at the end of this SOP for complete list of responsibilities.

4.3.7.4. ENTRY TEAM LEADER

4.3.7.4.1. The Head of Entry Team will assign an Initial Entry Team and a Backup Entry Team.

4.3.7.4.2. He/she will designate an Entry Station, assemble containment materials, and assemble emergency response PPE.

4.3.7.4.3. He/she will designate someone to record in writing who goes in, and the times that they go in and come back out (this person may be the Emergency Communications Coordinator).

4.3.7.4.4. He/she will work with the Incident Commander and the Plant Operations Monitor to determine which systems must be shut down first and which areas must be isolated first.

4.3.7.4.5. See Entry Team Leader Checklist at the end of this SOP for complete list of responsibilities.

4.3.7.5. PLANT OPERATIONS MONITOR

4.3.7.5.1. The Plant Operations Manager will monitor plant processes and identify critical systems to shut down, using APACs technology if possible.

4.3.7.5.2. He/she will keep the Incident Commander informed of the status of plant processes.

4.3.7.5.3. He/she will notify the Incident Commander if processes or monomers contained in storage tanks become unstable.

4.3.7.5.4. See Plant Operations Monitor Checklist at the end of this SOP for complete list of responsibilities.

4.4. EMERGENCY COMMUNICATIONS COORDINATOR

4.4.1. The Emergency Communications Coordinator is a pre-assigned position. In the event of an incident, the Emergency Communications Coordinator will do the following:

4.4.1.1. Gather information regarding the emergency.

4.4.1.2. Immediately contact all Local, State and Federal agencies as required, following the guidelines set down in the Hydrite Chemical Release Reporting Procedure SOP.

4.4.1.3. Contact a member of the crisis team if instructed to do so by the Operations Manager or ranking person-in-charge.

4.4.1.4. Contact Corporate SQRA Department.

4.4.1.5. Complete the Hydrite Chemical Release Report and forward it to the Associate Operations Manager for preventive actions and placement in the Legal File. Submit a copy to the Corporate SQRA Department.

4.4.1.6. Bring the weather radio along if evacuating to the tornado shelter.

4.5. OPERATIONS MANAGER

4.5.1. In the event of a crisis, the Operations Manager or ranking person-in-charge must immediately determine the severity of the crisis and contact, or direct the facility Emergency Communication Coordinator to contact, a member of the crisis management team, if deemed necessary. This notification shall be made in accordance with the Crisis Management Plan SOP and the Chemical Release Reporting Procedure SOP.

4.5.2. Following a chemical release, the Operations Manager will complete the corrective action section of the Chemical Release Report and have the report filed in the branch Legal File. The Operations Manager is responsible for following up on the corrective action and ensuring that it is completed within the specified time frame.

4.5.3. Following emergencies involving hazardous waste, or hazardous waste operations which required implementation of the Contingency Plan, the Operations Manager will notify the District DNR Hazardous Waste Specialist and the Local Emergency Planning Committee (LEPC), prior to resuming operations, that the facility has completed the clean-up and returned all emergency equipment to its original condition.

4.5.4. The Operations Manager must inform the EHS Manager of any proposed changes to the facility which could affect any provision of this Contingency Plan.

4.6. OPERATIONS AND DEPARTMENT SUPERVISOR

4.6.1. Supervisors will act as the Incident Commander until the Incident Commander arrives on the scene.

4.6.2. In the event of a facility evacuation, the Supervisors will be responsible to see that everyone has evacuated. The Supervisor will be the last person to evacuate his/her assigned area, after checking restrooms, conference rooms, and other areas where the alarm may not have been heard.

4.6.3. Any equipment that could become a hazard if left running should be shut down in accordance with the process specific SOP(s).

4.6.4. Supervisors with handicapped persons in their areas will specifically assign others in that area to assist the handicapped to evacuate.

4.6.5. Each Supervisor will be responsible for counting and accounting for every person assigned to him/her at the designated assembly area. They will work with the Headcounter to do this. Supervisors or the Headcounter must notify the Incident Commander if anyone is unaccounted for.

4.6.6. The Supervisor is responsible for coordinating incidental spill response activities within his/her area. The Supervisor must determine proper spill containment and clean-up methods to be used. He/she must also assess the characteristics of the spill clean-up material and determine the disposition of the material.

4.6.7. Supervisors must complete a Workers' Compensation Accident/Injury Report following any injuries in their areas. The reporting procedure is included in the Safety Manual.

4.6.8. The following preventive measures are the responsibility of the Supervisor:

4.6.8.1. Train employees in chemical safety.

4.6.8.2. Provide appropriate personal protective equipment to employees and enforce its correct use while handling chemicals.

4.6.8.3. Ensure that all containers are labeled. Have knowledge of department chemical inventory in order to readily identify any spilled material.

4.7. OFFICE STAFF AND LAB STAFF

4.7.1. During normal office hours, the Receptionist or other Office Staff will bring the visitor log to the designated meeting area.

4.7.2. During hours when the office is not staffed, the Lab Staff will bring the visitor log to the meeting area.

4.7.3. The Office Staff or Lab Staff is responsible for notifying the Incident Commander and Headcounter of any visitor on the property when an emergency exists. The Incident Commander should be advised as to who the visitor is with, so his/her whereabouts can be determined, and thereby ascertain that all visitors are accounted for.

4.7.4. The Office Staff or Lab Staff will announce evacuations over the intercom system in accordance with the evacuation procedure.

4.8. ALL EMPLOYEES

4.8.1. Follow all safety procedures at all times.

4.8.2. Become knowledgeable concerning the chemicals and protective equipment used in your department. Wear the appropriate personal protective equipment when handling chemicals, and understand and adhere to the procedures for its correct use.

4.8.3. Report any spill or fire to your supervisor immediately.

4.8.4. Evacuate the building when an announcement is made, in accordance with evacuation procedures.

4.9. TRUCK DRIVERS

4.9.1. At the direction of the Incident Commander, these individuals are responsible for moving all company trucks away from the fire area, being careful not to hinder or block the Fire Department's entrance to the fire area.

4.10. FORKLIFT TRUCK DRIVERS

4.10.1. At the direction of the Incident Commander, these individuals may be requested to operate a company forklift truck and remove or isolate containers which are in close proximity to a fire or spill.

5. DRILLS

5.1. Evacuation drills will be conducted annually by the EHS Manager or designee. It is important that drills be treated as though a real emergency exists. The purpose of a drill is to resolve any problems that might be encountered in evacuating the facility. The EHS Manager will complete the Emergency Evacuation Form in accordance with the Internal Inspection SOP.

6. AMENDMENT OF CONTINGENCY PLAN

6.1. The Regulatory Specialist II is responsible for reviewing this Contingency Plan at least annually with the Operations Manager to verify the accuracy of all provisions. In addition, the Regulatory Specialist II will ensure that revisions are distributed in accordance with the Amendment of Contingency Plan section of this SOP. The Plan will be immediately amended if necessary, whenever:

6.1.1. The facility permit is revised.

6.1.2. The plan fails in an emergency.

6.1.3. The facility changes in its design, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency.

6.1.4. The list of emergency equipment changes.

6.2. The Operations Manager will inform the Regulatory Specialist II of any changes in the above listed items, prior to the implementation of the changes.

6.3. Revisions of this SOP will be forwarded to the SOPP Systems Manager. The SOPP Systems Manager will distribute updated copies to the appropriate branches, the Regulatory Specialist II, and to the following agencies:

Dane Cty. Dept. of Emergency Management
Public Safety Building, Room 2107
115 West Doty St.
Madison, WI 53703-3202
ATTN: David Bursack

Cottage Grove Fire Department
4030 County Road N
Cottage Grove, WI 53527
ATTN: Bruce Boxrucker

Wisconsin Emergency Management
Southwest Region
2400 Wright Street
Madison, WI 53708
ATTN: Paul France; Regional Director

Wisconsin Department of Natural Resources
Madison Service Center
3911 Fish Hatchery Road
Fitchburg, WI 53711
Attn: Cynthia English

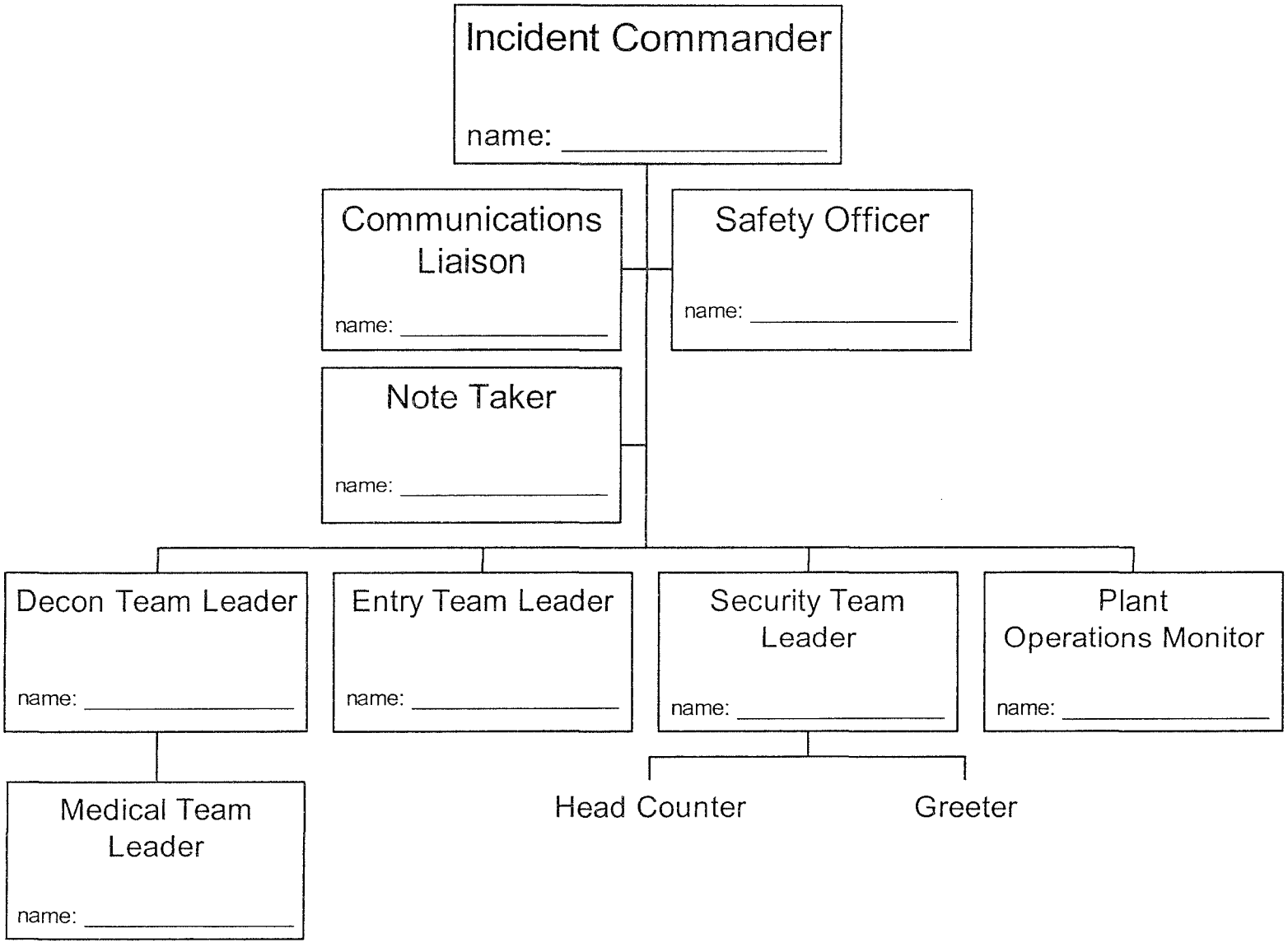
Cottage Grove Police Department
2560 Nora Rd
Cottage Grove, WI 53527
http://www.cottagegrovepolice.org/
ATTN: John Gould

Township of Cottage Grove
Division of Emergency Government
4058 County Trunk N
Cottage Grove, WI 53527
Attn: Karen Kessinich

Village of Cottage Grove
221 E. Cottage Grove Rd.
Cottage Grove, WI 53527
ATTN: Deb Winter

6.4. The office of Dane County Emergency Management is responsible for distributing applicable information local first response agencies and affected parties such has hospitals and sheriff's office.

Incident Command Structure for Emergency Response Team



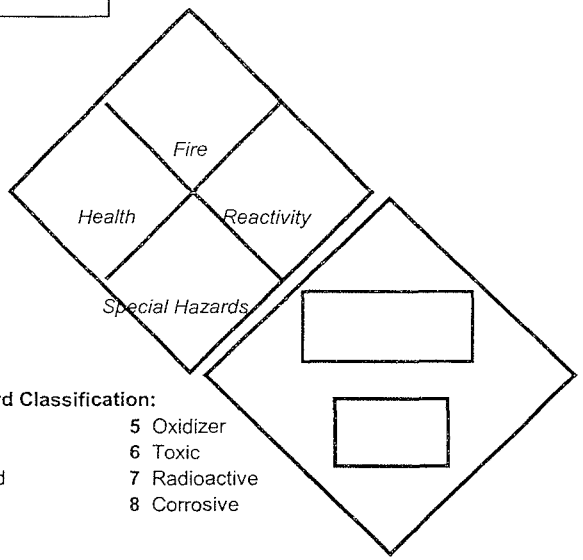
Spill Response Q-Card

Chemical Name: _____

CAS Number: _____ **Physical State:** _____

Color: _____ **Odor:** _____

NFPA Hazard Ratings:



DOT Hazard Classification:

1 Explosive	**5** Oxidizer
2 Compressed gas	**6** Toxic
3 Flammable Liquid	**7** Radioactive
4 Flammable Solid	**8** Corrosive

Chemical & Physical Properties	
Molecular Weight (MW)	g/mol
Vapor Density (Air = 1)	
Boiling Point (BP)	°F
Vapor Pressure	mmHg @ 68°F
Specific Gravity	
Solubility in Water	% @ 68°F
Ionization Potential	
pH (0-14)	
Freezing Point	°F
Auto-ignition Temperature	°F
Flash Point	°F
Lower Explosive Limit (LEL)	%
Upper Explosive Limit (UEL)	%

Exposure Limits			
Occupational Exposure Limits	**8-hr TWA**	**STEL (15-min TWA)**	**Ceiling Limit**
OSHA:	ppm	ppm	ppm
ACGIH:	ppm	ppm	ppm
NIOSH:	ppm	ppm	ppm
IDLH Concentration			ppm
Odor Threshold			ppm
Is this a {skin} –designated chemical?		Yes / No	

Extinguishing Agent: _____

Incompatibilities or Reactivities: _____
(Check MSDS—these are usually acids, bases, oxidizing agents, reducing agents, and UV light.)

Routes of Exposure	Symptoms of Exposure	First Aid Measures
Inhalation		
Ingestion		
Eye Contact		
Skin Contact		

Target Organs: _____

Acceptable Respiratory Protection				
Type	**Yes**	**No**	**Type of Cartridge**	**Max Concentration for use**
Air-Purifying				
Supplied Air **without** auxiliary SCBA				
SCBA/ARAP				

Personal Protective Equipment	
Suit/Material	
Level of Protection	A B C D
Modifications	
Special precautions (goggles, apron, splash shield)	
Glove Material	
Boot Material	
Decontamination Solution	

Spill Control

Clean-Up Materials: Contain spills immediately with _____(*e.g. Floor Dry*). Transfer liquids and solid diking material to separate suitable containers. If a monomer, add inhibitor to prevent polymerization. Absorbents can act as a contaminant (removes inhibitor) in liquid monomer.

Isolation (*Refer to 2000 ER Guide Book*): _____

Storage/Disposal/Container Type: Max. storage temp. _____°F. (*Containers tightly closed, out of direct sunlight in cool place if not in use. If monomer: after the addition of excess inhibitor, incinerate liquid and contaminated diking material.)* _____

_____

Indicate instrument(s) that will work for monitoring purposes:

☐ **PID with** _____**eV Lamp** ☐ **LEL, 4-gas meter** ☐ **Draeger Detector Tube** ☐ **pH Paper**

INCIDENT COMMANDER CHECKLIST

_____ SOUND ALARM & ASSIGN SOMEONE TO MAKE EVACUATION PAGE– 3 TIMES

_____ ASSIGN 911 CALLER (must give caller basic details regarding emergency)

_____ ASSIGN SAFETY OFFICER
- _____ TAKE A RADIO
- _____ FILL OUT HAZARDOUS MATERIAL WORKSHEET
- _____ GATHER MONITORING EQUIPMENT
- _____ DETERMINE WHAT PPE TO WEAR
- _____ DOCUMENT MONITORING EQUIPMENT READINGS APPROX. EVERY 15 MINUTES

_____ ASSIGN SECURITY TEAM LEADER, WHO WILL:
- _____ ASSIGN GREETER
  - ____ TAKE A RADIO
  - ____ OPEN GATE USING EMERGENCY GATE BUTTON (break glass)
  - ____ DIRECT POLICE, FIRE, AND EMS TO INCIDENT COMMAND STATION (find out where this is over radio from I.C.)
  - ____REMAIN AT GATE UNTIL ASKED TO RETURN (by I.C.)
- _____ ASSIGN HEADCOUNTER(S) (can be non-responders or less experienced responders)
  - ____ TAKE 1 RADIO EACH
  - ____ GET PRINTOUT FROM FRONT OFFICE OR LAB
  - ____ MAKE A CHECKMARK NEXT TO EACH NAME
  - ____ COORDINATE WITH EACH OTHER AND REPORT TO I.C.
  - ____ NOTIFY I.C. OF ANY INJURIES

_____ DESIGNATE A DECON AREA AND DECON/MEDICAL TEAMS NOW **if have injuries**
- ____ SEND INJURED EMPLOYEES TO DECON AREA AND UPDATE I.C.
- ____ SEND EMPLOYEES TO NEW MEETING AREA IF NECESSARY, AS INSTRUCTED BY I.C.

_____ ASSIGN COMMUNICATIONS LIASON (in charge of radios, radio frequency, radio traffic, telephone communications via Emergency Communicator)
- ____ GATHER RADIOS, DISTRIBUTE AS DIRECTED BY I.C.
- ____ GIVE EMERGENCY COMMUNICATOR NECESSARY INFO.
- ____ OBTAIN APPLICABLE MSDSs (get from lab, if possible)
- ____ DIAL EMERGENCY RESPONSE PAGERS: 551-1604
- ____ ASSIGN SOMEONE TO CALL FAMILY MEMBERS

_____ ASSIGN NOTE TAKER (can be a less experienced responder)
- ____ WRITE DOWN WHAT HAPPENS CHRONOLOGICALLY, IN LOG-STYLE FORMAT

_____ ASSIGN PLANT OPERATIONS MONITOR
- _____ USE STATION IN ENGINEERING if possible, OR TAKE LAPTOP TO REMOTE LOCATION as designated by I.C.
- _____ NOTIFY I.C. IF PROCESS OR MONOMER STORAGE TANKS BECOME UNSTABLE

INCIDENT COMMANDER CHECKLIST (cont.)

_____ ASSIGN ENTRY TEAM LEADER (if have enough spare responders)

- _____ TAKE 4 RADIOS
- _____ ASSIGN INITIAL ENTRY TEAM
- _____ ASSIGN BACKUP ENTRY TEAM
- _____ DESIGNATE AN ENTRY STATION
- _____ ASSEMBLE CONTAINMENT MATERIALS
- _____ ASSEMBLE EMERGENCY RESPONSE PPE
- _____ DESIGNATE SOMEONE TO WRITE DOWN WHO WENT IN, WHEN, AND FOR HOW LONG (may be comm. coor.)
- _____ ASSIGN SOMEONE TO HELP DON PPE AND TO REFILL AIR CANISTERS
- _____ WORK WITH I.C. TO DETERMINE WHICH SYSTEMS TO SHUT DOWN FIRST, WHICH AREAS TO ISOLATE FIRST

_____ ASSIGN DECON TEAM/MEDICAL TEAM AND TEAM LEADERS if do not have already (make sure are Medical Responders)

- _____ DESIGNATE DECON AREA
- _____ DESIGNATE FIRST AID AREA
- _____ ASSEMBLE DECON EQUIPMENT
- _____ DESIGNATE WASTE DRUMS/ TOTES FOR DIRTY PPE
- _____ PUT ON PPE AS DIRECTED BY SAFETY OFFICER
- _____ HELP ENTRY TEAM TAKE OFF PPE
- _____ MONITOR TEAM ENTRANTS' VITALS
- _____ DISPOSE OF DIRTY PPE

INCIDENT COMMANDER CHECKLIST (cont.)

INCIDENT COMMANDER, CHECK FOR THE FOLLOWING:

_____ HEAD COUNT COMPLETE (ALL EMPLOYEES, VISITORS, CONTRACTORS ACCOUNTED FOR)

_____ ENSURE FIRST AID PROVIDED FOR INJURED PERSONS / DECON UNDERTAKEN

_____ ERT HEAD COUNT COMPLETE (WHAT RESPONDERS ARE PRESENT/WHO ARE ENROUTE)

_____ CONTAINMENT MEASURES IN PLACE:

- FIRE DOORS CLOSED
- VALVES CLOSED
- PROCESS SHUT DOWN / CONTROLLED
- TANK WAGONS MOVED
- UTILITIES SAFE:
    - HOT OIL
    - STEAM
    - THERMOX
    - ELECTICAL
    - NATURAL GAS
- DIKES / DIVERSIONS ESTABLISHED

_____ FIRE WATCH ESTABLISHED DURING RESPONSE TO FLAMMABLE RELEASES (PURPLE K WHEELED UNIT)

_____ MAKE SURE SPRINKLER CONTROL VALVE OPEN

_____ AREA SECURED; PERSONNEL ASSIGNED FOR SECURITY

_____ EMERGENCY COMMUNICATIONS COORDINATOR ACTIVATED
- REGULATORY AGENCIES NOTIFIED
- HYDRITE PERSONNEL NOTIFIED (Crisis Mgmt Team/Media Contact)

_____ EVACUATED PERSONNEL SAFE OR RELOCATED AND CONTROLLED BY EVACUATION MARSHALLS

_____ EMERGENCY RESPONSE TEAMS ACTIVATED FOR FIRE AND/OR CHEMICAL RELEASE (SUPPORTED BY SAFETY OFFICER)

- RADIO COMMUNICATIONS ESTABLISHED

INCIDENT COMMANDER CHECKLIST (cont.)

HANDOFF TO CGFD OFFICER IN CHARGE

_____ INTRODUCTIONS

_____ STAY WITH THE COTTAGE GROVE FIRE DEPARTMENT OFFICER IN CHARGE

_____ STATUS REPORT:

- WORKING EXPLANATION OF INCIDENT
- WORST CASE PROGRESSION DISCUSSED
- ON-GOING HYDRITE RESPONSE ACTIVITIES REVIEWED
- ALL AVAILABLE DOCUMENTATION EXPLAINED
- EMS PROVIDED FOR INJURED PERSONS
- MISSING PERSONS/LAST LOCATION REPORT

_____ ONGOING RESPONSIBILITIES

- TRACK DESTINATION (HOSPITAL) OF INJURED PERSONS
- FOLLOWUP WITH SITUATION OF OTHER EVACUEES
- UPPER MANAGEMENT NOTIFIED TO COMMUNICATE W/EMPLOYEE VICTIM'S FAMILIES
- RESCUE TEAM COMMUNICATION
- FIRE/SPILL TEAM COMMUNICATION
- SCENE SECURITY

_____ PROVIDE ALL POSSIBLE ASSISTANCE AND INFORMATION TO RESPONDING POLICE, FIRE, EMS AND GOVERNMENTAL OFFICIALS.

INCIDENT COMMANDER CHECKLIST (cont.)

FIRE / CHEMICAL RELEASE BASICS

~NEVER RISK RESPONDER SAFETY FOR "THINGS"~

_____ ALL POSSIBLE DEFENSIVE CONTAINMENT MEASURES TAKEN:

- o FIRE DOORS CLOSED
- o VALVES CLOSED
- o PROCESSES SHUT DOWN/CONTROLLED
- o TANK WAGONS / CONTAINERS MOVED
- o UTILITIES SAFE:
  - HOT OIL
  - STEAM
  - THERMOX
  - ELECTRICAL
  - NATURAL GAS
- o DIKES / DIVERSIONS ESTABLISHED

_____ REPORT FOR YOUR OWN HEADCOUNT

_____ WORK IN PAIRS (BUDDY SYSTEM)

_____ CHEMICALS INVOLVED IDENTIFIED, Q-CARD FILLED OUT (SAFETY OFFICER)

_____ APPROPRIATE PPE DETERMINED AND WORN

_____ WIND DIRECTION ESTABLISHED; ATTACK WITH WIND AT RESPONDERS' BACKS

_____ SECONDARY ESCAPE PATH IDENTIFIED

_____ EMERGENCY RESPONSE TEAM EQUIPPED AND READY FOR RESPONSE

_____ ESTABLISH RADIO CONTACT

_____ UPDATE INCIDENT COMMANDER IN 10 MINUTE INTERVALS

INCIDENT COMMANDER CHECKLIST (cont.)

FIRE:

____ SPRINKLER CONTROL VALVE OPEN; SPRINKLERS OPERATING

____ SPRINKLER PUMPING; SIAMESE ACCESSIBLE

____ PURPLE K OR AFFF LINES USED FROM SAFE LOCATION TO CONTROL FIRES

____ ADDITIONAL EXTINGUISHERS AT AREA TO SUPPORT FIRE FIGHTING AND PROTECTION AGAINST RE-IGNITION

____ FIRE WATCH ESTABLISHED TO RESPOND TO RE-IGNITION

SPILL:

____ HOT ZONE ESTABLISHED & MARKED

____ FIRE WATCH ESTABLISHED FOR FLAMMABLE RELEASES (PURPLE K WHEELED UNIT ON STANDBY)

____ CONTROL SPILLS FROM THE EDGES OF ZONE, MINIMIZING CONTACT W/RELEASED MATERIAL

____ RELEASED MATERIAL NEUTRALIZED, ABSORBED OR CONTAINED

____ RECOVERED MATERIAL PACKAGED IN COMPATIBLE CONTAINERS

____ AREA DECONTAMINATED AND VENTILATED

____ DECON ESTABLISHED FOR RESPONDERS PRIOR TO PPE REMOVAL

MONITOR TEAM SAFETY. NEVER RISK SAFETY.

SAFETY OFFICER CHECKLIST

_____ TAKE A RADIO

_____ RECEIVE RELEVANT MSDS's FROM COMMUNICATIOS LIAISON

_____ FILL OUT SPILL RESPONSE Q-CARD

_____ DETERMINE WHAT PPE TO WEAR

_____ GATHER MONITORING EQUIPMENT

_____ TAKE MONITORING EQUIPMENT READINGS APPROX. EVERY 15 MINUTES AND DOCUMENT THEM

HEADCOUNTER CHECKLIST

_____ GATHER EMPLOYEE ROSTER, VISITOR SIGN-INS

_____ INSTRUCT EVACUEES TO STAY QUIET AND WITH THE GROUP

_____ EVACUEE SAFETY:

- STAY OUT OF TRAFFIC
- EVACUATE TO ADEQUATE SAFE DISTANCE
- CHECK WIND DIRECTION – EVACUATE TO AREA OUT OF SMOKE, VAPORS, ETC. (MAY HAVE TO CHANGE LOCATION)
- PROVIDE FIRST AID FOR INJURED
- DIRECT EXPOSED EMPLOYEES TO DECON AREA

_____ TAKE HEADCOUNT USING EMPLOYEE ROSTER / VISITOR BOOK

_____ QUESTION CO-WORKERS OF MISSING PERSONS (LAST SEEN/WHERE?)

_____ INFORM INCIDENT COMMAND OF HEAD COUNT & MISSING PERSONS

_____ IMMEDIATELY NOTIFY INCIDENT COMMAND OF ANY PERSONS REQUIRING EMS TREATMENT

_____ ASSIGN EMPLOYEES TO USE BARRICADE TAPE & ESTABLISH SECURITY PERIMETER

_____ REMIND EMPLOYEES TO REFER NEWS MEDIA TO HYDRITE REPRESENTATIVE

_____ MAINTAIN CONTROL OF EVACUEES & KEEP TOGETHER

_____ SUPPORT INCIDENT COMMAND REQUESTS FOR ASSISTANCE

GREETER CHECKLIST

_____ REPORT FOR YOUR OWN HEADCOUNT

_____ WEAR TRAFFIC VEST

_____ GET FLASHLIGHT FOR NIGHT TIME RESPONSE

_____ OBTAIN TWO-WAY RADIO

_____ OPEN THE PLANT GATE USING THE EMERGENCY GATE BUTTON (BREAK GLASS)

_____ CLEAR PEDESTRIAN AND VEHICLE TRAFFIC FROM PLANT ENTRANCES

_____ FLAG DOWN EMERGENCY VEHICLES (EMS, FIRE, POLICE)

_____ DIRECT POLICE, FIRE AND EMS TO INCIDENT COMMAND STATION (FIND OUT WHERE THIS IS OVER RADIO FROM INCIDENT COMMANDER)

_____ DIRECT PRESS MEDIA TO HYDRITE PRESS CONTACT (ASK THEM TO REMAIN OFF-SITE UNTIL SOMEONE COMES OUT TO SPEAK TO THEM)

_____ KEEP ALL UNAUTHORIZED PERSONNEL OFF-SITE (AUTHORIZED: COMMUNITY EMERGENCY RESPONDERS, GOVERNMENT OFFICIEALS, HYDRITE MANAGEMENT, HYDRITE RESPONDERS)

_____ STAY AT POST; FOLLOW ADDITIONAL DIRECTIVES OF INCIDENT COMMANDER.

ENTRY TEAM LEADER CHECKLIST

(Only assemble Entry Team if enough responders are on hand.)

_____ TAKE 4 RADIOS

_____ ASSIGN INITIAL ENTRY TEAM

_____ ASSIGN BACKUP ENTRY TEAM

_____ DESIGNATE AN ENTRY STATION

_____ ASSEMBLE CONTAINMENT MATERIALS

_____ ASSEMBLE EMERGENCY RESPONSE PPE

_____ DESIGNATE SOMEONE TO WRITE DOWN WHO WENT IN, WHEN, AND FOR HOW LONG (may be comm. coor.)

_____ ASSIGN SOMEONE TO HELP DON PPE AND TO REFILL AIR BOTTLES

_____ WORK WITH I.C. TO DETERMINE WHICH SYSTEMS TO SHUT DOWN FIRST, WHICH AREAS TO ISOLATE FIRST

COMMUNICATIONS LIASON CHECKLIST

(In charge of radios, radio frequency, radio traffic, telephone communications via Emergency Communications Coordinator)

____ GATHER RADIOS, DISTRIBUTE AS DIRECTED BY I.C.

____ GIVE EMERGENCY COMMUNICATOR NECESSARY INFO.

____ OBTAIN APPLICABLE MSDSs (get from lab, if possible)

____ DIAL EMERGENCY RESPONSE PAGERS: 551-1604

____ ASSIGN SOMEONE TO CALL FAMILY MEMBERS

PLANT OPERATIONS MONITOR CHECKLIST

_____ USE STATION IN ENGINEERING if possible, OR TAKE LAPTOP TO REMOTE LOCATION as designated by I.C.

_____ NOTIFY I.C. IF PROCESS OR MONOMER STORAGE TANKS BECOME UNSTABLE

_____ **MONITOR PLANT PROCESSES – IDENTIFY CRITICAL SYSTEMS TO SHUTDOWN** – KEEP INCIDENT COMMANDER INFORMED OF PLANT PROCESS(ES) STATUS

DECON TEAM/MEDICAL TEAM AND TEAM LEADER(S) CHECKLIST

(Make sure Medical Team members are medical responders)

_____ DESIGNATE DECON AREA

_____ DESIGNATE FIRST AID AREA

_____ ASSEMBLE DECON EQUIPMENT, collapsible stools, etc.

_____ DESIGNATE WASTE DRUMS/ TOTES FOR DIRTY PPE

_____ PUT ON PPE AS DIRECTED BY SAFETY OFFICER

_____ HELP ENTRY TEAM TAKE OFF PPE

_____ MONITOR TEAM ENTRANTS' VITALS

_____ DISPOSE OF DIRTY PPE

Entrant #	**Entrant Name**	**Time In**	**Time Out**	Baseline Vitals: **BP, HR, temperature**	Pre-Entry Vitals: **BP, HR, temperature, visual**	Post-Entry Vitals: **BP, HR, temperature, visual**

CHANGE HISTORY LOG		
Revision No.	**Date**	**Description**
15.1	05/05/11	1. Updated to new format. 2. Section 6.3 addresses updated.

COTTAGE GROVE – EMERGENCY RESPONSE

ALL EMERGENCIES (FIRE, POLICE, RESCUE, COUNTY)	**911**
ION 911 Emergency Dispatch	**608-255-2345**

EMERGENCY CONTACTS:

ALL PAGERS	
Select Link Call List (ADT Select Link)	866-905-4747 PIN 6981296
HYDRITE CHEMICAL CO. 24 HOUR EMERGENCY PHONE	414-277-1311
CHLORINE TECHNICAL SUPPORT (Oshkosh branch)	800-242-8270
CHEMTREC	800-424-9300
ALLIANT ENERGY HOTLINE (Call 911 for a gas line hit)	800-551-1743
ELECTRIC EMERGENCY OR OUTAGE WISCONSIN POWER AND LIGHT	800-862-6261
WISCONSIN SOUTHERN RAILROAD DISPATCH (leave message if voicemail answers)	414-438-8820 (Ext 223)
SCEPTER FIRE (24 HR. FIRE EXT. RECHARGE)	262-820-2266
CONCENTRA CLINIC (M-F 8:30-5:30pm)	608-244-1213
MERITER HOSPITAL (24 hour emergency line)	608-417-6206
----------(FAX)	417-6051
Landmark Services Cooperative (formerly known as CENEX) (Anhydrous Ammonia)	
– Marc Lea (Equipment and Facility Manager)	608-347-3060 (Cell)
– Brian Kent (Location Manager)	608-347-2799 (Cell)
POISON CONTROL CENTER	800-222-1222
DOW MONOMER SAFETY DISPATCH –Rolley Shook	989-636-4400
WEST SIDE FLAMMABLE WAREHOUSE ALARM MONITORING SERVICE – CENTRAL STATION DISPATCH CENTER	800-933-4762 (Passcode 1492)
CAPITAL FIRE AND SECURITY – JAMES ZIRBEL	608-442-9770
WI DEPT. OF AGRICULTURE, TRADE & CONSUMER PROTECTION (PESTICIDE SPILL INFO)	608-224-4500
ENVIRONMENTAL REMEDIATION FIRMS	
Veolia Environmental	800-255-5092
North Shore Environmental	262-255-4468

EMERGENCY RESPONSE TIPS:

- Make sure everyone in the plant, office and lab knows about the problem.
- Call 911 if you have reason to believe that a chemical release could harm neighbors around the plant.
- If you have doubts about the severity of a situation, proceed with emergency shutdown and evacuate the plant.
- Secure the area and control access to the plant. Do NOT allow contractors, truck drivers, news media, or non-employees to enter. Emergency Responders, Police, EMT's, Firefighters, etc. may enter.
- When the Fire Chief arrives on the scene, the Emergency Coordinator must meet and stay with the Chief, unless told otherwise by the Chief.
- When the Fire Chief arrives on the scene, the Fire Chief assumes control of the situation.
- Reference the Incident Command Checklist found in the Emergency Response Trunks and the SOPs in the Emergency Response SOPP binder #7, for complete standard policies and procedures.

MEDICAL RESPONSE TIPS:

- Call 911 as soon as possible to request an ambulance.
- Employees who have had a chemical splash to the eyes must be taken in an ambulance to a hospital for treatment, regardless of time of day or day of week.
- Employees with moderate, severe, or potentially life-threatening injuries must be taken in an ambulance to a hospital for treatment, regardless of time of day or day of week. The EMTs will determine the best facility for treatment (Meriter Hospital is the default hospital).
- Employees who have had chemical contact must be decontaminated and wearing a Tyvek suit prior to ambulance ride.
- Another Hydrite employee may take employees with minor, non life-threatening injuries, who are in stable condition, to **Concentra Clinic, M-F, 8:30am – 5:30pm**, or **after hours to Meriter Hospital E.R.** (The decision on who will provide transportation should be based on plant staffing and employee level of comfort. If possible, the driver should be a supervisor).

IF YOU MAKE A 911 CALL:

Give the Call-Taker the following information:

- ✓ Your Name
- ✓ Place: Hydrite Chemical Co.
  Cottage Grove East & Annex Address: 114 North Main St., Cottage Grove
  Cottage Grove West Address: 150 Progress Dr., Cottage Grove
- ✓ Telephone No.: The telephone number you are calling from or a number someone will answer (608.839.81XX)
- ✓ Problem: Describe the problem
- ✓ After this information is given to the agency, wait to be instructed to hang up.
- ✓ Assign a "greeter" to wait near the street to direct the EMS, Fire Department, Police, to the exact location of the incident or the victim decontamination station (decon. station usually near the Men's locker room).

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 5/1/95	Supersedes SOP Dated: 1/1/10	Effective Date: 10/1/10	Procedure No.: ER008CE
Facility: CE	Approval Name & Signature: Joe Weishar		Revision No.: 12.0
Review Frequency: 1 Year	Approval Title: General Manager – Process Organics		Page 1 of 4
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I. TITLE: CONTINGENCY PLAN: FACILITY LAYOUT AND DRAWINGS

II. KEY WORDS: Drawing, Facility, Layout

III. PURPOSE: To provide current copies of facility layouts and drawings referenced in the On-site Contingency Plan SOP's.

IV. APPLICATION: This SOP applies to all personnel who work at the Cottage Grove East facility.

V. DEFINITIONS: N/A

VI. ASSOCIATED MATERIAL(S):
Contingency Plan: Overview
Contingency Plan: Plan Implementation, Emergency Equipment and Personnel Responsibilities SOP
Contingency Plan: Personnel Designations and Emergency Contacts SOP
Contingency Plan: Emergency Procedures SOP
Contingency Plan: Spill Management Plan
Facility Layout CAD file: managed on CG Server. Contact Engineering.
Facility Layout CAD file: Plotplan.dwg, Layout ContPlan (attached)
Facility Layout CAD file: Plotplan.dwg, Layout CPlan1 (attached)
Facility Layout CAD file: Plotplan.dwg, Layout CPlan2 (attached)
Facility Layout CAD file: Plotplan.dwg, Layout CPlan3 (attached)

VII. PROCEDURE:

1. Responsibilities

1.1. The Regional Operations Manager must inform the Engineering Department of any changes to the Facility Layout or Site Coordinate Abbreviations within 30 days of the change.

1.1.1. For proposed changes, indicate the anticipated completion date.

1.2. The Engineering Department is responsible for updating both the Facility Layout and Site Coordinate Abbreviations. All updates are to be completed within 30 days of notification.

1.3. The Engineering Department shall forward any updates to the Facility Layout to the EHS Manager, the Corporate Quality Assurance Coordinator and the Corporate Regulatory Specialist II so that copies of existing layouts retained by the branches and the agencies on the distribution list for the Facility Contingency Plan can also be updated.

2. Changes or Updates to the Facility Diagram

2.1. The individual requesting a change or update to a facility diagram or site coordinate abbreviations must supply the following information to the Engineering Department.

2.1.1. For changes in physical equipment: Include the new equipment dimensions.

2.1.2. Locate the equipment in two directions (X & Y) for correct placement. Utilize walls for a base line whenever possible, or other fixed equipment.

2.1.3. Include the size & quantity of the printed copy desired. Also indicate which, if any, require lamination.

2.1.3.1. Available sizes include: 8.5 x 11, 11 x 17, 18 x 24 and 24 x 36.

2.1.4. Attach a marked up copy of the most current Layout or Site Coordinate Abbreviations for the facility showing the proposed changes.

3. Printed Copy

3.1. Facility Layout drawings will be plotted from the CAD System in the Engineering Department once the changes have been completed.

3.2. Plots will be created in black only, unless otherwise requested.

3.3. AutoCAD 2007 LT Version or newer must be used for plotting the Contingency drawings in order for the formatting to work properly.

3.4. All Contingency plots will be made on B size (11x17) paper. Set the scale to 1:1.

3.5. While on the model tab of the Plotplan, turn on all the layers. This will ensure that the required layers are on in the different layouts.

3.6. Plot the layout "ContPlan" by clicking on the layout tab named "ContPlan." This is an overview of the entire facility.

3.6.1. Turn on (thaw) the following layers for the current viewport while in the model space: 0, AMMONIA, ASPHALT, BLDG, CONCRETE_OUTLINE, CONTPLAN, EQUIPMENT, EQUIPMENT_NAME, EVAC, FENCE, FLOW, GRAVEL, MEZZ, PE, PARKING_SPACES, RAILROAD, SAFETY, SHRUBBERY, TANKNUM_INDOOR, TANKNUM_OUTDOOR, TANKS_INDOOR, TANKS_OUTDOOR, TEXT, TRAFFIC_FLOW, TRUCK_SCALE, WALLS.

3.7. Plot the layout "CPlan1" by clicking on the layout tab named "CPlan1." This is a detail of the front office.

3.7.1. Turn on (thaw) the following layers for the current viewport while in the model space: 0, ASPHALT, BLDG, CONCRETE_OUTLINE, CONTPLAN, EQUIPMENT, EQUIPMENT_NAME, EVAC, FENCE, GRAVEL, MATERIAL_FLOW, MEZZ, PARKING_SPACES, PE, RAILROAD, SAFETY, SAFTEY KEY_FRONT, SHRUBBERY, TEXT, WALLS.

3.8. Plot the layout "CPlan2" by clicking on the layout tab named "CPlan2." This is a detail of the plant.

3.8.1. Turn on (thaw) the following layers for the current viewport while in the model space: 0, AMMONIA, ASPHALT, BLDG, CONCRETE_OUTLINE, CONTPLAN, EDA STORAGE, EQUIPMENT, EQUIPMENT_NAME, EVAC, FENCE, FLOW, GRAVEL, HAZWASTEHATCH, MATERIAL_FLOW, MEZZ, PE, RAILROAD, SAFETY, SAFETY KEY_PLANT, TANKNUM_INDOOR, TANKNUM_OUTDOOR, TANKS_INDOOR, TANKS_OUTDOOR, TEXT, TRAFFIC_FLOW, TRUCK, WALLS.

3.9. Plot the layout "CPlan3" by clicking on the layout tab named "CPlan3." This is a detail of the Lab Annex, Building 1, Building 2 and Building 3.

3.9.1. Turn on (thaw) the following layers for the current viewport while in the model space: 0, AMMONIA, ASPHALT, BLDG, CONCRETE_OUTLINE, CONTPLAN, EDA STORAGE, EQUIPMENT, EQUIPMENT_NAME, EVAC, FENCE, FLOW, GRAVEL, MATERIAL_FLOW, PARKING_SPACES, PE, RAILROAD, SAFETY, SAFETY KEY_ANNEX, SHRUBBERY, TANKNUM_INDOOR, TANKNUM_OUTDOOR, TANKS_INDOOR, TANKS_OUTDOOR, TEXT, TRAFFIC_FLOW, TRUCK_SCALE, WALLS.

4. Hydrite Chemical Co., located at 114 North Main Street, Cottage Grove, WI is a chemical manufacturer and distributor. Facility layouts (drawings) are included at the end of this SOP.

SITE COORDINATE ABBREVIATIONS

HYDRITE CHEMICAL CO.
114 N. Main Street
Cottage Grove, WI 53527

ABBREVIATION	COORDINATE DESCRIPTION
T100	SOUTHWEST TANK FARM NO DEDICATED SERVICE
T200	NORTHWEST TANK FARM NO DEDICATED SERVICE
T300	NORTHEAST TANK FARM NO DEDICATED SERVICE
T400	SOUTHEAST TANK FARM HAZARDOUS WASTE STORAGE TANKS Monomer Storage Tanks
SP	SOUTH PROCESS AREA ASSORTED PROCESS EQUIPMENT
NP	NORTH PROCESS AREA ASSORTED PROCESS EQUIPMENT
NWP	NORTHWEST PROCESS AREA ASSORTED PROCESS EQUIPMENT
CW10	WAREHOUSE AREA 10
CW11	WAREHOUSE AREA 11

CHANGE HISTORY LOG		
Revision No.	**Date**	**Description**
12.0	09/13/10	1. Updated to new SOPP format. 2. Updated attached drawings. 3. Changed Corporate SOPP system revision number on drawings (Rev.9) to match CG's current revision number (Rev.13). Revision numbers 10,11 and 12 were skipped.

Original SOP Effective Date: 5/1/95	Supersedes SOP Dated: 6/1/11	Effective Date: 9/1/11	Procedure No.: ER009CG
Facility: CG	Approval Name & Signature: Dave Volenberg Dave Volenberg		Revision No.: 16.0
Review Frequency: 1 Year	Approval Title: Safety Manager		Page 1 of 12
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I. **TITLE:** CONTINGENCY PLAN: EMERGENCY PROCEDURES

II. **KEY WORDS:** Emergency, Evacuation, Fire, Medical, Procedure

III. **PURPOSE:** To provide personnel with procedural responses to emergency fire, medical, and disaster situations.

IV. **APPLICATION:** This SOP applies to all personnel who work at the Cottage Grove East facility.

V. **DEFINITIONS:** MSDS – Material Safety Data Sheet

VI. **ASSOCIATED MATERIAL(S):**
Chemical Release Reporting Procedure (CR001AF)
Contingency Plan: Emergency Equipment and Personnel Responsibilities (ER006CE)
Contingency Plan: Facility Layout and Drawings SOP (ER008CE)
Contingency Plan: Overview (ER001SF)
Contingency Plan: Spill Management Plan (ER010AF)
Crisis Management Plan SOP (ER013AF)
Emergency Response Plan (ER002AF)
Facility Contingency Plan (TX002AF)
Incident Command Personnel Structure (ER006CE)
Mandatory Training Requirements SOP (TX035AF)
Monomer Safety (TX034CG)
Spill Elimination Policy (ER004AF)
Spill Prevention, Control and Countermeasure Plan SOP (ER003CE)
Spill Response Q-Card (ER006CE)
WBT module under title: Facility Contingency Plan (Cottage Grove); Revisions made to this SOP should be done concurrently with WBT module.

VII. **PROCEDURE:**

1. EVACUATION PROCEDURES

1.1. The signal for evacuation is the evacuation alarm, or an announcement made over the facility communication system.

1.2. Evacuation may be ordered in the event of fire, imminent tornado, chemical release or other chemical related emergency.

1.3. When the evacuation alarm sounds, or an evacuation announcement is made, the entire facility work force will evacuate to the designated assembly area. Emergency Response Team members may remain in the plant to respond to the emergency, if ordered to do so by the Incident Commander or supervisor in charge.

1.4. Supervisors and Lab Shift Group Leaders are responsible for ensuring that all of their employees have evacuated and that all equipment which could lead to an increased hazard if left running is shut down in accordance with SOPs, and for securing the facility against entry of anyone until the all clear notice is received.

1.5. The Office Staff (or Lab Staff during "off-hours") will bring visitor logs to the assembly area and give them to the Headcounters. The Headcounters will review them to determine whether all visitors are accounted for.

1.6. The Incident Commander must be notified if any employees or visitors are not present at the assembly area.

1.7. Evacuation means the Contingency Plan has been activated. Any time this occurs, report must be made to various regulatory agencies.

2. EVACUATION RULES

2.1. Critical pant operations may delay the immediate evacuation of certain employees. Any equipment which could become a hazard if left running should be shut down. Emergency shutdown procedures are to be followed.

2.2. Anyone not involved in an emergency shutdown process shall evacuate the building immediately when the alarm sounds.

2.3. Do not block fire lanes.

2.4. Do not wait for friends.

2.5. Do not be casual.

2.6. Do not panic.

2.7. Follow assigned evacuation routes.

2.8. After leaving the building, move to the designated assembly area and report to your supervisor.

2.9. Do not return to the building or leave the designated assembly area until specific instructions have been given, either by the Fire Department or the Incident Commander.

2.10. Direct all inquiries from the news media to the Emergency Communications Coordinators. Do not offer any personal observations.

3. EVACUATION ROUTES AND ASSEMBLY AREAS

3.1. All employees should evacuate through the nearest exit which is not obstructed by the emergency situation. The designated assembly areas are as follows:

3.1.1. Evacuation (Fire, Chemical Release, Chemical Hazard)

3.1.1.1. East Primary –Southwest corner of parking area south of the Cottage Grove-East office, near the office building.

3.1.1.2. East Secondary – Northeast corner of the Employee Center Parking Lot. Key to gate at east end of property is located under the cap of the south gate post.

3.1.1.3. West Primary – West end of the parking lot, northwest of the tank farm.

3.1.1.4. West Secondary – East end of the property, along the road at the intersection of Progress Drive and Main St.

3.1.2. Tornado shelters are in the basement of the office building and at the Lab Annex rest rooms at the north end of the building.

4. FIRE EMERGENCY PROCEDURES

4.1. SMALL CONTAINABLE FIRE

4.1.2. Remain Calm.

4.1.3. Call your Supervisor or the Incident Commander. If the supervisor is not readily available at the time of the fire, the response may proceed as long as a minimum of two employees are present in the area. In this situation, the Supervisor must be contacted as soon as possible following the incident.

4.1.4. Extinguish incipient fires using a portable fire extinguisher if you have been trained to do so.

4.1.5. The Incident Commander must evaluate whether any additional actions should be taken at the scene to prevent a recurrence of the fire.

4.1.6. The Incident Commander must notify the Emergency Communications Coordinator of the fire.

4.1.7. Facility Management shall complete a report in accordance with the Chemical Release Reporting Manual and the Incident Investigation Procedure.

4.2. **LARGE UNCONTAINABLE FIRE**

4.2.1. Remain calm. Evacuate to a safe area.

4.2.2. ANNOUNCE THE EVACUATION **three times** over the facility communication system from a safe area. State which areas of the plant are involved in the fire, so that evacuating personnel can avoid them.

4.2.3. The Incident Commander or his/her designee must contact the Fire Department by dialing 9-911 and telling the dispatcher that there is a large uncontrollable fire.

4.2.4. Evacuation will proceed in an orderly manner in accordance with evacuation procedures.

4.2.5. The Incident Commander or his/her designee (Greeter) will direct the Fire Department to the fire.

4.2.6. If possible- the Incident Commander will direct someone to shut off the Main Gas supply valve located near the North Man Door of the North Process Room.

4.2.7. Personal and company vehicles are not to be moved unless instructed to do so by the Incident Commander or Fire Department.

4.2.8. Employees may return to the facility only upon specific instructions to do so, either by the Fire Department or the Incident Commander.

4.2.9. The Incident Commander must evaluate whether any additional actions should be taken at the scene to prevent a recurrence of the fire.

4.2.10. The Incident Commander must notify the Emergency Communications Coordinator of the fire.

4.2.11. Facility Management shall complete a written report in accordance with the Chemical Release Reporting Manual and/or the Incident Investigation Procedure.

5. **CHEMICAL RELEASE PROCEDURES**

5.1 In an emergency involving a chemical spill or release, follow the procedures in the Spill Management Plan SOP. There are two conditions to which the Emergency Response Team may respond:

5.1.1 Stopping an ongoing release of hazardous materials, or;

5.1.2 Clean up of a spill after the release is ended.

5.1.3 In conjunction with these activities, the Emergency Response Team may need to attend to injured personnel.

5.2 The Cottage Grove Fire Department will not assist in spill clean-up. They may provide related technical support, or may assist neighbors impacted by the release.

5.3 The Spill Response Q-Card, an attachment to the Contingency Plan: Emergency Equipment and Personnel Responsibilities SOP should be completed by the Safety Officer prior to initiating any response.

5.4 In order to perform a response requiring the responders to wear supplied air breathing apparatus, either SCBA or Air-line (ARAP), there must be:

5.4.1 At least four people present, who will comprise the Entry Team:

5.4.1.1 At least one person must have been trained to be an Emergency Responder, and;

5.4.1.2 All must be physically capable of performing in the response.

5.4.1.3 At least one person onsite who is currently certified to perform First Aid and CPR. This person is not required to be part of the entry team.

5.5 Prior to performing a supplied air response or entry to stop a release, it shall be determined by the Incident Commander that:

5.5.1 allowing the continued release will pose a significant probability of injury to Hydrite employees, the facility's neighbors or the environment, and;

5.5.2 that an entry to stop the flow can be made without endangering the health or well being of the entry team, and;

5.5.3 that adequate resources are on site to safely affect the entry and control the release.

5.5.4 Doing nothing is always a viable option and sometimes the safest option.

5.6 When it is determined by the Incident Commander that a supplied air response or entry is necessary:

5.6.1 Before any entry is begun:

5.6.1.1 The means for the entrants to decontaminate their suits and equipment shall be determined and discussed with the entrants. Normally, this will be accomplished by the entrants using the nearest safety shower.

5.6.1.2 Rescue procedures shall be defined and the necessary resources in place

5.6.2 Prior to donning a SCBA/ARAP respirator, as they feel is necessary and comfortable, each entrant shall drink at least 8 ounces of water or electrolyte fluid (e.g. Gatorade).

5.6.3 The Decon Team Leader or Medical Team Leader may take the pulse, blood pressure and temperature of each entrant and record it under the Pre-Entry section on the medical monitoring portion of the Decon/Medical Team Checklist at the end of the Contingency Plan: Emergency Equipment and Personnel Responsibilities SOP.

5.6.4 The Decon Team Leader or Medical Team Leader shall record the time that each entrant begins breathing supplied air and the time that each entrant stops breathing supplied air.

5.6.5 After coming off of supplied air, each entrant may drink at least 8 ounces of water or electrolyte fluid.

5.6.6 After each entrant comes off of supplied air, the Decon Team Leader or Medical Team Leader shall take his/her pulse, blood pressure and temperature and record it under the Post-Entry section on the medical monitoring portion of the Decon/Medical Team Checklist at the end of the Contingency Plan: Emergency Equipment and Personnel Responsibilities SOP.

6 EMERGENCIES INVOLVING ANHYDROUS AMMONIA

6.1. The evacuation distance for ammonia releases is 100 to 200 yards in all directions.

6.2. If an ammonia-containing vessel is threatened by fire, evacuate to a minimum of 2000 feet.

6.3. If an ammonia-containing vessel is threatened by fire, apply water to the vessel to keep it cool, if that can be done without risking life.

6.4. If a release of anhydrous ammonia occurs:

6.4.1. If the leak can be stopped from a remote location, stop it immediately.

6.4.2. NOTE: Ammonia is not regulated as a flammable material, but under the right conditions, ammonia vapor will burn.

6.4.3. Evacuate bystanders from the area of the leak.

6.4.4. Determine whether the release of ammonia may be detected at the facility boundary. If it can, call 911 and notify the dispatcher that a leak of an unknown amount of ammonia is in progress and that plant neighbors may be affected by the ammonia.

6.4.5. If an "entry" is required to stop the leak, and it can be done safely, don PPE, including SCBA or ARAP (Supplied Air Respirator with auxiliary escape canister), Level B chemical-resistant suit with chemical-resistant gloves and boots (see Spill Response Q-Card completed by Safety Officer for detailed PPE assignments) and take steps to stop the release, per Section 5, above.

6.4.6. Decontamination of exposed personnel:

6.4.6.1. Remove contaminated clothing only after it is thawed.

6.4.6.2. If ammonia has entered the nose or throat and the patient can swallow, administer large quantities of water.

6.4.6.3. Do not apply neutralizing ointments or solutions.

6.4.6.4. Use water to flush exposed skin.

6.4.6.5. A physician must treat all exposures to liquid ammonia.

6.4.7. Spill management:

6.4.7.1. The concentration of ammonia in the air can be reduced by water sprayed through air toward the point of ammonia release from a downwind location.

6.4.7.2. Water should not be used directly on ammonia spills, but should only be applied to vapors as a fog.

6.4.7.3. If leak is from a tank, do not spray ammonia tanks with water, but apply water spray/fog to the vapor cloud.

7. EMERGENCIES INVOLVING MONOMERS

7.1. Monomers typically used at the Cottage Grove East facility include acrylates (such as Methyl Methacrylate), acrylic acid, and styrene. These materials may undergo self-polymerization with release of heat energy.

7.1.1. Monomers may be containerized and stored at the Cottage Grove West facility. These monomers are typically products produced at the East Facility.

7.2. You can recognize the onset of a polymerization reaction by the following:

7.2.1. Vapor emissions;

7.2.2. Odor;

7.2.3. Bulging containers or other indication of higher than normal pressure in the container;

7.2.4. Release of material from a relief valve or vent pipe; **CAUTION: A tank or vessel that is venting may cease venting if the vent plugs with polymer. If this happens, that vessel may explode!**

7.2.5. Temperature rise (10°F or more above the expected temperature), or a container that is warm or hot to the touch but with no external reason for heat.

7.2.6. Visible polymer formation in the pure monomer.

7.2.6.1. If you are testing MMA, use Heptane diluent and check for cloudiness in the diluted solution. Cloudiness is caused by polymer.

7.2.6.2. If you are testing QM-516, use methanol diluent and check for cloudiness in the diluted solution. Cloudiness is caused by polymer.

7.2.7. A characteristic "popping" noise coming from the container or tank;

7.3. If you observe any of these conditions, stop what you are doing and notify a supervisor immediately. **Do not ship** an unstable drum, tote or tanker.

7.4. Consider contacting the Rohm & Haas internal monomer emergency hot line (see emergency response Red Card from ER007CG for the current phone number). Explain that you are from Hydrite Chemical, a toll manufacturer under contract to Rohm & Haas. Describe the emergency.

7.5. Incipient polymerization can be stopped by addition of a shortstop solution, or by cooling the tank contents.

7.5.1. Shortstop solutions contain high concentrations of inhibitors dissolved in a compatible solvent. NMP is usually the preferred solvent because it is not flammable. Do not add powder directly to the monomer because static ignition may cause a fire.

7.5.2. The type of shortstop used is dependent upon the monomer involved. If given a choice, use PTZ because it does not require dissolved oxygen. Although specific instructions are listed in the Product Specific and Drumming SOPs, examples are:

7.5.2.1. For QM 516, add at least 100 pounds of PTZ dissolved in NMP to provide an effective shortstop for 10,000 gallons of QM-516 (>1500 PPM PTZ in the final solution).

7.5.2.2. For MMA, add at least 120 pounds of PTZ dissolved in acetone to provide an effective shortstop for a 15,000 gallon tank (>1000 PPM PTZ in the final solution).

7.5.2.3. For other acrylate monomers (acrylic acid, glacial Methacrylic Acid) add an amount of PTZ dissolved in acetone to achieve a PTZ concentration of at least 1000 PPM in the final solution.

7.5.3. **In some cases, cooling the vessel or the vessel contents may be successful in preventing runaway polymerization.**

7.5.3.1. If the application of external cooling prevents the temperature rise described in section 7.6, add inhibitor and continue to monitor until the material is considered fully inhibited and stable or turns into a solid polymer. Quarantine the material and document frequent temperature readings. Frequency of temperature readings and disposition of material will be determined by the Incident Commander in conjunction with facility management and engineering.

7.6. If the temperature of bulk material exceeds 120°F, or the temperature is rising faster than 4°F/ hour with no external heat source, a runaway polymerization may be in progress.

7.6.1. The primary concern in any emergency of this type should be for personal safety and protection against the danger of explosion.

7.6.2. As soon as an incident is recognized as dangerous, personnel should be evacuated from the area.

7.6.3. Evacuation distance should be appropriate to the size of the container involved – as a general rule, 600 feet for drums, and 1800 feet for bulk storage tanks.

7.6.4. Follow the Chemical Release Procedures.

7.6.5. An Incident Command System should be established using Emergency Response Team members, and the Contingency Plan should be implemented.

7.7. If a severe polymerization hazard exists: follow these steps if the monomer temperature exceeds 120°F; the temperature is rising at a rate > 4°F/hour; there are vapor emissions, odors of heated monomer, hot surfaces, or bulging container(s); or there are releases from relief valves indicating that polymerization is occurring:

7.7.1. Implement the Contingency Plan.

7.7.2. Prohibit all personnel, including emergency responders, from approaching the container or vessel.

7.7.3. Maintain a minimum of a 300-foot or 1300 foot evacuation zone for a drum container or bulk container, respectively.

7.7.4. If the container is being heated and the heat source can be stopped remotely, stop it.

7.7.5. If inhibitor can be added remotely, do so, but avoid agitation unless directed. Avoid use of N2 to sparge because MEHQ inhibitor efficacy is dependent upon the presence of dissolved oxygen.

7.7.6. If a truck or railcar is involved- do not attempt to move it. Do not open any domes on tanks, trucks, tank cars, or vessels. Never approach a tank wagon or railcar at the vessel ends.

7.7.7. If the evacuation zone extends beyond Hydrite property boundaries, call the police or fire department to assist in protecting the community.

7.8. If a moderate polymerization hazard exists, follow these steps if the monomer temperature is less than 120°F, and none of the other "Severe" indicators described above are present:

7.8.1. Implement the Contingency Plan.

7.8.2. The Incident Commander may make a decision to approach the container. Prohibit non-emergency personnel from approaching the container or vessel.

7.8.3. Maintain a minimum of a 300-foot or 1300 foot evacuation zone for a drum container or bulk container, respectively.

7.8.4. If the container is being heated and the heat source can be stopped, stop it.

7.8.5. Sample and test for inhibitor level. If inhibitor level is low, and if inhibitor can be added, do so, but avoid agitation unless you are adding inhibitor. Avoid use of N2 to sparge because inhibitor efficacy is dependent upon the presence of dissolved oxygen.

7.8.6. Cool the monomer if possible.

7.8.7. Eliminate ignition sources in the area, if possible.

7.8.8. If a truck or railcar is involved- do not attempt to move it.

7.8.9. Do not open any domes on tanks, trucks, tank cars, or vessels. Never approach a tank wagon or railcar at the vessel ends.

7.8.10. If the evacuation zone extends beyond Hydrite property boundaries, consider calling the police or fire department to assist in protecting the community.

7.9. Guidance on Terminating Emergency Response. The event is over when:

7.9.1. The fire is out,

7.9.2. Vapors are no longer present at a hazardous level,

7.9.3. Equipment has been secured at a known safe pressure, **CAUTION: A tank or vessel that is venting may cease venting if the vent plugs with polymer. If this happens, that vessel may explode!**

7.9.4. Temperature is normal with no temperature rise,

7.9.5. All the monomer has reacted or reaction has completely stopped,

7.9.6. Any remaining monomer has been tested and found to be stable,

7.8.7. No emission of vapors for a 1-2 hour period after the cooling system has been shut off (if cooling was used).

7.9.7. Be aware that relief valve may be plugged with polymer. **CAUTION: A tank or vessel that is venting may cease venting if the vent plugs with polymer. If this happens, that vessel may explode!**

7.9.8. There are no other immediate hazards detected.

7.10. Emergency Response Actions should be guided by the Rohm & Haas Acrylic Monomer Stability Emergency Procedures, as directed by the Incident Commander. The Rohm & Haas Procedures are specific to acrylic monomers, but may be extended to other monomers such as styrene. The Acrylic Monomer Stability Emergency Procedure provides additional specific information on response strategies. A copy of the procedure is maintained in the QM-516 SOP Manual.

8. MEDICAL EMERGENCIES

8.1. Remain Calm.

8.2. Do not move the victim unless a life-threatening situation exists.

8.3. Survey the scene. Is the area safe to enter?

8.4. Put on appropriate protective equipment to avoid contact with any body fluids.

8.5. Evaluate the victim for chemical contamination. If any is present, remove contaminated clothing and decontaminate body surfaces using soap and water. Emergency Responders will not transport contaminated personnel.

8.6. Do a primary survey of the victim. Check the A, B, C's: Airway, Breathing, and Circulation. A summary of some Emergency First Aid techniques is included on the following page.

8.7. Report all injuries, regardless of how slight, to your supervisor. Supervisors are required to record all details of the accident.

8.8. In the event of an injury or accident requiring medical attention, call the emergency medical services (EMS) for help by dialing 911. Use the Emergency Response Quick Reference Card posted near the phones to help during a call. The caller should be prepared to answer the following questions:

8.8.1. Your name.

8.8.2. The location of the emergency.

8.8.3. The telephone number of the phone being used.

8.8.4. Description of the problem, what happened, the number of victims, victims' condition, the help being given

8.9. Upon giving this information to EMS, wait to be instructed to hang up.

8.10. An employee (Greeter) must be directed to meet the responding EMS and direct them to the location of the accident.

8.11. If a chemical is involved, ensure the MSDS is printed and available by the time the ambulance arrives. Give the MSDS and Workman's Comp. forms to the Medics.

8.12. If a victim has been exposed to a chemical, the victim must be decontaminated prior to transportation in an ambulance. The fire department may be called to assist unless EMS is able to verify that complete decontamination has occurred. A decontaminated employee should wear clean PPE to the hospital and leave contaminated clothing and objects at the facility.

EMERGENCY FIRST AID

This page does not take the place of first aid training. For complete first aid training contact your local chapter of the American Red Cross. Always follow Universal Precautions when attempting first aid to avoid any possibility of contact with body fluids.

BLEEDING

*Cover wound with clean cloth and apply pressure.
*Elevate wound.
*Treat for shock.
*Call the rescue squad.

BURNS

*Do not apply ointments or sprays.
*Apply a clean cloth.
*Treat for shock.
*Call the rescue squad.

CHOKING

*Ask the victim if he or she is choking.
If the victim cannot talk, follow these steps:
*Stand behind the victim.
*Wrap your arms around the victim's waist.
*Make a fist with one hand. Place your fist (thumbside) against the victim's stomach in the midline just above the navel and well below the rib margin.
*Grasp your fist with your other hand.
*Press into the stomach with a quick upward thrust.
If the victim is very large or pregnant, give chest thrusts.
*Call the rescue squad.

HEART ATTACK

If the victim has chest pains that travel through the shoulder and is having difficulty breathing OR if the victim has a severe case of indigestion or heartburn, call the rescue squad immediately.

POISONING

If the victim is alert:
1. Call the Medical Emergency Number for treatment to be given.
1. Identify the material swallowed.
2. Read the label on the container.
3. Refer to the product MSDS.
4. Do not give fluids or induce vomiting unless instructed to by a physician or the Emergency Medical service.

If the victim has passed out:
1. Clear the victim's breathing space.
2. Call the Hazardous Information Services and the rescue squad.
3. Do not give fluids.
4. Refer to the product label & MSDS for additional information.

SHOCK

*Keep the victim lying down.
*Maintain victim's normal body temperature. In cold weather, keep the victim comfortable.
*Talk to the victim.
*Call the rescue squad.

STOPPED BREATHING

*Clear the victim's breathing space.
*Call the rescue squad.
*If you know rescue breathing:
1. Tip head – look, listen, feel for breathing.
2. Pinch victim's nose. Open mouth wide. Make tight seal.
3. Blow air into victim's lungs.
4. 4. Listen for air to come out.
5. 5. Repeat steps 2, 3, 4.

ADULT: 1 breath every 5 seconds.
CHILD: 1 breath every 4 seconds
INFANT: 1 breath every 3 seconds.

RESCUE SQUAD 9-911

9. CHEMICAL EXPOSURE EMERGENCIES

This page does not take the place of first aid training. For complete first aid training contact your local chapter of the American Red Cross.

9.1. EYE EXPOSURE

9.1.1. Yell "Help"

9.1.2. Assist and/or proceed immediately to the nearest eyewash station or water supply (Use portable eyewash if feasible).

9.1.3. RINSE EYES. Holding eyes open, rinse eyes with water for at least 15 minutes or until medical assistance arrives.

9.1.4. Yell "Help" until a helper arrives.

9.1.5. Follow general medical emergency procedures and call EMS.

9.1.6. Provide the EMS and hospital with the appropriate MSDS information.

9.1.7. The Supervisor will send a copy of the accident report to Workers Compensation Administration at the Corporate Human Resources Department within 24 hours of the accident.

9.2. SKIN AND/OR CLOTHING EXPOSURE

9.2.1. Yell "Help"

9.2.2. Assist and/or proceed to the nearest safety shower or sufficient water supply.

9.2.3. Flush the affected area for 15 minutes with water or until medical assistance arrives.

9.2.4. Yell "Help" until a helper arrives.

9.2.5. Follow general medical emergency procedures and call EMS if additional assistance is required. NOTE: Injured party should always see a physician for Hydrofluoric Acid (HF) and Hydrogen Peroxide (H202) contact. Burns may be delayed.

9.2.6. Provide the EMS and hospital with the appropriate MSDS information.

9.2.7. The Supervisor will send a copy of the accident report to Workers Compensation Administration at the Corporate Human Resources Department within 24 hours of the accident.

9.3. INGESTION

9.3.1. Dial 9-911 and describe the nature of the emergency.

9.3.2. Identify the material swallowed by reading the label on the container and referring to the product MSDS.

9.3.3. If the victim passed out, tip the victim's head back.

9.3.4. Do not give fluids or induce vomiting unless instructed to by a physician.

9.4. INHALATION

9.4.1. SURVEY THE SCENE. Enter only if it is safe to do so. Unless you are trained to enter a scene in which poisonous gases are present and have the proper equipment, you should not try to rescue a victim. Call 9-911 and stay clear of danger.

9.4.2. If you can reach the victim, remove him or her form the poisonous environment. Get to fresh air.

9.4.3. Check and monitor the ABC's (Airway, Breathing, Circulation).

9.4.4. Have another employee direct EMS to the scene.

9.4.5. Refer to the product label and MSDS for additional information.

10. MAJOR DISASTER PROCEDURES – TORNADOES

10.1. A weather radio is located at the Lab Annex. When a tornado threatens, your immediate action can save your life. In the event of a tornado threat, follow these procedures.

10.1.1. The Lab staff will make an intercom announcement informing all employees.

10.1.2. At that time, all employees on site are to shut down all processes, secure the facility, and go to the office basement, the restrooms in the engineering area of Bldg. #1, or the utility room in the employee center.

10.1.3. If a tornado causes damage to plant systems, the supervisor in charge shall take appropriate actions to respond to any fires, chemical release, or other emergencies.

10.1.4. When the danger has passed, as determined by the supervisor in charge, employees will be directed to return to work.

11. MAJOR DISASTER PROCEDURES – EARTHQUAKES

11.1. Even though earthquakes are not common in this area, the potential is real. The following are recommendations:

11.1.1. Try to get to some place that is sturdy (i.e., doorways, under desks, etc). Once the ground stops moving, commence emergency shut-down steps and evacuate the building.

11.1.2. If an earthquake causes damage to plant systems, the supervisor in charge shall take appropriate actions to respond to any fires, chemical release, or other emergencies.

11.1.3. When the danger has passed, as determined by the supervisor in charge, employees will be directed to return to work

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 3/31/94	Supersedes SOP Dated: 4/1/11	Effective Date: 9/1/11	Procedure No.: ER010AF
Facility: AF	Approval Name & Signature: Tom Miazga		Revision No.: 14.0
Review Frequency: 1 Year	Approval Title: Director Safety, Quality & Regulatory Affairs		Page 1 of 12
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			If this block is black, this is NOT a controlled document

I. **TITLE:** CONTINGENCY PLAN: SPILL MANAGEMENT PLAN

II. **KEY WORDS:** Chemical, Release, Spill

III. **PURPOSE:** To provide safe, environmentally sound methods for the clean-up and disposal of all types of chemical releases within the facility.

IV. **APPLICATION:** This SOP applies to any employee who identifies a chemical release. It further applies to the emergency coordinator, supervisor or administrative staff responsible for record keeping and corrective action.

V. **DEFINITIONS:**

Buddy System: A system of organizing employees into work groups in such a manner that each worker is designated to be observed by at least one other worker in the work group. The purpose of the buddy system is to provide rapid assistance to workers in the event of an emergency.

Catastrophic Release: Any release which impacts human health or the environment off of Hydrite's property.

Cold Zone: Is the area outside of the warm zone where no exposure to the hazardous materials would be reasonably expected to occur. Personal protective equipment beyond normal work uniform is not necessary. The Cold Zone will be determined by the Emergency Coordinator.

Decontamination: The removal of hazardous substances from employees and their equipment to the extent necessary to prevent the occurrence of adverse health effects when personnel or equipment leave the Hot Zone.

Emergency Response: A response effort by employees or emergency response personnel from outside the immediate release area to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance.

Emergency Response Releases: All spills other than Incidental Chemical Releases. Emergency Response Releases may be further divided into Major Releases and Catastrophic Releases

ENU: Elementary Neutralization Unit

Hazardous substance: Any substance which may cause adverse health or safety effects as a result of exposure, including:

- Any substance defined under section 101(14) of CERCLA.
- Any biologic agent or other disease causing agent.
- Any substance listed by the US Department of Transportation as hazardous materials listed in 49 CFR 172.101.
- any Hazardous Waste, meaning a waste or combination of wastes as defined in 40 CFR 261.3 and 49 CFR Part 171.8.
- Any substance defined under SARA as extremely hazardous in 40

CFR Part 355 Appendix A & B.

Hot Zone: The work area in which inhalation, oral, or dermal contact with hazardous materials can be expected during the response. Personal protective equipment shall be appropriate for the hazard involved in the area.

IDLH (Immediately Dangerous to Life and Health): An atmospheric concentration of any toxic, corrosive or asphyxiate substance which poses an immediate threat to life or would interfere with an individual's ability to escape from a dangerous atmosphere and which may only be entered with Self Contained Breathing Apparatus (SCBA).

Incidental Chemical Release Response: A response effort by employees to contain and clean up a chemical release where the mitigation of the hazards, if any, associated with the release is within the control of the employees.

Oxygen deficiency: An atmosphere with less than 19.5% oxygen by volume.

PEL (Permissible Exposure Limit): The PEL is the maximum exposure an employee may receive of a regulated chemical during an 8 hour day, 40 hour work week without experiencing ill effects. This is normally expressed in units of Parts per Million (ppm) for gases and vapors or milligram per Cubic Meter of Air (mg/M^3) for solids and dusts. Promulgated and published by the Occupational Safety and Health Administration (OSHA) in 29 CFR 1910, Sub-parts G and Z. Unless the PEL is published with a Ceiling value, it is an 8 hour time weighted average (TWA) exposure measured in the workers breathing zone. If the PEL is expressed as a ceiling value, then it is an absolute limit which must not be exceeded. The PEL may also have a "SKIN" indicator, which means that the material will penetrate unbroken skin. Regardless of the airborne concentration, skin contact is to be avoided.

Spill: A spill, or chemical release, is defined as the "spilling, leaking, pumping, pouring, emitting, emptying, or dumping" of a hazardous substance. As a general rule of thumb, if a substance has come out of the container in which it was stored, and it is not a part of the process, a spill has occurred.

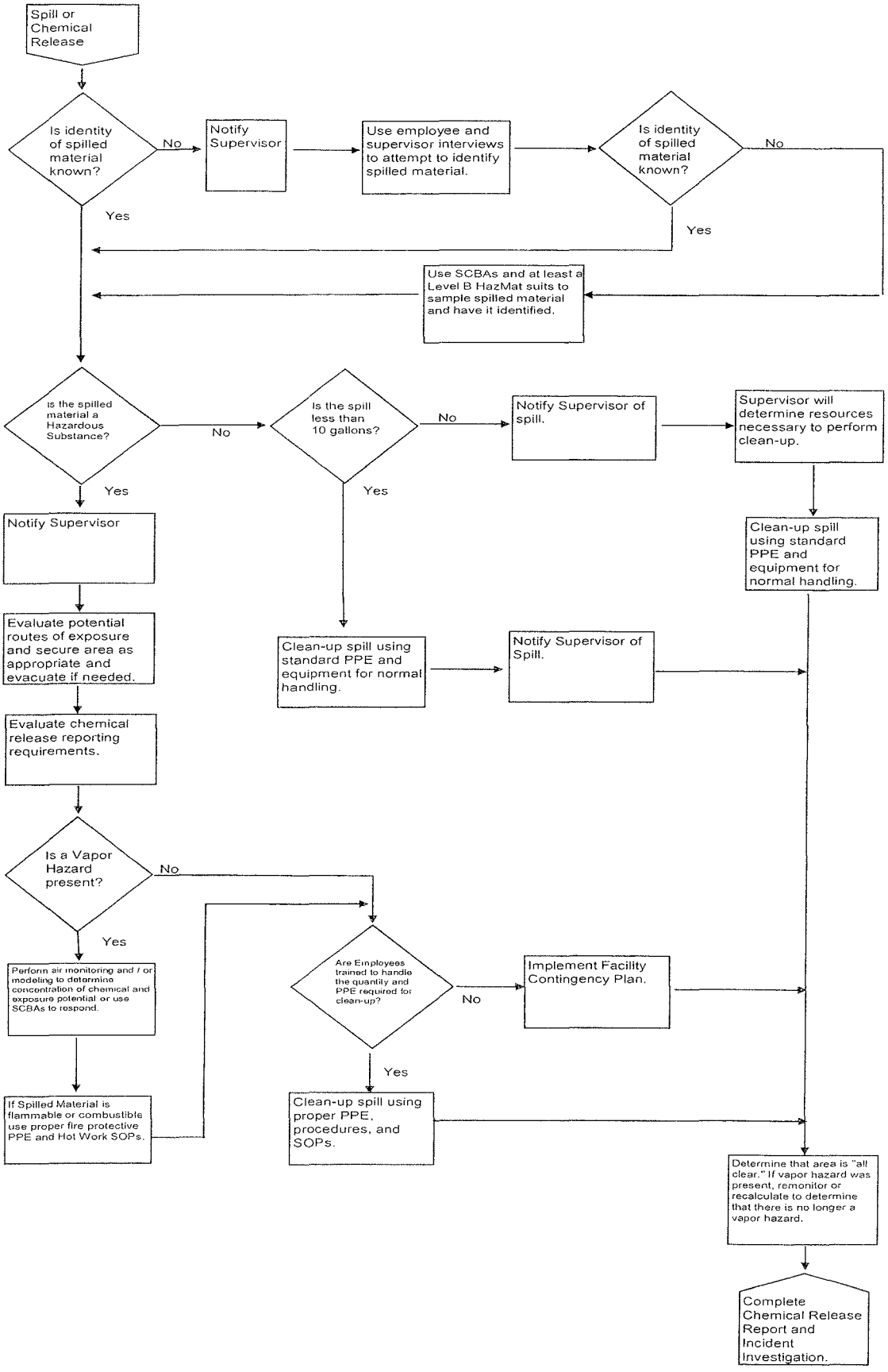
Warm Zone: Is the interface area between the hot zone and the cold zone used principally for staging supplies and decontamination upon exiting the hot zone.

VI. ASSOCIATED MATERIAL(S):

Chemical Release Reporting SOP (CR001AF)
Corrective or Preventive Action SOP (QA008SF)
Elementary Neutralization Unit SOP (PR003xx)
Incident Investigation and Reporting SOP (AD052AF)
Non-Hazardous Waste Management Policy (PR004AF)
Obsolete Inventory and Hazardous Waste Management SOP (PR029AF)
Spill Prevention Control and Countermeasures Plan SOP (ER003xx) only applicable to facilities with SPCCs

VII. PROCEDURE:

Spill Management Flow Diagram



1. IDENTIFY THE SPILLED SUBSTANCE AND EVALUATE THE HAZARDS

1.1. The objective of this step is to make an informed decision as to whether the spill should be classified as Emergency Response or Incidental Response.

1.2. When attempting to identify a spilled substance, remember:

1.2.1. DO NOT WALK INTO OR TOUCH ANY SPILLED MATERIAL

1.2.2. DO NOT TRY TO DETERMINE WHAT THE CHEMICAL IS BY TASTING OR SNIFFING

1.2.3. DO NOT BREATHE FUMES, SMOKE OR VAPORS

1.3. While remaining in the Cold Zone, use all available information to attempt to identify the spilled substance and determine the health, physical and environmental hazards presented by the spill.

1.3.1. Methods of Identifying the Spilled Material

1.3.1.1. Label: Product labels often include warning statements, first aid information, and a phone number for more information. Cross reference to the Material Safety Data Sheet.

1.3.1.2. Manifest: Refer to the Proper Shipping Name, Hazard Class and I.D. Number. Cross reference to the Emergency Response Guidebook and to the Waste Master.

1.3.1.3. Shipping Papers: Contain the Proper Shipping Name, Hazard Class and I.D. Number. "HM" column will be checked if the substance is a hazardous material. Cross reference to the Emergency Response Guidebook or Material Safety Data Sheet.

1.3.1.4. Placards: Hazard class and I.D. Number can be cross referenced to the Emergency Response Guidebook.

1.3.1.5. Knowledgeable persons in the area: Containers can often be identified by fellow employees.

1.3.2. Reference Materials for identifying material properties if material name is known

1.3.2.1. Material Safety Data Sheets (MSDS): Detailed information can be obtained from the MSDS:

1.3.2.1.1. Product information

1.3.2.1.2. Hazardous ingredients

1.3.2.1.3. Physical data

1.3.2.1.4. Fire and explosion hazard data

1.3.2.1.5. Health hazard data

1.3.2.1.6. Reactivity data

1.3.2.1.7. Spill or leak procedures

1.3.2.1.8. Special protection information

1.3.2.2. The North American Emergency Response Guidebook provides information which can be used for evacuation distances.

1.3.2.3. Other references may be used in addition to those listed above to determine appropriate hazard information and release mitigation, as appropriate.

2. NOTIFY SUPERVISOR OR EMERGENCY COORDINATOR

2.1. A spill must be reported immediately to a Supervisor, Manager, or Emergency Coordinator when:

2.1.1. The identity of the spilled substance is unknown,

2.1.2. The spilled substance is identified as a hazardous substance, or

2.1.3. When the quantity is of a non-hazardous substance release is greater than 10 gallons.

3. ISOLATE THE AREA OF THE SPILL AND ASSIST INJURED

3.1. This is a defensive step to protect all nearby persons and property.

3.2. Use barricade tape or station people at area entrances to restrict entry.

3.3. All potential routes of exposure must be evaluated when establishing a safe area around a spill (i.e. vapors through fans or doors, splashing, etc).

3.4. Wear appropriate PPE to evaluate the hazards potentially presented by the spill according to Section 7., below.

3.5. Assist injured and shut down equipment only if it is possible to do so without entering the Warm Zone or Hot Zone.

4. IF A PARTIAL EVACUATION IS NECESSARY

4.1. The Supervisor/Emergency Coordinator will determine whether a partial evacuation is necessary.

4.2. He/she will conduct the partial evacuation as outlined in the Contingency Plan: Emergency Procedures SOP.

5. IF A FULL EVACUATION IS NECESSARY, NOTIFY AUTHORITIES (EMERGENCY RESPONSE)

5.1. The Emergency Coordinator will determine whether a full evacuation is necessary.

5.2. The Emergency Coordinator will activate the alarm and evacuation will commence as outlined in the Contingency Plan: Emergency Procedures SOP.

5.3. The Emergency Coordinator will either immediately notify the local authorities, or request that the Emergency Communications Coordinator do so.

5.4. The Emergency Communications Coordinator will determine whether any additional government agencies need to be notified in accordance with the Chemical Release Reporting SOP.

6. CONTACT NEIGHBORS (EMERGENCY RESPONSE)

6.1. In the event that the Emergency Coordinator determines that evacuation of local areas may be advisable, the Emergency Coordinator or his/her designee must immediately notify the local authorities who will contact neighbors.

6.2. In the event that a release of sulfur dioxide, ammonia, or hydrogen sulfide occurs at the Terre Haute, IN facility, also follow procedures for notifying neighbors in the Contingency Plan: Emergency Procedures SOP, ER009TH - Volume 7.

7. PERSONAL PROTECTIVE EQUIPMENT, SHUT DOWN EQUIPMENT, STOP SOURCE OF RELEASE

7.1. Complete the Chemical Release Worksheet in accordance with the Contingency Plan: Plan Implementation, Emergency Equipment and Personnel Responsibilities SOP (ER006xx).

7.2. The specific PPE required will depend on the type and severity of the hazards presented by the release.

7.2.1. If IDLH conditions may exist, SCBAs MUST be worn until vapor monitoring information indicates that a lower level of respiratory protection is allowed.

7.2.1.1. SCBA may not be used in atmospheres greater than 10,000 times the PEL.

7.2.2. Follow PPE guidelines on Prism Safety code and matrix, if available.

7.3. Shut Down Equipment - If the spill involves a flammable substance, eliminate any sources of ignition from the area.

8. CONTAIN AND CONTROL THE RELEASE, CLEAN-UP

8.1. Appropriate action (or non-action) must be selected to assure the safety of personnel involved.

8.2. A minimum of two employees, that are trained to the hazards presented by the spilled material and the use of the PPE required to mitigate those hazards, are present in the area.

8.3. Once the appropriate level of PPE has been determined, one, or a combination of the following techniques may be used to correct the situation:

8.3.1. Dike, absorb or otherwise contain any spilled free liquid to prevent the spill from spreading.

8.3.2. Transfer contents of leaking container or vessel to a compatible container or vessel.

8.3.3. Plug leak or otherwise close the opening.

8.4. Every effort should be made to prevent spilled material from entering any surface water or sewer drainage system. Absorbent pads and socks are available to block off manhole covers or to direct the flow away from soil.

8.5. Stop Source of Release - Plug, patch or otherwise stop the source of the release.

8.6. General clean-up and spill residue management procedures can be found in Section 13, "General Response Guidelines," below.

8.6.1. The Material Safety Data Sheet and the DOT Emergency Response Guidebook may also provide additional response information.

8.7. Perform vapor monitoring to determine when the level of respiratory protection may either be lowered or eliminated when respiratory hazards are presented by the spilled material.

8.8. All hazards presented by the spilled material must be completely eliminated before the area affected by the spill is cleared for general use.

9. DECONTAMINATION

9.1. EQUIPMENT

9.1.1. All equipment which came in contact with the spilled chemical, or was in the hot zone must be decontaminated.

9.2. PERSONNEL

9.2.1. All personnel who were in contact with the spilled chemical, or who entered the Hot Zone, must be decontaminated

9.2.2. Determination of the proper decontamination method should be made prior to entry by any personnel into the Hot Zone.

9.2.3. Do not attempt to neutralize a chemical contaminant on PPE while the responder is still wearing the PPE.

9.2.4. Do not use chemical neutralization as a means of decontamination on personnel.

9.3. Decontamination will normally be accomplished with a clear water wash or a soapy water wash followed by a clear water rinse. Refer in the Material Safety Data Sheet, the DOT Emergency Response Guidebook, or other literature to identify any special methods or precautions for a specific contaminant.

9.3.1. The responders Personal Protective Equipment should either be properly discarded or washed until there is no visible evidence of contamination.

9.3.2. Care must be exercised as the PPE is removed that the responder is not contaminated by the rinsate.

9.3.3. The equipment should be washed until there is no visible evidence of contamination.

9.3.4. If the contaminant is corrosive, the effluent from the wash should be tested with pH paper and the wash continued until the effluent has a neutral pH.

9.4. The effluent from the decontamination should be contained and tested to verify that it is not a hazardous waste.

9.4.1. This can be accomplished by performing the decontamination within a contained area, such as a tank dike or building with built in containment.

9.4.2. If the spilled material would result in a waste which is corrosive, it may be possible to pump the effluent directly to the ENU for treatment. Refer to the Elementary Neutralization Unit SOP.

10. WASTE MANAGEMENT

10.1. The Emergency Coordinator (Emergency Response spill) or the Department Supervisor (Incidental spill) must determine whether the material can be reused, or whether it must be disposed of.

10.1.1. In some cases it may be necessary to run a profile on the material in the lab to determine whether it can be reused, or, if it must be disposed of, whether the material is hazardous or non-hazardous.

10.1.2. Additional information is available in the Non-Hazardous Waste Management Policy, the Obsolete Inventory and Hazardous Waste Management SOP, or through the Corporate SQRA Department.

10.1.3. The Department Supervisor (Incidental spill) or the Emergency Coordinator (Emergency Response spill) must ensure that, in the affected area(s) of the facility, no waste that may be incompatible with the released material is treated, stored, or disposed of until clean up procedures are completed.

10.2. Cleaning of equipment and disposal of single-use protective clothing may generate an additional waste stream. This waste will also have to be addressed in accordance with the Non-Hazardous Waste Management Policy and the Obsolete Inventory and Hazardous Waste Management SOP.

10.3. The Emergency Coordinator must follow up on the waste management process to assure that all wastes are properly handled and disposed of in a timely fashion.

10.4. Hazardous waste must be packaged and stored in accordance with the Obsolete Inventory and Hazardous Waste Management SOP.

11. RETURNING THE FACILITY TO OPERATIONAL STATUS

11.1. All emergency equipment listed in this plan must be cleaned and fit for its intended use before operations are resumed.

11.2. For Emergency Response spills which involve hazardous waste or affect hazardous waste operations, the Operations Manager must notify the Federal, State and Local authorities that the facility is in compliance with the above before any operation in the affected area is resumed. Phone numbers for these agencies are included in the Chemical Release Reporting Manual.

12. FOLLOW UP REPORTING AND DISSEMINATION OF INFORMATION

12.1. Refer to the

12.1.1. Chemical Release Reporting SOP.

12.1.2. Incident Investigation and Reporting SOP.

13. GENERAL RESPONSE GUIDELINES

13.1. Non-Hazardous - Dry Chemicals

13.1.1. Use appropriate Personal Protective Equipment (PPE) for the material being handled.

13.1.1.1. Be aware of potential dust inhalation hazards.

13.1.2. Use a wet/dry vacuum cleaner or broom and shovel to clean-up the material, as appropriate.

13.1.3. Clean-up only one material/chemical type at a time.

13.1.4. Be sure not to mix chemicals in the vacuum cleaner.

13.1.5. Refer to the MSDS and ENU SOP to determine whether the chemical can be disposed of in the ENU.

13.1.5.1. If so, empty the dry chemical into the ENU at a rate not to cause upsets or slug loads.

13.1.5.2. Record the chemical name, amount, and date of disposal on the Waste Log located at the ENU (See ENU SOP).

13.1.6. If the chemical cannot be disposed of in the ENU, it must be stored in an appropriate container and disposed of as a special waste in at an "approved" facility.

13.1.7. When clean-up and disposal has been completed for the spill, be sure to clean up any response equipment.

13.1.8. Follow manufacturer's instructions to clean-up the wet/dry vacuum cleaner.

13.1.8.1. Be sure to wipe the inside of the wet/dry vacuum cleaner dry with paper towels and return to its normal use area.

13.1.8.2. Paper towels used for this purpose should be disposed of in the dumpster (See Non-Hazardous Waste Management Policy).

13.2. Non-Hazardous Liquids

13.2.1. Use appropriate PPE for the material being handled.

13.2.2. Recover Free Liquids to the extent practical using pumps or other means. The liquid should be placed into an appropriate container pending disposition.

13.2.3. As part of the process of identification, be sure to test the pH of the spilled material.

13.2.3.1. If less than a pH of 5.0 (5.0 - 2.0) or greater than a pH of 10.0 (10.0 - 12.5), neutralize the spill.

13.2.3.2. Add sufficient neutralizing agent to achieve neutrality (pH of 6.0 - 8.0). Measure the pH again after neutralization.

13.2.4. If positively identified as a non-hazardous, non-flammable liquid, and neutralized to a pH of 6.0 - 8.0, a wet/dry vacuum cleaner may be used to clean-up the residue.

13.2.5. If unable to clean up the spill completely with the wet/dry vacuum cleaner, use a floor scrubber or mop.

13.2.5.1. If clean up of the spill with a floor scrubber or mop is not functionally possible, use absorbent material.

13.2.5.2. Use this procedure sparingly, as it creates more waste for disposal.

13.2.6. Refer to the MSDS and SQRA Coordinator before emptying liquid spills cleaned up in the wet/dry vacuum cleaner or floor scrubber into the ENU to verify that the material is acceptable.

13.2.6.1. If not, use absorbent material and place in a drum for disposal off-site as a special waste.

13.2.7. All equipment used to clean-up the spill should be rinsed with sufficient water to remove any residue of the spilled material.

13.2.7.1. The rinsate from spill clean-up equipment should be disposed of in the same manner as described in Section 10.

13.2.8. Follow manufacturer's instructions to clean-up the wet/dry vacuum cleaner.

13.2.8.1. Be sure to wipe the inside of the wet/dry vacuum cleaner dry with paper towels and return to its normal use area.

13.2.8.2. Paper towels used for this purpose should be disposed of in the dumpster (See Non-Hazardous Waste Management Policy).

13.3. Hazardous - Corrosive Liquids

13.3.1. If a corrosive liquid chemical or chemical mixture release occurs, notify supervision immediately.

13.3.2. Review vapor exposure limits and perform vapor monitoring in SCBA if the potential for an IDLH condition exists to determine the appropriate level of respiratory PPE required.

13.3.3. If properly trained to handle corrosive liquid spills,

13.3.3.1. Confine and neutralize the spill using the proper PPE.

13.3.3.2. Otherwise, protect the area until a trained emergency responder arrives.

13.3.4. Hydrofluoric Acid

13.3.4.1. Hydrofluoric acid fumes are highly corrosive and toxic. Spills can only be cleaned up by fully protected personnel.

13.3.5. Refer to the MSDS and SQRA coordinator to determine the proper neutralizing agent.

13.3.6. Once the corrosive liquid chemical has been neutralized to a pH of 6.0 - 8.0, use the procedure described in the previous section for "Non-Hazardous Liquids" for clean-up and disposal.

13.4. Hazardous - Flammable Liquids

13.4.1. If a release of flammable liquid chemical or chemical mixture occurs, notify supervision immediately.

13.4.2. Block off area.

13.4.3. Eliminate all sources of ignition.

13.4.4. Review vapor exposure limits and perform vapor monitoring in SCBA if the potential for an IDLH condition exists to determine the appropriate level of respiratory PPE required.

13.4.5. Refer to the MSDS and SQRA coordinator for the proper absorbent materials and approved methods for confinement and clean up.

13.4.6. If properly trained to handle flammable liquid chemical spills, confine and absorb the spill with absorbent material using the proper PPE.

13.4.6.1. Otherwise, protect the area until a trained emergency responder arrives.

13.4.7. Use the following procedures for clean up and disposal of the contaminated absorbent:

13.4.7.1. Absorbent material used to clean up the flammable spill should be stored in an approved steel drum for flammable hazardous waste (1A2 - 17H open head steel drum).

13.4.7.2. Label and date the container used for storing the contaminated absorbent in accordance with the Obsolete Inventory and Hazardous Waste Management SOP.

13.4.7.3. Transport the drum to the Hazardous Waste Storage Area.

13.4.7.4. Or, if available on-site, the spill clean-up could be placed in a Satellite Accumulation Drum of compatible waste.

13.5. Hazardous - Flammable Solids

13.5.1. If a release of flammable solid chemical or chemical mixture occurs, notify supervision immediately.

13.5.2. Block off area.

13.5.3. Eliminate all sources of ignition.

13.5.4. Be aware of respiratory exposure limits as presented by dust.

13.5.5. If properly trained to handle flammable solid chemicals, clean-up the material with a broom or non-sparking shovel using the proper PPE.

13.5.5.1. Otherwise, protect the area until a trained emergency responder arrives.

13.5.6. Use the following procedure for clean-up and disposal of the waste flammable solid material:

13.5.6.1. The waste flammable solids should be placed in an approved pail or drum (5 gallon plastic pail/lids or open head steel drums).

13.5.6.2. Label and date pails or drum containing the waste flammable solid material in accordance with the Obsolete Inventory and Hazardous Waste Management SOP.

13.5.6.3. Transport to the Hazardous Waste Storage Area.

13.5.6.4. Or, if available on-site, the spill clean up could be placed in a Satellite Accumulation Drum of compatible waste.

13.6. Liquid Oxidizers

13.6.1. If a release of a liquid oxidizer occurs, notify supervision immediately.

13.6.2. Block off area.

13.6.3. Review vapor exposure limits and perform vapor monitoring in SCBA if the potential for an IDLH condition exists to determine the appropriate level of respiratory PPE required.

13.6.4. Refer to the MSDS or SQRA coordinator for the proper absorbent materials and approved methods for confinement and clean up.

13.6.5. If properly trained to handle oxidizer spills, confine and absorb the spill with non-combustible absorbent material using the proper PPE.

13.6.5.1. Do not allow spilled material to come in contact with wood or other combustible materials.

13.6.5.2. DO NOT use a combustible Floor Dry to absorb an oxidizer spill.

13.6.5.3. Label and date pails or drums containing the clean up material in accordance with the Obsolete Inventory and Hazardous Waste Management SOP.

13.6.5.4. Otherwise, protect the area until a trained emergency responder arrives.

13.6.6. After the gross contamination has been removed, flush the affected area with large amounts of clear water.

13.6.7. Refer to the MSDS or SQRA coordinator to determine proper disposal.

13.7. Dry Oxidizers

13.7.1. Do not allow dry oxidizers to contact water if at all possible

13.7.2. Be aware of respiratory exposure limits as presented by dust.

13.7.3. Determine the proper PPE to wear before cleaning up the dry material.

13.7.4. Pick up spilled dry oxidizers with a non-sparking shovel and place in a non-combustible receptacle, such as a metal drum.

13.7.5. Refer to the product's material safety data sheet to determine whether it is safe to sweep up fine powder with a broom.

13.7.6. Label and date pails or drum containing the clean up material in accordance with the Obsolete Inventory and Hazardous Waste Management SOP.

13.7.7. After the gross contamination has been removed, flush the affected area with large amounts of clear water. It may be necessary to wear respiratory protection against the reaction products, i.e. chlorine typically.

13.7.8. Refer to the MSDS or SQRA coordinator to determine proper disposal.

13.8. Chlorine/Anhydrous Ammonia/Sulfur Dioxide

13.8.1. Block off area, do not expose your self to liquid or gases.

13.8.2. Evacuate the area immediately and the facility as necessary.

13.8.3. Notify the Emergency Coordinator who will determine if evacuation of local areas may be advisable, the Emergency Coordinator or his/her designee must immediately notify the local authorities who will contact neighbors.

13.8.4. In the event that a release of sulfur dioxide, ammonia, or hydrogen sulfide occurs at the Terre Haute, IN facility, also follow procedures for notifying neighbors in the Contingency Plan: Emergency Procedures SOP, ER009TH - Volume 7.

13.8.5. If properly trained, spills can only be contained by fully protected (Level A) personnel. Chlorine A, B & C Kits are available at most locations which store these gases.

Original SOP Effective Date: 9/1/93	Supersedes SOP Dated: 5/1/09	Effective Date: 2/1/11	Procedure No.: CR001AF
Facility: AF	Approval Name & Signature: Catherine Hay-Bassett		Revision No.: 16.0
Review Frequency: 2 Years	Approval Title: Manager, Technical Regulatory Services		Page 1 of 7
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			If this block is black, this is NOT a controlled document

I. TITLE: CHEMICAL RELEASE REPORTING PROCEDURE

II. KEY WORDS: Chemical Release, Spill, Incident

III. PURPOSE: To provide consistent reporting of all chemical releases to appropriate parties.

IV. APPLICATION: This procedure applies to all Emergency Communications Coordinators, Regional RHS Coordinators, Regulatory Specialist, and Operations/Plant Managers.

V. DEFINITIONS:

Chemical Release or Release: For the purpose of reporting, any hazardous substance which comes out of the container it is intended to be in and is not part of the process, is considered a release. i.e. overfilled drums or tanks, leaking equipment, air spills.

CRISIS: An event that has or exhibits the potential to significantly impact the operability of an individual facility or the company as a whole, or, to pose a significant health, environmental, financial or legal threat.

DOT: U.S. Department of Transportation

ECC: Emergency Communications Coordinator

Emergency Communications Coordinator: This individual is responsible for internal communications and reporting in the event of a chemical release, notification of appropriate agencies and maintenance of chemical release records in accordance with all applicable local, state and federal regulations, as defined in the Hydrite Chemical Co. Release Reporting Procedure.

General Public: Any person not considered an employee, i.e. vendors, service personnel, community individuals, etc., excluding contract truck drivers who are trained in hazardous materials handling.

Hazardous Material: A material or substance that has been determined by the DOT to be capable of posing and unreasonable risk to health, safety and property when transported. Hazardous Materials include Hazardous Substances, Hazardous Waste, and Marine Pollutants.

Hazardous Substance: For the purpose of release reporting, a hazardous substance is any substance for which an MSDS is required, all hazardous waste, all customer waste, or any substance released in such an amount or concentration that it is potentially dangerous to human health or the environment.

Hazardous Waste: Any material that is subject of the Hazardous Waste Manifest Requirements of the U.S. Environmental Protection Agency specified in 40 CFR Part 262.

LEPC: Local Emergency Planning Committee. This is the local emergency

response agency. Typically these agencies are set up by county.

NRC: National Response Commission. A federal emergency response agency.

RQ: Reportable Quantity is the amount, when released into the environment over a 24 hr. period, which triggers reporting to the NRC. The values are Chemical specific as listed in 40 CFR Part 302.4 or the Title III List of Lists.

SERC or SERB: State Emergency Response Commission or State Emergency Response Board. This is the state emergency response agency.

Transportation Related Release: Transportation related releases include all releases which occur during transit, loading, unloading, and temporary storage incidental to transit for any load from the time it is offered for shipment until accepted and motive power is removed.

VI. ASSOCIATED MATERIAL(S):

Air Spill Reporting SOP CR003SF
Branch Specific Decision Tree (attached)
Branch Specific Release Reporting & Call-Down List (attached)
Corrective and Preventive Action SOP QA008AF
DOT Decision Tree (attached)
Emergency Communication Coordinator Call Down List ER007AF
Emergency Response Guide Book (attached)
Instructions for Completing the Chemical Release Report Form SOP CR002AF
Pesticide Spill Reporting SOP CR004AF
SARA Title III Lists of Lists (attached)
40 CFR Part 355
40 CFR Part 264
49 CFR Part 171.15 and 171.16

VII. PROCEDURE:

1. Crisis Situation Communication

1.1. A crisis situation is realized when a significant event requires notification to or assistance from a government agency, medical/emergency response team, legal counsel or insurance provider.

1.2. It is the responsibility of any employee who is involved in the event, observes the event and/or contacts an emergency response agency, to inform the facility manager/ ranking person-in-charge or respective department manager of a crisis situation.

1.3. The facility manager/ ranking person-in-charge or department manager must immediately determine the severity of the crisis situation and contact, or direct the facility Emergency Communications Coordinator to contact, a member of the crisis management team, if deemed necessary.

1.3.1. Information that is to be communicated to the crisis management team will be provided by facility management.

1.3.2. Crisis management team call down list is located in the Emergency Call Down SOP located in this volume.

1.4. Contact with the crisis management team does not replace nor relieve any other reporting responsibilities required by company SOP.

2. Chemical Release Incident

2.1. Upon notification of a chemical release, the ECC must gather basic information quickly. This information must be recorded on the Chemical Release Report. The Chemical Release Report form and instructions for completion are described in the Instructions for Completing the Chemical Release Reporting Form SOP located in this Volume.

2.1.1. What chemical was released?

2.1.2. How much was released? (an estimate is acceptable)

2.1.2.1. How much was released to the environment?

2.1.3. What is the Reportable Quantity (RQ) for the chemical?

2.1.4. Where exactly did it occur?

2.1.5. Time and duration of release?

2.1.6. Cause of release?

2.1.7. Was emergency assistance requested by the Emergency Coordinator?

2.2. Determine whether the release must be reported immediately to government agencies or simply reported to Corporate by following the attached decision trees.

2.2.1. The first decision tree is for State and Federal reporting of on-site spills. Follow the guidance in Section 3 for non-agency reportable releases and Section 4 for agency reportable releases.

2.2.2. The second decision tree is for transportation related spills both on-site and off-site. Follow the guidance in Section 5 for all transportation related releases.

2.3. Complete the Chemical Release Report.

2.4. Incidents involving hazardous waste or affecting hazardous waste operations, require telephone notification. See the attached decision trees for appropriate agencies and consult the Incident Reporting Call Down list for appropriate agencies phone numbers.

2.5. Additional information on reporting requirements required by your facility permits may be found in the SQRA SOPP Manual. If a determination can not be made, contact Corporate for additional assistance.

3. Chemical Release, Non- Agency Reportable:

3.1. Send a copy of the completed chemical release report to your Regional SQRA Coordinator.

3.1.1. Terre Haute will voicemail the Regional Coordinator to obtain location to fax report.

3.2. Submit the original to the Operations Manager for completion of the loss value and corrective action section in accordance with the Instructions for Completing the Chemical Release Reporting Form SOP.

3.2.1. Cottage Grove East and Annex submit reports to the Plant Manager and the RHS Manager. The RHS Manager will fax the Release report details to the Wisconsin Department of Natural Resources Hazardous Waste Management Specialist.

3.2.2. Terre Haute ECC will calculate loss value prior to submission of report to Operations Manager for corrective action.

3.3. Copies of chemical release reports for spills not reported to any agency will be completed and submitted to the Regulatory Specialist at Corporate within 5 days of the release.

4. Chemical Release, Agency Reportable:

4.1. Make the required phone calls. Agency telephone numbers are listed in the attached Incident Reporting Call Down List. The order in which agencies are contacted is not mandated. As a rule of thumb; if assistance is required or the potential for public

disturbance exists, contact the LEPC first, then the SERC and NRC. If the situation is contained and managed on-site, contact the NRC first, then the SERC and LEPC.

4.2. The verbal notification must include:

4.2.1. Name of the Emergency Communications Coordinator.

4.2.2. Name, address and telephone number of the facility.

4.2.3. Date, time and type of incident (e.g. - release, fire).

4.2.4. Chemical name and estimated quantity of materials involved.

4.2.5. Exact location.

4.2.5.1. Report location in plant (e.g. - liquid blending area: outside SW corner of warehouse; center bay of indoor loading dock on South side of building)

4.2.5.2. Report conditions at the location (e.g. - inside or outside; paved or unpaved; controlled or discharged)

4.2.6. The extent of injuries, if any.

4.2.7. The possible hazards to human health or the environment, outside the facility.

4.3. When calling agencies:

4.3.1. Be Calm, Do Not Panic!

4.3.2. State your name, company name, location and the reason you are calling (e.g.: this is Pat Hemann, I need to report a chemical release).

4.3.3. If no outside assistance is required, specifically state so at the beginning and at the end of the call.

4.3.4. If assistance is needed, tell the agency specifically what assistance is required.

4.3.5. Wait for further instructions or questions.

4.3.6. If the release is contained on-site and being managed, reassure the agency contact that the situation is under control and that you are fulfilling the release notification requirements.

4.3.7. Answer all questions completely.

4.3.8. Do not guess. For example, if the exact cause of the release is unknown at the time of reporting, state that the cause is under investigation. If a question is asked and you are unsure of the answer, ask if you may get back to them.

4.3.9. Always ask if they require a written follow-up report.

4.3.10. Put the name of the contact, agency, time, date, and report number if assigned, and whether a written or verbal follow-up report is required on the Chemical Release Report.

4.4. Voice mail and send a copy of the chemical release report to your Regional SQRA Coordinator.

4.4.1. Leave a message on voice mail for the Chemical Release Reporting group at voice mailbox 456 regarding the release.

4.4.2. If 911 has been called, also copy your voice mail message to the Sales Manager Group at voice mail box: 321

4.5. The original chemical release report must be submitted to the Operations Manager for completion of the loss value and corrective action sections in accordance with the Instructions for Completing the Chemical Release Reporting Form SOP.

4.5.1. Cottage Grove East and Annex submit reports to the Plant Manager.

4.5.2. Terre Haute ECC will calculate loss value prior to submission of report to Operations Manager for corrective action.

4.6. Reports must be completed and faxed within 1 day of the incident to the Manager, Technical Regulatory Services at the Milwaukee plant 414-354-4108 or email Catherine Hay-Bassett a copy. Include a copy of the bill of lading or manifest, if applicable.

4.7. In response to any media inquiries, state that the incident is under investigation and our Corporate office will be issuing a statement. The reporter may contact the Vice-President of Treasury, Risk & Legal Affairs or Director of Safety, Quality and Regulatory Affairs during normal business hours at 262-792-1450 for more information. If the reporter persists, restate that the incident is under investigation and our Corporate Office will be issuing a statement.

5. Chemical Release, Transportation Related.

5.1. All transportation related releases will be reported by the carrier. The exceptions are if:

5.1.1. If the release is caused by the customer unloading material consigned to them, then the customer is responsible for the DOT report. Note: if the customer causes a release of material that is consigned to someone else, then the carrier is responsible for the report.

5.1.2. The releases that meets all of the following conditions.

5.1.2.1. Not an air shipment;

5.1.2.2. Not a Hazardous Waste;

5.1.2.3. Material is classified a ORM-D or Packaging Group III in Class or Division 3, 4, 5, 6.1, 8 or 9;

5.1.2.4. Each package has a capacity less than 5.2 gallons (20 liters) for liquid or 66 pounds (30 kilograms)for solids; and

5.1.2.5. The total aggregate release is less than 5.2 gallons (20 liters) for liquid or 66 pounds (30 kilograms) for solids.

5.2.. All transportation related releases in which Hydrite is the carrier will be reported in accordance with this SOP. See Section 2 for guidance on reporting when applicable.

5.3. All transportation related releases in which Hydrite is not the carrier will be reported as follows.

5.3.1. Emergency Communication Coordinator will complete the Chemical Release Report Form for all releases that occur on Hydrite property regardless of who the carrier is. The chemical release report form and instructions for completion are described in the Instructions for Completing the Chemical Release Reporting Form SOP.

5.3.2. State and Federal notification for transportation related releases that are **caused** by Hydrite and occur on Hydrite property are the responsibility of Hydrite.

5.3.3. State and Federal notification for releases that are **caused** by a carrier other than Hydrite and occur on Hydrite property are the responsibility of the carrier.

5.3.3.1. Hydrite personnel will assist the carrier as necessary to insure accurate and timely reporting.

5.3.3.2. Agency telephone numbers are listed in the attached "Incident Reporting Call Down List" for reference.

5.3.3.3. Should the carrier choose not to report after Hydrite has advised them of the requirement to do so, Hydrite will make the report on the carriers behalf.

5.3.4. Copies of all reports filed by a carrier for releases which occur on Hydrite property will be supplied by the carrier to the Transportation Manager.

5.3.4.1. Transportation Manager will forward copies of all reports to the Manager, Technical Regulatory Services upon receipt.

6. Training

6.1. When one of the trained branch Emergency Communications Coordinators is replaced, the remaining Emergency Communications Coordinator is responsible for notifying the Corporate Regulatory Specialist.

6.2. A training session will be arranged to review the Chemical Release Reporting Procedure with the new Emergency Communications Coordinator.

7. Recordkeeping

7.1. The Operations Manager is responsible for placement of the original report in the branch legal file.

7.1.1. Cottage Grove East and Annex reports are the responsibility of the Plant Manager.

7.2. The Operations Manager must note in the operating records the time, date and details of any incident that requires implementation of the Contingency Plan for hazardous waste.

7.2.1. This requirement is located in 40 CFR Part 264.56

7.3. Original chemical release reports and copies of follow-up written reports are to be kept in the branch legal file. The Operations Manager is responsible for maintaining release records in accordance with the Record Retention SOP.

7.4. Corrective and Preventive Action Plan Forms or a similar agreed upon form, generated as a result of the release are to be maintained in accordance with the Corrective and Preventive Action SOP.

7.5. Waterloo must update the Storm Water Pollution Prevention Plan (SWPPP) SOP within 2 weeks for all releases which exceed the RQ into the environment. Information contained within the chemical release report will be used to complete the update. See the Storm Water Pollution Prevention Plan SOP number RH014WL for specific information to be included.

7.6. Cottage Grove must update the Storm Water Pollution Prevention Plan (SWPPP) SOP within 2 weeks for all releases into the environment which exceed the RQ. Information contained within the chemical release report will be used to complete the update. See the Storm Water Pollution Prevention Plan SOP number RH014SF for specific information to be included.

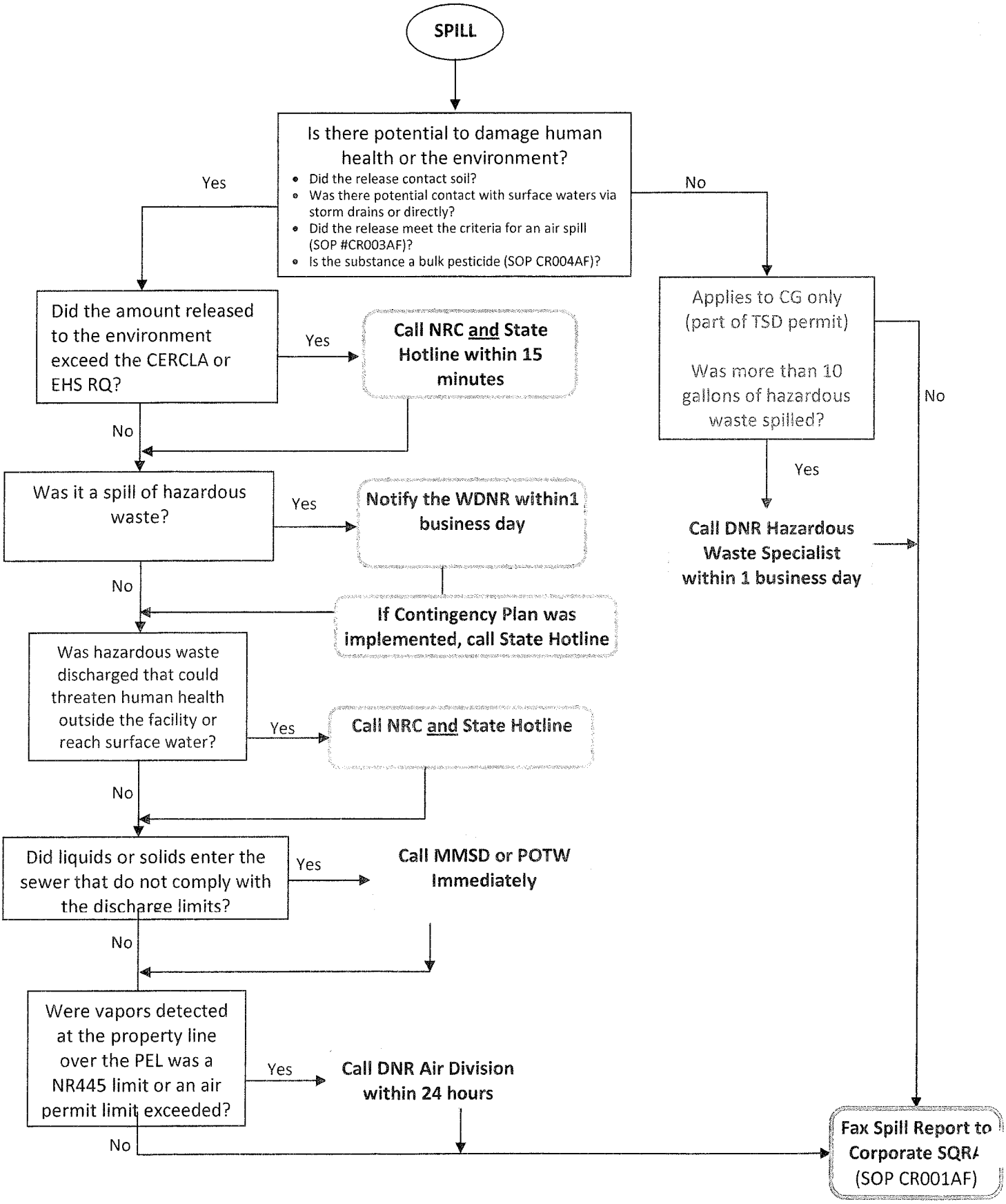
COTTAGE GROVE, WI – RELEASE REPORTING & CALL-DOWN LIST

Emergency assistance calls are made by the Emergency Communications Coordinator (or the Driver in the case of a transportation related incident). Follow-up calls are made by the Operations Manager or designee (usually EHS/SQRA) prior to resuming operations. All other notifications are made by the branch Emergency Communications Coordinator.

AGENCY(S) TO BE NOTIFIED	PHONE NUMBER
EMS (FIRE, POLICE, AMBULANCE)	911
NATIONAL RESPONSE CENTER (NRC)	800-424-8802
STATE HOTLINE	800-943-0003
WISCONSIN DNR, DISTRICT HAZ WASTE MGMT. SPECIALIST Cynde English Instructions on what to report: o Company name and location: Hydrite Chemical Co., 114 N Main Cottage Grove, WI o What spilled: "hazardous waste, consisting mainly of X, Y, Z..." o Where: either in containment or not in containment. If not in containment, approximately where on property. o When did the spill occur and approximately how much spilled? o Was the Contingency Plan evoked (i.e. was the plant or area evacuated and the Emergency Response Team activated)? o How much corrective action has occurred so far? Is the area cleaned up already or is cleanup still in process? o If you are not from EHS/SQRA making the call, explain that someone will follow up with another phone call.	608-275-3240
WISCONSIN DEPT. OF NATURAL RESOURCES (DNR) AIR MANAGEMENT DIVISION – Jennifer Hamill If malodorous, air permit violation or if we exceed an NR 445 emission limit Instructions on what to report: o Company name and location: Hydrite Chemical Co., 114 N Main Cottage Grove, WI o What spilled: "generic material name, main constituents" o How much: approximate numbers OK, gallons or pounds or PPM if measured with PID, FID, or Draeger tube at property boundary o From when to when: date/time to date/time o Which control device malfunctioned? Has a source been identified? o How much corrective action has occurred so far? Is the area cleaned up already or is cleanup still in process? o If you are not from EHS/SQRA making the call, explain that someone will follow up with another phone call.	608-273-5608
MADISON METRO. SEWERAGE DISTRICT	608-222-1201
HYDRITE CORPORATE SQRA DEPARTMENT	262-792-1450
WISCONSIN DNR SPILL COORDINATOR – Mike Schmoller	608-275-3303

For Transportation Spills follow decision trees in CR001AFx for the state in which the spill occurred and follow SOP TR005AF .

WISCONSIN SPILL REPORTING



NOTE:

- Releases which require a HAZWOPER response and evacuation or in-place sheltering, or threaten to present a fire or explosion hazard require immediate notification to Wisconsin DNR.
- Air spills must be reported if a permit or regulatory limit is exceeded or if based on concentration and toxicity, the release can pose a substantial hazard to human health or the environment.

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 9/1/93	Supersedes SOP Dated: 9/1/09	Effective Date: 2/1/11	Procedure No.: CR002AF
Facility: AF	Approval Name & Signature: Catherine Hay-Bassett		Revision No.: 9.0
Review Frequency: 2 Years	Approval Title: Manager, Technical Regulatory Services		Page 1 of 7
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			If this block is black, this is NOT a controlled document

I. **TITLE:** INSTRUCTIONS FOR COMPLETING THE CHEMICAL RELEASE REPORT

II. **KEY WORDS:** Chemical Release, Spill, Incident

III. **PURPOSE:** To provide uniform structure and format for the completion of Chemical Release Reports.

IV. **APPLICATION:** Emergency Communications Coordinators, Regional SQRA Coordinators, Operations/Facility Managers and Regulatory Specialist

V. **DEFINITIONS:**

BOL: Bill of Lading (Shipping papers)

CAS: Chemical Abstract Services who assign specific numbers to chemicals and chemical compounds.

DOT: U.S. Department of Transportation

EHS: Extremely hazardous substances

Emergency response release: High hazard release which endangers human health or the environment.

EPA: U.S. Environmental Protection Agency

FIFRA: Federal Pesticide, Fungicide and Rodenticide Act.

Incidental release: Low hazard release which is contained.

NR 706: Wisconsin Department of Natural Resources regulations on discharge notification.

OHSA: Occupational Health and Safety Administration

Pesticide: Product which is registered with the EPA under the FIFRA

Production release: Release which occurs during normal production and is controlled as part of that operation.

Release: Material that come out of their container (Tank, pipe, drum, bag etc.)

RQ: Reportable Quantity. This may refer to an EPA RQ or an OSHA RQ which is in the EPA's "List of Lists"

SPCC: Spill Prevention Countermeasures and Controls

TPQ: Threshold Planning Quantity

VI. ASSOCIATED MATERIAL(S):

Air Spill Reporting SOP (CR003SF)
Chemical Release Report CR002AFa (attached)
Chemical Release Reporting Procedure SOP (CR001AF)
Corrective and Preventive Action Policy (QA008AF)
Material Safety Data Sheets
SARA Title III List of Lists
SPCC Plan (ER003xx)
Hazardous Substance Discharge Notification & Source Confirmation Requirements, NR 706 (attached)

VII. PROCEDURE:

1. Instructions for Completing Chemical Release Report

1.1. Branch: List the branch responsible for reporting the release.

1.2. Date and Time: Log the date and time the release began.

1.3. Duration: Insert the duration of the actual release, not how long it took to clean up.

1.4. Name: Name of the person completing the report.

1.5. Contact: This could be an additional person knowledgeable in the details of the release, either the person reporting the release to you or other contact. This may be left blank.

1.6. Address: Physical address of branch reporting, including City, State and Zip Code. Do not list P.O. Boxes.

1.7. Phone: Reporting branch phone number, including area code.

1.8. Chemical Released: List the chemical name of the product released. You may use the common name if you include the actual chemical name or CAS number. For example, list either Hydrochloric Acid or Muriatic Acid and the CAS #7647-01-0.

1.9. Estimated Quantity: Estimate the amount of the release using best available information and calculations. The last page in this SOP is a worksheet for calculating quantity with various available information. ALWAYS convert the estimate into pounds for reporting and comparison with the Reportable Quantity.

1.9.1. If the material released is a mixture, it may be reported in several ways:

1.9.1.1. For mixtures where all constituents are known, each hazardous component or ingredient may be listed separately. If this method is chosen, the amount released is determined for each ingredient released as a percent by weight of the total amount released. See the MSDS Section II - Hazardous Ingredients for all hazardous constituents and their percent by weight of the mixture. When a percent range is given, you are obligated to use the upper bound limit. Another source of component information is the product master. The product master also lists the constituents, usually with a narrower percentage range.

1.9.1.2. For mixtures where all components are not know, report on the mixture as a whole, with the amount released given as the total amount of the release.

1.10. Estimated Quantity Released to the Environment.

1.10.1. This includes releases to the ground, land, waterways, public sewers or air.

1.10.2. If a material is released to containment and recovered, then it is not released to the environment. If a portion is released to the media listed in 1.10.1., the report only that portion of the total estimated release.

1.11. Reportable Quantity: Reportable quantity (RQ) can be determined by checking the SARA List of Lists, 40 CFR Table 302.4, or the MSDS.

1.11.1. Instructions for using the "List of Lists" is included in that section.

1.11.2. When using the MSDS, refer to the Environmental Data Sheet section or regulatory data.

1.11.3. A material released is a mixture, the RQ may be determined in several ways:

1.11.3.1. For mixtures where all constituents are known and each hazardous component or ingredient is reported separately, RQ's are determined by individual ingredient released as a percent by weight of the total amount released. If the RQ for any ingredient released to the environment is exceeded, then notification is automatically required.

1.11.3.2. For mixtures where all components are not known, report on the mixture as a whole, with the RQ calculated based on the known component with the lowest RQ.

1.11.3.3. If no components are known, but the mixture is known to be a hazardous substance, the RQ is 1 pound.

1.12. Extremely Hazardous Substance (EHS) identification can be found in the same locations as RQ and TPQ. On the MSDS, EHS determination is made by the presence of a value in the TPQ column. If a value is present, write in RQ value. This is required information.

1.13. Wisconsin NR706 Reporting - NR706 requires reporting to the State releases into the environment. The specifics of reporting and required information attached to this SOP. Common releases which must be reported are:

1.13.1. One gallon or more of gasoline, if release is not on impervious surface

1.13.2. Five gallons or more of other petroleum products, if release is not on impervious surface

1.14. Wisconsin Pesticide

1.14.1. See SOP CR004AF for reports of releases of EPA registered pesticides.

1.14.2. Contingency Plan Implemented: Indicate if the contingency plan was implemented in response to the release. If evacuation of any areas were required, the contingency plan was in fact implemented.

1.14.3. Contacts and Agencies: Contacts and Agencies will only be completed for "reportable releases". Always obtain the name of the person who takes the report. Be sure to include the date and time, including a.m. or p.m., of the notice. In the comments section enter any report numbers assigned and note if a written follow up report is necessary.

1.15. Exact Location of Incident

1.15.1. Exact location for releases on Hydrite property should describe the area where the release occurred, i.e., liquid blending, Northeast section of new warehouse, or use MRP II location code.

1.15.2. For transportation related releases not occurring on Hydrite property, include the name and complete address of the customer, or highway number and nearest mile marker for in-transit releases.

1.16. County: County means the county in which the release occurred. Transportation related releases may obtain the county from driver, maps, customer inquiry, etc. This is required information.

1.17. Medium into Which Release Occurred: Circle any medium affected by the release. For specific chemicals that also impact the air, see Air Spill Reporting SOP (CR003AF) regarding air spill chemicals and guidance.

1.18. Surface water affected? Check yes or no. Be aware that some storm drains have direct discharge into streams.

1.19. Ground water affected? If soil is contaminated, but completely remediated this would be no. If a release impacts soil area where full remediation is not possible this would be yes. For

example, a tank failed and releases 5,000 gallons into containment. The dike has a crack and 500 pounds leak through the containment wall into the soil below. The potential for the chemical to reach ground water does exist, therefore this would be marked yes.

1.20. Cause and Type of Incident: Indicate the root cause and type of incident along with a description of what occurred.

1.20.1. Indicate inadequate/nonexistent SOP if the process SOP either does not exist, does not cover the circumstance which can be expected to reoccur, or contains incorrect information.

1.20.2. Indicate training as the cause if the employee has either not been trained on an SOP or activity.

1.20.3. Indicate equipment if the release was caused by equipment failure such as a tank failure or pump seal. Do not indicate equipment if improper use of equipment resulted in the release. Equipment is not the root cause when a high level alarm fails. The employee should know the tank capacity prior to transferring product and be in attendance.

1.20.4. Indicate personnel for releases caused by not following SOP, error in judgment, or other improper behavior.

1.20.5. Indicate what type of incident occurred; spill, fire or explosion. If none of the types listed apply, include in the description a detailed account of what transpired.

1.20.6. Be specific when identifying the cause of the release. Include as much detail as necessary in the narrative to adequately describe what happened. The Operations Manager will need this information to determine corrective action.

1.20.6.1. If the drum fell off the fork lift, ask why did it fall? Was it bumped? Was the driver going too fast? Was the load improperly banded? Why was the tank truck overfilled? Were the driver and loader in attendance? Did an alarm fail?

1.21. Transportation Related: To determine if a release is transportation related, follow the flow chart included in the chemical release reporting procedure. Any release which occurs during transport, loading or unloading when a power unit is attached or temporary storage in transit is considered transportation related.

1.22. Carrier: Indicate if Hydrite is the carrier on transportation related releases.

1.22.1. Include container information on page 2 of the release report and attach a copy of either the Bill of Lading (BOL) or Manifest for all releases in which Hydrite was the carrier.

1.22.2. This information is required for all transportation related releases, regardless of RQ.

1.23. Physical state, odor and color are self-explanatory. This information is helpful when emergency assistance is requested. Notify responders if potential fumes that are odorless and colorless may be present.

1.24. Weather conditions are important for outside spills in particular and may be pertinent for volatile indoor spills. If there is significant wind, or extreme temperatures it will affect the distance and speed with which the spill spreads.

1.24.1. Wind direction is listed as the direction the wind is coming from, not the direction it is headed.

1.25. Local units on the scene should be used to indicate the presence of non-Hydrite emergency responders.

1.26. Actions Taken On the Scene: Use this section to describe the sequence of steps taken to stop, contain and clean up the release. Identify all materials used to clean up or neutralize, indicate if responders were dispatched to assist in clean up or recovery, did customer assist, where did contaminated material end up. Be specific and detailed in this section.

1.26.1. May keep an addition record of all actions, contacts and individuals involved.

1.27. Estimate Recovery: Estimate recovery of released material and how it was handled. List the amount of product recovered and/or neutralized separately, indicate the amount of waste generated and disposed of as a result of the release.

1.28. Injuries: Describe any injuries and treatment received. Include Doctor recommendations if known. Some reporting agencies request this information. Include the number of people injured in each category on the right side of this section.

1.29. Property Damage: Property damage is described here, including such things as valve on pipeline was crushed by truck, hose fitting crushed by fork truck, etc.

1.30. Loss Value: Dollar value for losses must be included on all releases.

1.30.1. Include value of product released.

1.30.2. To calculate the cost of clean-up, include any virgin product used for neutralization, absorbent materials, replacement costs. Labor is calculated at a flat rate of $20.00/hour per person responding unless a more accurate figure is known. Include disposal cost for all waste generated.

1.30.3. Other costs would include external response costs, trucking charges, etc.

1.31. Packaging information is only required for reportable transportation related releases where Hydrite is the carrier. Be sure to obtain the container specification prior to overpacking or disposal of drums, or have the drums packed so the information is visible. This information is specific to the container involved in the release.

1.31.1. You may still want information on the container if it is not reportable, and tote/cylinder serial numbers should be listed to ensure that they are properly handled.

1.32. For transportation related releases, circle the correct information regarding vehicle and incident details. Attach a copy of the BOL or Manifest, whichever is applicable. A copy of the BOL or Manifest is required for transportation related releases.

1.33. Recommendations and actions to prevent a reoccurrence shall be addressed in "Incident Investigation SOP (AD052AF).

2. Reporting procedures

2.13. Reporting to Federal, State or Local government agencies is described in "Chemical Release Reporting Procedure" SOP (CR001AF)

CALCULATING QUANTITY RELEASED

Sg = Specific Gravity Density = lbs/gallon

Lbs/gallon = Sg x 8.33 lbs/gallon (density of water)

$$Sg = \frac{145}{145 - \text{degrees Baume'}}$$

TO CALCULATE TOTAL RELEASE BY CHEMICAL:
Multiply pounds of product released x % of purity

Scenario 1: 50 gallons of Muriatic Acid 20° Baume' is spilled.

Sg of HCL is 1.16

lbs/gallon = 1.16 x 8.33 = 9.66 lbs/gallon

quantity product released = 50 gallon x 9.66 lbs/gallon = 483 lbs.

total release of HCL = 483 lbs x 31.5% purity = 152 lbs.

Scenario 2: 10 gallons of Bleach (Sodium Hypochlorite 12.5%) is spilled then is rinsed to neutralization where is reacts with a low pH, releasing chlorine gas. With no additional information, assume all available chlorine releases.

chlorine released = gallons bleach released x available chlorine

Sodium Hypochlorite 12.5% contains 1.251 lbs chlorine/1 gallon bleach

10 gallons x 1.251 lbs/gallon = 12.51 lbs chlorine

Aqua ammonia 26° Be (30%) contains 2.37# available ammonia/ 1 gallon aqua

To calculate ammonia vapor released, assume 10% of total available ammonia vaporizes. This is based on guidance issued by EPA for SARA 313 reporting.

Note: To locate specific gravity, lbs/gallon, % purity of products, consult the MSDS, SKU listing, Product Master, or calculate as shown above.

CHANGE HISTORY LOG		
Revision No.	**Date**	**Description**
9.0	1/14/10	1. Added 1.10 (releases to environment) and 1.32. 2. Amended 1.21, 1.24 and 1.52.1.2.1. 3. Updated format. 4. Changed approver.

Chemical Release Report

Branch		**Completed By**	
Date of Incident		**Hydrite Contact**	
Time of Incident		**Address**	
Duration of Incident		**Phone**	

Chemical(s) Released / **Hazardous Waste (Check One)** ☐Yes ☐No	**Total Est. Quantity Released (lbs)**	**Est. Quantity of Release to Environment (lbs)**	**CERCLA RQ**	**EHS RQ**	**Contingency Plan Implemented**
	lbs	lbs	lbs	lbs	☐Yes ☐No
	lbs	lbs	lbs	lbs	
	lbs	lbs	lbs	lbs	
	lbs	lbs	lbs	lbs	
	lbs	lbs	lbs	lbs	

Names of Contact & Agencies Notified	**Date & Time**	**Comments**

Exact Location of Incident (Check One)	☐Inside ☐Outside Location: _____		**County Where Release Occurred**
Medium Into Which Release Occurred (Check One)	☐Air ☐Soil ☐Water ☐Containment ☐Concrete		
Surface Water Affected?	☐Yes ☐No	**Transportation Related?**	☐Yes ☐No
Ground Water Affected?	☐Yes ☐No	**Hydrite The Carrier?**	☐Yes ☐No
Cause of Incident? (Check One)	☐SOP ☐Training ☐Equipment ☐Personnel	**Type of Incident? (Check One)**	☐Spill ☐Fire ☐Explosion

DESCRIBE:

Physical State	**Color** / **Odor**	**Weather Condition**	**Local Units on Scene**
☐Solid ☐Semisolid ☐Liquid ☐Gas		Wind Speed _____ Direction _____ Temperature _____ Precipitation ☐Yes ☐No Direction of Spill Movement _____	☐Emergency Government ☐Fire Department ☐Law Enforcement ☐EMS ☐Other

Actions Taken on Scene

Chemical Re' se Report

Estimated Recovery and Disposition of Material

Injuries (Describe)

# of Fatalities:
# of Hospitalized:
# of Non-Hospitalized:

Property Damage (Describe)

Carrier Damage: $_____
Public/Private Property Damage: $_____

Loss Value

Product Loss: $_____
Decontamination/Cleanup: $_____
Other: $_____
Total Loss: $_____

Packaging Information (Complete for Reportable Transportation Incidents)

Type of Packaging Including Inner Receptacles: _____

Capacity of Weight Per Unit Package: _____

Serial Number of Cylinders, Portable Tanks, Cargo Tanks, Tank Cars: _____

Number of Packages of Same Type Which Failed in Identical Manner: _____

Package Identification (un 1A1/Y1.2/250/98USA): _____

Number of Packages of Same Type in Shipment: _____

Any Other Packaging Markings: _____

If Reconditioned or Requalified: Registration Number of Symbol: _____

Name & Address, Symbol or Registration Number of Packaging Manufacturer:

Date of Last Test or Inspection: _____

_____

Exemption/Approval/Competent Authority Number (If Applicable): _____

Complete if Transportation Related (attach Bill of Lading or Waste Manifest)

Type of Vehicle:
- ☐ Cargo Tank
- ☐ Van Truck/Trailer
- ☐ Flat Bed Truck Trailer
- ☐ Tank Car
- ☐ Rail Car
- ☐ TOFC/COFC
- ☐ Aircraft
- ☐ Barge
- ☐ Ship
- ☐ Other

Incident Occurred During: _____

Was spill the result of a vehicle accident/derailment? ☐ Yes ☐ No

Estimated Speed: _____

Total Number of Lanes: _____

Highway Type: ☐ Divided/Limited Access ☐ Undivided

Additional Comments: (Recommendations and Preventive actions shall be addressed in "Incident Investigation" SOP-AD052AF).

Appendix M

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 6/1/99	Supersedes SOP Dated: 5/1/10	Effective Date: 7/1/10	Procedure No.: RH029AF
Facility: AF	Approval Name & Signature: Catherine Hay-Bassett		Revision No.: 6
Review Frequency: 3 Years	Approval Title: Manager, Technical Regulatory Services		Page 1 of 3
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.		If this block is black, this is NOT a controlled document	
Revised Section(s): Changed review frequency from 2 years to 3 years. Update reference in section 5.1 to Hazardous Waste Awareness training. Retraining on this change is not required.			

I. TITLE: WASTE MINIMIZATION

II. KEY WORDS: Pollution, Recycle, Reuse, Waste, Waste Minimization

III. PURPOSE: This SOP provides guidance to company personnel for implementing waste minimization activities.

IV. APPLICATION: This SOP will apply to all facilities.

V. DEFINITIONS: Waste minimization: A reduction in the amount of or toxicity of the waste generated by a facility.

Recycling: A material that is reuse or reclaimed to use as an ingredient in an industrial process or employed as an effective substitute for a commercial product.

VI. ASSOCIATED MATERIAL(S):
Obsolete Inventory and Hazardous Waste Management SOP (PR029AF).
Elementary Neutralization Unit SOP (PR003xx)
Recycling of Business Generated Waste SOP (RH003AF)
Managing Product Returns SOP (QA013AF)
Management of Change SOP (QA005AF)
Maintenance Waste Management SOP (MN002AF)
Good Manufacturing Practices – Container, Packaging, Holding and Distribution Policy SOP (GM010AF)
Non-hazardous Waste Management Policy SOP (PR004AF)
Laboratory Waste Handling Program SOP (QC003xx)
Wisconsin Administrative Code NR 630.32
40 CFR 262.23

VII. PROCEDURE:

1. In the Hazardous and Solid Waste Amendments of 1984, the U. S. Congress declared that reduction or elimination of hazardous waste is a priority.
   - 1.1. The Pollution Prevention Act of 1990 set up a hierarchy of waste management options. These are in order of preference:
     - 1.1.1. Prevention
     - 1.1.2. Environmentally sound recycling or reuse.
     - 1.1.3. Environmentally sound treatment
     - 1.1.4. Environmentally sound disposal
   - 1.2. This SOP will act as a guide in complying with these initiatives.
2. Prevention
   - 2.1. When beginning a process or task, use only the raw materials needed to do the job.

2.2. If there is excess or left over raw materials, contain the left over material in the proper container that has been labeled to use next time. If possible, save the material for the next batch that uses the material.

2.2.1. If the material cannot be reused or is out of date, follow the procedures outlined in section 3.2.3.

2.3. Minimize line flushes and clean outs whenever possible and consistent with good manufacturing practices to ensure that equipment is adequately cleaned to prevent product contamination.

2.3.1. Segregate line flush material based on the type of material.

2.4. Analyze specific processes on a case by case basis to see if steps or materials can be saved or eliminated, or equipment purchased to reduce waste.

2.4.1. This may involve capitol investment or changes in process SOPs. Waste minimization analyses should be analyzed as a part of Management of Change, New Product Review and New Process Review.

2.5. Whenever possible use non-toxic or non-hazardous materials for the process or task.

2.6. Care must be taken to avoid spilling material.

3. Environmentally sound recycling, reuse, and disposal.

3.1. Non-hazardous material.

3.1.1. Each facility will have separate containers for landfilling and recycling.

3.1.2. Office and administrative wastes will be managed in accordance with the Recycling of Business Generated Waste SOP.

3.1.3. Each facility will insure that recyclable material is properly segregated, and sent to an approved recycling facility. Follow the Non-hazardous Waste Management Policy SOP and the specific requirements of the recycler being used.

3.1.4. Non-recyclable materials must not be placed with recyclable materials.

3.1.5. Each facility will keep track of all material going to landfill. **DO NOT LAND FILL HAZARDOUS MATERIAL.**

3.2. Hazardous materials

3.2.1. Laboratory Waste should be managed in accordance with the Laboratory Waste Handling Program SOP. This includes reuse of materials where possible.

3.2.2. Line flush

3.2.2.1. Segregate, label and containerize similar line flush materials. This allows for simpler handling and increased reuse of materials.

3.2.2.2. Keep line flush and cleaning material to a minimum whenever possible. Follow applicable Food Manufacturing Practices in accordance with GMP Container, Packaging, Holding and Distribution Policy SOP (GM010AF).

3.2.2.3. Ketones, acetates, diluents, and some alcohols can be used as clean out material or feed stock for lacquer thinner. Chlorinated solvents, naphthas, glycols, and some alcohols cannot be used for this purpose and must be must be disposed of at an approved facility.

3.2.3. Returned products

3.2.3.1. Returned unused product should go back to inventory for resale after analysis in per the Managing Product Returns SOP (QA013AF).

3.2.3.2. Returned product that is not returned to stock, reworked or reclassified as product should be managed as obsolete inventory. In accordance with the Obsolete Inventory & Hazardous Waste Management SOP (PR029AF), the product should be used as feedstock whenever possible.

3.2.3.3. Solvent products that cannot be resold or used as feedstock may be used as clean out material or lacquer thinner feed stock. Check with Cottage Grove East facility if these materials can be reused

3.2.4. Scrap metal

3.2.4.1. These materials should be segregated from other material and recycled.

3.2.4.2. Scrap metal should be sent to a salvage yard to be reused. Scrap metal should be clean and free from chemical residue prior to shipment as scrap.

3.2.5. ENU material

3.2.5.1. Before disposing of any material in the ENU, make sure that the material cannot go back into inventory or be used for some other purpose. Follow the procedures outlined in the Elementary Neutralization Unit SOP.

3.2.5.2. Use obsolete or off spec acids and bases as treatment material whenever possible and in compliance with the wastewater permits.

4. Environmentally sound disposal

4.1. Make sure that all waste is properly segregated and to recycle or reuse whenever possible.

4.2. Never mix hazardous waste with non-hazardous waste. This makes all the waste hazardous.

4.3. Solvent, combustible chemical or other combustible wastes should be fuel blended for energy recovery when possible. Check with the Cottage Grove East facility on the compatibility of the waste.

4.4. Low BTU wastes and wastewater must go to an approved recycling or disposal facility.

5. Employee awareness

5.1. Employees should be made aware that waste minimization is the concern of everyone that works for Hydrite. Waste Minimization will be included in Hazardous Waste Awareness Training.

Appendix N

Appendix A

Original SOP Effective Date: 5/8/90	Supersedes SOP Dated: 9/1/07	Effective Date: 4/1/10	Procedure No.: SF014AF
Facility: AF	Approval Name & Signature: Tom Miazga		Revision No.: 8
Review Frequency: 3 Years	Approval Title: Director of Safety, Quality & Regulatory Affairs		Page 1 of 7
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Revised Section(s): Amended C1 Hazard Code.			

I. TITLE: PERSONAL PROTECTIVE EQUIPMENT GENERAL REQUIREMENTS

II. KEYWORDS: Equipment, Protective, PPE

III. PURPOSE: To define standard requirements for use of personal protective equipment.

IV. APPLICATION: This SOP applies to all Hydrite Chemical employees, visitors, and contractors.

V. DEFINITIONS: PPE: - Personal Protective Equipment

Protective suits: Protective suits consist of a waist length jacket with pants providing full body protection, or a one-piece, full body coverage suit.

VI. ASSOCIATED MATERIAL(S):
29 CFR Subpart I – Personal Protective Equipment (1910.132-1910.140)
29 CFR 1910.132 General Requirements
Exposure Assessment SOP SF044AF
Eye & Face Protection SOP SF015AF
Facility Specific PPE Certifications and/or Job Safety Analyses
Foot Protection SOP SF025AF
Hearing Conservation Program SOP and Training module SF003AF, TX019AF
Head Protection SOP SF016AF
Personal Protective Equipment Selection Guide (Appendix A - attached)
Personal Protective Equipment Specifications (Appendix B – attached)
Respirator Program SOP SF012AF

VII. PROCEDURE:

1. GENERAL REQUIREMENTS

1.1. Hard hats are to be worn in designated areas. (See *Head Protection Policy*)

1.2. Safety glasses are to be worn in all locations and at all times except when in the office, break, or lunch areas, when fueling automobiles, and when driving trucks on the road. (See *Eye & Face Protection Policy*)

1.3. Contact lenses are generally prohibited from all work stations, with an exception of general office personnel. (See *Eye & Face Protection Policy*)

1.4. Splash goggles (unvented or indirectly vented) at a minimum are to be worn when handling liquids where a potential for splash exists. (See *Eye & Face Protection SOP.)*

1.5. Splash goggles with face shields (or mono-shield goggles) are to be worn at all times when handling acids or alkalis (including dry caustics) and other corrosive liquids. (See *Eye & Face Protection SOP.)*

1.6. All operating employees are to wear safety shoes at all times. (See *Foot Protection Policy*)

1.7. Protective suits made of chemical resistant material, are to be worn when handling any corrosive material or when working on equipment containing corrosive material.

1.8. Approved chemically resistant gloves (sometimes called rubber gloves) shall be worn at all times when handling corrosive and systemic poisons.

1.9. Approved respirators shall be worn while handling products and materials that produce corrosive and toxic vapors, fumes, mist or dust, as determined through monitoring and the Respiratory Protection Program SOP.

1.10. Coast Guard approved life preservers shall be worn by all personnel while working over water and while working on the deck of docks and barges.

1.11. Hearing protection shall be worn in areas where the worker is exposed to levels greater than 90 dBA for an 8 hour TWA. Hearing protection shall be worn in areas where the worker is exposed to levels greater than 85 dBA for an 8 hour TWA, when the worker has shown a threshold shift. (See *Hearing Conservation Program*)

2. PROVISION

2.1 To assure that all employees are equipped with adequate and proper personal protective equipment at all times, each employee shall be issued their own personal safety equipment and be accountable for it.

2.2 The equipment may consist of the following items:

2.2.1 "Rubber" rain suit (chemically rated)

2.2.2 Chemical goggles

2.2.3 Mono-shield goggle (incorporates goggles and face shield)

2.2.4 Splash shield and hard hat attachment

2.2.5 Safety glasses

2.2.6 Safety shoes

2.2.7 Hard hat

2.2.8 Chemical boots

2.2.9 Chemical/dust cartridge respirator with spare cartridges

2.2.10 Personal lock and multiple lock out hasps (LOTO authorized personnel)

2.3. A minimum supply of this equipment shall be well maintained and controlled so that a sufficient supply is always available at the facility.

2.4. It is the responsibility of the employee to assure the PPE being used is clean and undamaged. It is the supervisor's or manager's responsibility to have replacement PPE available when needed.

2.5 Each facility shall establish provisions to control abuse, theft and personal disregard for the equipment by requiring employees to pay for new issues required for reasons other than damage or wear and tear.

3. STORAGE

3.1 Personal protective equipment shall be stored in a clean and sanitary manner.

3.2 Plants may have designated PPE storage areas where cleaned PPE may be stored such that dust and debris do not collect in and on PPE.

3.3 Plants may provide containers (protective bags or sealing baggies available commercially) for employees to store their respirators in to prevent respirators from becoming dirty or dusty.

4. TRAINING

4.1 PPE Selection will be controlled and communicated by activity-specific training, checklists or SOP's and be referenced in a product master.

4.2 Employees shall be trained to know at least the following:

4.2.1 When PPE is necessary.

4.2.2 What PPE is necessary.

4.2.3 How to properly don, doff, fit check, adjust, and wear PPE.

4.2.4 The limitations of PPE.

4.2.5 The proper care, maintenance, useful life, and disposal of the PPE.

5. GENERAL PRINCIPLES

5.1 Be aware that the equipment does not eliminate the hazard.

5.2 If the equipment fails, exposure will occur.

5.3 To reduce the possibility of failure, equipment must be properly fitted and maintained in a clean and serviceable condition.

5.4 WHEN IN DOUBT ASK QUESTIONS about when or where to wear PPE or about what type of equipment you should wear.

5.5 DON'T MODIFY PPE. PPE is designed for a specific purpose to be worn a specific way. If you alter it - even slightly - you can reduce its reliability and may expose you to harmful hazards.

5.6 ONE SIZE DOESN'T FIT ALL. Getting the right fit is almost as important as wearing the right equipment.

5.7 INSPECT YOUR EQUIPMENT. Before using any equipment, always check for cracks, holes, or other signs of wear that can limit your protection.

5.8 DIRTY equipment can endanger your health. Dirty or scratched glasses may hamper your sight and dirty ear plugs can cause ear infections.

5.9 Safety glasses must meet the Z87 ANSI standard. Approved frames are stamped on each temple and nose piece. Personal glasses may be "shatterproof", but they are not true safety glasses. Safety glasses may be worn over prescription glasses.

5.10 For any material, chemical resistance may vary significantly, depending on the product / process. Double up on protection if at all possible. For example, safety glasses alone don't provide adequate protection in all cases.

6. SELECTION

6.1 The following list of PPE selection documents means by which PPE is selected by SQRA coordinators in conjunction with local operations managers. The order below also serves as the hierarchy of selection: first facility specific certifications based on actual facility conditions, the selections set forth in this SOP, Product Masters and Production Worksheets.

6.1.1 Regional SQRA Coordinators will perform a workplace hazard assessment and document the selection of PPE for each facility. Appendix A, the Personal Protective Equipment Selection Guide, was compiled to assist the SQRA Coordinators in maintaining consistency of application of PPE. The PPE assessments will take into consideration specifications in this SOP as well as operating procedures. Documented PPE specifications should be consistent with this SOP, but are based on actual operational conditions. Respiratory protection is always facility specific.

6.1.2 Personal protective equipment shall be selected in accordance with the General Requirements set forth in this SOP, as defined by specific operating SOPs, and as defined by Facility Management and the Regional SQRA Coordinator.

6.1.3 Product Masters and production worksheets will identify the primary hazards of the material and the minimum personal protective equipment to be worn while working with chemicals through the assignment of a Safety info. code. The *PPE Matrix* lists the equipment to be worn which corresponds to the Safety info. code.

6.1.4 Receipt tickets will identify the primary hazards of the material and the minimum personal protective equipment to be worn while working with chemicals through the assignment of a Safety info. code. The *PPE Matrix* lists the equipment to be worn which corresponds to the Safety info. code.

6.2 Employees may wear a mono-shield goggle or full-face respirator in place of a face shield and goggles unless an activity-specific assessment documents otherwise.

6.3 Any new brands of PPE that a facility wishes to utilize, other than those specified in Appendix B, the Personal Protective Equipment Specifications, must be approved. To approve a new type of PPE, you must provide the PPE specifications (which explain the PPE and what standards it meets) to the SQRA Coordinator who will confer with the Director of Safety Quality and Regulatory Affairs, along with the use for the PPE. If the PPE meets specifications, it will be added to the list of acceptable PPE in Appendix B.

6.3.1 Certain items are not specified in Appendix B, such as safety glasses. Branches may use any safety glasses that meet the Z87 standard. Items listed by specific brand may not be substituted without prior approval.

7. ACTIVITY DEFINITIONS

Bulk load / unload, filling, all assume that the materials are under pressure. Therefore, there is a considerable splash hazard in the case of equipment failure. (i.e., hose breaks, or line seal fails). This includes bulk loading and unloading of tankers and railcars, filling containers, transferring materials through hoses, line disconnects and filter change-outs.

Processing and blending situations – assumes that hazards are controlled, since there is a workplace hazard assessment (job safety analysis or PPE certification). This can be achieved through engineering controls, such as hard piping, dedicated hoses with connections between two fixed points combined with PM on hoses, etc.

Warehouse – assumes materials are in containers, under non-emergency situation.

Sampling – assumes a small amount of material is being drawn, presenting minor splash hazards in the immediate area of the sample port. The material is generally not under pressure.

PPE MATRIX
PRODUCT MASTER SAFETY INFO. CODES

HAZARD CODE	PPE **In addition to hard hat and safety shoes:**
A1	*WARNING.* Solvox only. This may irritate eyes. Wear Safety glasses and neoprene, PVC or nitrile gloves. Refer to PPE cert.
B1	*CAUTION!* May cause irritation to eyes and skin. Wear Safety glasses and neoprene, PVC or nitrile gloves. See product / process specific SOP or PPE cert.
B2	CAUTION! May cause irritation to eyes and skin. Wear Safety Goggles/faceshield and neoprene, PVC or nitrile gloves. See product/process specific SOP or PPE cert.
C1	WARNING! MAY BE IRRITATING. Wear safety goggles & faceshield or full-faced respirator, rainjacket or Tyvek, nitrile, neoprene or PVC gloves, and boots. See product specific SOP or PPE cert.
D1	DANGER! CORROSIVE - CAUSES SEVERE BURNS. Bulk loading / Unload / Filling: use Nitrile, Neoprene or PVC gloves, chemical jacket, goggles & face shield or full-faced respirator, boots, unless specified differently. Processing / Blending / Sampling: see specific safety instructions on worksheet or process specific SOP or PPE certification
D2	*DANGER! CORROSIVE/OXIDIZER - CAUSES SEVERE BURNS* Bulk loading/unload / filling: use Neoprene or PVC gloves, chemical suit, goggles & face shield or full-faced respirator, chemical boots unless specified differently. Processing / Blending / Sampling: see specific safety instructions on worksheet or process specific SOP or PPE certification.
D3	DANGER! HIGH CORROSIVE – CAUSES SEVERE BURNS. Bulk loading/unload / filling: use Neoprene or PVC gloves, chemical suit, goggles & face shield or full-faced respirator, chemical boots unless specified differently. Processing / Blending / Sampling: see specific safety instructions on worksheet or process specific SOP or PPE certification
E1	Solvox Only – dusty material. May be corrosive. Use goggles & face shield (or full-faced respirator), gloves and chemical boots. Refer to PPE cert.

F1	Solvox Only – Corrosive material. Wear Goggles, neoprene or PVC gloves, chemical suit, chemical boots. Refer to PPE cert
H1	WARNING! FLAMMABLE LIQUID - Keep away from heat, sparks, and open flames. Bulk loading/unload / filling: use Neoprene, PVC or nitrile gloves, chemical suit, goggles & face shield or full-faced respirator (if required), chemical footwear unless specified differently. Processing / Blending / Sampling: see specific safety instructions on worksheet or process specific SOP or PPE certification.
H2	WARNING! COMBUSTIBLE LIQUID Bulk loading/unload / filling: use Neoprene, PVC or nitrile gloves, chemical suit, goggles & face shield or full-faced respirator (if required), chemical boots unless specified differently. Processing / Blending / Sampling: see specific safety instructions on worksheet or process specific SOP or PPE certification.
H3	WARNING! CHLORINATED SOLVENT Bulk loading/unload / filling: use Neoprene, PVC or nitrile gloves, chemical suit, goggles & face shield or full-faced respirator (if required), chemical boots unless specified differently. Processing / Blending / Sampling: see specific safety instructions on worksheet or process specific SOP or PPE certification.
H4	DANGER! GAS IS SEVERELY IRRITATING TO EYES, SKIN, AND RESPIRATORY SYSTEM. LIQUID IS CORROSIVE TO EYES AND SKIN. Bulk unloading and line breaking: wear PVC gloves, goggles & face shield or full-faced respirators and chemical suit unless specified differently. Container Filling: PVC or neoprene gloves, goggles, chemical suit. Escape respirator must be readily at hand in control of operator unless specified differently. Filling / Processing / Blending / Sampling: see specific safety instructions on worksheet or process specific SOP or PPE certification.
H5	CORROSIVE and FLAMMABLE/COMBUSTIBLE. CAUSES SEVERE BURNS. Bulk unloading and line breaking: wear neoprene, PVC or nitrile gloves, goggles and face shield or full-faced respirators, rain suit or chemical suit unless specified differently. Container Filling/sampling: neoprene, PVC or nitrile gloves, goggles and face shield (or FFAPR), chemical suit, chemical boots. Respirator, if required, unless specified differently. Processing / Blending: see specific safety instructions on worksheet or process specific SOP or PPE certification.
I1	Solvox only – Water Reactive. Loading, mixing/filling: Use goggles and face shield, or full-faced respirator, nitrile, PVC or neoprene gloves, Tychem QC suit. See PPE cert.
J1	WARNING! SEVERELY IRRITATING TO EYES, SKIN, AND RESPIRATORY AND DIGESTIVE TRACT.

	Bulk loading/unloading/filling: use Neoprene, PVC or nitrile gloves, goggles & face shield or full-faced respirator (if required), chemical footwear, rain suit or chemical suit, unless specified differently. Sampling/Processing/Blending: Neoprene, PVC or nitrile gloves, goggles & face shield or Full-faced respirator (if needed), boots, rain suit or chemical suit, unless specified differently. See specific safety instructions on worksheet or process specific SOP or PPE certification.
J2	WARNING! FLAMMABLE SOLID keep away from flames Processing/sampling: use Neoprene, PVC or nitrile gloves, *chemical suit*, goggles & face shield or full-faced respirator (if required), chemical boots, unless specified differently. See specific safety instructions on worksheet or process specific SOP or PPE certification.
J3	DANGER! OXIDIZER Bulk loading /unload/filling: use Neoprene, PVC or nitrile gloves, chemical suit, goggles & face shield or full-faced respirator (if required), chemical boots, unless specified differently Processing / Blending / Sampling: see specific safety instructions on worksheet or process specific SOP or PPE certification.
J4	DANGER! POISON/CORROSIVE HIGHLY TOXIC Bulk loading/unload/filling: use Neoprene, PVC or nitrile gloves, chemical suit, goggles & face shield or full-faced respirator (if required), chemical boots, unless specified differently. Processing / Blending / Sampling: see specific safety instructions on worksheet or process specific SOP or PPE certification.
J5	Danger! CORROSIVE – MAY CAUSE BLINDNESS OR DEATH Bulk loading/unload/filling: use Neoprene, PVC or nitrile gloves, chemical suit (if liquid), *Suit* (if solid), goggles & face shield or full-faced respirator (if required), chemical boots. Sampling/Processing/Blending: Neoprene, PVC or nitrile gloves, goggles or & face shield or Full-faced respirator (if needed), chemical boots. See specific safety instructions on worksheet or process specific SOP or PPE certification.

Appendix A
Personal Protective Equipment Guide

NOTES

High Corrosives = Sulfuric acid (>20%), nitric acid (>25%), formic acid (>50%), muriatic (>10%)
High Corrosives = Hydroflouric acid (>3.5%) and hydrogen peroxide (35% or more)
Boots= not just steel toe shoes, but chemical boots or overays
Respiratory protection is generally based on exposure assessments, but may be specified if used as a preventative measure, i.e. with Chlorine.

Category	Task	Gloves	Chemical Jacket	Chemical suit (jacket & pants or 1piece full body suit)	Safety Glasses	Goggles (or mono-goggle or full face respirator)	Face Shield (or mono-goggle or full face respirator)	Boots*
High Corrosives	Bulk load / unload	X		X		X	X @ chin cup	X
(D2, D3)	Filling	X		X		X	X @ chin cup	X
	Process/Blending	X	X			X	X @ chin cup	X
	Warehouse	X			X			
	Sampling	X	X			X	X @ chin cup	
Corrosives	Bulk load / unload	X	X			X	X	X
D1	Filling	X	X			X	X	X
	Process/Blending	X	X			X	X	X
	Warehouse				X			
	Sampling	X				X	X	
Organic Liquids	Bulk load / unload	X	X	if absorbed,		X		X
	Filling	X	X	use a suit,		X		X
	Process/Blending	X	X	not a jacket		X		X
	Warehouse				X			
	Sampling	X				X		
Sensitizers	Bulk load / unload	X		X		X	X	X
	Filling	X		X		X	X	X
	Process/Blending	X		X		X	X	X
	Warehouse	X			X			
	Sampling	X		X		X	X	X
Oxidizers	Bulk load / unload	X		X		X	X	X
	Filling	X		X		X	X	X
	Process/Blending	X		X		X	X	X
	Warehouse	X			X			
	Sampling	X		X		X	X	X
Solids	Bulk load / unload	X	only if the	only if the	X	only if the	only if the	only if the
	Filling	X	material	material	X	material	material	material
	Process/Blending	X	presents	presents	X	presents	presents	presents
	Warehouse		another hazard	another hazard	X	another hazard	another hazard	another hazard
	Sampling	X	category	category	X	category	category	category
Gasses	Bulk load / unload	X	only if the	only if the	X	only if the	only if the	only if the
	Filling	X	material	material	X	material	material	material
	Process/Blending	X	presents	presents	X	presents	presents	presents
	Warehouse		another hazard	another hazard	X	another hazard	another hazard	another hazard
	Sampling	X	category	category	X	category	category	category

Original SOP Effective Date: 12/1/98	Supersedes SOP Dated: 12/1/09	Effective Date: 3/1/11	Procedure No.: SF041CG
Facility: CG	Approval Name & Signature: Angela Watry		Revision No.: 6.0
Review Frequency: 2 Years	Approval Title: Environmental Manager		Page 1 of 7
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I. **TITLE:** RESPIRATORY PROTECTION COMPLIANCE MANAGEMENT PLAN

II. **KEY WORDS:** Compliance, Respirator, Safety

III. **PURPOSE:** Specify procedure for compliance with the OSHA Respiratory Protection Standard at Hydrite- Cottage Grove Facilities

IV. **APPLICATION:** Hydrite Chemical Co. Cottage Grove facilities

V. **DEFINITIONS:** N/A

VI. **ASSOCIATED MATERIAL(S):**
29CFR1910.134, Respiratory Protection
Air Purifying Respirators SOP, TX004AF
Respirator Program SOP, SF012AF
Review of New Chemicals and Processes SOP, RH013AF
Internal Facility Auditing SOP, QA014AF
Emergency Response, Volume 7, SOPP Manual
Attachment A: Tasks Requiring Respiratory Protection (included)
Attachment B: Respirator Program Evaluation SF041CGa (attached)

VII. **PROCEDURE:**

1. Program Administrator

1.1. The Director of the Safety, Quality & Regulatory Affairs Department is the Hydrite Chemical Co. Respiratory Protection Program Administrator.

2. Selection of respirators

2.1. Only NIOSH approved respiratory protection equipment may be used.

2.1.1. The PPE Certification file in the facility Legal File lists those respirators approved for use at Cottage Grove facilities.

2.1.2. The Safety Manager is responsible to maintain the PPE Certification file.

3. Workplace hazard assessment and Procedures for selecting respirators

3.1. Tasks requiring respiratory protection and type of respirator are listed on Attachment A.

3.2. Respiratory Hazards may include:

3.2.1. Oxygen-deficient atmosphere (may be encountered during entry into confined spaces or in other cases in which gases or vapors have displaced the oxygen in the air)

3.2.2. Exposure to Gases/Vapors

3.2.2.1. *Gases* are substances that become airborne at room temperature. Examples of hazardous gases are nitrogen dioxide, sulfur dioxide, hydrogen sulfide, carbon monoxide, chlorine, and anhydrous ammonia.

3.2.2.2. *Vapors* are formed when liquids or solids evaporate. Examples are vapors from organic solvents, other organic liquids, and corrosive materials.

3.2.2.3. Gases and vapors may be toxic or cause damage to the respiratory system, eyes, or skin.

3.2.3. Particulates (may be toxic or may cause damage to the lungs)

3.2.3.1. *Dusts* are small particles of solid material

3.2.3.2. *Mists* are tiny liquid droplets usually created by spraying, mixing, or cleaning activities.

3.2.3.3. *Fumes* occur when metal is melted, vaporized, then quickly cooled, creating very fine particles that drift in the air

3.2.3.4. An *aerosol* is a suspension of tiny particles or droplets in the air (may be dusts, mists, or fumes)

3.3. Voluntary use of respirators is encouraged.

3.3.1. *Voluntary use* is defined as using a respirator:

3.3.1.1. For protection from nuisance levels (below the regulatory exposure limit) of airborne materials and when a respirator AND

3.3.1.2. When a respirator is not required by the relevant SOP

3.3.2. For any employee voluntarily using any respirator, a document stating that he/she has read and understands Appendix D to 29 CFR 1910.134 ("Information for Employees Using Respirators When Not Required Under the Standard") must present in the Legal File

3.3.3. Employees who wish to voluntarily use a respirator other than a filtering facepiece respirator (dust mask) must be in the Respirator Program

3.3.4. Any employee may voluntarily use a dust mask as long as he/she complies with Section 3.3.2

3.4. The Job Safety Analysis (JSA) and/or Process Safety Analysis (PSA) component of the Environmental, Health, and Safety Review covering each process provides documentation of the basis for assigning respiratory protection and respirator type for Cottage Grove specific processes.

3.4.1. Other JSAs or PSAs may be used to assign PPE where the chemical components, equipment, location, and/or personnel are comparable.

3.5. The Hydrite Chemical Company Respiratory Protection Policy specifies the procedures used to select and assign respirators for other tasks conducted at Cottage Grove facilities.

4. Respirator type and application

4.1. Air purifying respirators- this type includes air purifying full-facepiece cartridge/dust respirators and filtering facepieces (dust masks)

4.1.1. Use of these respirators is specified in Process Specific Standard Operating Procedures (Process Specific SOPs) and in Production Worksheets.

4.1.2. Whenever these respirators are specified for use, the requirement must be documented as part of the EHS review applicable to the process or task.

4.1.3. At the Cottage Grove facilities, half-face piece air purifying respirators are not approved for use when respiratory protection is required.

4.2. Supplied Air Respirators, full face piece- this type is used in IDLH atmospheres and includes both Self Contained Breathing Apparatus (SCBA) and Supplied Air Respirators equipped with "Escape Bottle" used in pressure demand mode (also called ARAP).

4.2.1. Use of these respirators is specified in Process Specific Standard Operating Procedures, in Production Worksheets, Emergency Response Q-Cards, and may be required during Emergency Response Operations as directed by the Supervisor, Emergency Coordinator, or Incident Commander.

4.2.2. Only Grade D or better air may be used in supplied air respirator systems.

5. Respirators must be used:

5.1. During clean-up operations, as specified in the Process Specific SOP or production worksheet;

5.2. When effective engineering controls are not feasible and airborne contaminants are present at harmful levels;

5.3. Until such time as engineering controls can be installed, when feasible.

5.4. Whenever specified in the task specific work instruction or SOP as a "preventive measure";

5.5. Whenever directed to do so by the Supervisor, Emergency Coordinator, or Incident Commander.

6. How respirators are used

6.1. Respirators may not be worn by employees who have facial hair below the corners of the mouth or any condition that interferes with the face to facepiece seal or valve function.

6.2. Other PPE worn in conjunction with the respirator may not interfere with the respirator function, especially the face piece seal.

6.3. Employees must inspect the respirator for cleanliness and damage and perform a seal check (positive and negative fit test) each time they put on a respirator.

6.4. Employees must maintain an awareness of respirator cartridge change out schedule(s) and "breakthrough" if it occurs. An attachment specifies change out schedules by task.

6.5. Employees using respirators must not conduct activities that will impair the respirator seal. If respirators are found to be defective during use, the employee must immediately leave the work area and repair or replace the respirator.

6.6. Only 1.) SCBA or 2.) air-supplied respirators in the pressure demand mode in the pressure demand mode with an auxiliary escape canister (known as ARAP) may be used in areas that are Immediately Dangerous to Life and Health (IDLH).

6.6.1. Employees working in IDLH atmospheres must work with a "backups" located immediately outside the IDLH area, while in continuous communication with the employee(s) working in the IDLH area, and trained and ready to conduct a rescue if needed.

6.6.2. Employees wearing respirators in IDLH areas may not, under any circumstances, remove the respirator or take any action that may compromise the face piece fit.

6.6.3. These respirators may be used in atmospheres of up to 10,000 times the exposure limit (PEL-TWA or PEL-STEL) of the contaminant.

7. Inspection, Cleaning, Maintenance and Storage of respirators.

7.1. Respirators assigned to individuals

7.1.1. Must be marked to identify the user.

7.1.2. The respirator user must inspect the respirator for cleanliness and physical damage (straps, face piece, valves, seals, any connectors) before and after each use.

7.1.3. The respirator user must repair any damage before use. Discard the respirator and obtain a new one if it cannot be repaired.

7.1.4. Respirator cartridges must be changed out by the user at the frequency indicated in the SOP or product worksheet, or the attached change-out schedule, or when breakthrough is detected.

7.1.4.1. Cartridge Service Life is determined based on recommendations from the manufacturer for 3M respirators.

7.1.4.2. Cartridge Service Life is estimated for other cartridge suppliers based on 3M recommendations.

7.1.5. The respirator user must decontaminate and/or clean the respirator at the end of each workshift according to the procedure recommended in the respirator instruction manual provided by the manufacturer.

7.1.5.1. Respirators may be decontaminated/disinfected by removing filters, cartridges, etc., and washing and rinsing in warm (110°F) water. A disinfectant may be added to the water.

7.1.5.2. After decontamination/disaffection, respirators must be rinsed in warm water, dried, reassembled and tested before storing in airtight containers.

7.1.6. The respirator user must discard dust respirators at the end of each shift or sooner when the respirator becomes contaminated.

7.1.7. The respirator user must store the respirator in an air tight bag or container when it is not in use. The respirator must be stored in such a way as to avoid damaging the seals, face piece, and valves.

7.2. Other respirators

7.2.1. Respirators assigned only for emergency use must be inspected according to the Internal Inspection SOP checklist for Emergency Response Equipment.

7.2.2. Emergency use respirators must be cleaned and disinfected by the user after each use, before storing. Follow the cleaning instructions described in Para. 7.1.

7.2.3. Supplied air respirator systems used for other than emergency purposes must be inspected as specified in the Internal Inspection SOP checklist for air supplied respirators. The user is responsible to conduct inspections and cleaning specified in Paragraphs 10.1.2-10.1.6.

8. Emergency Operations

8.1. The Supervisor, Emergency Coordinator or Incident Commander specifies the type(s) of respirators to be worn, if any are required, during responses to emergencies.

8.2. Emergencies are defined in the Contingency Plan/Emergency Response Manual of the SOPP Manual system.

9. Medical evaluations

9.1. Persons assigned to tasks requiring respiratory protection must be evaluated by a licensed health care professional to determine whether they are able to perform job duties while wearing protective equipment.

9.1.1. This evaluation is typically conducted as part of the medical examination conducted with all new or reassigned employees.

9.1.2. Employees assigned to tasks requiring respiratory protection will undergo annual physical examination by a licensed health care professional to verify their continued ability to perform job duties while wearing protective equipment.

9.1.3. Physical examination by a licensed health care professional to verify continued ability to perform job duties while wearing protective equipment is required at any time the respirator user medical status undergoes a change.

10. Training

10.1. All employees and their supervisors, except those working strictly in Administration, must complete the Respiratory Protection Training Module(s) contained in the SOPP System Training Manual.

10.2. Employees who use respirators must pass a fit test.

10.3. Training and fit testing must be completed before employees are assigned to tasks requiring respiratory protection. Training must cover each type of respirator (i.e.- Supplied air, air purifying) that the employee will need to use.

10.4. Retraining and fit testing must occur at least once each year.

10.5. The Air-Purifying Respirator Training Module provides details on training and fit testing.

11. Fit testing procedures

11.1. All employees assigned to tasks requiring use of respirators must pass a qualitative or quantitative fit test prior to using the respirator and at least annually thereafter.

11.1.1. Qualitative fit tests are conducted using the Fit Tester 3000.

11.1.2. Quantitative fit tests are only performed if the Fit Tester 3000 is unavailable. As soon as the Fit Tester is available, a qualitative fit test will be performed.

11.2. Fit tests may only be conducted by the Regional SQRA coordinators, SQRA specialists, Facility Compliance Coordinators, Facility Trainers, or qualified contractors.

11.3. Fit Tests:

11.3.1. Employees using full face-piece respirators, both supplied air and air purifying, must be fit tested using an appropriate OSHA-approved (in 29 CFR Part 1910.134 (f)) test protocol.

11.3.2. Employees using dust respirators must be fit tested using an appropriate OSHA-approved (in 29 CFR Part 1910.134 (f)) test protocol.

11.3.3. Fit test protocols are specified in the Respirator Program (SOP).

12. Program evaluations

12.1. The Corporate SQRA Program Administrator or designee will conduct an audit at least once each year to assess compliance with this plan.

12.1.1. At least one facility operating employee will participate in the audit.

12.1.2. The Program Administrator will document the findings of the audit in a report

12.1.3. Corrective Actions, if any are required, will be specified in the report.

12.1.4. The Cottage Grove Operations Manager is responsible to implement Corrective Actions.

12.2. The Cottage Grove EHS Manager or designee will consult with employees approximately annually to assess the employees' views on program effectiveness and to identify any problems.

12.2.1. The consultation will include, but is not limited to, discussions of respirator fit, respirator selection, respirator use, and respirator maintenance.

The findings will be documented using the checklist at Attachment B.

Any problems that are identified during the assessment shall be corrected.

ATTACHMENT A: TASKS REQUIRING RESPIRATORY PROTECTION
NOTE: ANY STEP INVOLVING MATERIALS UNDER PRESSURE, OR MAYBE UNDER PRESSURE, REQUIRE A MINIMUM OF POSITIVE EYE PROTECTION

TASK	RESPIRATOR REQUIRED
1. Emergency Response	1. Full Face/Supplied Air, Pressure Demand Mode with Auxiliary Escape Canister (known as ARAP); or SCBA 2. As directed by Supervisor or Incident Commander
2. Spill Clean Up- Large Spill of hazardous material or any non-incidental spill of Extremely Hazardous Material.	1. Full Face/Supplied Air, Pressure Demand Mode with Auxiliary Escape Canister (known as ARAP); or SCBA 2. As directed by Supervisor or Incident Commander
3. Spill Clean Up- Incidental Spill	As specified in the Process Specific SOP or Production worksheet for the material spilled.
4. Sampling (Tank Wagon, Process Vessels, Tanks, Rail Cars, Drums)	As specified in the Process Specific SOP or Production worksheet for the material being sampled.
5. Drum Pumpout- Hazardous Waste	If contents known: As specified in the Process Specific SOP or Production worksheet for the material. If not known or multiple materials: Air purifying full facepiece respirator equipped with Multi-Gas cartridges for organic vapors.
6. Drum Sampling- Hazardous Waste	If contents known: As specified in the Process Specific SOP or Production worksheet for the material. If not known or multiple materials: Air purifying full facepiece respirator equipped with Multi-Gas cartridges for organic vapors.
7. Drum Filling	As specified in the Process Specific SOP or Production worksheet for the material being transferred to drums.
8. Drum Pumpout (Except Hazardous Waste)	As specified in the Process Specific SOP or Production worksheet for the material being pumped out.
9. Line flushing with exposure to free liquids	As specified in the Process Specific SOP or Production worksheet for the material being flushed.
10. Hose disconnect	As specified in the Process Specific SOP or Production worksheet for the material being transferred.
11. Vacuum pump oil change-out	As specified in the Process Specific SOP or Production worksheet for the material in the pump oil. If unsure or multiple materials present in the oil- wear Full face air-purifying respirator with multi-gas cartridges
12. Scrubber water change-out	As specified in the Process Specific SOP or Production worksheet for the material in the scrubber water. If unsure or multiple materials present in the water- wear Full face air-purifying respirator with multi-gas cartridges
13. Process Activity- Filter Change out	As specified in the Process Specific SOP or Production worksheet for the material being filtered.
14. Process Activity- Solids addition	As specified in the Process Specific SOP or Production worksheet for the material being transferred.
15. Maintenance Activity- Confined Space Entry	1. As directed by Entry Supervisor or Rescue Incident Commander 2. Full Face/Supplied Air, Pressure Demand Mode with Auxiliary Escape Canister (known as ARAP); or SCBA

CHANGE HISTORY LOG		
Revision No.	**Date**	**Description**
6.0	01/17/2011	1. Updated Approval Name. 2. Added to section 6.1 "below the corners of the mouth." 3. New attachment (pulled from SOP). 4. Associated Materials section.

ATTACHMENT B
RESPIRATOR PROGRAM EVALUATION

COTTAGE GROVE RESPIRATORY PROTECTION PLAN

DATE OF EVALUATION:

ISSUE	EMPLOYEE(S)	COMMENTS
RESPIRATOR FIT- DO THE EMPLOYEES FEEL THAT THEIR RESPIRATORS FIT PROPERLY? DO THEY PERFORM A POSITIVE/NEGATIVE PRESSURE SEAL CHECK TO DETERMINE PROPER FIT BEFORE EACH USE? ASK THEM TO DEMONSTRATE.		
RESPIRATOR FIT- DO THE EMPLOYEES FEEL THAT THE RESPIRATORS EVER PROVIDE EXCESSIVE INTERFERENCE WITH THE ASSIGNED WORK?		
RESPIRATOR SELECTION – DO THE EMPLOYEES FEEL THAT THE APPROPRIATE RESPIRATORS ARE PROVIDED FOR THE HAZARDS TO WHICH THEY ARE EXPOSED?		
RESPIRATOR SELECTION – IN THE EVALUATOR'S OPINION, ARE THE APPROPRIATE RESPIRATORS BEING USED FOR TASKS? (BASED ON ATTACHMENT A OF THIS SOP, PRODUCTION AND SAFETY SOP'S, MSDS'S, AND I.H. MONITORING?)		

ISSUE	EMPLOYEE(S)	COMMENTS
IN THE EVALUATOR'S OPINION, ARE EMPLOYEES PROPERLY USING THE RESPIRATORS UNDER THE WORKPLACE CONDITIONS THEY ENCOUNTER?		
DOES IT APPEAR THAT THE RESPIRATORS ARE PROPERLY MAINTAINED? DO EMPLOYEES CLEAN THEM AFTER EACH USE AND INSPECT THEM BEFORE EACH USE?		

LIST ANY RECOMMENDED CORRECTIVE ACTIONS BELOW AND ON BACK OF SHEET.

COMPLETED BY: _____

REVIEWED: _____
SUPERVISOR/EHS/SQRA

COPIES TO: LEGAL FILE, PLANT MANAGER, and OPERATIONS MANAGER

HYDRITE CHEMICAL CO. TRAINING MODULE

Original Module Effective Date: 5/1/99	Supersedes Module Dated: 6/1/03	Effective Date: 6/1/08	Module No.: TX038CG
Facility: CG	Approval Name & Signature: Dave Volenberg DAVE VOLENBERG		Revision No.: 2
Review Frequency: 5 Years	Approval Title: Safety Manager		Page 1 of 7
Without a green control label to the right of this statement, this training module is a draft. A draft or an uncontrolled copy cannot be used to train a process or task.			If this block is black, this is NOT a controlled document
Revised Section(s): Updated Approval Name and Title.			

I. **TITLE:** 3M SUPPLIED AIR RESPIRATOR

II. **KEY WORDS:** Respiratory Protection, PPE, Supplied Air, Respirator

III. **TRAINING OBJECTIVE(S):** To meet the basic requirements of the applicable regulatory standards. To provide the employee with basic technical information related to the safe use of the 3M Supplied Air Respirator System. The employee will be able to use and maintain the 3M Supplied Air Respirator System.

IV. **QUALIFIED TRAINERS:** Trained Facility Compliance Coordinators & Trainers

V. **APPLICATION:** Cottage Grove Employees assigned to tasks requiring the use of the 3M Supplied Air Respirator

VI. **TRAINING STATUS:** Mandatory

VII. **TRAINING STANDARD(S):** 29 CFR 1910.134
29 CFR 1910.120

VIII. **TRAINING FREQUENCY:** Initial/12

IX. **TRAINING AIDS:**

Mandatory:
- 7800 Series 3M Respirator , equipped as supplied air respirator, with Grade D Breathing Air
- 3M 5 Minute Escape System
- Respiratory Protection Compliance Management Plan
- Instructions for Using the 3M Escape System
- Instructions for converting the 7800 Series Facepiece from Air Purifying to Supplied Air

Optional:
- 3M 7800 Series Respirator Video
- Respirator Cleaning equipment

X. **TRAINING OUTLINE:**

1. Introduction

1.1. This training provides employees with basic information on how to use the 3M respirator in the supplied air mode. It includes:

1.1.1. Procedures used for workplace hazard assessment and respirator selection, fit testing, application, maintenance, and cleaning, as specified in the Cottage Grove Respiratory Protection Compliance Management Plan.

1.1.2. General information on how to use the 3M 7800 Series Respirator facepiece in the Air Purifying and Supplied Air modes.

1.1.3. Instruction on converting the 7800 Series Facepiece from the Air Purifying to Air Supplied Mode.

1.1.4. Breathing Air specification and selection.

1.1.5. Safe practices for working in IDLH atmospheres

1.2. Trainees will demonstrate that they can convert their 7800 facepiece from air purifying to supplied air mode, and reverse.

1.3. A quiz will be used at the end of this training to measure retention of the subject matter.

1.4. Trainees must complete Respirator Training and Fit Testing on the 3M 7800 Series Respirator before, or in conjunction with, this training.

2. Training

2.1. Workplace Hazard Assessment and Respirator Selection

2.1.1. Review paragraphs 2 through 7 from the Cottage Grove Respiratory Protection Compliance Management Plan.

2.1.2. Briefly review typical current applications for the Airline Supplied Respirator.

2.2. How to use the 3M 7800 Series Respirator.

2.2.1. If available- show the video on the 3M 7800 Series respirator

2.2.2. Review appropriate sections of the training manual for the 3m 7800 Series respirator.

2.2.3. Demonstrate features of the 7800 series respirator, including how to chane out inhalation/exhalation valves, how to clean the respirator, how to inspect the respirator.

2.2.4. Demonstrate the procedure for converting the 7800 Series Respirator from air purifying to air supplied mode.

2.2.5. Discuss the use of the 5-Minute Escape System.

2.2.6. Observe while each trainee demonstrates the conversion of the respirator from air purifying to supplied air.

2.2.7. Observe each trainee don the facepiece and use the supplied air system.

2.3. Discuss safe work practices for IDLH atmospheres

2.3.1. Air supplied Respirators may be specified in situations that are not IDLH.

2.3.2. Only Air supplied respirators (SCBA and airline) in the pressure demand mode may be used in areas that are Immediately Dangerous to Life and Health (IDLH).

2.3.3. Employees working in IDLH atmospheres must work with a "backups" located immediately outside the IDLH area, while in continuous communication with the employee(s) working in the IDLH area, and trained and ready to conduct a rescue if needed.

2.3.4. Employees wearing respirators in IDLH areas may not, under any circumstances, remove the respirator or take any action that may compromise the face piece fit.

3. Questions

3.1. Ask for questions. Allow time for discussion

3.2. If you can not answer a question, make a note of it and follow up to get the answer.

4. Quiz

4.1. Administer the quiz

4.2. Review and ask employees to self-correct.

5. Sign-up sheets

5.1. Collect quizzes and send to the Corporate Training Manager

5.2. Collect individual sign-up sheets and file in the employee-training file. Send a copy of the sign-up sheets to the Corporate Training Manager.

EMPLOYEE TRAINING RECORD SLIP
3M SUPPPLIED AIR RESPIRATOR

EMPLOYEE NAME: _____

BRANCH: COTTAGE GROVE _____

DATE OF TRAINING: _____ **LENGTH OF TRAINING:** _____ **(MINUTES)**

TRAINERS: _____

TRAINING REQUIREMENTS

Training Objective: To meet the basic requirements of the applicable regulatory standards. To provide the employee with basic information related to the safe use of the 3M 7800 Series Respirator in the Supplied Air Mode.

Standards:
29 CFR 1910.134
29 CFR 1910.120

Materials:
7800 Series 3M Respirator , (supplied air) with Grade D Breathing Air
3M 5 Minute Escape System
Respiratory Protection Compliance Management Plan
Instructions for Using the 3M Escape System
Instructions for converting the 7800 Series Facepiece from Air Purifying to Supplied Air

Optional — Film: 3M 7800 Series Respirator

Outline:

Respiratory Protection Program Review

Using the 3M 7800 Series Respirator

Converting to/from the Supplied Air Mode

Safe Work Practices- IDLH Atmospheres

Questions

Quiz

I have completed the training outlined in the sections above.

EMPLOYEE SIGNATURE: _____

Original: Employee's Training File

3M SUPPPLIED AIR RESPIRATOR

QUIZ

CIRCLE THE BEST ANSWER

#			QUESTION
1	T	F	Taking even one breath in an "Immediately Dangerous to Life and Health" (IDLH) atmosphere could result in death.
2	T	F	Air purifying respirators do not protect your health if you are in an IDLH atmosphere.
3	T	F	Air Purifying respirators protect against oxygen deficiencies.
4	T	F	You can judge the contents of a compressed gas cylinder by looking at the color of the cylinder.
5	T	F	When working in an IDLH atmosphere, a "backup" person must be immediately available and equipped to make a rescue.
6	T	F	The 5-minute escape bottle must be used with the supplied air system.
7	T	F	You must conduct a positive and negative fit test on your respirator each time you put it on.
8	T	F	When converting the 7800 Series respirator from air purifying to supplied air mode, you must put plugs in the holes used for the purifying cartridges.
9	T	F	The 5-Minute Escape system may be used only for escape from hazardous atmospheres if the air supply is cut off.
10	T	F	You can use any air hose with the supplied air respirator.

QUIZ ANSWERS

1	T	Taking even one breath in an "Immediately Dangerous to Life and Health" (IDLH) atmosphere could result in death.
2	T	Air purifying respirators do not protect your health if you are in an IDLH atmosphere.
3	F	Air Purifying respirators protect against oxygen deficiencies.
4	F	You can judge the contents of a compressed gas cylinder by looking at the color of the cylinder.
5	T	When working in an IDLH atmosphere, a "backup" person must be immediately available and equipped to make a rescue.
6	T	The 5-minute escape bottle must be used with the supplied air system.
7	T	You must conduct a positive and negative fit test on your respirator each time you put it on.
8	T	When converting the 7800 Series respirator from air purifying to supplied air mode, you must put plugs in the holes used for the purifying cartridges.
9	T	The 5-Minute Escape system may be used only for escape from hazardous atmospheres if the air supply is cut off.
10	F	You can use any air hose with the supplied air respirator.

RESPIRATOR CLEANING PROCEDURE

A. Remove filters, cartridges, or canisters. Disassemble facepiece by removing speaking diaphragms, demand and pressure- demand valve assemblies. Discard or repair any defective parts.

B. Prepare the respirator cleaning station by filling each compartment with about one gallon of clean, warm (110 deg. F maximum) water. Add the contents of a disinfectant packet to one of the compartments.

C. Wash the respirator and any washable parts in the compartment containing the disinfectant. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt. Drain.

D. Rinse the respirator and any washable parts in the compartment containing the clean, warm ([110 deg. F maximum) water. Rinse under warm (110 deg. F maximum) water if available. Drain.

The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.

E. Components should be hand-dried with a clean lint-free cloth or air-dried.

F. Reassemble facepiece, replacing filters, cartridges, nosepieces, etc., where necessary.

G. Test the respirator to ensure that all components work properly.

H. Store the respirator in your respirator storage box or bag after it is dry.

HYDRITE CHEMICAL CO. TRAINING MODULE

Original SOP Effective Date: 5/1/98	Supersedes SOP Dated: 10/1/04	Effective Date: 2/1/09	Procedure No.: TX025CG
Facility: CG	Approval Name & Signature: Angela Watry		Revision No.: 5
Review Frequency: 5 Years	Approval Title: EHS Manager		Page 1 of 8
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.		If this block is black, this is NOT a controlled document	
Revised Section(s): Added WBT module to Training Aids. Self-review of this change is not needed.			

I. TITLE: PROCESS SAFETY MANAGEMENT – OVERVIEW TRAINING

II. KEY WORDS: Contractor, Process Safety Management, Training, Visitor

III. TRAINING OBJECTIVES: Define procedure for training Hydrite employees, Visitors, and Contractor employees working at Hydrite Cottage Grove facilities regarding Process Safety Management programs.

IV. QUALIFIED TRAINERS: SQRA Coordinators, EHS Compliance Coordinators, Facility Trainers, Supervisors or Web Based Training

V. APPLICATION: All Cottage Grove employees, contractors and visitors working on or around process systems and equipment covered under Process Safety Management.

VI. TRAINING STATUS: Mandatory

VII. TRAINING STANDARDS: 29CFR1910.119- Process Safety Management

VIII. TRAINING FREQUENCY: Initial/Change

IX. TRAINING AIDS: Mandatory For Contractors and Visitors: Contractor Hazard Communication and Safety Training Guide. Optional: Drawing of the work area.
OR-
WBT Module: Process Safety Management H815PSM; should be revised concurrently with revisions to this SOP.

X. TRAINING OUTLINE:

1. Preparation for Training
   - 1.1. Review processes covered by PSM.
     - 1.1.1. Engineering, Operations, SQRA, and EHS can assist in this determination.
     - 1.1.2. Review the PSM-related SOPs in the SOPP Manual system. Make sure the SOPs are available when you do the training. All the SOPs you'll need are listed in the text of this training module.
   - 1.2. Obtain an individual training record form and a copy of the quiz for each trainee.
   - 1.3. Visitors and contractors- complete the Contractor Hazard Communication and Safety Training Guide (Attachment to MN005CG) prior to this training.
2. Introduction of the Subject
   - 2.1. Training objectives are to ensure employees:
     - 2.1.1. An awareness of the Process Safety Management Standard and why it applies at Cottage Grove facilities;

2.1.2. Understand hazards of materials covered by Process Safety Management and in use at Cottage Grove facilities.

2.2. A quiz will be used to measure retention of this training.

3. Begin the training with the following:

3.1. Briefly describe the background of the Process Safety Management Standard

3.1.1. This OSHA regulation specifies a format for intensive safety programs applicable to highly hazardous chemicals, as defined by OSHA, if they are present in quantities above a specified weight limit.

3.1.2. The safety program is directed at identifying hazards associated with processing the materials, and implementing steps to mitigate the hazards.

3.1.3. Employee involvement, including contractors and other non-employees working on or around Process Safety Management covered systems, is an important aspect of the program.

3.1.4. This training session is intended to familiarize employees, visitors, and contractors with the requirements of the Process Safety Management standard, provide an overview of covered processes, and review selected Policies and Procedures related to Process Safety Management compliance.

3.2. Describe the processes at Cottage Grove facilities that are covered under Process Safety Management

3.2.1. Distillation Columns, LUWAs, and related bulk storage and support systems such as vacuum pumps, bulk storage tanks, and oil heaters at Cottage Grove East are covered since flammable materials are processed.

3.2.2. Reactor units and related bulk storage and support systems such as vacuum pumps and steam boilers at Cottage Grove East are covered since flammable materials and formaldehyde are processed.

3.2.3. Warehouse areas at Cottage Grove West are covered since the warehouses contain chlorine, sulfur dioxide, and formaldehyde.

3.2.4. Flammable solvent handling areas at Cottage Grove West, including the tank farm, warehouse, and fill areas, even where quantities of flammable materials are greater than 10,000 pounds, are <u>not</u> covered per 29CFR1910.119(a)(1)(ii)(B) which states the following are exempt:

3.2.4.1. *Flammable liquids stored in atmospheric tanks or transferred which are kept below their normal boiling point without benefit of chilling or refrigeration.*

3.2.4.2. Hydrite's management of flammable material storage in compliance with the PSM standard is elective, not mandatory, due to the PSM exemption.

4. Describe the policies and procedures

4.1. Show employees, contractors and visitors Volume 24 of the SOPP Manual System.

4.1.1. Explain to the employees, contractors and visitors where the volume can be accessed at the facility.

4.2. Required Elements of the Process Safety Management Compliance policies and program are:

4.2.1. **Employee participation:** Employees are consulted for the development of the operating procedures and changes to the processes through involvement in the Process Hazard Analyses. Feedback from the operators for process improvement is solicited and processed by EHS, supervisors, and the engineering department. Employees are also provided access to process hazard analyses and all other process safety information over the branch network and in the branch legal files;

4.2.2. **Process Safety Information**: Information pertaining to the hazards of the materials, technology, and equipment involved in the process is gathered prior to and reviewed during the Screening Review and Process Hazard Analysis. The information is summarized on the Standard Operating Procedure and is also documented in the PHA notes and Material Safety Data Sheets. Electronic information is stored on the local network and accessible to all employees. Printed information is stored in the branch legal file and also accessible to all employees.

4.2.2.1. Show employees how to access the information on the local network and legal files. Also tell employees that the information is available to those who forget how to use the network through Supervisory, EHS, Engineering, or Lab personnel.

4.2.2.1.1. Information on the network is backed up and stored offsite regularly.

4.2.2.2. Training, including how and when production and other operations employees are trained to safely handle hazardous materials

4.2.3. **Process Hazard Analysis (PHA)**: identification and review, including the procedure used to systematically identify and mitigate process hazards. Reference SOP # PS003AF.

4.2.3.1. Tell the employees how and where in the legal files and the local network they can access PHA records and information on process hazards, process drawings, and process procedures.

4.2.3.2. Briefly explain the different types of PHAs.

4.2.3.2.1. What-If;

4.2.3.2.2. Checklist;

4.2.3.2.3. What-If / Checklist;

4.2.3.2.4. Hazard and Operability Study (HAZOP);

4.2.3.2.5. Failure Mode and Effects Analysis (FMEA);

4.2.3.2.6. Fault Tree Analysis; or

4.2.3.2.7. An appropriate equivalent methodology.

4.2.3.3. The methodology selected for the PHA is the type (or types) that are most appropriate to determine and evaluate the hazards of the process being analyzed.

4.2.3.4. A team is assembled for the PHA consisting of at least one person with expertise in engineering and process operations, one employee who has experience and knowledge specific to the process being evaluated, and one person knowledgeable in the type of PHA being used (e.g. HAZOP, What-if, etc.).

4.2.3.5. An MOC system has been established to track action items that may result from the PHA. Reference SOP # QA005CG.

4.2.3.6. PHAs are repeated at least every 5 years to make sure the PHA is consistent with the current process.

4.2.4. **Standard Operating Procedures (SOPs)**: written operating procedures are developed to provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information. Reference SOP # QA036CE.

4.2.5. **Training**:

4.2.5.1 Operating personnel receive comprehensive training on the Standard Operating Procedures covering production operations.

4.2.5.1.1. Initial training occurs in conjunction with process start-up or as changes are made to process operating parameters.

Refresher training is conducted at least every 3 years. More frequent training is conducted if changes have occurred to the process.

4.2.5.1.2. The SOP training is typically conducted by the process engineer including description of hazards inherent to the process, identification of alarm situations and mitigation, personal protective equipment, and chemical specific hazards, and a review of the process specific Standard Operating Procedure.

4.2.5.1.2.1. Operators are notified of subsequent changes to processes by a sign-off procedure.

4.2.5.1.3. Hazard Communication (HazCom) training related to the process is typically conducted by the Shift Supervisor, emphasizing chemical specific hazards, PPE, and Emergency Response. Refresher training is conducted at least every 3 years.

4.2.5.1.4. Hands-on training may occur during processing operations and is also conducted by the Facility Trainer for each process system to which employees are assigned. Reference SOP # TX043CG.

4.2.5.2. Visitors and contractors receive training on procedures related to the work that they perform. Those working directly on or around Process Safety Management covered processes will receive training on the process operations and hazards.

4.2.6. **Contractors**: Contractors are managed per the Selection, Management, and Training of Contractors SOP, MN005CG.

4.2.4.3. Additional Training- For Contractors and other visitors working on or around Process Safety Management covered processes.

4.2.4.1. Identify the area in which the contractor or visitor may be working (e.g.- tank farm, reactor room). Utilize a drawing of the work area.

4.2.4.2. Identify processes in operation and materials likely to be present during the contractor/visitor's time on site.

4.2.4.3. Conduct training per SOPs PS005AF and MN005CG.

4.2.4.4. Have the contractor and/or visitor sign and date each training record form.

4.2.7. **Management of Change:** see the Management of Change SOP QA005AF.

4.2.8. **Pre-Start-up Safety Reviews** covering new and revised equipment installations are conducted to ensure construction and equipment is in accordance with design specifications and the PHA, and that the safety, operating, maintenance, and emergency procedures are in place and are adequate. Reference PS006AF.

4.2.9. **Incident Investigation** and follow-up, applied to any incident that has the potential for catastrophe. Results of investigations must be shared with affected employees to minimize the potential for recurrence of the incident. Reference the Incident Investigation, Reporting, and Corrective Action Procedure, AD052AF.

4.2.10. Other policies and procedures that apply to Process Safety Management include

4.2.10.1. Various Safe Work and Maintenance Safety Procedures, including Hot Work, Lockout/Tagout, Confined Space Entry, Mechanical Integrity, and Contractor Selection, Management, and Training. Employees and Contractors who may be performing activities

covered by these procedures must be trained and the training documented.

4.2.10.2. Review of New Chemicals and Processes covering the evaluation procedure for new product or process introduction by Engineering, Lab, and Operations for safety, quality and regulatory compliance. Reference SOP RH013AF.

4.2.10.3. Emergency Response Procedures (Volume 7 in the SOPP Manual System)

4.2.10.4 Internal Facility Audits: Audits are performed and documented per the standard following the SOP Internal Facility Auditing, QA014AF.

4.2.11.5 Trade Secrets: No information pertinent to safety, health, quality, or the environment will be withheld from employees.

5. Hazard Communication

5.1. All employees, visitors and contractors receive training on Hydrite's Hazard Communication Policy with additional product specific hazard training if the job may result in exposure to highly hazardous materials.

5.2. Information on Process Safety Management covered systems and their hazards is available to all employees, visitors, and contractors in the Legal File.

6. Review related, relevant Operating Procedures

7. Questions

7.1. Ask for questions and provide answers or take follow up notes as needed.

8. Quiz

8.1. Ask the trainee(s) to complete a quiz.

8.2. Review quiz answers with the trainees.

9. Recordkeeping

9.1. Everyone must sign a training record form.

9.2. Completed training records are to be inserted into the Legal File Mail Slot in the Cottage Grove East Office for filing at the branch legal file.

PROCESS SAFETY MANAGEMENT TRAINING

EMPLOYEE NAME (print): _____

I have completed the training outlined below.

EMPLOYEE SIGNATURE: _____

DATE: _____

BRANCH: _____

TRAINER: _____
(SIGN) **I certify that the training has been completed.**

TRAINING TIME: _____ **MINUTES**

TRAINING OBJECTIVE:
MEET THE REQUIREMENTS OF THE APPLICABLE REGULATORY STANDARDS AND PROVIDE THE EMPLOYEE, CONTRACTOR, OR VISITOR WITH BASIC INFORMATION RELATED TO PROCESS SAFETY MANAGEMENT POLICIES AT HYDRITE CHEMICAL CO. FACILITIES. THIS INCLUDES A REVIEW OF RELEVANT SOPS. THE TRAINING OBJECTIVE WILL BE MET BY REVIEWING THE INFORMATION AND EXCERPTS OF PROCEDURES, DISCUSSION OF QUESTIONS WITH THE TRAINER, AND COMPLETING THE QUIZ.

TRAINING AGENDA:
1. REVIEW OF THE OSHA PSM STANDARD- HISTORY, OBJECTIVES, APPLICABILITY
2. REVIEW OF PSM COVERED PROCESSES AT THE FACILITY
3. SAFETY POLICIES AND PROCEDURES RELATED TO PSM
4. OPERATING PROCEDURES
5. QUESTIONS
6. QUIZ

APPLICABLE STANDARDS:
- 29 CFR 1910.119 Process Safety Management
- 29 CFR 1910.1200 Hazard Communication Standard

MATERIALS: TRAINING GUIDE, RELATED SOPs (AS SPECIFIED IN THE TEXT) AND QUIZ

QUIZ

PROCESS SAFETY MANAGEMENT TRAINING

SELECT THE BEST ANSWER FOR EACH QUESTION.

1	T	F	Process Safety Management Policies and Procedures only apply to production equipment operators.
2	T	F	"Management of Change" means that managers can change procedures whenever they want.
3	T	F	"Employee involvement" means that every employee operating a process must participate in SOP development.
4	T	F	Results of incident investigations are provided to employees to punish the guilty.
5	T	F	Contractor or temporary employees working on or around Process Safety Management covered processes must receive training on the hazards of the process before starting work.
6	T	F	Process Hazard information may include equipment drawings, MSDS, and information on chemical reactions.
7	T	F	Re-training for operators of Process Safety Management covered processes must occur every six months.
8	T	F	The Process Safety Management standard is a safety program designed to identify and help control hazards associated with chemical processes.
9	T	F	The Operations Manager at each facility may designate which, if any, processes are covered by Process Safety Management.
10	T	F	Processes using flammable liquids are covered under Process Safety Management if more than 10,000 pounds are present at the facility.

QUIZ ANSWERS

PROCESS SAFETY MANAGEMENT TRAINING

1	F	Process Safety Management Policies and Procedures only apply to production equipment operators. ***The policies and procedures apply to all personnei- including visitors and contractors- who may work on or around processes covered by PSM. Note that warehouse storage is considered a process.***
2	F	"Management of Change" means that managers can change procedures whenever they want. ***It means that a systematic approach- involving employees operating the process- must be taken before any changes are made to covered processes. Maintenance activities and in-kind replacements are exempt.***
3	F	"Employee involvement" means that every employee operating a process must participate in SOP development. ***Involvement of a representative employee or employees satisfies the requirements.***
4	F	Results of incident investigations are provided to employees to punish the guilty. ***Results are shared to ensure awareness of what happened and prevent recurrence.***
5	T	Contractor or temporary employees working on or around Process Safety Management covered processes must receive training on the hazards of the process before starting work.
6	T	Process Hazard information may include equipment drawings, MSDS, and information on chemical reactions.
7	F	Re-training for operators of Process Safety Management covered processes must occur every six months. ***Re-training must occur at least every three years or whenever the process is changed. Retraining must only cover the change.***
8	T	The Process Safety Management standard is a safety program designed to identify and help control hazards associated with chemical processes.
9	F	The Operations Manager at each facility may designate which, if any, processes are covered by Process Safety Management. ***The OSHA regulations state what materials are covered by quantity. If a process- including storage- uses more than the stated amount in a single vessel or series of interconnected vessels- PSM applies.***
10	F	Processes using flammable liquids are covered under Process Safety Management if more than 10,000 pounds are present at the facility. ***Trick question- PSM applies only if the 10,000 pounds of flammables are present in a single vessel or series of interconnected vessels, which are pressure vessels. Hydrite manages flammables consistent with PSM, but the material is stored in atmospheric tanks and therefore not actually covered.***

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 11/1/95	Supersedes SOP Dated: 11/1/05	Effective Date: 10/1/08	Procedure No.: PS002AF
Facility: AF	Approval Name & Signature: Tom Miazga		Revision No.: 5
Review Frequency: 3 Years	Approval Title: Director of Safety, Quality and Regulatory Affairs		Page 1 of 2
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			If this block is black, this is NOT a controlled document
Revised Section(s): Reviewed, no changes.			

I. **TITLE:** PROCESS SAFETY INFORMATION; PROCESS SAFETY MANAGEMENT

II. **KEY WORDS:** Hazards, Information, Process Safety Management

III. **PURPOSE:** Define Hydrite procedure regarding availability of information on hazards of chemicals used in Process Safety Management covered processes, as required under 29CFR1910.119(c) & (e).

IV. **APPLICATION:** Process Safety Management Programs at all Hydrite Chemical Co. facilities.

V. **DEFINITIONS:** N/A

VI. **ASSOCIATED MATERIAL(S):** Process Safety Management Program Manual(s) or files in the facility legal file
Hydrite Chemical Co. Hazard Communication Program SF045AF
Review of New Chemicals and Processes Procedure RH013AF

VII. **PROCEDURE:**

1. The Review of New Chemicals and Processes SOP provides detailed instructions for hazard review.
2. Information which must be compiled to complete the Hazard Analysis includes:
   - 2.1. Chemical Hazards Information
     - 2.1.1. Toxicity information, to the extent it is available;
     - 2.1.2. Permissible exposure limits, where such limits are established;
     - 2.1.3. Physical data such as boiling point, melting point, flash point;
     - 2.1.4. Reactivity data, where applicable;
     - 2.1.5. Corrosivity data, where applicable;
     - 2.1.6. Data on chemical and thermal stability, where available;
     - 2.1.7. Hazardous effects of inadvertent mixing of hazardous materials, where such information is available.
   - 2.2. Process Technology Information
     - 2.2.1. Process Flow Diagram
     - 2.2.2. Process chemistry
     - 2.2.3. Upper / Lower temperature and pressure limits
     - 2.2.4. Consequences of deviation from limits
     - 2.2.5. Identification of waste streams, including:
       - 2.2.5.1. waste streams generated during process start up
       - 2.2.5.2. waste streams generated during normal process operations

2.2.5.3. waste streams generated during expected process upsets, including, as applicable:

2.2.5.3.1. over temperature,

2.2.5.3.2. loss of agitation or circulation,

2.2.5.3.3. loss of vacuum or pressure,

2.2.5.3.4. waste streams generated during normal shut down,

2.2.5.3.5. waste streams generated during maintenance.

2.3. Process Equipment Information

2.3.1. List of equipment, including pumps, tanks, vessels and reactors.

2.3.2. Information addressing the compatibility of the process equipment with the process fluids.

2.3.3. Maximum intended inventory in the process system.

2.3.4. Process control equipment, including any computerization or automation.

2.3.5. Emission control equipment.

2.3.6. Environmental and workplace monitoring equipment.

2.3.7. Emergency Relief systems.

3. All information must be dated.

4. After compilation, this information will be used during the Process Hazards analysis (HAZOP) and will be located in the Process Safety Management section of the Facility Legal File.

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 11/1/95	Supersedes SOP Dated: 11/1/05	Effective Date: 10/1/08	Procedure No.: PS005AF
Facility: AF	Approval Name & Signature: Tom Miazga		Revision No.: 5
Review Frequency: 3 Years	Approval Title: Director of Safety, Quality & Regulatory Affairs		Page 1 of 2
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			If this block is black, this is NOT a controlled document
Revised Section(s): Reviewed, no changes.			

I. **TITLE:** TRAINING; PROCESS SAFETY MANAGEMENT

II. **KEY WORDS:** Safety, Process, Safety, Management, Employee, Training

III. **PURPOSE:** Define Hydrite Chemical Co. Procedure regarding conduct of employee training for Process Safety Management covered processes, as required under 29CFR1910.119(g).

IV. **APPLICATION:** Process Safety Management Programs, all Hydrite facilities.

V. **DEFINITIONS:** Training: Qualifying or preparing an individual to act so as to achieve a desired outcome.

Process Specific Training: Training focused on a specific operation or process.

Refresher Training: Training provided periodically so as to assure an individual understands current operating procedures and policies.

VI. **ASSOCIATED MATERIAL(S):** Process Safety Management Program Manual(s)/File(s) (In Facility Legal File)
New & Reassigned Employee Training Requirements TX043
Selection, Management, and Training of Contractors MN005

VII. **PROCEDURE:**

1. All employees who work on or around Process Safety Management covered processes, including regular, temporary, and contractor employees, must be qualified by training to perform assigned tasks.
2. Training must be documented using a paper form showing at least the name of the employee, date the training was performed, an outline or other description of what the training covered, and the name of the trainer.
   - 2.1. The person being trained must sign the form, and the form must be inserted into a training record file established for that person in the facility legal file.
3. Trainers must be qualified by education and/or experience to conduct the training.
   - 3.1. Such qualifications may be documented in the facility or corporate file.
   - 3.2. Overview and process specific training should be conducted by an experienced process supervisor or technical manager.
   - 3.3. Trainers are responsible to ensure that training record forms are completed as needed.

4. Process training must include:

   4.1. A review of the process flow diagram, P&ID, and process operating parameters;

   4.2. A review of the hazards of the materials and the process;

   4.3. Safe work practices which may be applicable such as lock-out tag-out, application of hot work permits, operating checklists.

      4.3.1. Employees not directly involved in conducting these activities or actually conducting process operations may be trained only to an awareness level.

      4.3.2. Operating and maintenance employees must be fully trained in these matters;

   4.4. How to access operating information (operators only);

   4.5. Emergency operations and response actions;

   4.6. Operators and maintenance personnel involved in maintaining the process must be trained in the process operating procedures, including a step-by-step review of all procedures used to conduct the process (Preparation, start up, normal operations, shutdown, emergency shutdown, emergency operations, and re-start after emergency shutdown, and maintenance). The training must include:

      4.6.1. Discussion of process hazards and the relationship between upper and lower operating limits and hazards, and steps required to correct from a deviation.

      4.6.2. Safety and health considerations specific to process operations such as selection and use of PPE, precautions needed to prevent exposure to hazards of the process, and steps needed in case exposure occurs.

      4.6.3. Safe work practices which may be applicable to the process operations (e.g.- how to complete process specific inspection checklists, or how to apply lock-out/tag-out procedures).

      4.6.4. Spill and waste management procedures specific to process materials and operations.

      4.6.5. On-the-job training in application of the procedures.

         4.6.5.1. This must be administered by an experienced operator, supervisor, or technical manager.

         4.6.5.2. This training is generally conducted with the employee in training assigned to specific portions of process operations or related activities.

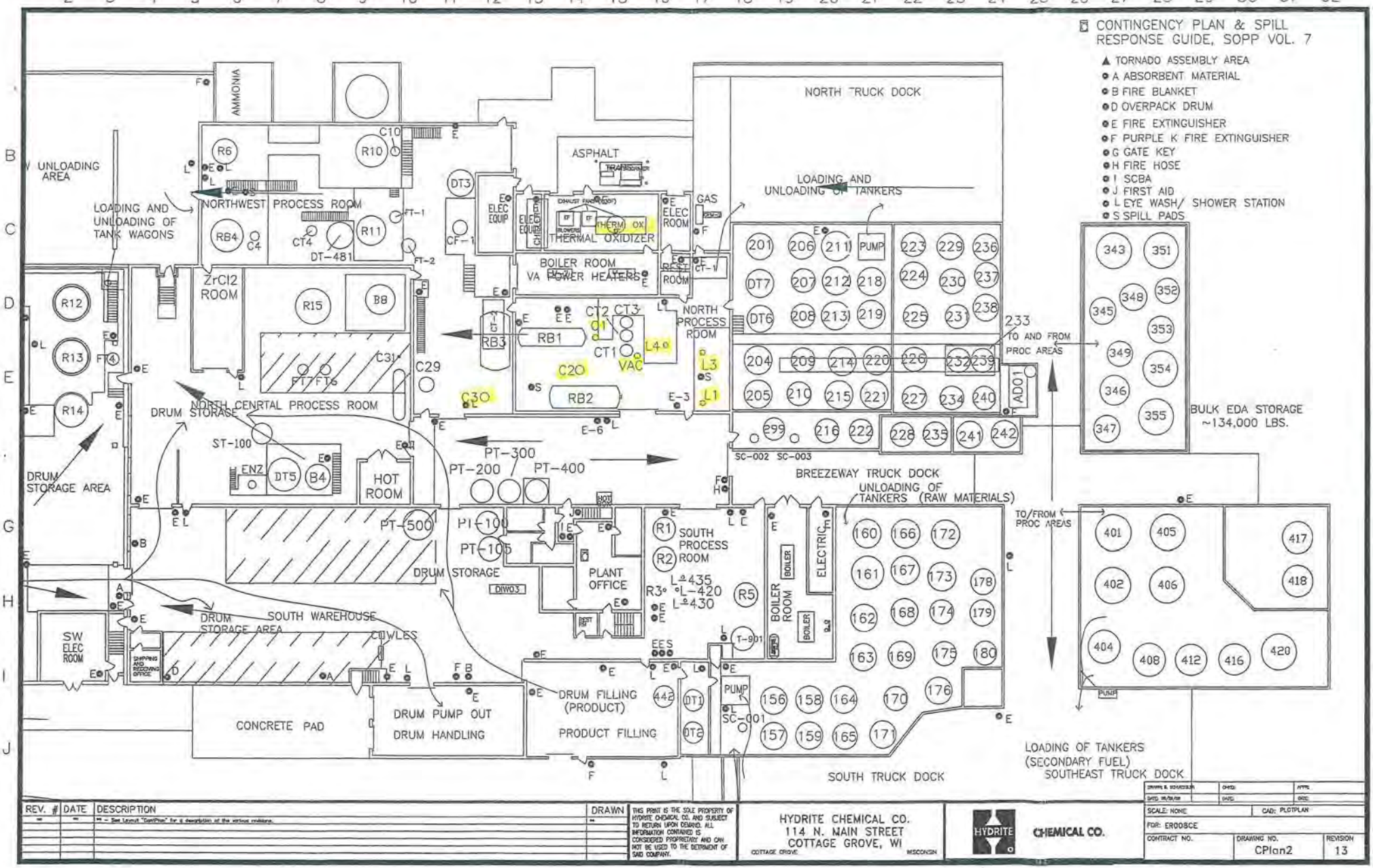
         4.6.5.3. Such training must be documented as described above.

5. Specialized contractors providing services such as welding, electrical, pipefitting, must receive a similar level of training. In addition, records applicable to any certifications (such as welding) must be entered into the contractor training file (refer to the Contractor Selection, Management, and Training SOP).

6. Refresher Training will be conducted whenever changes are made to the process, or at least once each three years.

   6.1. Requirements for the scope, conduct and documentation of refresher training are the same as those specified for other training, described above.

Appendix O



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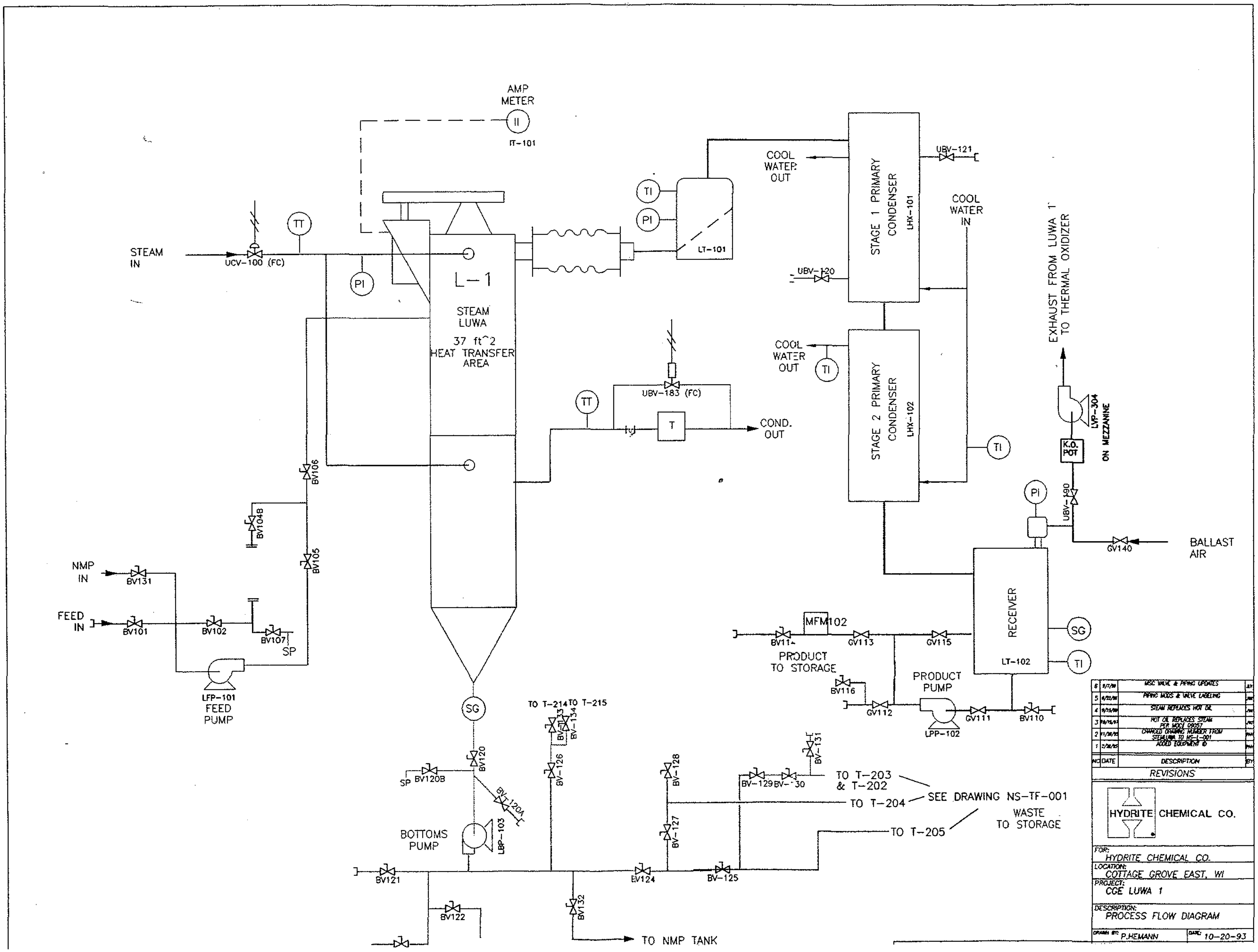
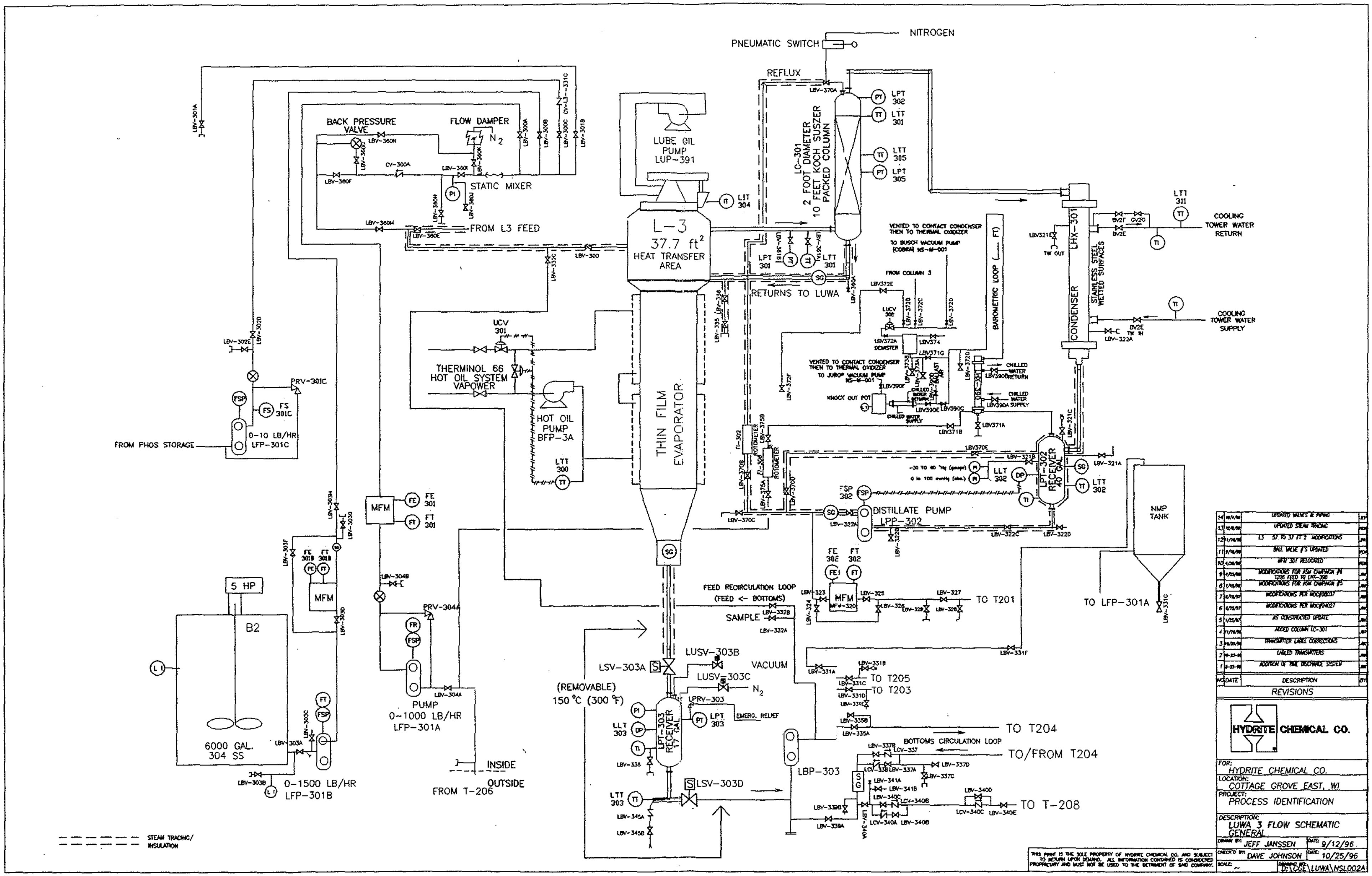
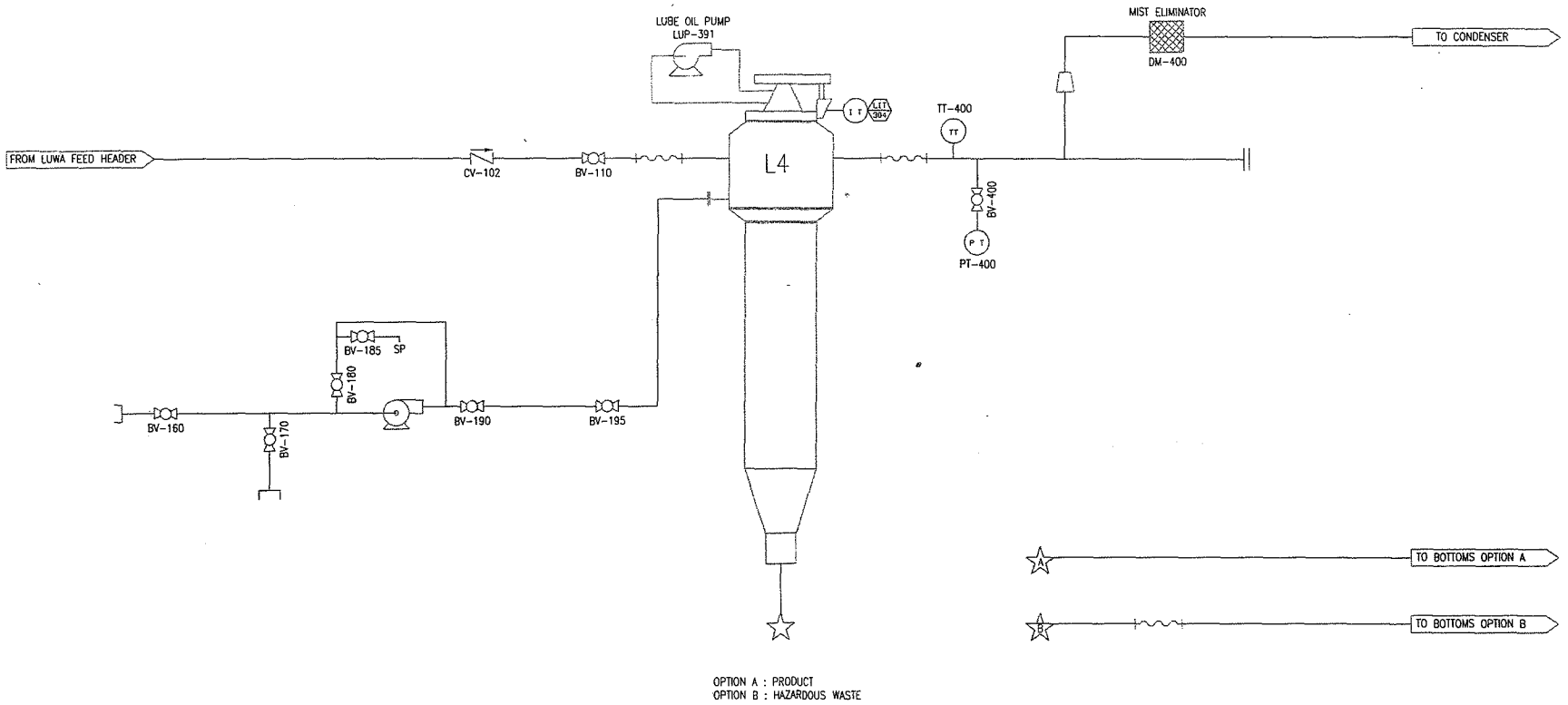

AMP METER
IT-101
STEAM IN
UCV-100 (FC)
TT
PI
L-1
STEAM LUWA
37 ft^2 HEAT TRANSFER AREA
TI
PI
LT-101
COOL WATER OUT
UBV-121
STAGE 1 PRIMARY CONDENSER
LHX-101
COOL WATER IN
UBV-120
EXHAUST FROM LUWA 1 TO THERMAL OXIDIZER
COOL WATER OUT
STAGE 2 PRIMARY CONDENSER
LHX-102
UBV-183 (FC)
COND. OUT
LVP-304
ON MEZZANINE
K.O. POT
BV106
BV104B
BV105
NMP IN
BV131
FEED IN
BV101
BV102
BV107
SP
LFP-101
FEED PUMP
UBV-190
GV140
BALLAST AIR
RECEIVER
LT-102
SG
MFM102
GV113
GV115
PRODUCT TO STORAGE
BV116
PRODUCT PUMP
GV112
LPP-102
GV111
BV110
TO T-214
TO T-215
BV-133
BV-134
BV120
BV120B
BV-120A
BV-126
BV-128
BV-131
BV-129
BV-130
TO T-203 & T-202
SEE DRAWING NS-TF-001
TO T-204
WASTE TO STORAGE
TO T-205
BV-127
BOTTOMS PUMP
LBP-103
BV121
BV122
BV124
BV-125
BV132
TO NMP TANK
MISC VALVE & PIPING UPDATES
PIPING MODS & VALVE LABELING
STEAM REPLACES HOT OIL
HOT OIL REPLACES STEAM PER MOC# 09057
CHANGED DRAWING NUMBER FROM STEMLUWA TO NS-L-001
ADDED EQUIPMENT ID
NO DATE DESCRIPTION BY
REVISIONS
HYDRITE CHEMICAL CO.
FOR: HYDRITE CHEMICAL CO.
LOCATION: COTTAGE GROVE EAST, WI
PROJECT: CGE LUWA 1
DESCRIPTION: PROCESS FLOW DIAGRAM
DRAWN BY: P.HEMANN
DATE: 10-20-93


NITROGEN
PNEUMATIC SWITCH
REFLUX
LC-301 2 FOOT DIAMETER 10 FEET KOCH SUSZER PACKED COLUMN
LPT 302
LTT 301
LTT 305
LPT 305
LUBE OIL PUMP LUP-391
BACK PRESSURE VALVE
FLOW DAMPER
N_2
STATIC MIXER
FROM L3 FEED
L-3
37.7 ft²
HEAT TRANSFER AREA
LIT 304
RETURNS TO LUWA
LPT 301
LTT 301
THIN FILM EVAPORATOR
UCV 301
THERMINOL 66 HOT OIL SYSTEM VAPOWER
HOT OIL PUMP BFP-3A
LTT 300
PRV-301C
FS 301C
0-10 LB/HR LFP-301C
FROM PHOS STORAGE
MFM
FE 301
FT 301
PRV-304A
PUMP 0-1000 LB/HR LFP-301A
INSIDE
OUTSIDE
FROM T-206
5 HP
B2
6000 GAL. 304 SS
0-1500 LB/HR LFP-301B
COOLING TOWER WATER RETURN
COOLING TOWER WATER SUPPLY
LTT 311
LHX-301
CONDENSER
STAINLESS STEEL WETTED SURFACES
BAROMETRIC LOOP
VENTED TO CONTACT CONDENSER THEN TO THERMAL OXIDIZER
TO BUSCH VACUUM PUMP
FROM COLUMN 3
KNOCK OUT POT
CHILLED WATER RETURN
CHILLED WATER SUPPLY
LPT-302 RECEIVER 40 GAL.
LLT 302
LTT 302
DISTILLATE PUMP LPP-302
FSP 302
NMP TANK
TO LFP-301A
FEED RECIRCULATION LOOP (FEED <- BOTTOMS)
SAMPLE
FE 302
FT 302
MFM
TO T201
LSV-303A
LUSV-303B
VACUUM
LUSV-303C
(REMOVABLE) 150 °C (300 °F)
LPRV-303
EMERG. RELIEF
LPT 303
LLT 303
LPT-303 RECEIVER 17 GAL.
LSV-303D
LTT 303
TO T205
TO T203
TO T204
BOTTOMS CIRCULATION LOOP
TO/FROM T204
LBP-303
TO T-208
STEAM TRACING/ INSULATION
REVISIONS
HYDRITE CHEMICAL CO.
FOR: HYDRITE CHEMICAL CO.
LOCATION: COTTAGE GROVE EAST, WI
PROJECT: PROCESS IDENTIFICATION
DESCRIPTION: LUWA 3 FLOW SCHEMATIC GENERAL
DRAWN BY: JEFF JANSSEN
DATE: 9/12/96
CHECKED BY: DAVE JOHNSON
DATE: 10/25/96
LUWA\NSL002A



ISSUED FOR APPROVAL

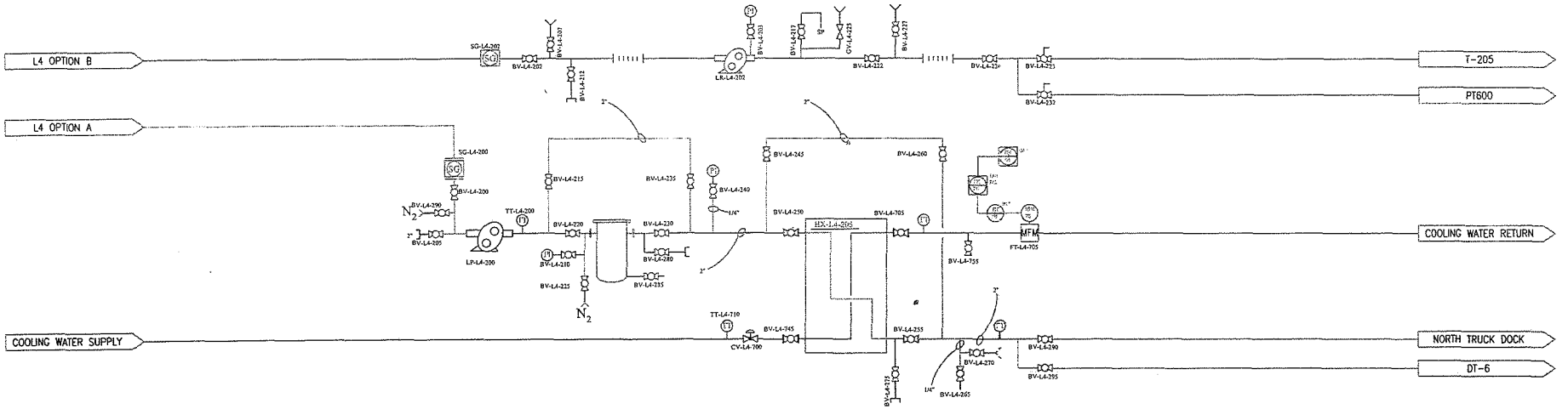
APPROVED BY _____ DATE: _____

REV. #	DATE	DESCRIPTION	INITIALS
01	4/17/08	ADDED RECYCLE PROCESSING / REMOVED DT-6 FEED HEADER	AJL
–	–	–	–
–	–	–	–

L4 EVAPORATOR
PIPING & INSTRUMENTATION
DIAGRAM

HYDRITE CHEMICAL CO.
COTTAGE GROVE WISCONSIN

DRAWN BY: ADAM L.(PIPERS) | DATE: 4/17/2008 | PAGE: 1 OF 1
LAYOUT: 01 | SCALE: NTS
DRAWING NAME: L4 EVAPORATOR | REV 01



ISSUED FOR APPROVAL

APPROVED BY: _____ DATE: _____

REV. #	DATE	DESCRIPTION	INITIALS
01	4/29/08	ADDED RECYCLE PROCESSING	AJL
–	–	–	–
–	–	–	–

L4 BOTTOMS
PIPING & INSTRUMENTATION
DIAGRAM

HYDRITE CHEMICAL CO.
COTTAGE GROVE WISCONSIN

DRAWN BY: ADAM L.(PIPERS)	DATE: 12/21/2007	PAGE: 1 OF 1
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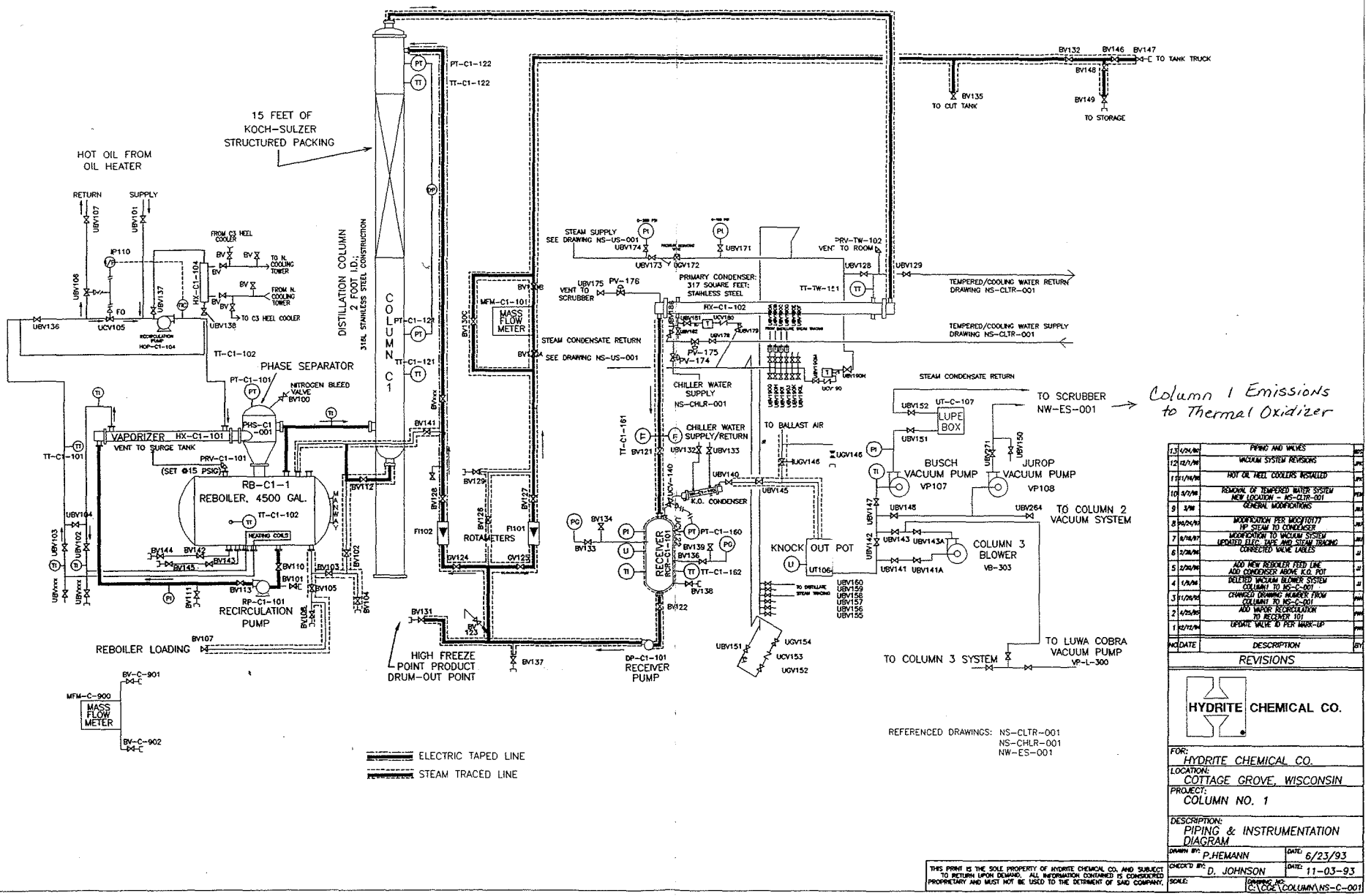
DRAWING NAME: L4 BOTTOMS		REV 01

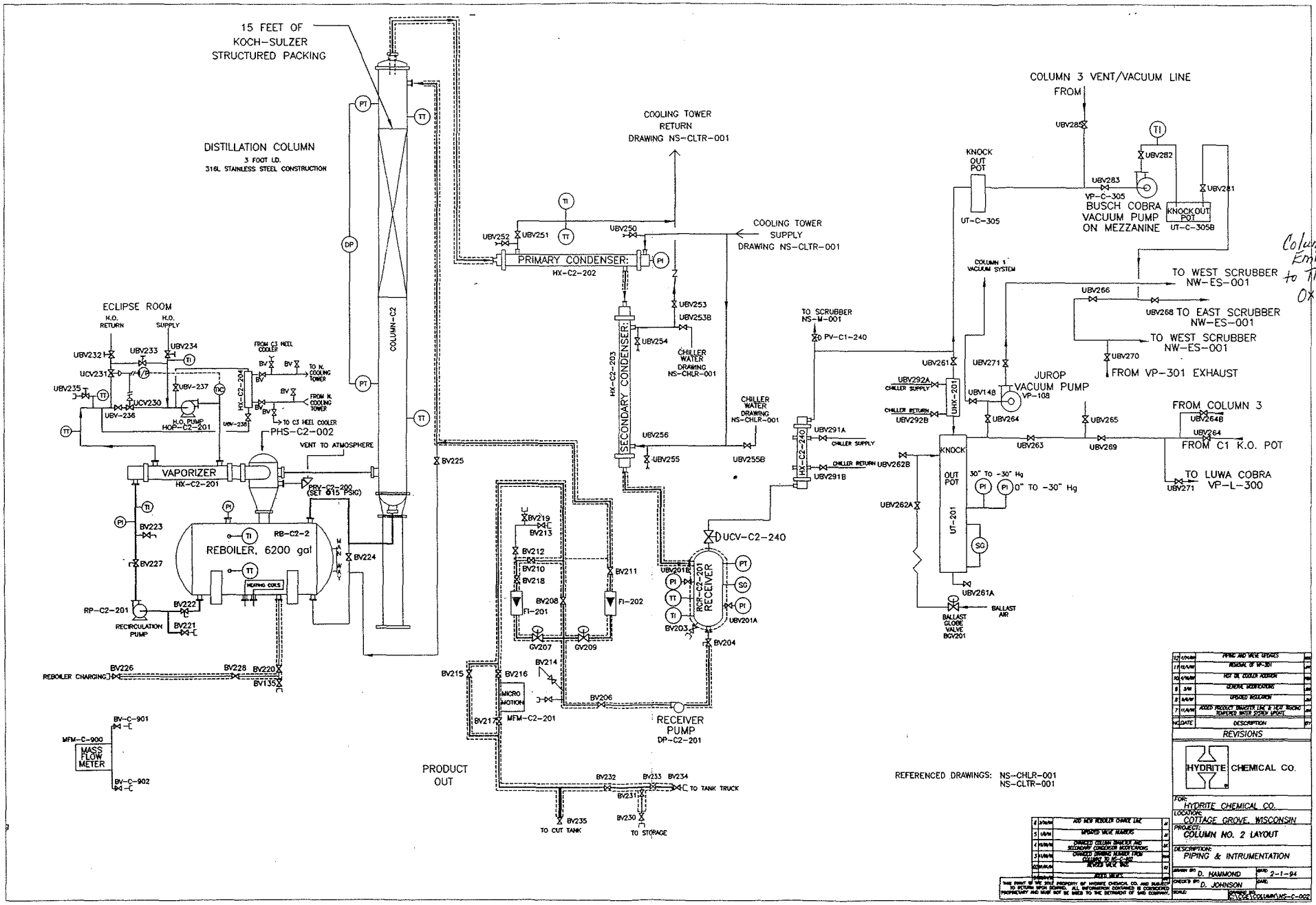


NO	DATE	DESCRIPTION	BY
13	4/24/00	PIPING AND VALVES	BDC
12	12/1/98	VACUUM SYSTEM REVISIONS	JPW
11	11/16/98	HOT OIL HEEL COOLERS INSTALLED	JPW
10	9/1/98	REMOVAL OF TEMPERED WATER SYSTEM NEW LOCATION - NS-CLTR-001	PEW
9	3/98	GENERAL MODIFICATIONS	JMS
8	10/24/97	MODIFICATION PER MOC#10177 HP STEAM TO CONDENSER	JMS
7	8/18/97	MODIFICATION TO VACUUM SYSTEM UPDATED ELEC. TAPE AND STEAM TRACING	JMS
6	2/26/96	CORRECTED VALVE LABELS	JJ
5	2/20/96	ADD NEW REBOILER FEED LINE ADD CONDENSER ABOVE K.O. POT	JJ
4	1/5/96	DELETED VACUUM BLOWER SYSTEM COLUMN 1 TO NS-C-001	JJ
3	11/29/95	CHANGED DRAWING NUMBER FROM COLUMN1 TO NS-C-001	PEW
2	4/25/95	ADD VAPOR RECIRCULATION TO RECOVER 101	PEW
1	12/12/94	UPDATE VALVE ID PER WALK-UP	PEW

REVISIONS

HYDRITE CHEMICAL CO.

FOR: HYDRITE CHEMICAL CO.
LOCATION: COTTAGE GROVE, WISCONSIN
PROJECT: COLUMN NO. 1
DESCRIPTION: PIPING & INSTRUMENTATION DIAGRAM
DRAWN BY: P.HEMANN DATE: 6/23/93
CHECKED BY: D. JOHNSON DATE: 11-03-93
SCALE: DRAWING NO. C:\COE\COLUMN\NS-C-001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STRUCTURED PACKING
DISTILLATION COLUMN
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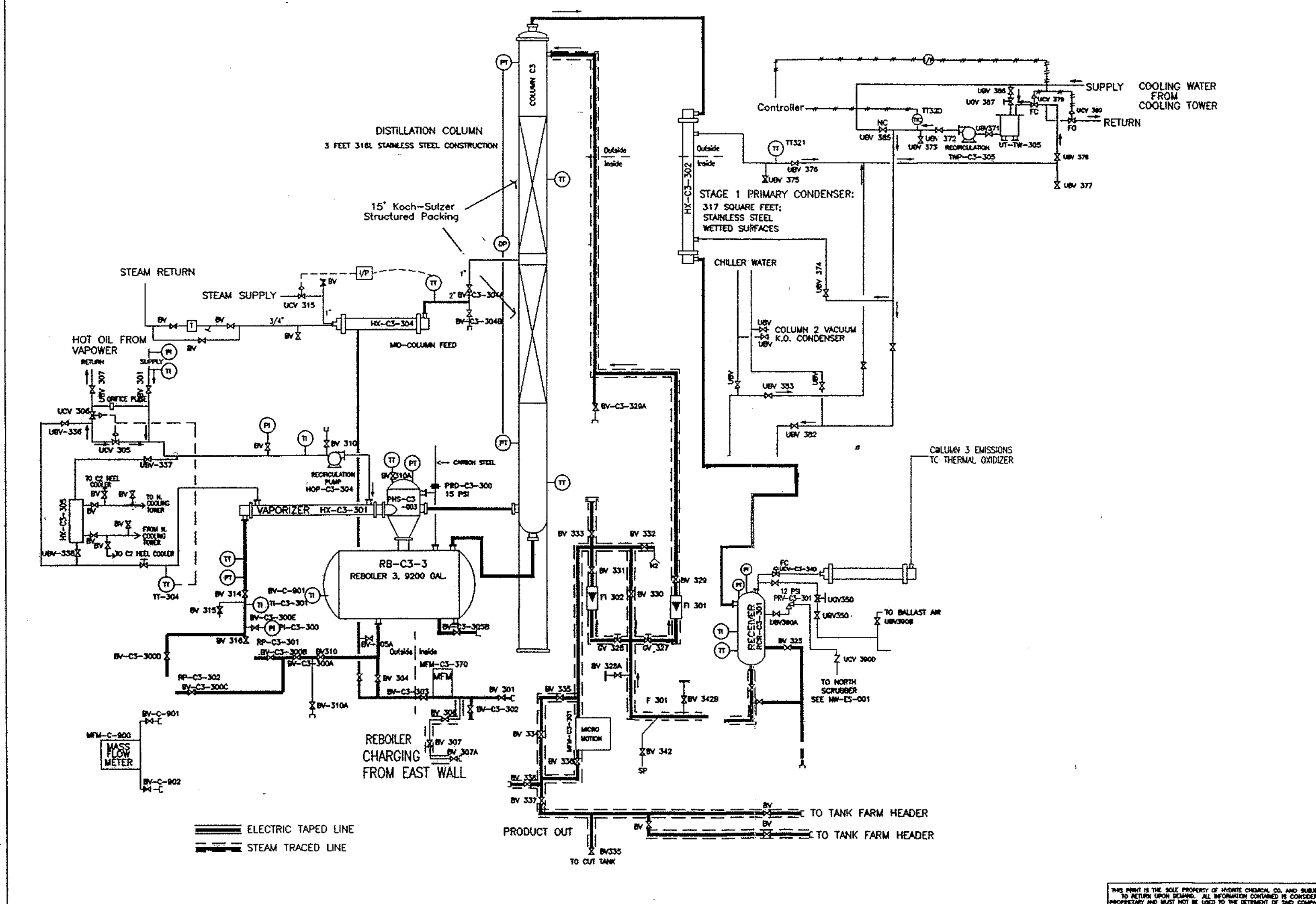
316L STAINLESS STEEL CONSTRUCTION
COLUMN-C2
COOLING TOWER
RETURN
DRAWING NS-CLTR-001
COOLING TOWER
SUPPLY
DRAWING NS-CLTR-001
PRIMARY CONDENSER:
HX-C2-202
SECONDARY CONDENSER:
HX-C2-203
CHILLER
WATER
DRAWING
NS-CHLR-001
ECLIPSE ROOM
H.O.
RETURN
H.O.
SUPPLY
H.O. PUMP
HOP-C2-201
FROM C3 HEEL
COOLER
TO N.
COOLING
TOWER
TO C3 HEEL COOLER
PHS-C2-002
VENT TO ATMOSPHERE
VAPORIZER
HX-C2-201
PRV-C2-200
(SET @15 PSIG)
REBOILER, 6200 gal
RB-C2-2
HEATING COILS
RP-C2-201
RECIRCULATION
PUMP
REBOILER CHARGING
MFM-C-900
MASS
FLOW
METER
BV-C-901
BV-C-902
PRODUCT
OUT
MICRO
MOTION
MFM-C2-201
RECEIVER
PUMP
DP-C2-201
RCVR-C2-201
RECEIVER
UCV-C2-240
FI-201
FI-202
TO CUT TANK
TO STORAGE
TO TANK TRUCK
TO SCRUBBER
NS-M-001
PV-C1-240
HX-C2-240
COLUMN 3 VENT/VACUUM LINE
FROM
KNOCK
OUT
POT
UT-C-305
VP-C-305
BUSCH COBRA
VACUUM PUMP
ON MEZZANINE
KNOCK OUT
POT
UT-C-305B
COLUMN 1
VACUUM SYSTEM
TO WEST SCRUBBER
NW-ES-001
TO EAST SCRUBBER
NW-ES-001
TO WEST SCRUBBER
NW-ES-001
FROM VP-301 EXHAUST
JUROP
VACUUM PUMP
VP-108
UHX-201
FROM COLUMN 3
FROM C1 K.O. POT
TO LUWA COBRA
VP-L-300
KNOCK
OUT
POT
UT-201
30" TO -30" Hg
0" TO -30" Hg
BALLAST
GLOBE
VALVE
BGV201
BALLAST
AIR
REFERENCED DRAWINGS: NS-CHLR-001
NS-CLTR-001
Column 2
Emissions
to Thermal
Oxidizer
REVISIONS
HYDRITE CHEMICAL CO.
FOR: HYDRITE CHEMICAL CO.
LOCATION: COTTAGE GROVE, WISCONSIN
PROJECT: COLUMN NO. 2 LAYOUT
DESCRIPTION: PIPING & INTRUMENTATION
DRAWN BY: D. HAMMOND
DATE: 2-1-94
CHECK'D BY: D. JOHNSON
SCALE:
DRAWING NO.
E:\CVE\COLUMN\AS-C-002

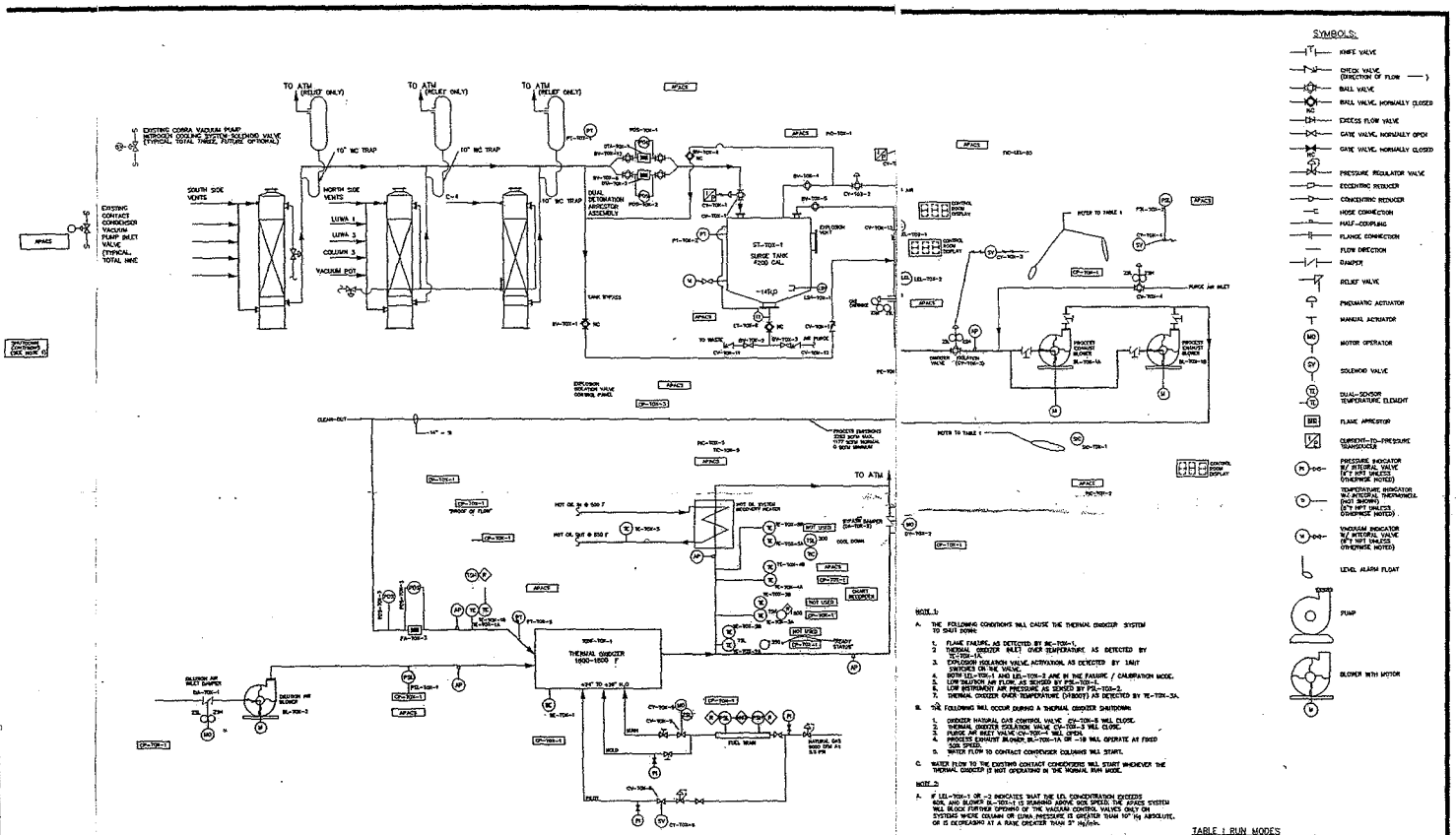


NO	DATE	DESCRIPTION	BY
18	[illegible]	VALVE LABELING	[illegible]
17	[illegible]	ADDITION OF REMOVABLE CARBON TOTE	[illegible]
16	[illegible]	UPDATED VACUUM SYSTEM NAMES	[illegible]
15	[illegible]	HOT OIL COOLER ADDITION	[illegible]
14	[illegible]	GENERAL MODIFICATIONS	[illegible]
13	[illegible]	MID-COLUMN FEED HEAT EXCHANGER ADDITION	[illegible]
12	[illegible]	KNOCK-OUT POT ADDITION ABOVE RECEIVER PER MOC/06037	[illegible]
11	[illegible]	VACUUM SYSTEM CONNECTION TO LUWA NUCKEPAK	[illegible]
10	[illegible]	ADDED PRESSURE RELIEF VALVE TO RECEIVER	[illegible]
9	[illegible]	ADDED PRESSURE RELIEF LINE TO SEPARATOR AND REBOILER	[illegible]
8	[illegible]	ADDED PRESSURE RELIEF LINE TO SEPARATOR AND REBOILER	[illegible]
7	[illegible]	UPDATED PIPING BETWEEN RECEIVER AND COLUMN PER MARK-UP	[illegible]
6	[illegible]	ADD REBOILER CHARGE LINE ADD TOP SECTION OF COLUMN	[illegible]
5	[illegible]	UPDATED VALVE ID AND CORRECTED BOILER LOADING LINES	[illegible]
4	[illegible]	UPDATED COOLING WATER SYSTEM AND VACUUM SYSTEM	[illegible]
3	[illegible]	UPDATED COOLING WATER SYSTEM	[illegible]
2	[illegible]	ADD VAPOR RECIRCULATION TO RECEIVER 101	[illegible]
1	[illegible]	UPDATE VALVE ID PER MARK-UP	[illegible]

REVISIONS

HYDRITE CHEMICAL CO.

FOR: HYDRITE CHEMICAL CO.
LOCATION: COTTAGE GROVE, WISCONSIN
PROJECT: PROCESS SAFETY MANAGEMENT COLUMN No. 3
DESCRIPTION: PIPING & INSTRUMENTATION DIAGRAM
DRAWN BY: S. ARVESEN DATE: 5/23/95
CHECK'D BY: D. Johnson DATE: 11-03-93
SCALE: DRAWING NO: C:\CCE\COLUMN\HS-C-003



SYMBOLS:

- KNIFE VALVE
- CHECK VALVE (DIRECTION OF FLOW ———)
- BALL VALVE
- BALL VALVE, NORMALLY CLOSED (NC)
- EXCESS FLOW VALVE
- GATE VALVE, NORMALLY OPEN
- GATE VALVE, NORMALLY CLOSED
- PRESSURE REGULATOR VALVE
- ECCENTRIC REDUCER
- CONCENTRIC REDUCER
- HOSE CONNECTION
- HALF-COUPLING
- FLANGE CONNECTION
- FLOW DIRECTION
- DAMPER
- RELIEF VALVE
- PNEUMATIC ACTUATOR
- MANUAL ACTUATOR
- MOTOR OPERATOR
- SOLENOID VALVE
- DUAL-SENSOR TEMPERATURE ELEMENT
- FLAME ARRESTOR
- CURRENT-TO-PRESSURE TRANSDUCER
- PRESSURE INDICATOR W/ INTEGRAL VALVE (N.O. NOT UNLESS OTHERWISE NOTED)
- TEMPERATURE INDICATOR W/ INTEGRAL THERMOWELL (NOT SHOWN) (N.O. NOT UNLESS OTHERWISE NOTED)
- VACUUM INDICATOR W/ INTEGRAL VALVE (N.O. NOT UNLESS OTHERWISE NOTED)
- LEVEL ALARM FLOAT
- PUMP
- BLOWER WITH MOTOR

NOTE 1:

A. THE FOLLOWING CONDITIONS WILL CAUSE THE THERMAL OXIDIZER SYSTEM TO SHUT DOWN:

1. FLAME FAILURE, AS DETECTED BY BE-703-1.
2. THERMAL OXIDIZER OUTLET OVER-TEMPERATURE AS DETECTED BY TE-703-1A.
3. EXPLOSION ISOLATION VALVE ACTUATION, AS DETECTED BY LIMIT SWITCHES ON THE VALVE.
4. BOTH LEL-703-1 AND LEL-703-2 ARE IN THE FAILURE / CALIBRATION MODE.
5. LOW DILUTION AIR FLOW, AS SENSED BY FSL-703-1.
6. LOW PROPULSION AIR PRESSURE AS SENSED BY PSL-703-2.
7. THERMAL OXIDIZER OVER-TEMPERATURE (H-BOOT) AS DETECTED BY TE-703-3A.

B. THE FOLLOWING WILL OCCUR DURING A THERMAL OXIDIZER SHUTDOWN:

1. OXIDIZER NATURAL GAS CONTROL VALVE (CV-703-5 WILL CLOSE.
2. THERMAL OXIDIZER ISOLATION VALVE CV-703-3 WILL CLOSE.
3. PURGE AIR INLET VALVE, CV-703-4 WILL OPEN.
4. PROCESS EXHAUST BLOWER BL-703-1A OR -1B WILL OPERATE AT FIXED 100% SPEED.
5. WATER FLOW TO CONTACT CONDENSER COLUMNS WILL START.

C. WATER FLOW TO THE EXISTING CONTACT CONDENSERS WILL START WHENEVER THE THERMAL OXIDIZER IS NOT OPERATING IN THE NORMAL RUN MODE.

NOTE 2:

A. IF LEL-703-1 OR -2 INDICATES THAT THE LEL CONCENTRATION EXCEEDS 40%, AND BLOWER BL-703-1 IS RUNNING ABOVE 60% SPEED, THE APACS SYSTEM WILL BLOCK FURTHER OPENING OF THE VACUUM CONTROL VALVES ONLY ON SYSTEMS WHOSE COLUMN OR LUMA PRESSURE IS GREATER THAN 10" Hg ABSOLUTE, OR IS DECREASING AT A RATE GREATER THAN 3" Hg/min.

TABLE 1 RUN MODES

MODE	OXIDIZER ISOLATION VALVE CV-703-3 (CONTROLLED BY POSITIONER CY-703-3)	PURGE AIR INLET VALVE CV-703-4 (CONTROLLED BY POSITIONER - CY-703-4)	BLOWER VARIABLE SPEED DRIVE SIC-703-1	HOT OIL SYSTEM BYPASS DAMPER DA-703-2 (CONTROLLED BY POSITIONER DY-703-2)
PURGE	100% CLOSED	100% OPEN	SET FOR 30% AIRFLOW	100% CLOSED
HEAT UP	100% CLOSED	100% OPEN	SET FOR 30% AIRFLOW	100% CLOSED
IDLE	100% CLOSED	100% OPEN	SET FOR 25% AIRFLOW	WILL POSITION AS NECESSARY TO MAINTAIN DISCHARGE OR TEMPERATURE AT 550°F, AS SENSED BY TE-703-5. THE DAMPER WILL ALSO OPEN AS NECESSARY TO LIMIT THE PRESSURE AT THE GAS STREAM INLET TO THE THERMAL OXIDIZER TO 24" W.C.G.(576" W.C.A.) AS SENSED BY PIC-703-5.
NORMAL RUN	100% OPEN	100% CLOSED	WILL ADJUST AS NECESSARY TO MAINTAIN -16" W.C. AT THE SURGE TANK, AS SENSED BY PIC-703-2.	WILL POSITION AS NECESSARY TO MAINTAIN DISCHARGE OR TEMPERATURE AT 550°F, AS SENSED BY TE-703-5. THE DAMPER WILL ALSO OPEN AS NECESSARY TO LIMIT THE PRESSURE AT THE GAS STREAM INLET TO THE THERMAL OXIDIZER TO 24" W.C.G.(576" W.C.A.) AS SENSED BY PIC-703-5.
SHUTDOWN CONDITION	100% CLOSED	100% OPEN	SET FOR 50% AIR FLOW	100% CLOSED

PIPING LEGENDS:

- PROCESS PIPING
- ELECTRICAL SIGNALS
- CONTROL AIR PIPING

PIPE SIZE AND DESIGNATION

PIPE SIZE IN INCHES - MEDIA TYPE

S = 316 L STAINLESS STEEL
C = CARBON STEEL
F = FIBERGLASS

EQUIPMENT DESIGNATION

EQUIPMENT (SEE PROCESS EQUIPMENT AND INSTRUMENTATION ABBREVIATIONS) - SYSTEM (TOX = THERMAL OXIDIZER) - NUMBER

INSTRUMENTATION ABBREVIATIONS

AP = ANALYSIS POINT (HALF-COUPLING WITH PLUG)
BE = BURNER ELEMENT, INCLUDING FLAME MONITORING
CV = CONTROL VALVE
CY = CONTROL VALVE POSITIONER
DA = DAMPER
DY = DAMPER POSITIONER
FEM = MASS FLOW METER
LEL = LOWER EXPLOSIVE LIMIT TRANSMITTER
LSH = LEVEL SWITCH, ALARMS ON HIGH LEVEL
PDS = PRESSURE DIFFERENTIAL SWITCH
PE = PRESSURE ELEMENT
PI = PRESSURE INDICATOR
PSL = PRESSURE SWITCH, ALARMS ON LOW LEVEL
RD = RUPTURE DISCH
SIC = SPEED INDICATING CONTROLLER
SV = SOLENOID VALVE
TE = TEMPERATURE ELEMENT
TI = TEMPERATURE INDICATOR
TIC = TEMPERATURE INDICATING CONTROLLER
TSH = TEMPERATURE SWITCH, ALARMS ON HIGH
TSL = TEMPERATURE SWITCH, ALARMS ON LOW
VI = VACUUM INDICATOR
ZSH = POSITION SWITCH, HIGH LIMIT
ZSL = POSITION SWITCH, LOW LIMIT

EQUIPMENT ABBREVIATIONS

BL = BLOWER
CP = CONTROL PANEL
DA = DAMPER
EA = DETONATION ARRESTOR
IVD = PROPULSION ISOLATION VALVE
FA = FLAME ARRESTOR
HE = HEAT EXCHANGER
ST = SURGE TANK
TOX = THERMAL OXIDIZER FURNACE

C&H engineers, p.c.
PROFESSIONAL ENGINEERING SERVICES
431 East Fayette Street, Syracuse, New York 13202
(315)472-6660 Fax(315)472-3523

NO.	DATE	DESCRIPTION	BY
1	1/7/99	PER AES COMMENTS	TPK
2	1/27/99	PER SECOND AES COMMENTS	TPK
3	4/27/99	PER AES COMMENTS	TPK

AS BUILT

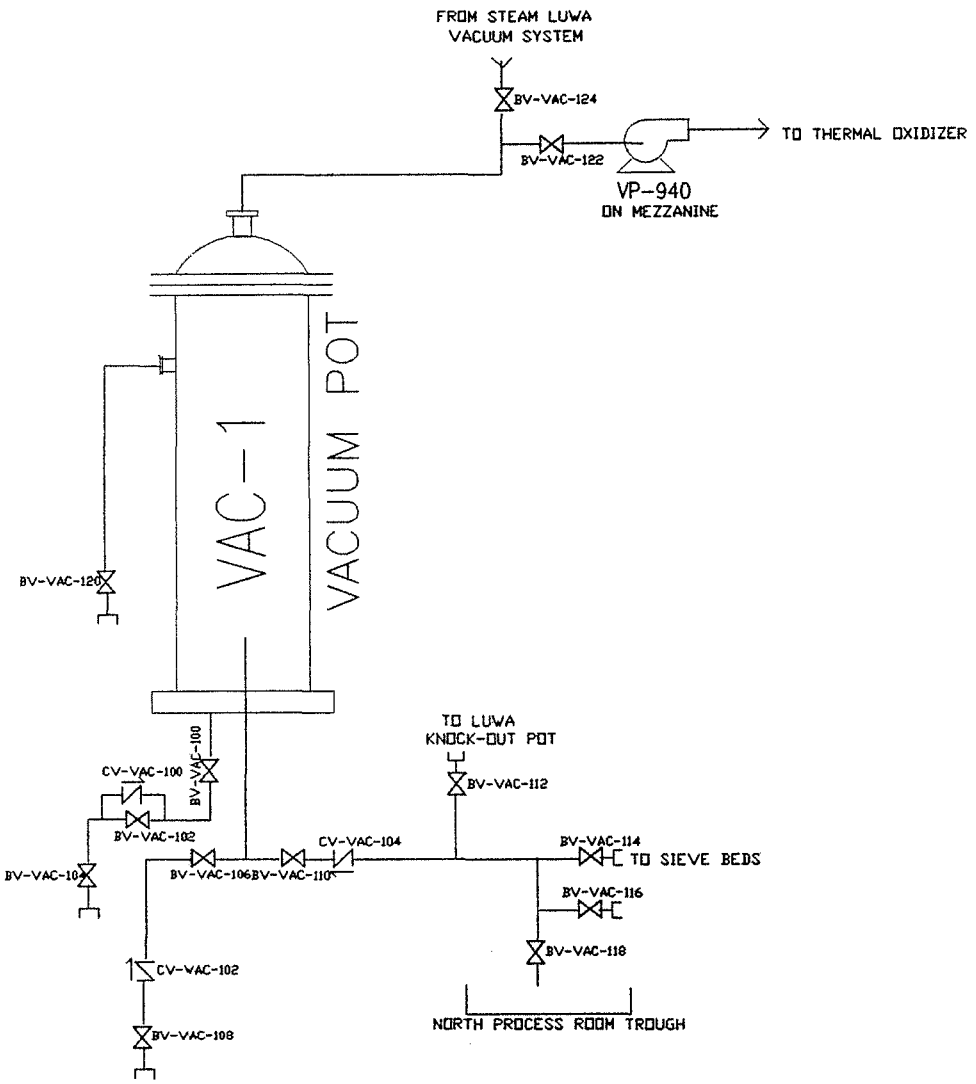
K. KNAUSS PE No. 057174 REVIEWED BY: TPK
DRAWN BY: MC
UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE NEW YORK STATE LAW. ARTICLE 145 SECTION 7209.

HYDRITE CHEMICAL COMPANY
COTTAGE GROVE FACILITY

THERMAL OXIDIZER SYSTEM PROCESS AND INSTRUMENTATION DIAGRAM

PROJECT NO: 98-414
FILE NO: 98-414D1
SCALE: NOT TO SCALE

DATE: 4/27/99
DRAWING NO:
M-1



NO.	DATE	DESCRIPTION	BY
		REVISIONS	

HYDRITE CHEMICAL CO.

FOR: HYDRITE CHEMICAL CO.

LOCATION: COTTAGE GROVE EAST, WI

PROJECT: PROCESS SAFETY MANAGEMENT P&ID – VACUUM POT

DESCRIPTION: NORTH PROCESS ROOM

DRAWN BY: J. VOSS — DATE: 8/18/99

CHECK'D BY: J.JANSSEN — DATE: 8/18/99

SCALE:

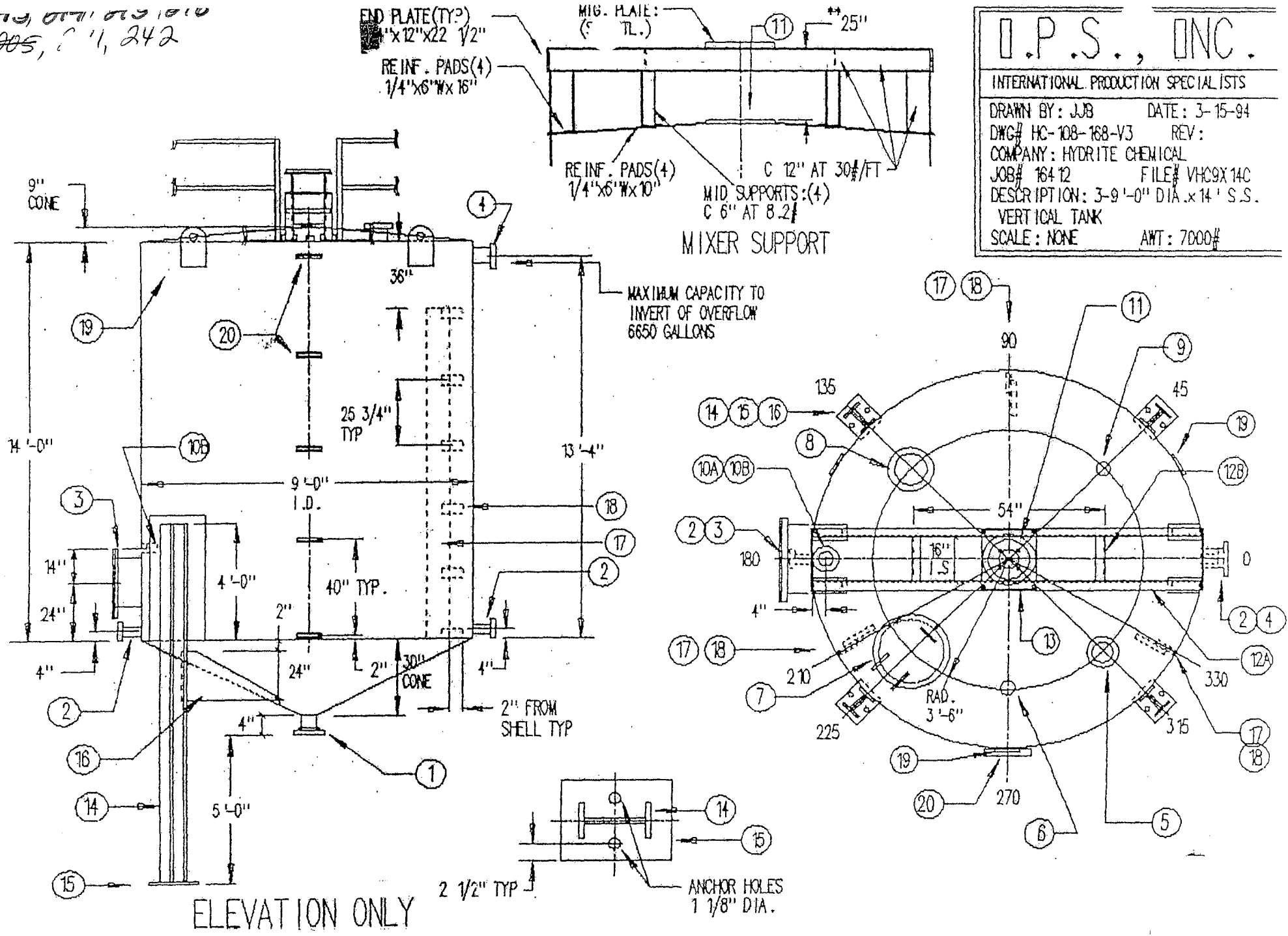
DRAWING NO.: C:\CGE\UTILITIES\VACUUM POT

Appendix P

Major Organics fou ı Waste Recycling

Compound	CAS #	Family	Vapor Pressure	Vapor Pressure	Vapor Pressure	Vapor Pressure
			kPa @ 20 C	mmHG @ 20 C	kPa @ 25 C	mmHg @ 25 C
**********	**********	**********	**********	**********	**********	**********
Acetone	67-64-1	Ketone			30.80	231.02
Amyl Acetate	628-63-7	Ester			0.60	4.50
*Aromatic 100 Solvent^*	64742-95-6	Aromatic		<10		
*Aromatic 150 Solvent^*	64742-94.5	Aromatic		<1		
Cyclohexanone	108-94-1	Ketone			0.53	3.98
Dibasic Ester (DBE)	53-60-5	Ester	0.01	0.08		
Diisobutyl Ketone	108-83-8	Ketone			0.23	1.73
Dimethyl Carbonate	616-38-6	Ester	5.60	42.00		
Ethyl Acetate	141-78-6	Ester			12.60	94.51
Ethyl Lactate	97-64-3	Ester	0.23	1.70		
Ethyl-3-Ethoxypropionate (EEP)	763-69-9	Ester			0.20	1.50
Glycol Ether EB	111-76-2	Glycol Ether	0.07	0.50		
Glycol Ether EP	2807-30-9	Glycol Ether	0.17	1.28		
Glycol Ether PM	107-98-2	Glycol Ether			1.57	11.80
Glycol Ether PM Acetate	106-65-6	Ester	0.49	3.70		
Glycol Ether PnB	5131-66-8	Glycol Ether	0.09	0.70		
Glycol Ether PnP	1569-01-3	Glycol Ether	0.20	1.50		
Heptane	64742-89-8	Aliphatic	5.96	44.70		
Hexane	64742-73-0	Aliphatic	18.67	140.00		
Isobutyl Acetate	110-19-0	Ester			2.39	17.93
Isobutyl Isobutyrate (IBIB)	97-85-8	Ester			0.55	4.13
Isopropyl Acetate	108-21-4	Ester			7.88	59.10
Methyl Acetate	79-20-9	Ester			28.80	216.02
Methyl Ethyl Ketone	78-93-3	Ketone			12.60	94.51
Methyl Isoamyl Ketone	110-12-3	Ketone	0.60	4.50		
Methyl Isobutyl Ketone	108-10-1	Ketone			2.64	19.80
Methyl n-Amyl Ketone	110-93-0	Ketone	0.28	2.10		
*Methyl n-Propyl Ketone^*	107-87-9	Ketone			4.97	37.28
Mineral Spirits	64742-86-7	Aliphatic	0.27	2.00		
N-Butyl Acetate	123-86-4	Ester			1.66	12.45
N-Propyl Acetate	109-60-4	Ester			4.49	33.68
Propylene Carbonate	108-32-7	Ester	0.004	0.03		
Tertiary Butyl Acetate	540-88-5	Ester			4.50	33.75
Toluene	108-88-3	Aromatic			3.79	28.43
VM&P Naphtha	64742-49-0	Aliphatic	1.50	11.25		
Xylene	1330.20-7	Aromatic	0.93	7.00		

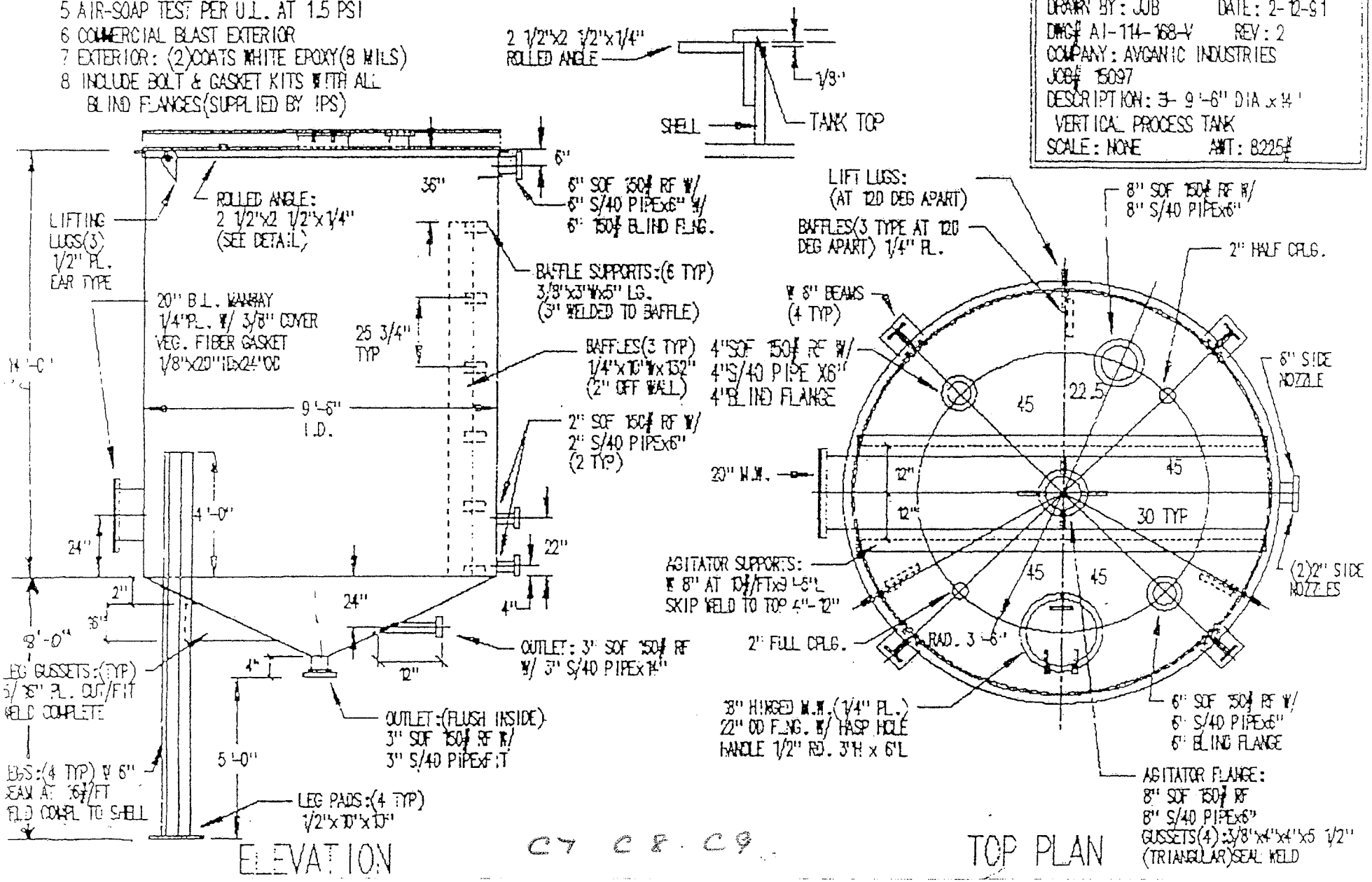
Appendix Q


END PLATE(TYP)
1"x12"x22 1/2"
REINF. PADS(4)
1/4"x6"Wx 16"
MTG. PLATE:
(5 TL.)
11
25"
REINF. PADS(4)
1/4"x6"Wx10"
C 12" AT 30#/FT
MID SUPPORTS:(4)
C 6" AT 8.2#
MIXER SUPPORT
O.P.S., INC.
INTERNATIONAL PRODUCTION SPECIALISTS
DRAWN BY: JJB DATE: 3-15-94
DWG# HC-108-168-V3 REV:
COMPANY: HYDRITE CHEMICAL
JOB# 16412 FILE# VHC9X14C
DESCRIPTION: 3-9'-0" DIA.x14' S.S. VERTICAL TANK
SCALE: NONE AWT: 7000#
9" CONE
36"
MAXIMUM CAPACITY TO INVERT OF OVERFLOW 6650 GALLONS
25 3/4" TYP
14'-0"
13'-4"
9'-0" I.D.
14"
24"
4'-0"
40" TYP.
2"
24"
2"
30" CONE
4"
4"
2" FROM SHELL TYP
5'-0"
2 1/2" TYP
ANCHOR HOLES 1 1/8" DIA.
ELEVATION ONLY
90
135
45
180
0
210
330
225
315
270
54"
16" I.S.
RAD. 3'-6"

T219 T220 T221

NOTES: 1 TANK CONSTR.: ALL 3/4" MILD C.S.
2 SHELL AND TOP JOINTS TO BE LAP WELDED
3 CONE AND CONE TO SHELL BUTT WELD
4 BOLT HOLES TO STRADDLE C-L LINE
5 AIR-SOAP TEST PER U.L. AT 1.5 PSI
6 COMMERCIAL BLAST EXTERIOR
7 EXTERIOR: (2)COATS WHITE EPOXY(8 MILS)
8 INCLUDE BOLT & GASKET KITS WITH ALL BLIND FLANGES(SUPPLIED BY IPS)

I.P.S., INC.
INTERNATIONAL PRODUCTION SPECIALISTS
DRAWN BY: JJB DATE: 2-12-91
DWG# A1-114-168-V REV: 2
COMPANY: AVGANIC INDUSTRIES
JOB# 15097
DESCRIPTION: 3- 9'-6" DIA x 14' VERTICAL PROCESS TANK
SCALE: NONE AMT: 8225#



ELEVATION

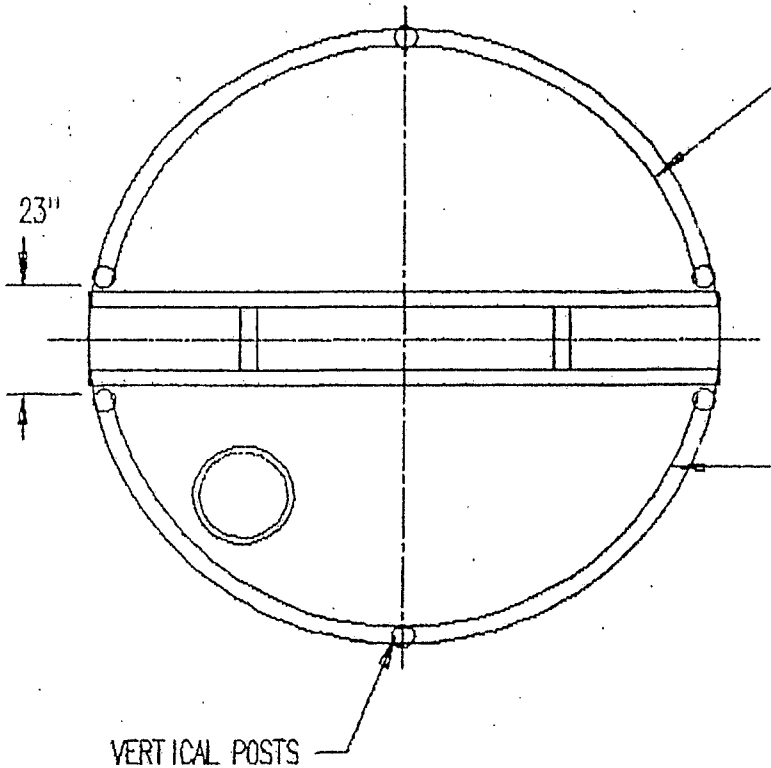
C7 C8 C9

TOP PLAN

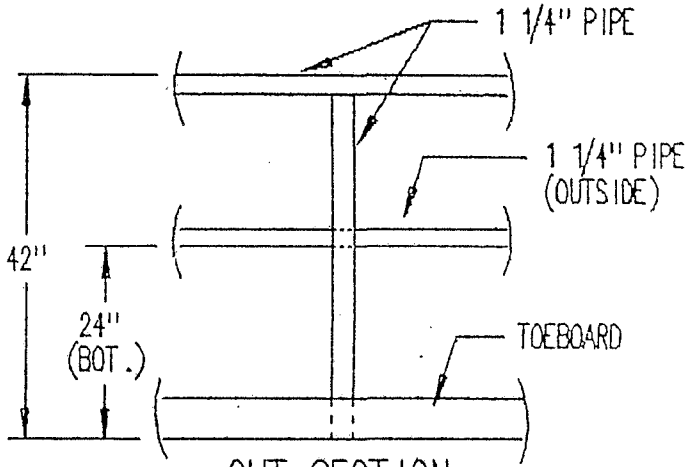
119 120 121

NOTES:
1 COAT SAME AS TANK
2 CUT LEGS AND WELD ONTO TANK: 1 1/4"X 6" ROUNDSTOCK AFTER RAILING HAS BEEN FIT (1 FOR EA. VERTICAL POST)
3 RAILING SHALL SHIP IN (3) SECTIONS

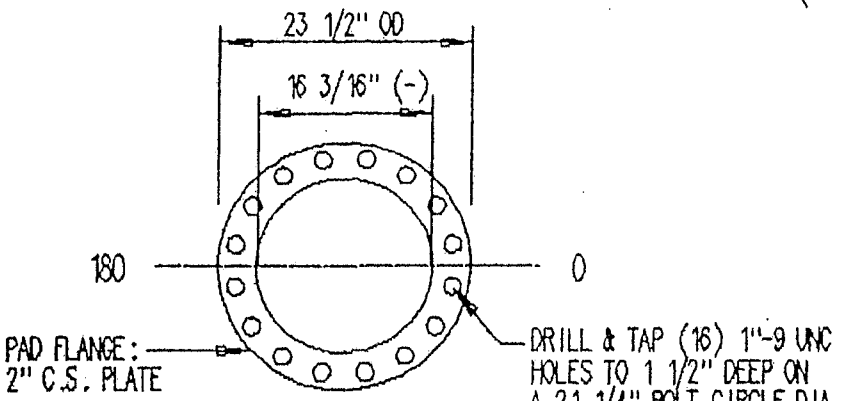
O.P.S., INC.
INTERNATIONAL PRODUCTION SPECIALISTS
DRAWN BY: JJB DATE: 3-10-95
DWG# HC-108-168-V6 REV:
COMPANY: HYDRITE CHEMICAL
JOB# 16412 FILE# VHC9X14F
DESCRIPTION: 3- OSHA HANDRAILING AND PAD FLANGE DETAIL
SCALE: NONE AMT:



RAILING TOP PLAN



CUT SECTION ELEVATION

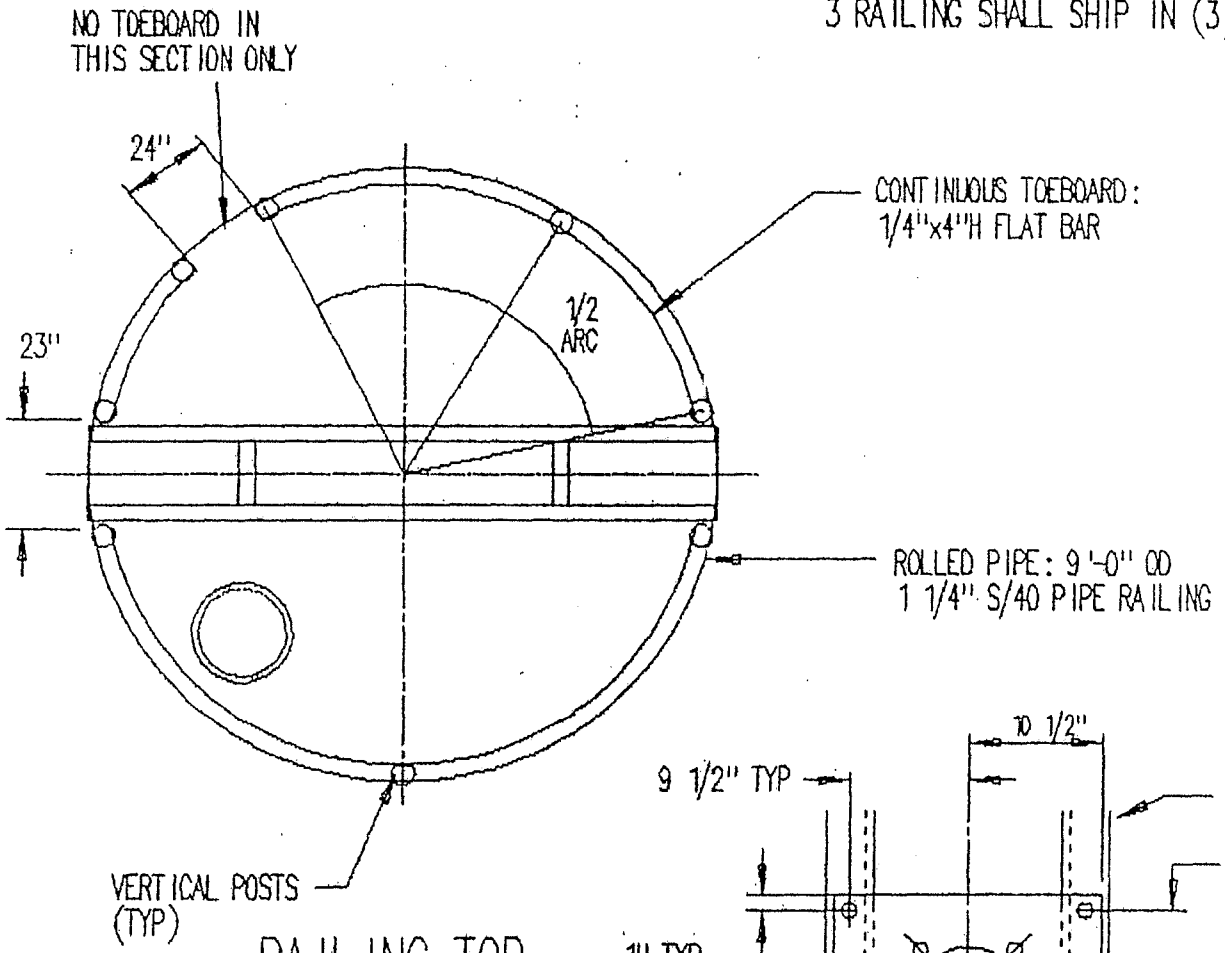


CENTER FLANGE DETAIL

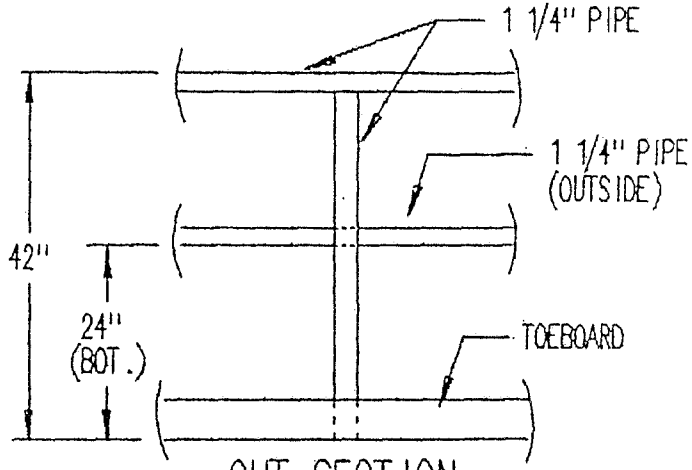
T219 T220 T221

NOTES:
1 COAT SAME AS TANK
2 CUT LEGS AND WELD ONTO TANK: 1 1/4"X 6" ROUNDSTOCK AFTER RAILING HAS BEEN FIT (1 FOR EA. VERTICAL POST)
3 RAILING SHALL SHIP IN (3) SECTIONS

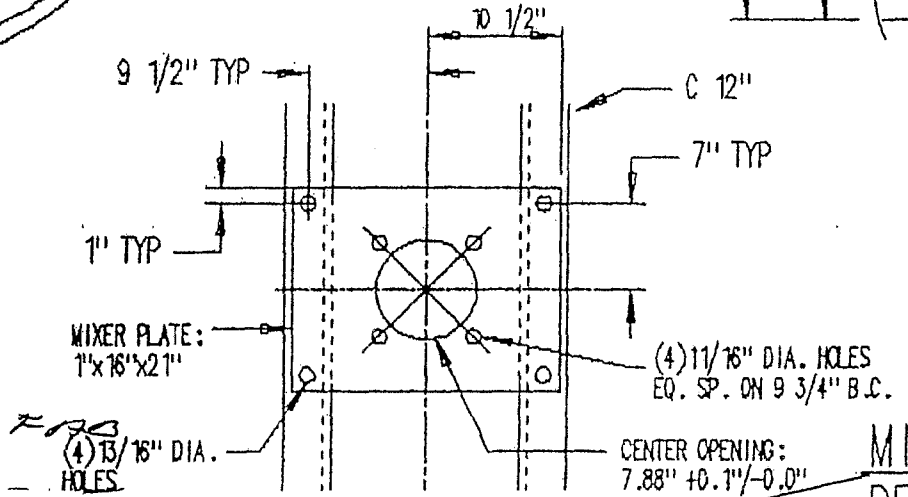
D.P.S., INC.
INTERNATIONAL PRODUCTION SPECIALISTS
DRAWN BY: JJB DATE: 3-10-95
DWG# HC-108-168-V5 REV:
COMPANY: HYDRITE CHEMICAL
JOB# 16412 FILE# VHC9X14E
DESCRIPTION: 1- OSHA HANDRAILING AND MIXER PLATE DETAIL
SCALE: NONE AWT:



RAILING TOP PLAN



CUT SECTION ELEVATION



MIXER PLATE DETAIL

T219
T220
T221

		BILL OF MATERIALS
NO.	QTY.	DESCRIPTION
1	1	OUTLET: 3" SOF 150# RF W/ 3" S/40 PIPE x 3 1/2" LG.
2	2	SIDE PORT: 3" SOF 150# RF W/ 3" S/40 PIPE x 6" LG.
3	1	SIDE MANWAY: 20" BOLTED B.L. (1/4" PL. W/ 5/16" PL. COVER)
	36	1/2" x 1 1/2" HEX BOLT AND NUT
	1	VEG. FIBER GASKET: 1/8" x 20" ID x 24" OD (U.L.)
4	1	OVERFLOW: 6" SOF 150# RF W/ 6" S/40 PIPE x 6" LG.
5	1	TOP PORT: 6" SOF 150# RF W/ 6" S/40 PIPE x 6" LG.
6	1	TOP NPT PORT: 2" X.H. FULL CPLG.
7	1	TOP MANWAY: 20" HINGED TYPE (ALL 1/4" PL.) W/ HINGES/HASP
	1	HANDLE: 1/2" RD. STOCK 3" HIGH x 6" LG.
8	1	EMERGENCY VENT: 8" SOF 150# RF W/ 8" S/40 PIPE x 6"
9	1	WORKING VENT: 2" X.H. FULL CPLG.
10A	1	DROP PIPE PORT: 3" SOF 150# RF W/ 3" S/40 PIPE 6" LG.
10B	1	DROP PIPE BRACKET: 3" S/40 PIPE x 3" W/ 3/8" x 3" W BAR TO WALL
11	1	CENTER FLANGE: 16" PAD FLANGE W/ (16) 1" UNC TAPPED HOLES
12A	2	MIXER SUPPORT MAIN MEMBERS: C 12" AT 30# (SEE DETAIL)
12B	2	CROSS SUPPORT: C 12" AT 30#/FT (SEE DETAILS)
13	1	MIXER PLATE: 1" x 16" x 21" (SEE DETAILS)
14	4	LEGS: W 8" AT 24#/FT x 13' LG. SEAL WELD TO
		REINFORCING PL. 1/4" x 12" W x 51" H
15	4	LEG PADS: 1" x 12" x 12" PL.
16	4	CONE GUSSETS: 5/16" PL. CUT TO FIT
17	3	BAFFLE: 5/16" PL. x 10" W x 11' LG.
18	18	BAFFLE SUPPORTS: 3/8" PL. x 3" W x 5" L
19	3	LIFT LUGS: 1/2" x 7" x 14"
20	5	UNISTRUT BRACKETS 2" x 2" x 8" LG.
21	1	OSHA LADDER: (SEE DETAILS) FOR ONE TANK ONLY

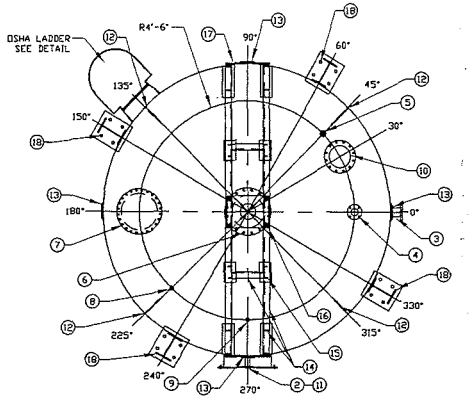
D.P.S., INC.

INTERNATIONAL PRODUCTION SPECIALISTS

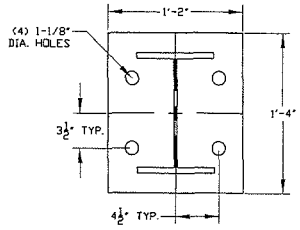
DRAWN BY: JJB DATE: 3-10-95
DWG# HC-108-168-V1 REV:
COMPANY: HYDRITE CHEMICAL
JOB# 16412 FILE#: VHC9X14A
DESCRIPTION: 4-9'-0" DIA. x 14' S.S. VERTICAL TANK
SCALE: NONE AWT: 7000#

NOTE:
1. CONE TOP CONSTRUCTION: 3/16" MILD C.S.
2. SHELL CONSTRUCTION: 3/16" MILD C.S.
3. CONE BOTTOM CONSTRUCTION: 1/4" MILD C.S.
4. TANK CONSTRUCTED IN ACCORDANCE WITH U.L. 142 STANDARD
5. TOP AND SHELL TANK CONNECTIONS SHALL BE PER U.L. 142 SEC. 16 (PARTS 16.1-16.6) AS ILLUSTRATED IN FIGURES 11.1, 11.2 AND 16.1.
6. SHELL MANHOLE CONNECTION SHALL BE PER U.L. 142 SEC. 17 (PARTS 17.1-17.4) AS ILLUSTRATED IN FIGURES 12.2 AND TABLE 17.3.
7. ALL WELDS SHALL BE SEAL WELDS UNLESS SPEC. OTHERWISE
8. EXTERIOR: SOLAR WHITE EPOXY-ESTER (4-6 MILS)
9. AIR TEST ACCORDING TO UL 142 AT 2 PSIG

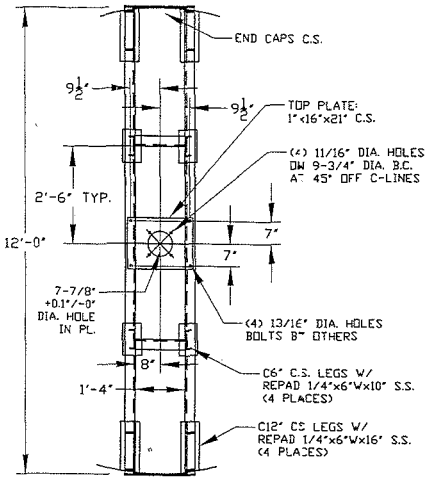
1401 1405



TOP VIEW ORIENTATION



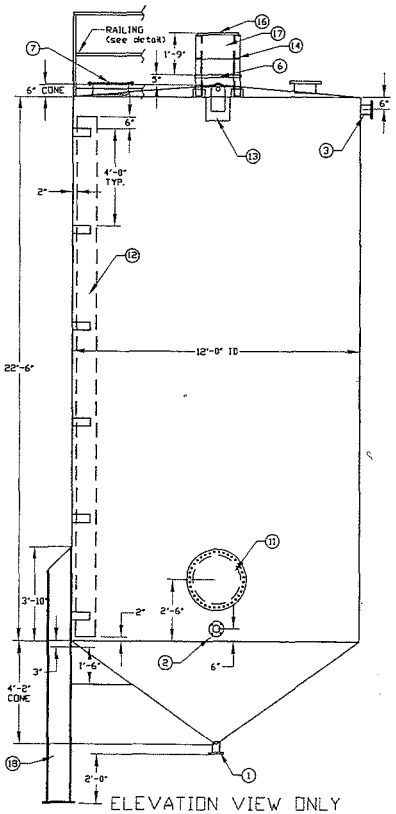
LEG PADS



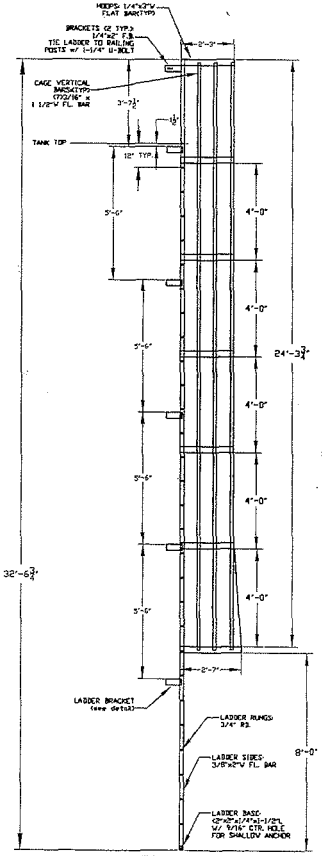
MIXER SUPPORT DETAIL

BILL OF MATERIAL

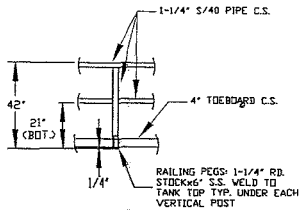
NO.	QTY.	DESCRIPTION	PROJ.	USE
1	1	3" SOF 150# RF W/ 3" S/40S PIPE x FIT (SS304)	6"	TANK OUTLET
2	1	3" SOF 150# RF W/ 3" S/40S PIPE x FIT (SS304)	5"	SIDE IN/OUT
3	1	4" SOF 150# RF W/ 4" S/40S PIPE x FIT (SS304)	5"	OVERFLOW
4	1	3" SOF 150# RF W/ 3" S/40S PIPE x FIT (SS304)	5"	
5	1	2" NPT FULL CPLG. (SS304)		CONSERVATION VENT
6	1	16" SOF 150# RF W/ 16" FAB. PIPEx3/8" (SS304)	5"	MIXER FLANGE
7	1	18" A.L. M.W. ALL 1/4" PL. (SS304) W/ GALV. BOLTS	6"	TOP MANWAY
		W/ VEG. FIBER GASKET 1/8"x18"IDx22-1/2"OD		
8	1	1" NPT FULL CPLG. (SS304)		HI-LEVEL ALARM
9	1	1" NPT FULL CPLG. (SS304)		
10	1	10" SOF 150# RF W/ 10" S/40S PIPE x FIT (SS304)	6"	EMERGENCY VENT
11	1	24" B.L. M.W. ALL 1/4" PL. W/ 3/8" COVER (SS304)	5"	SIDE MANWAY
		W/ VEG. FIBER GASKET 1/8"x24"IDx29"OD & GALV. BOLTS		
12	4	1/4"x10"Wx258"L W/ (6)3/8"x4"x9" BRACKETS (SS304)		BAFFLES
13	4	5/8" x 7"H x 14"L CS W/ 1/4"x9"Wx12" REPAD SS		LIFT LUGS
14	8	C12" AT 30#/FT A36 C.S. & REPADS 1/4"x6"x16" SS		MIXER SUPPORT
15	4	C6" AT 8.2#/FT A36 C.S. & REPADS 1/4"x6"x10" SS		VERT. SUPPORT
16	1	1" x 16" x 21" PL. A36 C.S.		MIXER BOLT PLATE
17	2	3/8" x 12-1/4" x 22-1/2" PL. A36 C.S.		MIXER END CAPS
18	4	W 12" BEAM AT 45#/FT A36 C.S. W/ TOP CUT AT 45°		TANK LEGS
	4	WITH RE-PADS: 1/4"x12"x47-1/2" (SS304)		
	4	AND LEG PADS: 1"x14"x16" (SEE DETAIL)		
	4	GUSSETS: 5/16" C.S. PL. W/ PADS: 10G.x2"W (SS304)		



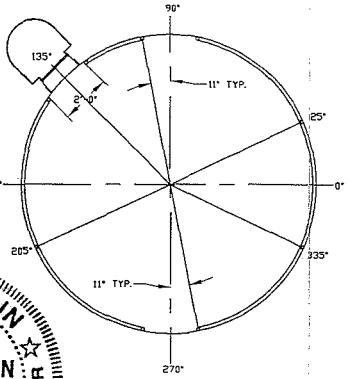
ELEVATION VIEW ONLY



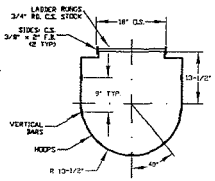
LADDER ELEVATION



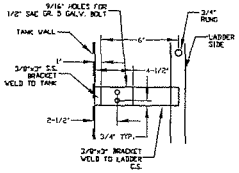
RAILING CUT SECTION ELEVATION



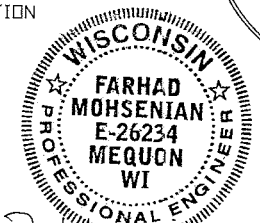
RAILING LAYOUT



UPPER TOP PLAN

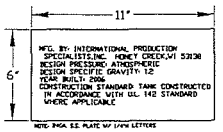


BRACKET DETAIL FOR LADDER



12-21-07

Per Conditions of Professional Engineer's Certification letter, 12-21-07



NOTES:
1. CONE TOP HEAD: 3/16" SS304
2. SHELL: 1ST 4' OF 3/8" SS304
   REMAINING 18'6" OF 3/16" SS304
3. CONE BOTTOM HEAD: 3/8" SS304
4. MILL FINISH W/ EXTERIOR WELDS CLEANED AND BUFFED AND INT. WELDS CLEAN ONLY.
5. TANK DESIGNED FOR PRODUCT W/
   MAX. S.G. = 1.2
   AT ATMOSPHERIC PRESSURE.
   MIXER LOADS: TBD
   DOWNLOAD = 1680 LBS.
   TORQUE = 10,000 in-lbs.
   BENDING MOMENT = 60,000 in-lbs.
6. AIR SOAP TEST TANK AT 2-1/2 PSIG.
7. EXTERIOR C.S.: COAT SHERWIN WILLIAMS MACROPOXY 646 WHITE EPOXY (4-6 MILS DFT)
8. ATTACH IPS LABEL
9. OSHA LADDER AND RAILING SHOP FIT AND SHIP LOOSE FOR FIELD FIT BY OTHERS.

REV.	DATE	DESCRIPTION
3	12-20-07	Add mixer loads to notes
2	12-20-06	Add label for customer install
1	4-20-06	Chng. #6 to 16' flg., Chng. #11 to 24" MW
0	4-7-06	-

I.P.S., INC.
INTERNATIONAL PRODUCTION SPECIALISTS

DRAWN BY: JJB DATE: 12/20/07
JOB#: 19182 REV: 3
DWG#: HC-V-19182
COMPANY: HYDRITE CHEMICAL
REP:
DESCRIPTION: (2) 12'0" ID x 22'6" VERTICAL MIXING TANK
SCALE: NONE AWT.: 17,600#

RELEASED FOR PRODUCTION

CONTAINMENT CALCULATIONS

200 TANK FARM

Containment wall, lowest point: 11"

Containment Dimensions: 104' X 78'

Containment Volume: 104' X 78' X 11"/12" X 7.48 ft^3 = **55,621 gallons**

All tanks are mounted on 4 legs. Each leg is 1 foot in diameter. There are 41 tanks in the 200 Tank Farm.

Leg displacement: [Pi X $(0.5')^2$ X 11"/12" X 7.48 Gallons/ft^3 X 164 Legs = **882 Gallons**

Effective Containment = 55,621 Gallons - 882 Gallons = **54,739 Gallons**

Largest Tank = 15,000 Gallons

North Truck Dock

The dock consists of two sloped pits, each it 42' long and 29' wide. Each it slopes from 0" to 8" in depth.

Containment volume calculated as the volume of a triangle =
2 pits X [1/2 X 8"/12" X 42' X 49'] X 7.48 Gallons ft^3 = **10,263 Gallons**

Revised: 05/29/08

CONTAINMENT CALCULATIONS

400 Tank Farm

Containment Wall: 3.5'

Containment Dimensions: 83' X 60'

Containment Volume: 83' X 60' X 3.5' X 7148g/ft^3 = **130,376 Gallons**

Four tanks are mounted on four legs each; each leg is 1' in diameter.

Leg Displacement: [Pi(0.5')^2 x 3.5']7.48 g/ft^3 x 16 legs = **328 Gallons**

Six tanks are mounted on the floor of the containment.

Tank Displacement: 6[12^2 Pi/4 x 3.5' x 7.48 g/ft^3] = **17,750 Gallons**

1[10.5^2 x Pi/4 x 3.5' x 7.48 g/ft^3] = **2360 Gallons**

Effective Containment: 130,376 - [17,750 + 2360 + 328] = **109,938 Gallons**

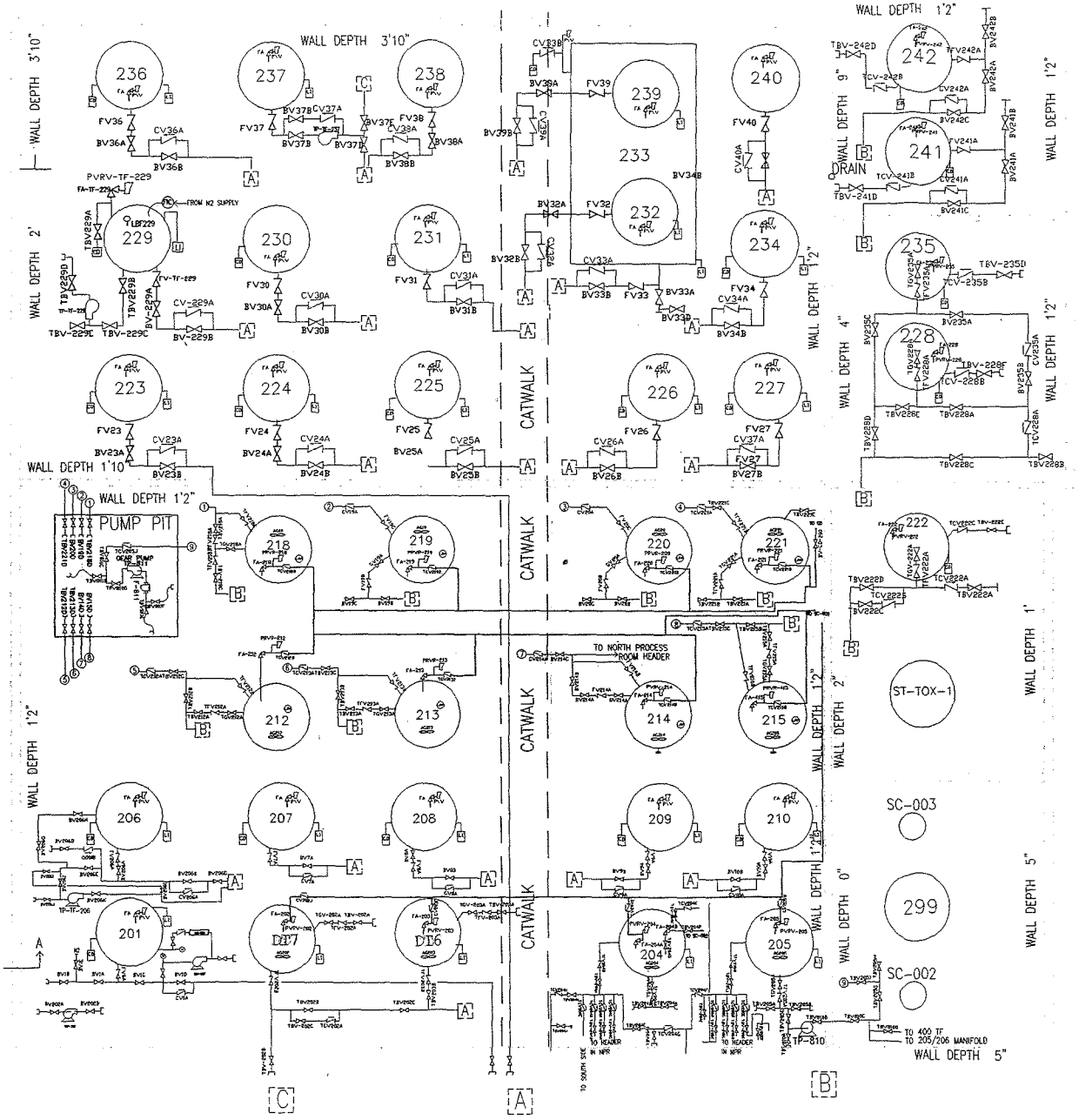
Largest Tank: 20,000 Gallons

Southeast Truck Dock

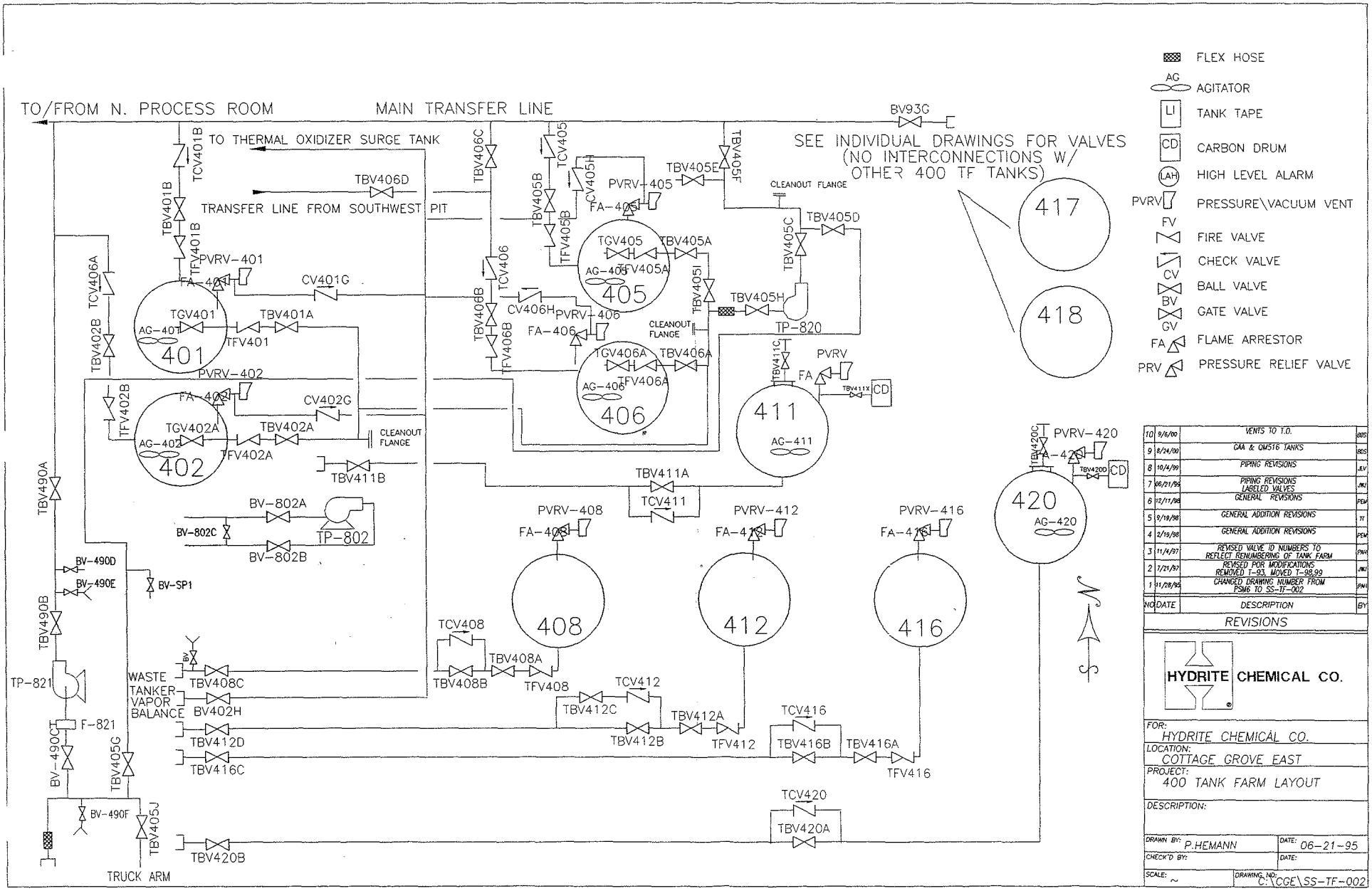
The dock is a sloped pit, 40' long and 50' wide. The pit slopes from 0" to 9" in depth. Containment volume is calculated as the volume of a triangle:

[1/2 x 9/12" x 40' x 50'] x 7.48 g/ft^3 = **5618 Gallons**.

Appendix R



200 Tank Farm Layout



NO	DATE	DESCRIPTION	BY
10	9/6/00	VENTS TO T.O.	BDS
9	8/24/00	CAA & OM516 TANKS	BDS
8	10/4/99	PIPING REVISIONS	JLV
7	06/21/99	PIPING REVISIONS LABELED VALVES	JMC
6	12/11/98	GENERAL REVISIONS	PEM
5	9/19/98	GENERAL ADDITION REVISIONS	TT
4	2/19/98	GENERAL ADDITION REVISIONS	PEM
3	11/4/97	REVISED VALVE ID NUMBERS TO REFLECT RENUMBERING OF TANK FARM	PMH
2	7/21/97	REVISED PDR MODIFICATIONS REMOVED T-93, MOVED T-98,99	JMC
1	11/28/95	CHANGED DRAWING NUMBER FROM FSM6 TO SS-TF-002	PMH

REVISIONS

HYDRITE CHEMICAL CO.

FOR: HYDRITE CHEMICAL CO.
LOCATION: COTTAGE GROVE EAST
PROJECT: 400 TANK FARM LAYOUT
DESCRIPTION:
DRAWN BY: P.HEMANN
DATE: 06-21-95
CHECK'D BY:
DATE:
SCALE: ~
DRAWING NO: C:\CGE\SS-TF-002

Appendix 5

HYDRITE CHEMICAL CO. STANDARD OPERATING PROCEDURE

Original SOP Effective Date: 3/14/94	Supersedes SOP Dated: 4/1/09	Effective Date: 5/1/09	Procedure No.: RC003CG
Facility: CG	Approval Name & Signature: Ronald E. Carrington		Revision No.: 10
Review Frequency: 5 Years	Approval Title: Plant Manager		Page 1 of 9
Without a green control label to the right of this statement, this procedure is a draft. A draft or an uncontrolled copy cannot be used to manage a process or task.			If this block is black, this is NOT a controlled document
Revised Section(s): Changed SOP facility from CE to CG. Changed Cottage Grove East Bulk Tank Truck Unloading Checklist RC003CEa to RC003CGa. Changed Application from Cottage Grove East employees to Cottage Grove employees.			

I. TITLE: TANK TRUCK BULK UNLOADING

II. KEY WORDS: Bulk, Tank Truck, Unloading

III. PURPOSE: To properly manage the process of unloading and transloading bulk products from transport tank trucks in a manner that ensures compliance with all quality, safety and regulatory requirements, including Process Safety Management, without adverse effects on human health and the environment.

IV. APPLICATION: This procedure applies to Cottage Grove employees involved in the process of unloading bulk products from transport tank trucks: Warehouse Employees and Supervisors, Production Employees and Supervisors, Toll Customer Service, Purchasing and Quality Control personnel.

V. DEFINITIONS: Bulk: Includes all liquid materials received in containers having a capacity of greater than 500 gallons having a gross weight of greater than 5000 pounds.

Dropped Unload: An inbound shipment in which the carrier unhooks and leaves the full trailer onsite without unloading the shipment.

Live Unload: An inbound shipment in which the carrier does not unhook from the trailer during the unloading process.

Off-Hours: Any day and time outside of 7:30 am to 5pm Monday through Friday is considered 'off-hours' and back-up personnel are responsible for completing assigned activities.

Optional Paperwork: An asterisk (*) indicates that document is optional unless otherwise noted.

VI. ASSOCIATED MATERIAL(S):

Branch Access to MSDS (AD057AF)
Chemical Release Reporting (CR001AF)
Contingency Plan SOPs in vol. 7.0
Cottage Grove Bulk Tank Truck Unloading Checklist (RC003CGa.doc) (available via CG local network)
Cottage Grove East Bulk Receiving Process-Live Unload MH141CG
Cottage Grove East Bulk Receiving Process-Dropped Unload MH142CG
Expected Receipts Report (available via PRISM)
Incoming Crude, Recycles & Waste Disposals Log
Incoming Materials Table (available via CG local network)
Incoming Raw Materials Log (available via CG local network)
MRPII Receiving SOPs in vol. 12.0
Nonconforming Procedure for Incoming Materials (RC011CE)
Personal Protective Equipment General Requirements and attached "PPE Matrix" (SF014AF)

Process Production Scheduling & Manufacturing (MH120CE)
Purchase Order Material Receipt (MH001AF)
QC Incoming Material Procedures (available via CG local network)
QC Procedures in local document control system
Record Management (AD005AF)
Hose, Transfer Lines & Tank Truck Tagging Requirements PR077CE
Hose Connect/Disconnect (TX061CG)
Chemical Transfer Hose Connect/Disconnect (PR027AF)
Chemical Transfer Hose, Gasket & Fitting Specifications (MN015AF)
Environmental, Health, Safety & Security Policy (SF052CG)
Requirements for Operator Checks Policy (PR078CG)

VII. PROCEDURE:

1. Safety

1.1. The employee responsible for unloading bulk material(s) must be knowledgeable of and understand the MSDS and waste master of the material(s) being loaded.

1.2. The MSDS and waste master for the material(s) must be readily available in case of an emergency.

1.2.1. Refer to the SOP, Branch Access to MSDS (AD057AF) (available via Intranet lookup).

1.3. The employee must also have competent knowledge and understanding of the incidental and emergency response procedures before unloading can begin.

1.4. The employee must wear and use the proper material specific personal protective equipment (PPE) before proceeding with unloading.

1.5. The employee must also have competent knowledge and understanding of the "Environmental, Health, Safety & Security Policy (SF052CG)"

1.6. The employee must also have competent knowledge and understanding of the "Requirements for Operator Checks Policy (PR078CG)"

2. Communication of Expected Receipt

2.1. Material is ordered and scheduled for delivery according to the SOP, Process Production Scheduling & Manufacturing MH120CE (for CE) or Purchase Order Material Receipt MH001AF (for CW).

2.2. The Expected Receipts Report and Lotus Docking Information Database identifies all incoming materials and lists a coordinating purchase order (PO) or inbound number that is required for receipt at the facility.

2.2.1. PO number: Hydrite purchased raw materials, interbranch shipments of raw materials

2.2.2. Inbound number: Crude materials, customer owned raw materials, bulk waste

2.2.3. Additionally, bulk waste is issued an authorization number.

2.3. Any changes to the schedule should be updated in both PRISM and Lotus Docking Information Database.

2.4. The Lotus Docking Information Database will signify where the material is going by one of unloading destinations (e.g. "South", "North", Northwest" or "Breezeway").

2.5. All raw materials (including customer owned materials) and crude materials are received into useable status (USBL) upon the initial receipt at the facility.

2.6. Refer to the SOP, Cottage Grove East Bulk Receiving Process-Live Unload MH141CG and Cottage Grove East Bulk Receiving Process-Dropped Unload MH142CG for further details on the communication, responsibilities, PRISM receipt and paperwork flow for the overall bulk receiving process.

3. Initial Receiving Activities for Dropped Unloads and Live Unloads:

3.1. Refer to the SOP, Cottage Grove East Bulk Receiving Process-Live Unload MH141CG and Cottage Grove East Bulk Receiving Process-Dropped Unload MH142CG for details on initial receiving activities and required paperwork. Below is a brief outline of the activities completed at the initial receipt.

3.1.1. Bulk Loader/Unloader or Utility Operator will meet the driver at the scale house and retrieve the Receiving Paperwork Packet.

3.1.2. If a dropped load, the Bulk Loader/Unloader or Utility Operator will drop scale in the delivery by completing the following steps and add the tanker location in PRISM:

3.1.2.1. Position the unit on the scale without the tractor.

3.1.2.2. Place the Hydrite scale ticket into the scale printer.

3.1.2.3. Line the card up with the Gross Weight mark on the scale ticket.

3.1.2.4. Wait for the scale to settle.

3.1.2.5. Press the print button.

3.1.2.6. Calculate the gross weight.

3.1.3. If a live unload, the Bulk Loader/Unloader or Utility Operator will scale in the tanker by completing the following steps.

3.1.3.1. Position the unit on the scale.

3.1.3.2. Place the previously created Hydrite scale ticket into the scale printer.

3.1.3.3. Line the card up with the Gross Weight mark on the scale ticket.

3.1.3.4. Wait for the scale to settle.

3.1.3.5. Press the print button.

3.1.3.6. Calculate the gross weight

3.1.4. The Bulk Loader/Unloader or Utility Operator will receive the load in PRISM by selecting the correct option from the Receiving Menu.

3.1.5. If a dropped unload, the Bulk Loader/Unloader or Utility Operator will make one copy each of the required documents, place into a folder and place in the designated inbound dropped load file for the plant in the scale house. They will place the remaining original documents in the original folder and place in the designated inbound dropped load file for the office in the scale house.

3.1.6. If a dropped unload, the Bulk Loader/Unloader or Utility Operator will create and affix an identification tag and QC approval tag to the outlet valve(s) of tanker and move the tanker to its holding location in the yard.

3.1.7. If a live unload, the Bulk Loader/Unloader or Utility Operator will send Driver to dock/unloading location per the Docking Database, or per other direction from a Building Manager.

4. Pre-Unloading Inspection and Activities

4.1. All First and Second Operator Checks as required by this SOP and the Cottage Grove Bulk Tank Truck Unloading Checklist (RC003CGa.doc) must comply with the "Requirements for Operator Checks Policy (PR078CG)" and "Hose, Transfer Lines & Tank Truck Tagging Requirements PR077CE"

4.2. The following steps apply to the personnel completing the unloading activities. The Building Managers provide direction through their production notes, a work order or verbally for the responsible personnel to unload a dropped tanker.

4.3. For dropped loads, at the time of unloading, retrieve the receiving paperwork packet (copies) from the designated inbound dropped load for plant file in the scale house and move the tanker to the unloading location.

4.4. Print and initiate a Cottage Grove Bulk Tank Truck Unloading Checklist for the load, fill-in the required information and check-off the items as you continue with the unloading process.

4.4.1. Checklists are available via the CG local network.

4.5. Review the receipt ticket for material(s) being unloaded to determine the Hazard Code.

4.5.1. Determine the proper PPE by the Hazard Code and PPE matrix (attached to SOP SF014AF) or by looking in the MSDS.

4.6. Before spotting and unloading a bulk tank truck, check to make sure the product placards match the BOL or manifest.

4.6.1. If they do not match, contact your supervisor before proceeding.

4.7. Verify a completed weight ticket for the load.

4.8. If the trailer arrived with seals and tags, and if the seal numbers were documented on the BOL, manifest or COA, check to make sure that the seal numbers and tags match the seal numbers and product name listed on the BOL, manifest or COA.

4.8.1. If they do not match, contact your supervisor before proceeding.

4.9. All FCC/USP/NF/FG/FP/OTC shipments must be sealed.

4.9.1. If a FCC/USP/NF/FG/FP/OTC shipment arrives without seals, contact your supervisor before proceeding.

4.10. Ground all tank trucks before sampling or unloading. Secure tanker by chocking wheels and setting brake.

4.11. Ensure the vehicle brake is set and trailer wheels chocked.

4.12. The driver or unloader must slowly relieve pressure from the tank truck with the pressure relief valve prior to opening the dome for inspection.

4.12.1. If there is no relief valve, must slowly relieve pressure from the tank truck by the next step.

4.13. The driver or unloader must slowly and carefully open the dome cover beginning at the hinge.

4.14. If pressure escapes or a hissing noise is heard, carefully continue to relieve pressure through the dome until pressure is removed.

4.15. Sample material as required by the Incoming Material Table.

4.15.1. Table is posted in the control room and is available via CG local network.

4.16. Label the required sample with the following information:

4.16.1. Date and time sample was collected

4.16.2. Initials of employee that collected the sample

4.16.3. Customer or Supplier name

4.16.4. Material name

4.16.5. Authorization number if Crude, Recycle or Waste Disposal (stated on green sheet)

4.17. Forward the sample and COA (COA for raw materials only) to the lab for verification/testing and review by QC personnel.

4.18. Check the Incoming Material Table to determine if approval is needed to unload the material.

4.18.1. If approval is not needed continue to the Unloading section of this SOP.

5. Approval of Bulk Raw Materials

5.1. Check the lab's 'Incoming Raw Material Log' via the local network to know whether QC personnel approved the material.

5.2. Match the following information (as applicable) in the 'Incoming Raw Material Log' or 'Incoming Crude, Recycle, Disposal Log' to the Expected Receipts Report/BOL/Waste Authorization Receipt to make sure you are receiving the correct shipment:

5.2.1. Supplier's name

5.2.2. Material name

5.2.3. Resource number

5.2.4. PO/Inbound number

5.2.5. Lot number

5.3. If QC personnel approved the material, continue to the Unloading section of this SOP.

5.4. If QC personnel have not approved the material and lab approval is required according to the Incoming Materials Table, you must quarantine the non-conforming material.

5.4.1. DO NOT unload the material if it is not approved by QC personnel.

5.4.2. Proceed to the Handling of Quarantined Incoming Bulk Material section of this SOP.

6. Approval of Crude, Recycle and Waste Disposal Materials

6.1. Check the lab's 'Incoming Crude, Recycle, Disposal Log' to determine if the lab has approved the material.

6.2. Match the following information in the lab's 'Incoming Crude, Recycle, Disposal Log' to the shipping paperwork:

6.2.1. Customer Name

6.2.2. Material Name

6.2.3. Authorization Number

6.3. If QC personnel approved the material, continue to the Unloading section of this SOP.

6.4. If QC personnel have not approved the material and lab approval is required according to the Incoming Materials Table, you must quarantine the material.

6.4.1. DO NOT unload the material if it is not approved by QC personnel.

6.4.2. Proceed to the Handling of Quarantined Incoming Bulk Material section of this SOP.

7. Unloading

7.1. Route lines to the proper tank or process as indicated on the receipt ticket.

7.2. Check the product storage tank level to ensure sufficient capacity is available to hold the quantity being received.

7.2.1. If there is doubt, make arrangements with the Shift Supervisor.

7.3. Inspect pumps, hoses, couplers, and gaskets prior to making connections.

7.4. Verify that all hoses you will be using have been steamed and/or solvent flushed prior to use.

7.4.1. Use dedicated hoses when available for the material. If in doubt, contact the Shift Supervisor.

7.5. Report any unsafe or questionable conditions to the Shift Supervisor.

7.5.1. All unsafe or questionable conditions must be corrected before proceeding.

7.6. Place proper collection equipment (i.e. buckets, pans, mats) under tank truck discharge outlets.

7.7. Connect the proper transfer hoses between the tank truck and transfer line.

7.7.1. Connect enough hoses to reach the inlet of the receiving tank via unloading pump, or direct connect (if using vacuum or pressure).

7.8. Install a product bleed off valve between the truck and hose.

7.9. All Second Operator Checks and tasks including but not limited to the verify material(s), appropriate receiving paperwork, all line routing, connections and couplings as required by this SOP and the Cottage Grove Bulk Tank Truck Unloading Checklist (RC003CGa.doc) must comply with the "Requirements for Operator Checks Policy (PR078CG)". The Second Operator must sign the Loading Checklist and verify there are no errors or discrepancies before the First Operator proceeds with the transfer.

7.10. Visually check emergency shut-off valve for accessibility.

7.11. Open truck and line valves and inspect for leaks.

7.12. Prior to unloading the material complete the following:

7.12.1. Flush the lines to tank with approximately 50 - 100 gallons of material into a satellite waste drum or to a proper fuels tank.

7.12.2. Blow lines clear with nitrogen, except when unloading inhibited monomers. **Use compressed air or N_2O_2 for inhibited monomers.**

7.13. Relieve pressure in hose by:

7.13.1. Close tank truck outlet valve.

7.13.2. Close valve in front of tank (if flushing to a fuels tank).

7.13.3. Open sample port or filter drain valve into a pail to relieve pressure and catch any residual liquid.

7.13.4. Close sample port or filter drain valve when pressure is released.

7.14. Connect the outlet of the unloading hose to the proper receiving tank inlet as listed on the receipt ticket or process specific SOP (or PRISM Log).

7.15. Change tank valves to receive material.

7.16. Unloading may be completed by pump, pressure or vacuum or a combination thereof.

7.16.1. When using vacuum, tank truck must be padded with nitrogen, except when unloading inhibited monomers. **Use compressed air or N_2O_2 when unloading inhibited monomers.**

7.16.2. When using pressure, tank truck must have an operable pressure gauge and relief vent. Nitrogen must be used to build pressure, except when unloading inhibited monomers. **Use compressed air or N_2O_2 when unloading inhibited monomers.**

7.17. Do not exceed 30 PSI, when using pressure to unload.

7.18. Tank truck dome lid must be open or be nitrogen padded (when nitrogen is required), when using a pump. **Use compressed air or N_2O_2 when unloading inhibited monomers.**

7.19. Ensure vapor recovery system is in place, when vapor balance is required by air permit while unloading.

7.19.1. Contact your supervisor if you are unsure of this procedure.

7.20. The driver or employee responsible for unloading must attend the truck and product storage tank during the unloading/receiving process.

7.20.1. The attendant must be awake and in the area of the vehicle throughout the unloading process.

8. Completion of Unloading

8.1. When unloading is complete, close truck valve and turn off pump or blow lines clear, then close tank loading valve.

8.1.1. Use nitrogen to blow lines clear, except when unloading inhibited monomers. **Use compressed air or N_2O_2 when unloading inhibited monomers.**

8.2. Slowly open bleeder valve and drain any remaining product into collection container.

8.3. Slowly disconnect transfer hoses and drain remaining product residue into collection container.

8.4. Close the external valves on the tanker and place cap on the valve.

8.5. Ensure the dome of the tanker is closed and secured with the bolts tight.

8.6. Cap and properly store transfer hoses and lines.

8.7. Dispose of product residue into satellite waste storage, close waste container and store properly.

8.8. Rinse or clean permanent or non-disposable supplies and/or PPE. Properly store these supplies and/or PPE.

8.9. Place disposable miscellaneous rags, PPE and supplies into appropriately labeled satellite waste container.

8.10. Scale out tank truck using the same tractor that was used to scale in. Or, if the tanker was dropped scaled in, it must be dropped scaled out.

8.10.1. Position the unit on the scale.

8.10.2. Place the previously created Hydrite scale into the scale printer.

8.10.3. Line the card up with the Gross Weight mark on the scale ticket.

8.10.4. Wait for the scale to settle.

8.10.5. Press the print button.

8.10.6. Preferably, contact a Bulk Loader/Unloader or Utility Operator via radio to scale out the load. If one is not readily available, place the Receiving Paperwork Packet in the designated unloaded, to be scaled out file in the Shift Supervisor's office. Bulk Loader/Unloaders or Utility Operators will check the file periodically throughout their shift and scale out the tanker.

8.11. Calculate the net weight.

8.12. Write the required information on the Receipt Ticket.

8.12.1. 'Location' unloaded to

8.12.2. Lot number(s). Be sure to include all lot numbers.

8.12.3. Actual quantity unloaded (net weight) and unit of measure.

8.12.4. Note whether a COA did or did not accompany the shipment by circling 'Y' or 'N'.

8.12.5. 'Received By' name or initials

8.12.6. Name of 'Carrier'.

8.12.7. 'Shelf Life' date, if required by Receipt Ticket.

8.12.7.1. If a manufactured date is provided on the COA, enter one year beyond that date.

8.12.7.2. If an expiration date is provided on the COA, enter the date provided.

8.12.7.3. If no manufactured date or expiration date is provided on the COA and a shelf life date is required by the Receipt Ticket, enter one year from the date of receipt.

8.13. Once the unloading is complete, deliver the Receiving Paperwork Packet to the designated completed inbound unload paperwork file in the scale house:

8.14. No paper work may be delivered to the scale house until the unloading/receiving process is finished. When the process and paperwork is all complete, the person completing the scale out is responsible for delivering the Receiving Paperwork Packet to the scale house

8.15. For batch unloading (when the entire tanker is unloaded at different times), the Receiving Paperwork Packet must stay in the designated location in each operating area. Once the unloading is 100% complete the Receiving Paperwork Packet may be closed out as described above.

9. Handling of Quarantined Incoming Bulk Material

9.1. Quarantined material is material that is either known/suspected to be non-conforming or material for which a vendor COA is required but one has not been approved by the QC lab. When one of these situations occurs, the incoming material must be clearly identified quarantined in order to prevent its unintentional use.

9.2. Once the lab identifies that incoming bulk material is either known/suspected to be non-conforming or does not approve a COA, the lab will:

9.2.1. Verbally notify the Shift Supervisor or Building Manager and designate in the applicable sample log that that incoming material is non-conforming.

9.2.2. Reclassify the material in PRISM to quarantine (QUAR) status.

9.3. If an operations employee identifies that an incoming material is either known/suspected to be non-conforming or does not arrive with a COA, they are responsible for notifying the QC Lab and the Shift Supervisor or Building Manager.

9.4. The employee receiving the quarantined material must:

9.4.1. Place a QUAR tag on the bottom outlet valve of the tanker.

9.4.2. Write "QUAR" on the receipt ticket.

9.4.3. For live unloads only, hold the driver until the issue is resolved, as the material may be sent back to the supplier or customer.

9.4.3.1. If the issue is with a supplier's COA, the driver may released by the Building Manager if it is predicted that the issue cannot be resolved quickly.

9.5. The Building Manager, QC personnel and other applicable personnel will determine the disposition of the quarantined material according to the SOP, Nonconforming Procedure for Incoming Materials RC011CE.

9.6. The lab will notify the Building Manager when the issue regarding the non-conforming material is resolved and the material has been reclassified from quarantined to useable status (or other status). This typically completed through an e-mail distribution communicating the PRISM reclassification.

9.7. The employee receiving the material checks the lab's Incoming Raw Material log or Incoming Crude, Recycle, Disposal Log to verify that the material has been approved by the lab and removes the QUAR tag from the bottom outlet valve on the tanker.

9.8. If the material is to be rejected, the Branch Buyer will return the material to the customer or supplier.

9.8.1. QUAR tags must remain on rejected material until it leaves the facility.

10. Special Requirements

10.1. EMERGENCY SHUT-DOWN PROCEDURE

10.1.1. Follow plant Contingency Plan, if necessary.

10.1.1.1. Refer to SOPs in SOPP manual, Emergency Response, Vol. 7.0.

10.1.2. Shut off pump or nitrogen flow.

10.1.3. Close valve near as possible to tank truck.

10.1.4. Notify supervisor of situation.

10.2. A release (spill) of any chemical may require the completion of a spill report and notification of a government agency.

10.2.1. Follow the SOP, Chemical Release Reporting CR001AF.

10.3. Exposed Earth Area: Take extra precaution with collection container if loading is in or close to an exposed earth area; have tools, absorbent booms, mats and chemicals readily available for the specific products being loaded.

10.4. Storm Water Control/Management: Take note of the location of the storm water control measures and sewers with regard to the loading areas to ensure protection of surface waters in the event of an accidental release; have tools, absorbent booms, mats and chemicals readily available for the specific products being loaded.

10.5. Containers

10.5.1. All containers used for collection containers or sampling must be of proper size and condition.

10.6. Labeling

10.6.1. All compartments must be placarded as required.

10.6.2. Waste collection container for products must be labeled as "Waste" and labeled with appropriate hazard symbol.

10.6.3. Secondary containment containers for hazardous wastes must be labeled "Hazardous Waste" and labeled with appropriate hazard symbol.

10.6.4. Refer to the SOP, Obsolete Inventory & Hazardous Waste Management SOP PR029AF.

10.7. Inspection

10.7.1. Hoses, valves, transfer lines and tankers must be visually inspected prior to each use.

10.7.2. Hoses must be tested each year.

10.8. Hazardous Waste Shipments

10.8.1. A Hazardous Waste Manifest required for all hazardous waste shipments.

10.8.2. If the quantity listed on the manifest varies 10% in comparison to the quantity actually received, the discrepancy must be noted on the manifest and sent to EHS.

10.8.3. A Land Disposal Restriction Form (Land Ban) is required for each waste stream.

10.8.4. The manifest and land ban are filed in the front office.

10.9. Transportation

10.9.1. Company transport or approved carrier.

11. Record Keeping

11.1. Records will be maintained according to the Record Retention Schedule in the Record Management SOP AD005AF.

Checklist applies to non-EPI or non-monomer transfers

Cottage Grove Bulk Tank Truck Unloading Checklist

Tanker#/ Compartment#: _____ Carrier Name: _____ Date: _____

Inbound/PO/Manifest #: _____ Product: _____ Resource #: _____

☐ Unload to Location: _____ OR ☐ Transloaded from Tanker/Tank #: _____

Seal #s: _____

1st Operator: _____ 2nd Operator: _____

If any items are marked "NO", the situation must be corrected before the unloading can continue and initialed by a supervisor. The following checklist must be completed before unloading. Note: A Supervisor must approve all exceptions by initialing next to the item.

Initials for Shift Change	YES	NO	N/A	DROP TRAILER SECTION ONLY (Leave this section blank for Live Unloads)
				Trailer was dropped scaled in? CW Only: ☐ N/A
				Receipt ticket agrees with product on BOL or Manifest or Trailer # and tanker placards?
				Trailer was tagged with a red identification tag and a yellow QC approval tag?
				Copies of required documents (compare to posted list) in a yellow folder were placed in the 'Inbound Dropped Load for Plant' file in the scale house (CE) or to Supervisor (CW)?
				Original remaining documents (compare to posted list) were stapled and placed in the 'Inbound Dropped Load for Office' file in the scale house (CE) or to Supervisor (CW)?

Initials for Shift Change	YES		NO		N/A	PRE-UNLOADING ACTIVITIES
	1st	2nd	1st	2nd		
						Required personal protective equipment is worn/used (PPE Matrix, MSDS or product specific SOP)?
						Receipt ticket agrees with product on BOL or Manifest or Trailer# and tanker placards?
						Multi-compartment load: Compartment number matches the number on the BOL?
						Sealed Trailers: Seal numbers match the numbers on the BOL?
						Placards match the BOL or Manifest?
						Transloads: A washout certificate or last haul paperwork for the 'unload to' tanker was obtained?
						Tanker was scaled in for its 'Gross' weight prior to unloading and Hydrite scale ticket is attached to paperwork? CW Only: ☐ N/A
						Vendor supplied scale ticket is attached to paperwork?
						Tanker is secured by chocking wheels and by setting brake?
						Grounding cable is connected to the trailer? CW Non-flammables Only: ☐ N/A
						Relieved pressure from tanker to carbon drum prior to opening dome?
						Sample was taken to lab, if required by the Incoming Material Table? **N/A allowed only if not required by the Incoming Materials Table.**
						Vendor COA taken to the lab?
						Lab approval received prior to unloading, if required by the Incoming Material Table? **Must check the lab log to verify lab approval! N/A allowed only if not required by the Incoming Materials Table.**
						Receiving tank or process capacity was verified and will hold the amount to be transferred? Vessel capacity _____ lbs./gal.
						Enough serviceable clean hoses are assembled, ears on OPWs are secure to complete the unloading?
						Catch bucket, pan or pads are placed under connections and tanker valves?
						Bleed off valve is installed between tanker and hose? CW Acids/Bases/H_2O_2 Only: ☐ N/A
						Lines have been flushed prior to connecting to the tanker?
						T Supervisor or second employee has checked routing, connections and lines to tank? Compare Tank Truck #, Product Name and Resource # to the Paperwork.

The following checklist through the scale out item must be completed before the tanker can depart the facility.

Initials for Shift Change	YES	NO	N/A	POST UNLOADING ACTIVITIES
				Internal valves on the tanker are closed?
				External valves on the tanker are closed and capped?
				Lines are blown clear with nitrogen (**Compressed air or N_2O_2 for inhibited monomers**)?
				Inlet valve on the tank / vessel being unloaded to is closed?
				Nitrogen or air pressure was relieved from hoses prior to disconnecting?
				Dome is closed and secured and bolts are tight? (If no dome, mark "yes")
				Hose was disconnected, capped and stored?
				Bleed off valve, fittings, etc. was removed and stored?
				Grounding cable was disconnected? CW Non-flammables Only: ☐ N/A
				Waste in drip buckets was properly disposed of and buckets are covered?
				Tanker was scaled out using the same tractor that scaled it in? CW Only: ☐ N/A
				T Live Unloads: Receiving Paperwork Packet (compare to posted list) was filed in the 'Completed Inbound Paperwork for Office' file in the scale house (CE) or to Supervisor (CW)?
				Transloads: Receiving Paperwork Packet (compare to posted list) was filed in the 'Inbound Dropped Load for Plant' file in the scale house (CE) or to Supervisor (CW)?

Exemptions: T Transloading a trailer

Cottage Grove Bulk Tank Transfer Checklist

Tank/Vessel to be Transferred from:_____ Receiving Tank/Vessel:_____ Material: _____ Date: _____

Was Transfer Recorded on a PRISM Log
YES ☐ NO ☐

Capacity of Receiving Tank	Estimated Amount of Material to Transfer	Actual Amount of Material Transferred
_____ lbs _____ gal	_____ lbs _____ gal	_____ lbs _____ gal

1st Operator: _____ 2nd Operator: _____

If any items are marked "NO", the situation must be corrected before the loading can continue and initialed by a Supervisor.
The following checklist must be completed before loading. A Supervisor must approve all exceptions by initialing next to the item.

Initials for Shift Change	YES 1st	YES 2nd	NO 1st	NO 2nd	N/A	BULK TANK LOADING ACTIVITIES
						Required PPE is worn/used (Per Pick List, PPE Matrix, MSDS, or process specific SOP)?
						Employee knows the location of MSDS for product and also knows the emergency shutdown procedure?
						Sample of product to be transferred was analyzed and approved by the lab?
						Verify that the receiving tank tape and /or level control is working.
						Calculate how much the receiving bulk tank/vessel_____ can hold by completing equations A-C.
						Calculate how much of the material is being transferred to receiving tank, by completing equations D.
						Determine whether the transfer can take place per the logic of equation E. **Tank transfer cannot take place and Supervisor must be contacted if the following reasons occur:** • **If the gallons to transfer is > then what bulk tank/vessel can hold, no transfer can take place and then contact the supervisor.** • **If the high level alarm is tripped.** • **If the radar, sonic, or tank tape is not reading.**
						Receiving vent is free from visual obstructions and connected via a hose to a carbon drum or hard piped to thermal oxidizer for emissions control (or vapor balance)?
						Enough clean hoses are assembled & ears on OPWs are secured to complete the loading?
						Catch buckets, pans or pads are placed under connections.
						Route for Bulk Tank to Bulk Tank Transfer, per the SOP or production notes as applicable.
						Bleed off valve is installed between product tank outlet and hose is connected to receiving tank?
						Lines were flushed prior to connecting to bulk tank/vessel?
						Supervisor or second employee has checked routing, connections, lines, and valves to bulk tank/vessel? Compare Bulk Tank #, Product Name and Resource # to the paperwork.
						Begin transfer to receiving tank and walk routing during transfer to check for leaks. Check the level control periodically.
						Take a retain sample from the bulk tank when the loading is at least half completed or per SOP instructions and sent to the lab with a Retain Request Form?
						Once transfer is complete, then clear lines per the SOP.
						Disconnect and put away hoses and fittings.

The following checklist must be completed BEFORE the bulk tank/vessel transfer begins.

YES 1st	YES 2nd		**Bulk Transfer Calculations:**
		A	**Maximum Volume for Receiving Bulk Tank, _____ (Carefully pull tank tape until float stops that will be absolute maximum, slowly lower the tank tape.)** (_____ in. (max. tape) – 12 in.(for headspace) * _____ gal./in. = _____ gal.
		B	**Calculate the Amount of Material in Receiving Tank, T-_____.** (_____ in. (tank tape) * _____ gal./in. = _____ gal.
		C	Calculate the Available Capacity in Receiving Bulk Tank, T-_____ _____ gal. (A) - _____ gal. (B) = _____ gal. (C)
		D	Calculate the Amount to Transfer _____ gal. If Transferring from Bulk Tank T-_____ : (_____ in. (tank tape) * _____ gal./in. = _____ gal. Conversion lbs. to gal. = _____ lbs of material /_____ (lbs./gal.) (material density)= _____ gal. Density= Specific Gravity of Material * 8.34
		E	Can material be transferred? If C>D, then transfer can continue. If C< D, then transfer can NOT proceed and you must contact the supervisor.

SOP NUMBER	1003L101	**SOP TITLE**	Luwa 1 Recycle SOP
			(select from drop down) ---> Generic RCLT
PSM REQUIRED	Yes	**REVISION**	01

ORIGINATOR:	Rod Brandenburg	03/02/10	(signature required) - Required for original SOP only
	Building Manager	Date	

MOC #:

APPROVALS FOR NEW SOPS

Signature	Date	
David Volenberg	03/03/10	(Safety Manager)
Ronald E. Carrington	03/02/10	(Plant Manager)
Jeff Prom	03/03/10	(Engineering Manager)
Jim Barnhill	03/02/10	(Process Engineer)
Kori Brandl for Gaye Lehman	03/03/10	(QA/QC Manager)

REVISED BY:			(signature required) - Required after major review
	Building Manager	Date	

MOC # _____

APPROVALS FOR REVISED SOP

Signature	Date	
		(Health & Safety Manager)
		(Process/Project Engineer)
		(Engineering Manager)
		(QA/QC Manager)

RE-CERTIFED BY:	Rod Brandenburg	11/2/2011	(signature required) - Required for annual Re-certification
	Building Manager	Date	

APPROVALS FOR RE-CERTIFICATION

Signature	Date	
David Volenberg	11/17/2011	(Health & Safety Manager)
Jim Barnhill	11/15/2011	(Process/Project Engineer)

Air Operating Mode:	**OCPSF:**	**Hazardous Waste Treatment:**
3	Does Not Apply	Applies

RE-CERTIFICATION DUE DATE:	11/15/12	(Not later than 1 year after last signatures)

	Luwa Batch # _____ **Date:** _____ **Operator:** _____	
	Procedure Description	
I.	**LUWA Preparations:** **Customer:** **Generic RCLT** (from drop-down on cover sheet)	
1	Check that Luwa 1 has been cleaned with NMP.	
2	Check that all transfer lines are clean and empty.	
3	Verify T-205 has sufficient capacity for the Distillate Bottoms to proceed with the next run	
4	Inspect unloading lines and the feed pump to insure they have not been used for other purposes.	
5	Check the following equipment parameters: - Cooling tower water flow and temperature - Condenser on full cooling	
6	Check rotor seal oil system (lines, tank level, bleeder drips, etc.).	
7	Check that all process inlet/outlet valves are closed. - Distillate Line Bottoms Lines to T-205 - Feed Line - Main Vacuum line to the JUROP (1 Manual & 1 Pneumatic) (Closed) Any other valves listed:	
8	Ensure the N_2 **SWEEP** to the Luwa 1 receiver is OFF.	
9	Route the product line to the Product Tank/Tanker opening and close all necessary valves to the manifold valve. Attach flexible hose where necessary. (Check the hose and hose gasket integrity before use. Replace if necessary.) **PPE: FF(MG), NRG**	
10	Check Product Tank/Tanker for sufficient room for expected volume of Distillate and to make sure it is empty.	
11	Set alarms to values in Alarm Table.	
12	Check that the North Scrubber and Thermal Oxidizer is engaged and operational. **CW Flow** **Temperature** (Outlet water should be below 60°F)	
13	Turn on and warm up the vacuum pump.	
14	Perform a vacuum drop test per Vacuum System Operation by pulling vacuum to <16" Hg. The vacuum must not drop more than 2" Hg/15 minutes.	
15	Zero mass meters and Totalizers on APACS.	

II.	**Customer Table**	
	Feed Stream Name:	Generic RCLT
	Typical Temperature (F)	314
	Typical Steam Pressure	60
	Typical vacuum	13-15
	Typical Product Rate / hour	varies
	Typical Yield	TBD
	Maximum Product Volume	0
	Stream Type	LT
	Drums/Bulk Out	N/A
	Notes:	DIRECTLY INTO LT & High ActivesPROGRAMS

Procedure Description	
II.	**Processing:**
16	Post the Waste Profile on the Vessel.
17	Route all lines: **FEED TANK:** [redacted] **PRODUCT TANK:** [redacted] Route the bottoms line into T-205. Check the tank level to prevent an overflow. Clean the Luwa bottoms sight glass as necessary. Route the lines from the feed tank to the feed pump, opening/closing all necessary valves. Attach flexible hose where necessary. (Check the hose and hose gasket integrity before use, replace if necessary.) Route the lines from the receiver to the Product tank, opening/closing all necessary valves. Attach flexible hose where necessary. (Check the hose and hose gasket integrity before use, replace if necessary.) **Have a 2nd Operator Check Line/Material Routing:_____ (Initials)**
18	Start the Luwa motor.
19	Engage the vacuum system to pull vacuum (see Customer Table for typical values).
20	Start the feed pump and adjust according to the bottoms flow.
21	Engage the bottoms pump.
22	Engage the steam system and set pressure set point (see Customer Table for typical values).
23	Slowly increase the feed flow rate but do not flood the bottoms sight glass. Adjust the steam set point but avoid overwhelming the condenser or the thermal oxidizer. Adjust vacuum to improve distillation without losing the required suction head for the bottoms pump. Attempt to maintain a high viscosity in the bottoms (seen through Luwa sight glass) and avoid flooding to the bottom of the Luwa. Check the Notes section of the Customer Table for special information.
24	Obtain a sample of the distillate from the receiver with a 4 oz. glass bottle and verify overheads are clean and clear. Send to the Lab. If the overhead samples are not clean and clear, then discuss what actions to take with the Building Manager or the Process Engineer. **PPE: FF(MG), NRG** **Label Hazard Rating: (3,3,0)**
25	When the product receiver is 1/3 full of liquid, open the valves to the overheads product tank/tanker and engage the distillate pump.
26	Fill out Luwa Run Sheet with the relevant data hourly as the processing progresses.
27	As process continues, check rate and apparent Yield information with the typical values in the Customer Table and contact shift manager if you find a wide discrepancy.
28	Shutdown when the feed tank is empty or when instructed by the Building Managers notes.
29	When feed tank is empty shut-off the steam supply and shut-off the vacuum pump control valve.
30	Shut-off the feed pump, empty the receiver, close the product tank header valve, stop the vacuum pump, and close the feed tank header valve.
31	Sample the product tank with a 4 oz. poly bottle. Submit to lab for tank analysis: GC, KF water, APHA color, and specific gravity. If the material in the product tank needs to be decanted, wait to submit the lab sample until after the material has been decanted. Update the product tank level on the Luwa #1 Run Sheet. **PPE: FF(MG), NRG** **Label Hazard Rating: (3,3,0)**
32	Route the NMP stripper to the feed pump from Luwa NMP Feed Tank and route the bottoms pump piping back to the NMP tank.
33	When the NMP is showing in the sight glass start the bottoms pump.
34	At a minimum, circulate NMP stripper until the Luwa has cooled. Typically 2 hours is sufficient to adequately clean the system.
35	Replace NMP stripper as necessary.

Appendix T

-N-

NOTES TO USERS

…ap is for use in administering the National Flood Insurance Program. It does …cessarily identify all areas subject to flooding, particularly from local drainage …s of small size. The **community map repository** should be consulted for …le updated or additional flood hazard information.

…ain more detailed information in areas where **Base Flood Elevations** (BFEs) … **floodways** have been determined, users are encouraged to consult the Flood …s and Floodway Data and/or Summary of Stillwater Elevations tables contained … the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users … be aware that BFEs shown on the FIRM represent rounded whole-foot …ons. These BFEs are intended for flood insurance rating purposes only and … not be used as the sole source of flood elevation information. Accordingly, …levation data presented in the FIS Report should be utilized in conjunction with …RM for purposes of construction and/or floodplain management.

…n areas not in Special Flood Hazard Areas may be protected by **flood control** …ures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance … Report for information on flood control structures for this jurisdiction.

…aries of the **floodways** were computed at cross sections and interpolated …en cross sections. The floodways were based on hydraulic considerations with … to requirements of the National Flood Insurance Program. Floodway widths …her pertinent floodway data are provided in the Flood Insurance Study Report … jurisdiction.

…**rojection** used in the preparation of this map was Universal Transverse …tor (UTM) zone 16. The **horizontal datum** was NAD 83, GRS80 spheroid. …nces in datum, spheroid, projection or UTM zones used in the production of … for adjacent jurisdictions may result in slight positional differences in map …s across jurisdiction boundaries. These differences do not affect the accuracy … FIRM.

…elevations on this map are referenced to the North American Vertical Datum of … These flood elevations must be compared to structure and ground elevations …nced to the same **vertical datum**. For information regarding conversion …en the National Geodetic Vertical Datum of 1929 and the North American … Datum of 1988, visit the National Geodetic Survey website at …www.ngs.noaa.gov or contact the National Geodetic Survey at the following …s:

…formation Services
… N/NGS12
…al Geodetic Survey
…3, #9202
…East-West Highway
… Spring, Maryland 20910-3282
…713-3242

…ain current elevation, description, and/or location information for **bench marks** … on this map, please contact the Information Services Branch of the National …tic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

…**map** information shown on this FIRM was provided by Dane County Land …ation Office and Fly Dane Partnership. The aerial photography was acquired in …ing of 2005 to create 1"=200' scale digital orthophotos with 1-foot ground …ion and resampled to a 1-meter ground resolution.

… on updated topographic information, this map reflects more detailed and …late **stream channel configurations and floodplain delineations** than … shown on the previous FIRM for this jurisdiction. As a result, the Flood …s and Floodway Data tables for multiple streams in the Flood …nce Study Report (which contains authoritative hydraulic data) may reflect … channel distances that differ from what is shown on the map. Also, the …o floodplain relationships for unrevised streams may differ from what is … on previous maps.

…**rate limits** shown on this map are based on the best data available at the time …lication. Because changes due to annexations or de-annexations may have …ed after this map was published, map users should contact appropriate …unity officials to verify current corporate limit locations.

… refer to the separately printed **Map Index** for an overview map of the … showing the layout of map panels, community map repository addresses, … Listing of Communities table containing National Flood Insurance Program …or each community as well as a listing of the panels on which each community …ted.

…ct the **FEMA Map Service Center** at 1-800-358-9616 for information …ilable products associated with this FIRM. Available products may include …usly issued Letters of Map Change, a Flood Insurance Study Report, and/or … versions of this map. The FEMA Map Service Center may also be reached by … 1-800-358-9620 and its website at http://www.msc.fema.gov.

… have **questions about this map** or questions concerning the National Flood …nce Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or …e FEMA website at http://www.fema.gov.

HYDRITE CHEMICAL CO
114 N MAIN ST.
COTTAGE GROVE, WI 53527

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 7 NORTH, RANGE 11 EAST.

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary
0.2% Annual Chance Floodplain Boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
~~ 513 ~~ Base Flood Elevation line and value; elevation in feet*
(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

(A)——(A) Cross section line
(23)- - - -(23) Transect line
45° 02' 08", 93° 02' 12" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
2100000 FT 5000-foot ticks: Wisconsin State Plane South Zone (FIPS Zone …), Lambert Conformal Conic projection
1000-meter Universal Transverse Mercator grid values, zone 16
DA5510 X Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
June 17, 2003

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
January 2, 2009 – to update corporate limits, to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, to add roads and road names, to reflect updated topographic information, and to incorporate previously issued Letters of Map Revision

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP — NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0454G

FIRM
FLOOD INSURANCE RATE MA…

DANE COUNTY, WISCONSIN AND INCORPORATED AREA…

PANEL 454 OF 850
(SEE MAP INDEX FOR FIRM PANEL LAY…

CONTAINS:

COMMUNITY	NUMBER	PANEL
COTTAGE GROVE, VILLAGE OF	550617	0454
DANE COUNTY	550077	0454

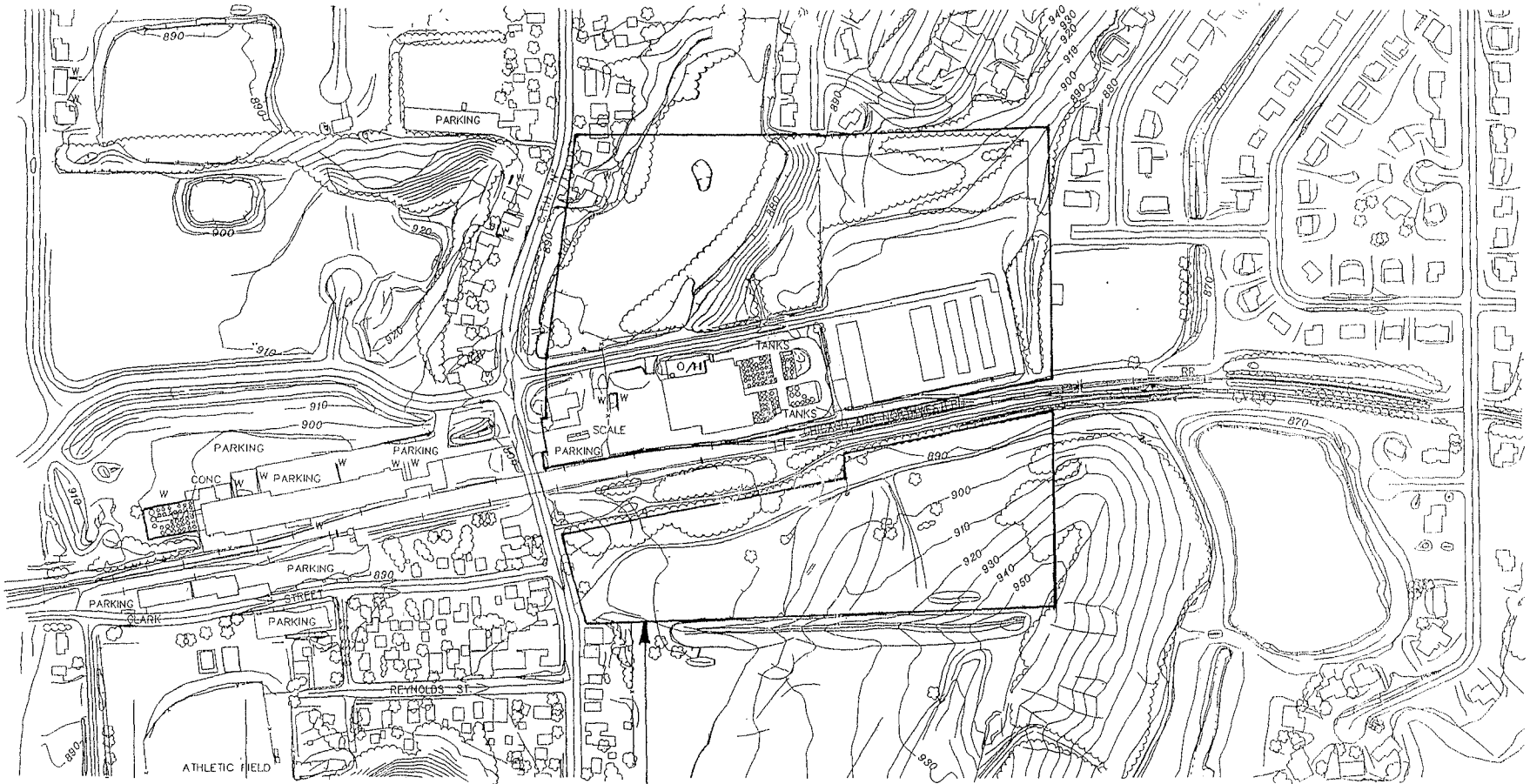
January 2, 20…

Notice to User: The **Map Number** shown … should be used when placing map orde… **Community Number** shown above sh… used on insurance applications for the … community.

MAP NUM…
55025C0…

MAP REV…
JANUARY 02, …

Federal Emergency Management …



PROPERTY LINE

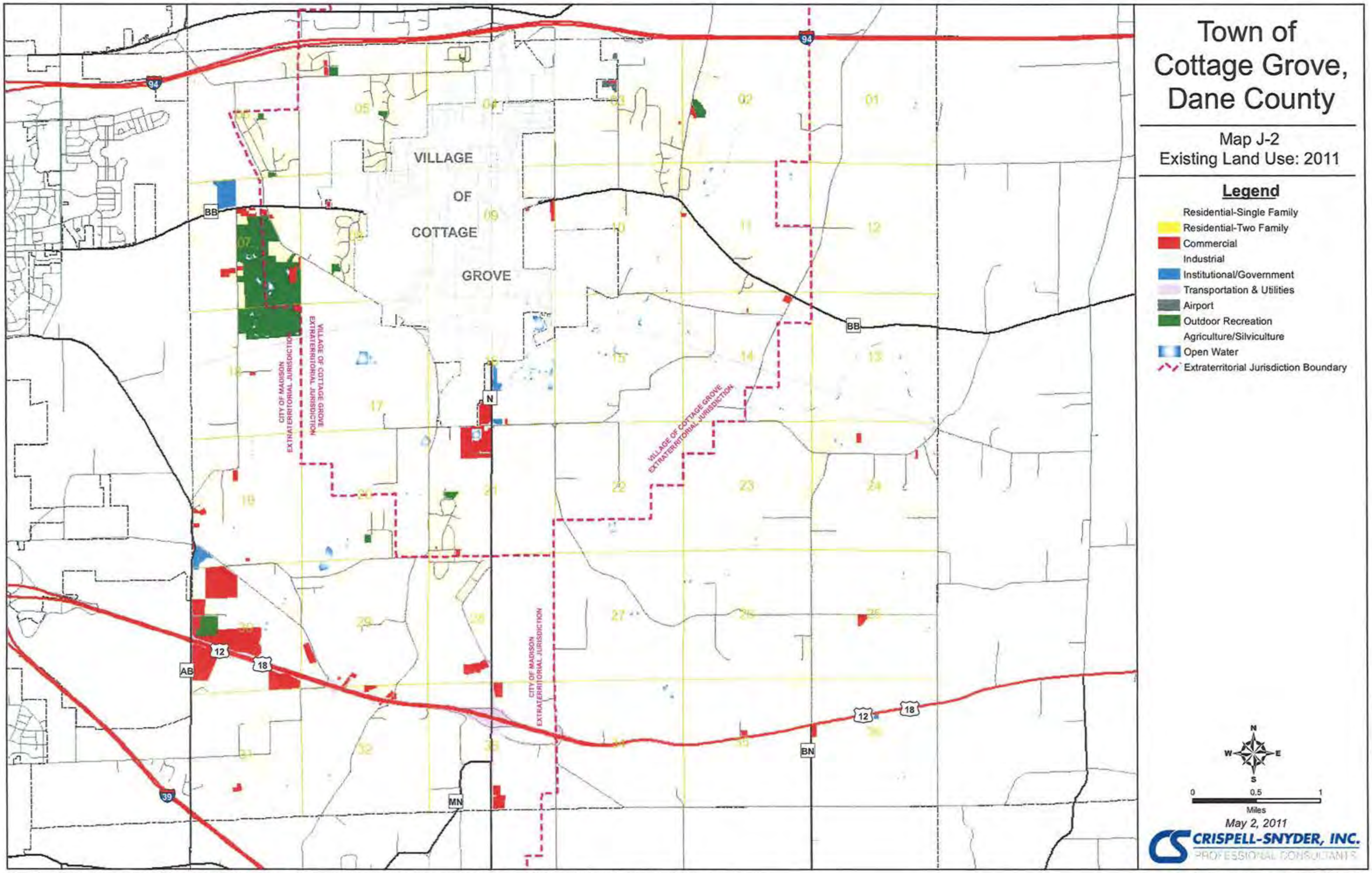
USGS ELEVATIONS

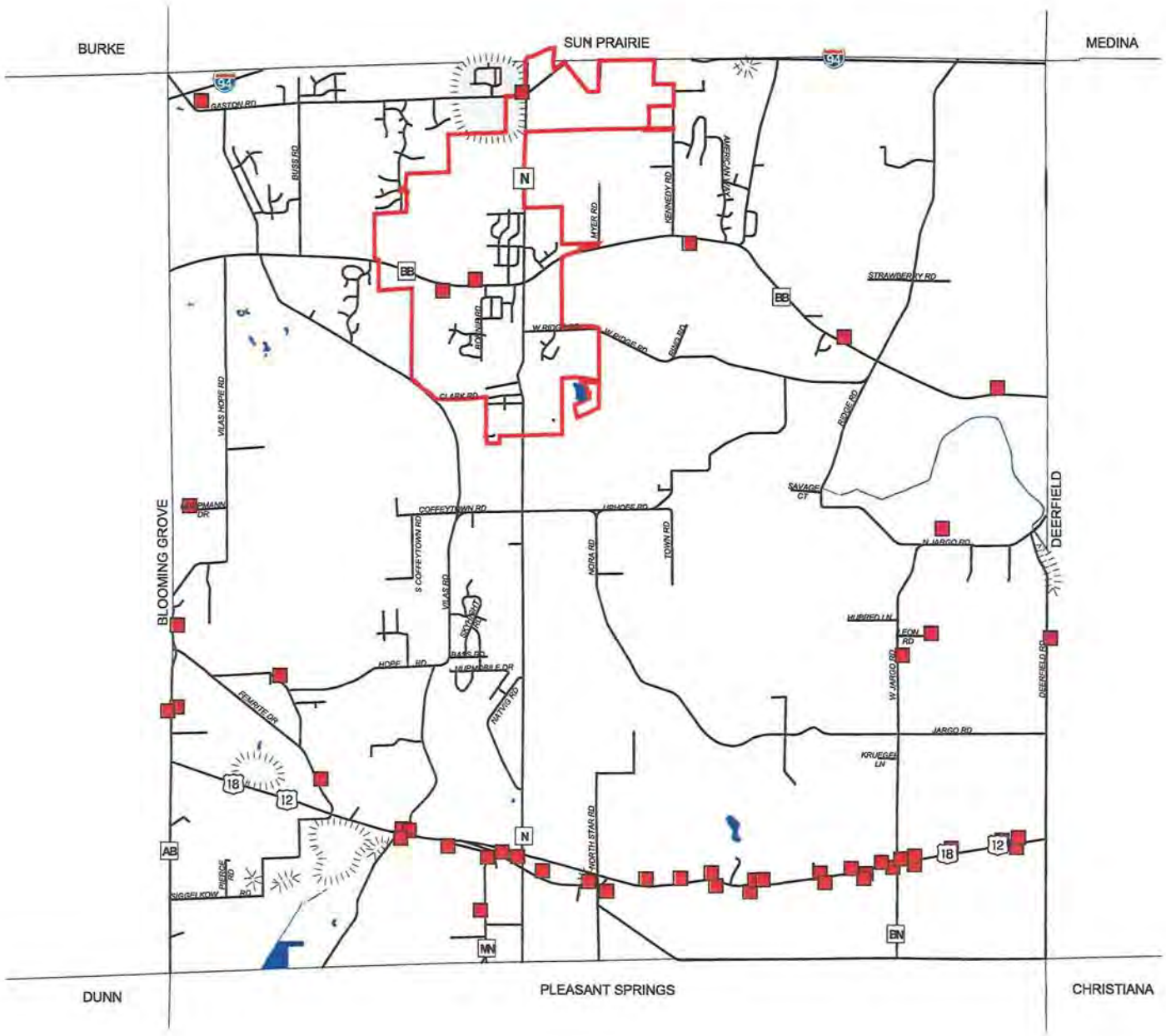
SCALE
0 600
Feet

N

APPENDIX T

TOPOGRAPHY MAP	DATE: 9-1-9
HYDRITE CHEMICAL CO.	DESIGNED:
114 N. MAIN STREET	CHECKED:
COTTAGE GROVE, WI	APPROVED:
	DRAWN:
HSI GEOTRANS A TETRA TECH COMPANY	PROJ.:
	Figure


VILLAGE
OF
COTTAGE
GROVE
CITY OF MADISON EXTRATERRITORIAL JURISDICTION
VILLAGE OF COTTAGE GROVE EXTRATERRITORIAL JURISDICTION
Town of
Cottage Grove,
Dane County
Map J-2
Existing Land Use: 2011
Legend
Residential-Single Family
Residential-Two Family
Commercial
Industrial
Institutional/Government
Transportation & Utilities
Airport
Outdoor Recreation
Agriculture/Silviculture
Open Water
Extraterritorial Jurisdiction Boundary
Miles
May 2, 2011
CRISPELL-SNYDER, INC.
PROFESSIONAL CONSULTANTS



Comprehensive Plan 2020
Town of Cottage Grove
June 18, 2001

Map G-8 Archaeological and Historic Resources: 2000

N

Map Features

- Village of Cottage Grove
- Roads
- Surface water

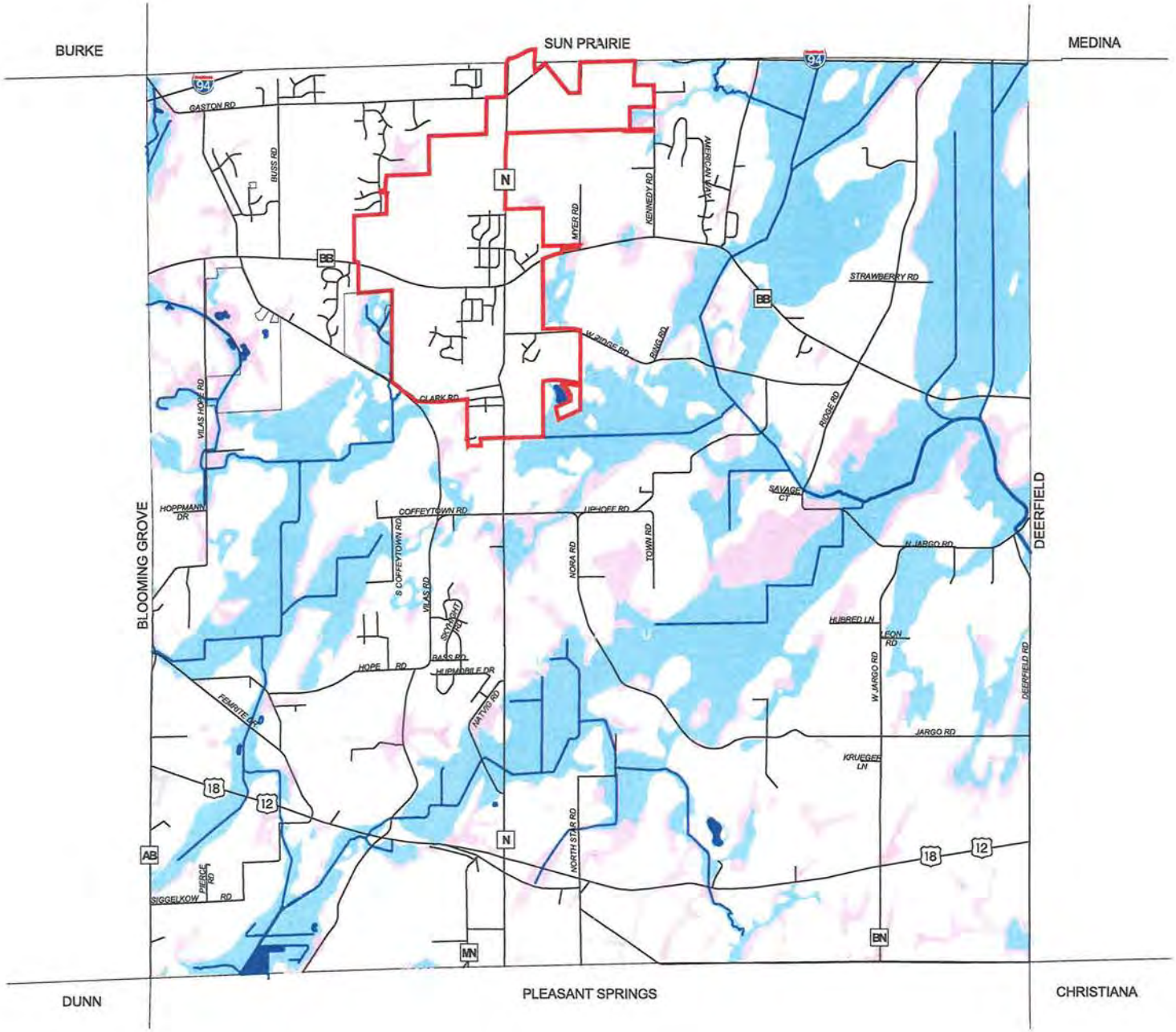
Map Legend

- Approximate Locations
- Structure Locations

Data Sources:

Base map provided by and copyright of Dane County and the Dane County Land Information Office.
Archaeology information provided by Wisconsin State Historical Society.

Mid-America Planning Services, Inc.
Madison, Wisconsin



Comprehensive Plan 2020
Town of Cottage Grove
June 18, 2001

Map G-7 Surface Water & Hydric Soils: 2000

N

Map Features

- Village of Cottage Grove
- Surface water
- Roads

Map Legend

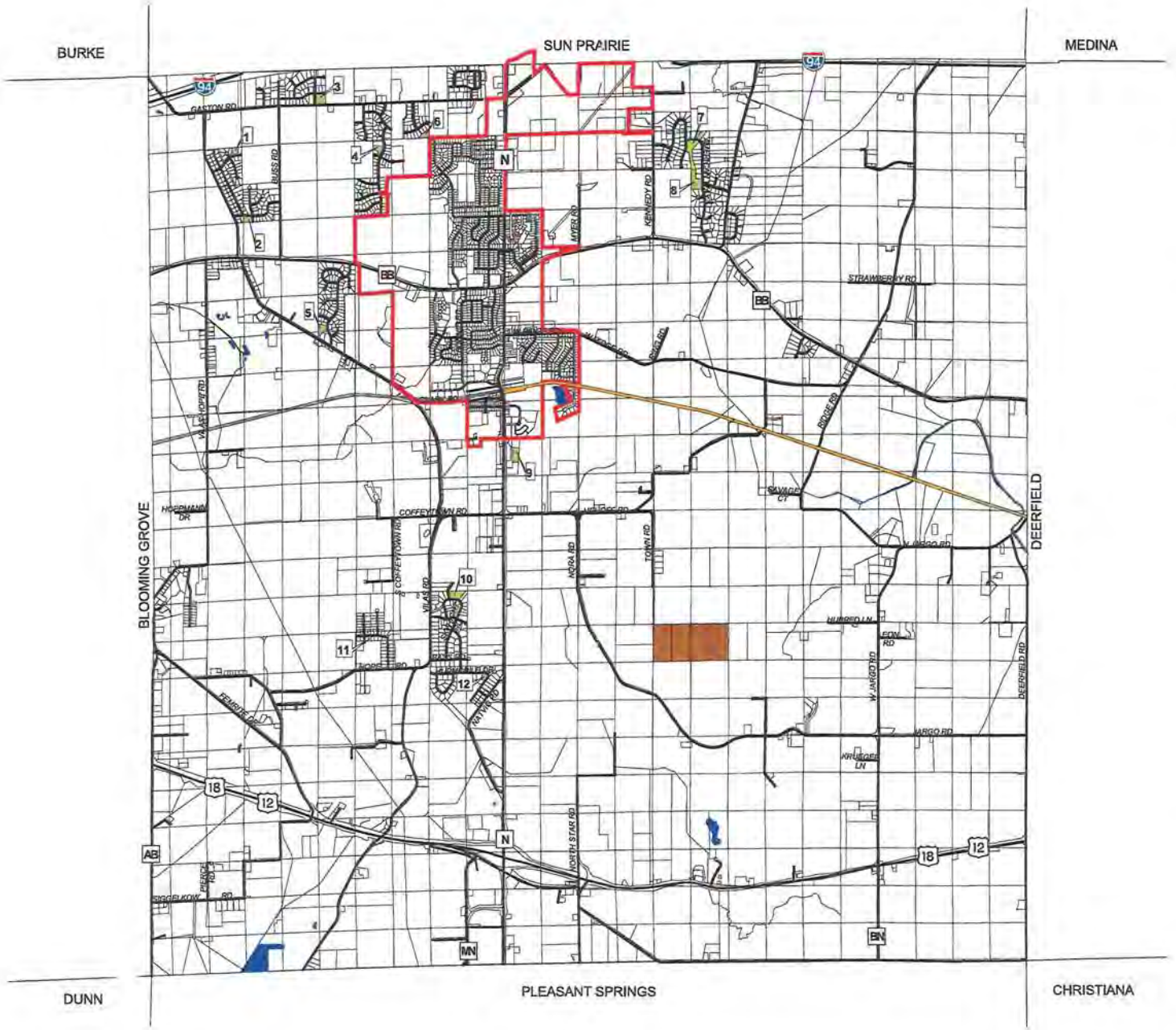
- Entire map unit is hydric
- Non-hydric unit, but likely to include hydric inclusions

Note: This map is general. Specific investigations should be conducted to determine the presence and extent of specific limitations.

Data Sources:

Data derived from the official USDA, Natural Resources Conservation Service (NRCS) soil tabular data found on the Wisconsin NRCS internet site: www.wi.nrcs.usda.gov. Data file: WI025map.txt, dated 9/9/99.

Mid-America Planning Services, Inc.
Madison, Wisconsin



Comprehensive Plan 2020
Town of Cottage Grove
June 18, 2001

Map F-1 Parks and Recreation Facilities: 2000

N

Map Features

- Village of Cottage Grove
- Roads
- Parcel lines
- Surface water

Map Legend

- Glacial Drumlin State Trail
- Other DNR Owned Land

Map I.D.	Park Name
1.	Nondahl Park #1
2.	Nondahl Park #2
3.	Cedar Knolls Park
4.	Ravenwood Park
5.	Meadow Grove Park
6.	Elmargo Park
7.	American Heritage Park #1
8.	American Heritage Park #2
9.	Town Hall
10.	Bass Park
11.	Bohnsac Park
12.	Rolling Wheels

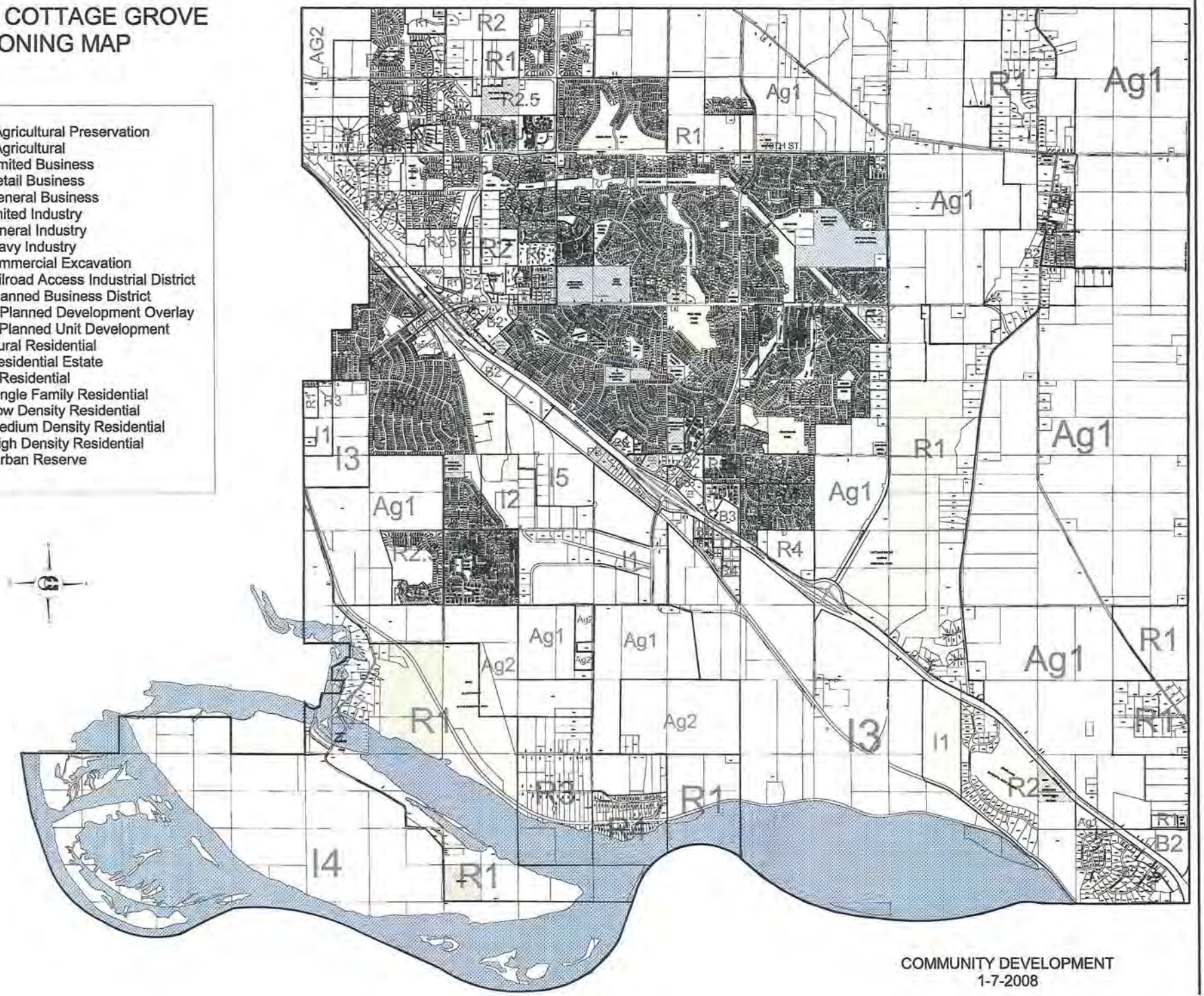
Data Sources:

Base map provided by and copyright of Dane County and the Dane County Land Information Office,dated 5/10/00. Park and recreation facility dataderived from field surveys (6/00), Town of Cottage Grove.

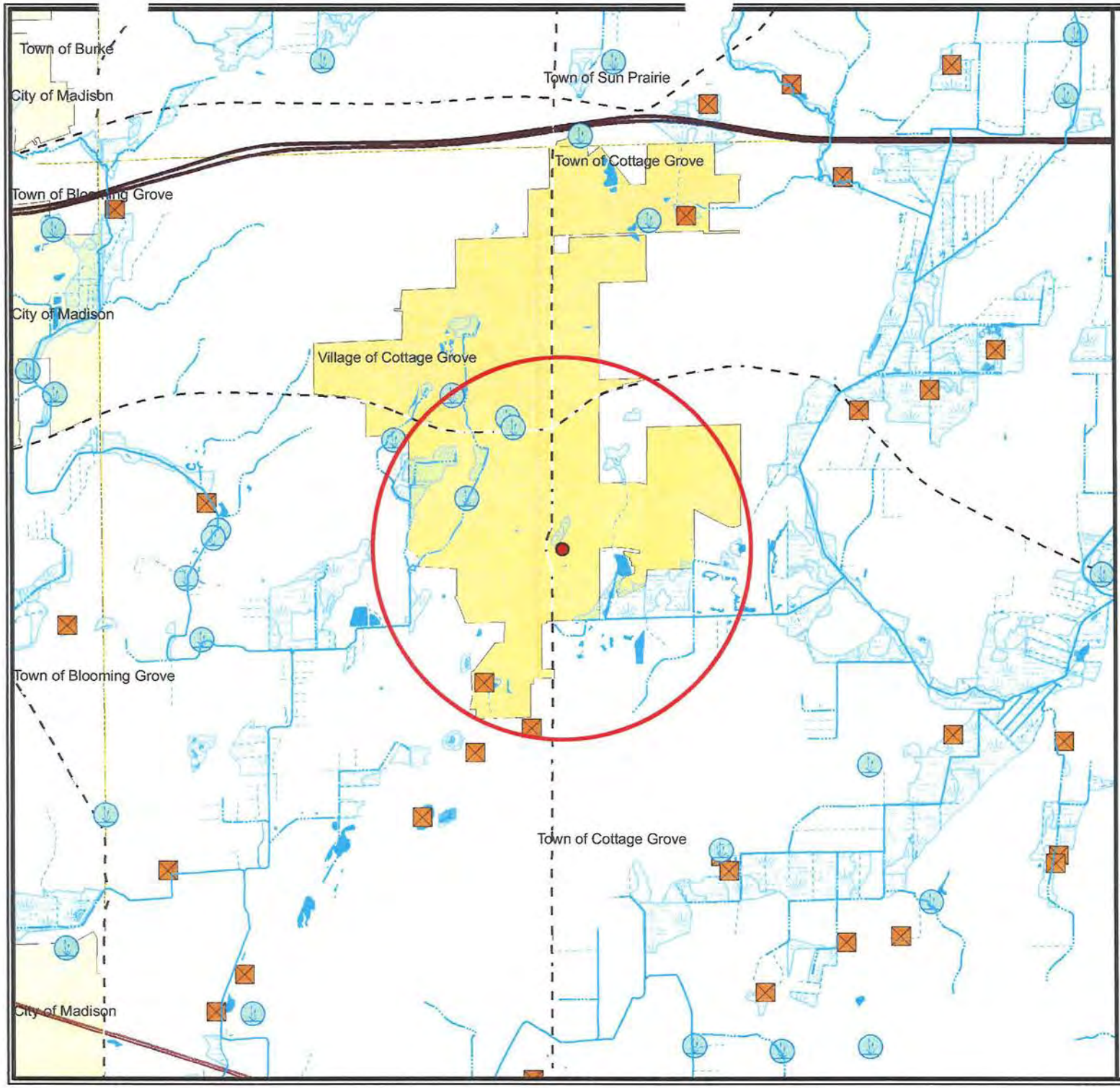
Mid-America Planning Services, Inc.
Madison, Wisconsin

CITY OF COTTAGE GROVE
ZONING MAP

Ag1 - Agricultural Preservation
Ag2 - Agricultural
B1 - Limited Business
B2 - Retail Business
B3 - General Business
I1 - Limited Industry
I2 - General Industry
I3 - Heavy Industry
I4 - Commercial Excavation
I5 - Railroad Access Industrial District
PB - Planned Business District
PDO - Planned Development Overlay
PUD - Planned Unit Development
R1 - Rural Residential
R2 - Residential Estate
R2.5 - Residential
R3 - Single Family Residential
R4 - Low Density Residential
R5 - Medium Density Residential
R6 - High Density Residential
UR - Urban Reserve



COMMUNITY DEVELOPMENT
1-7-2008



Dane County
Surface Water and Wetlands

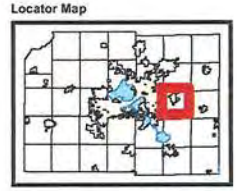
Legend

- Hydrite
- Perennial Stream
- Intermittent Stream
- Constructed Drainage
- Wetlands < 2 acres
- Dammed Pond
- Excavated Pond
- Wetlands > 2 acres

Data Sources:

(All datasets developed by Dane County unless otherwise noted)
Parcels: 2005 Tax Parcel Data
Zoning: 2005 Tax Parcel Data
Contours: 2000 4-foot Contours
Soils: 1989 Digital Soils (USDA NRCS)
Land Use: 2000 Land Use Inventory
Streets: 2000 Street Centerline Data
Lake & Streams: 1995 Hydrography Data
Municipalities: 2004 Municipal Boundary Data
Wetlands: 1997 Wetlands (WIDNR)
Aerial Photography: April 2000, 6-inch/1-foot resolution

Locator Map



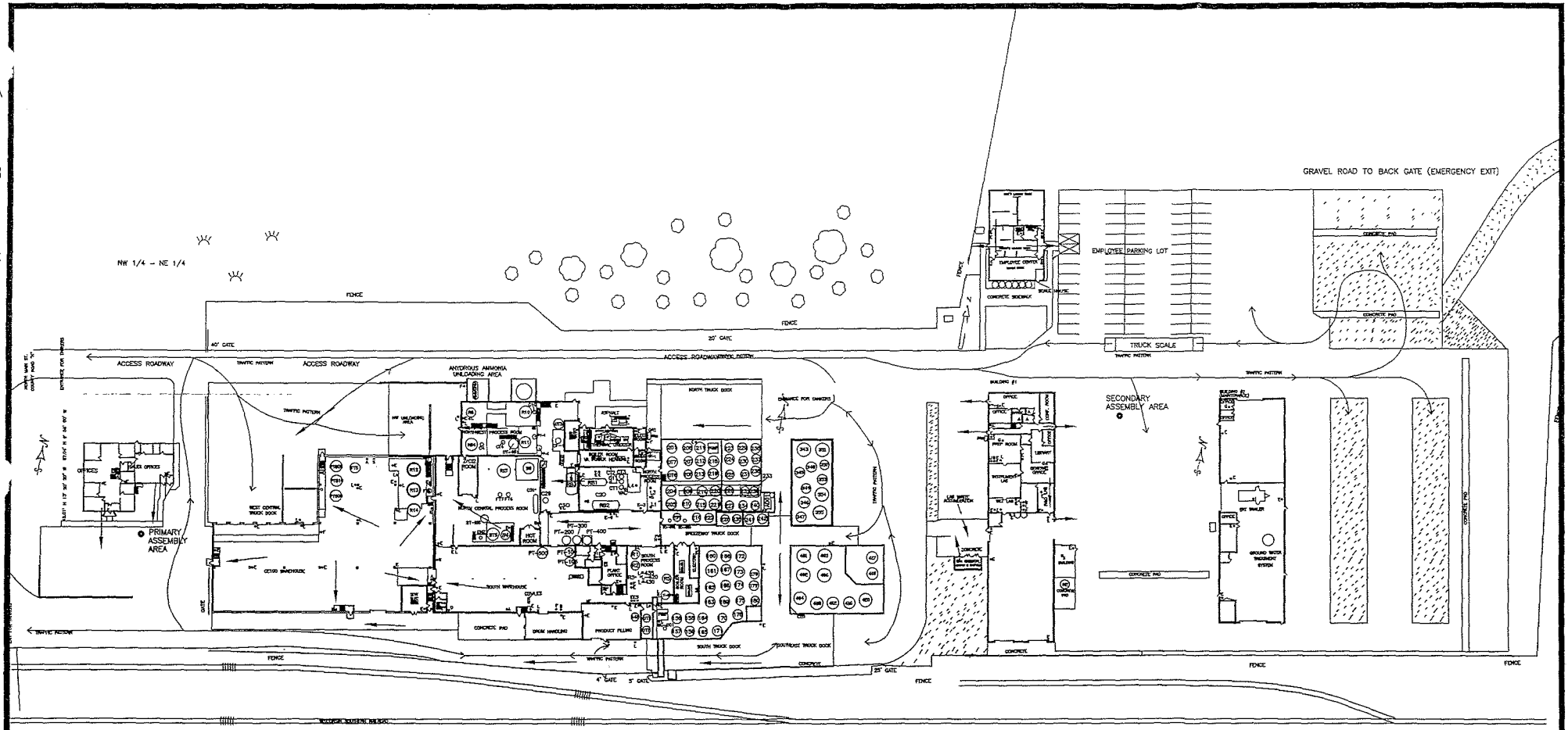
N

0 425850 1,700 2,550 3,400 4,250
Feet

This map was prepared by Dane County Emergency Management from records and data located in various public offices. Map information is believed to be accurate but is not guaranteed to be without error. Source data used to compile this map is dynamic and in a constant state of maintenance, correction and update. This map does not represent a field survey and is not intended to be used as one. For general cartographic and reference purposes only.

Printed: 8/14/2009

Appendix 24



HYDRITE CHEMICAL CO.
114 N. MAIN STREET
COTTAGE GROVE, WI

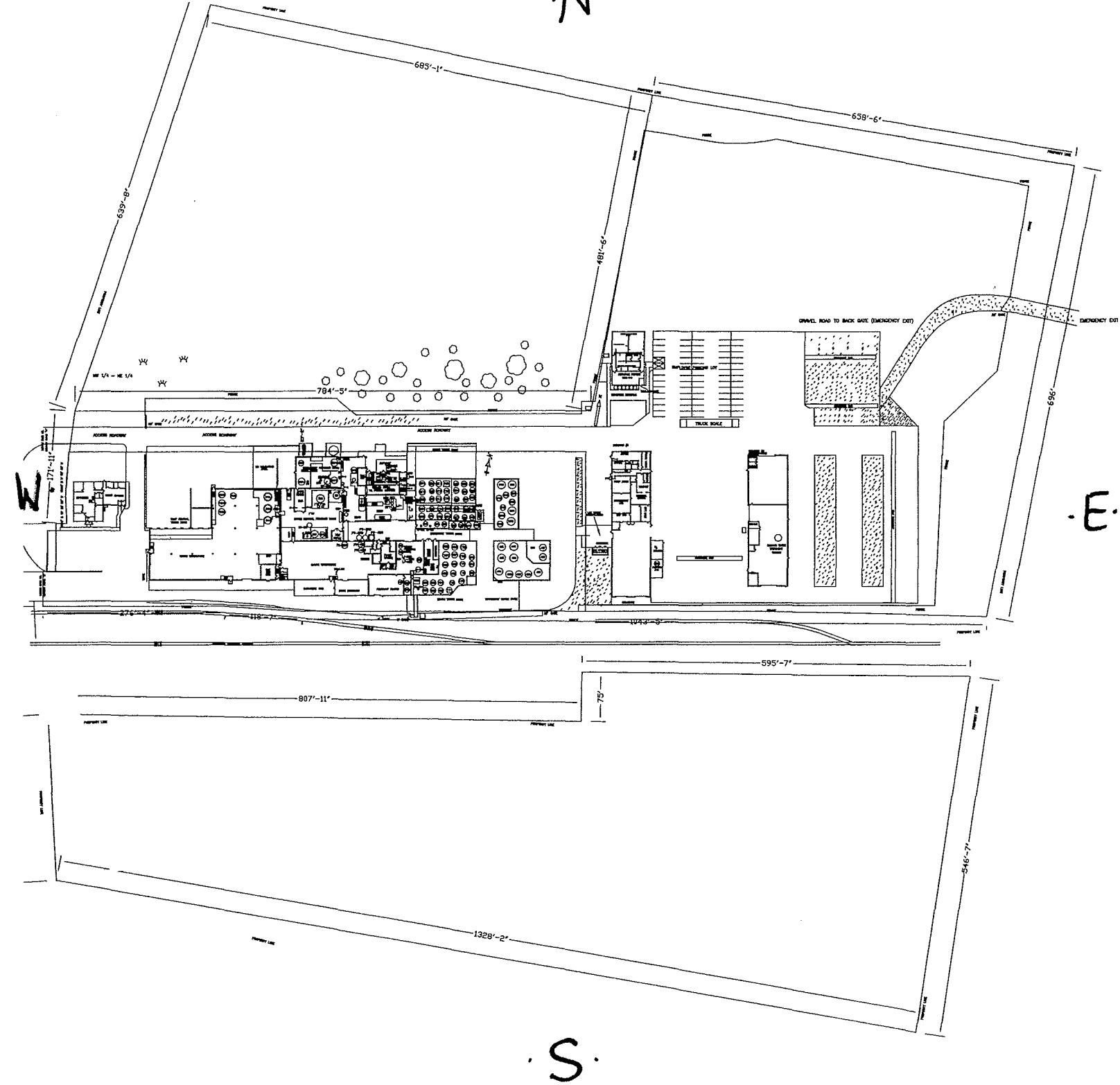
PlotPlan.dwg (ContPlan) (10/1/10, Rev. 13)

REV. #	DATE	DESCRIPTION	DRAWN
08	5/02/08	Added tank Farm Layout. Other Numerous Updates.	B. Schroeder
09	6/16/08	Updated Fenceline. Corrected other numerous dimension errors and layouts..	B. Schroeder
10	11/18/08	Added new scale & underground utilities. Removed old scale & Baker.	B. Schroeder
11	1/08/09	Added safety gear to HAZMAT Trailer. Moved the CONLES blower. Removed Big Blue, FT-101, FT-201, FT-501 & HS-1.	B. Schroeder
12	11/11/09	Numerous updates due to building expansion. Added BB. Moved storage tanks around.	B. Schroeder
13	7/13/10	Added RTS. NEW TANKS. OTHER MISC.	B. Schroeder

HYDRITE CHEMICAL CO.
114 N. MAIN STREET
COTTAGE GROVE, WI
COTTAGE GROVE WISCONSIN

HYDRITE CHEMICAL CO.

DRAWN: B. SCHROEDER	CHKD:	APPR:
DATE: 08/28/08	DATE:	DATE:
SCALE: NONE	CAD: PLOTPLAN	
FOR: ER008CE & ER003CE		
CONTRACT NO.	DRAWING NO. ContPlan	REVISION 13

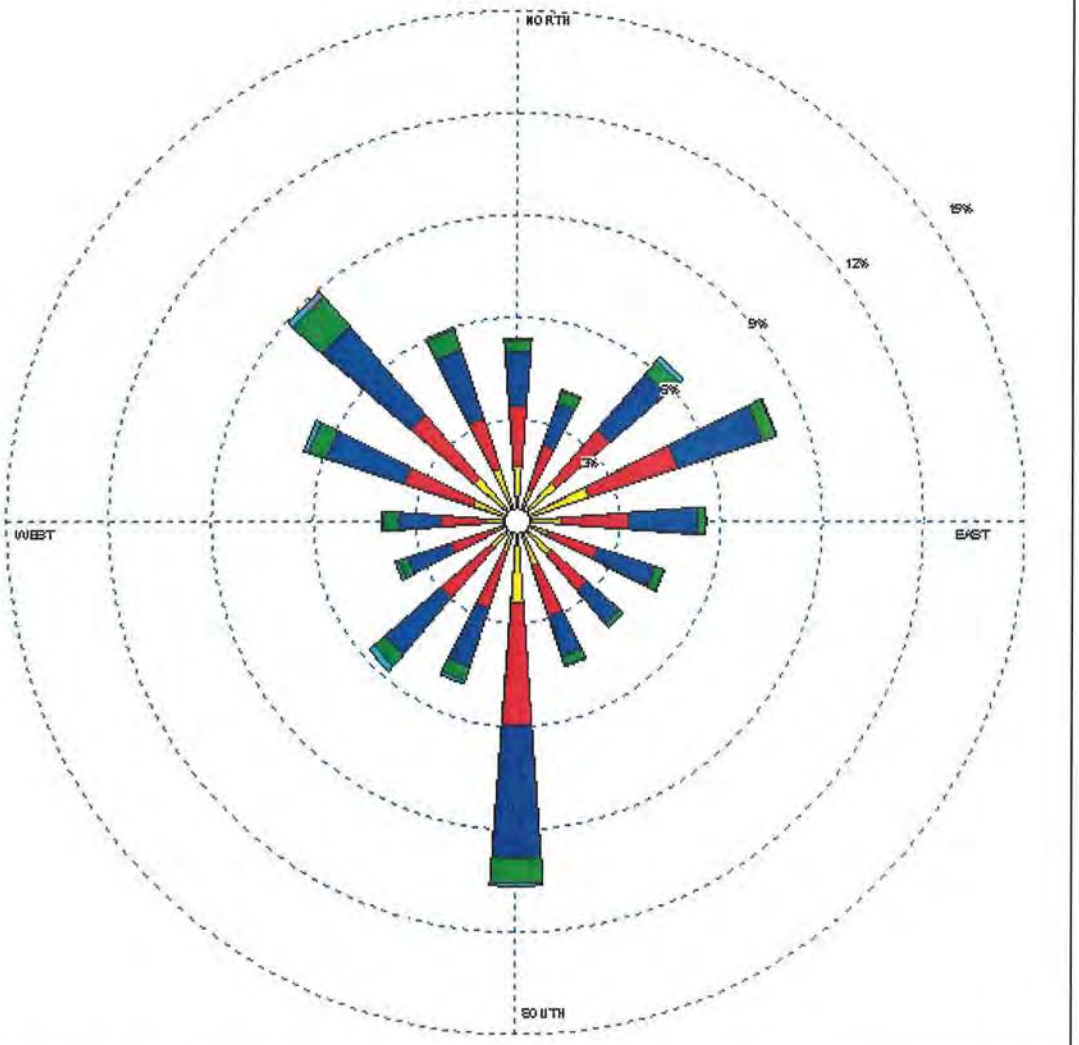

N
685'-1"
658'-6"
639'-8"
481'-6"
784'-5"
696'
171'-11"
W
E
595'-7"
807'-11"
75'
546'-7"
1328'-2"
S

Appendix V

Appendix

WIND ROSE PLOT

Station #14837 - MADISON/DANE CO REGIONAL ARPT, WI



Wind Speed (m/s) > 11.06 8.49 - 11.06 5.40 - 8.49 3.34 - 5.40 1.80 - 3.34 0.51 - 1.80	MODELER	DATE 11/4/2002	COMPANY NAME
	DISPLAY Wind Speed	UNIT m/s	COMMENTS
	AVG. WIND SPEED 5.29 m/s	CALM WINDS 6.54%	
	ORIENTATION Direction (blowing from)	PLOT YEAR-DATE-TIME 1961 Apr 1 - Apr 30 Midnight - 11 PM	PROJECT/PLOT NO.

WRPLOT View 7.0 by Lakes Environmental Software - www.lakes-environment.com

Appendix W

Appendix A

HYDRITE COTTAGE GROVE PERMIT HISTORY (2000 -

DATE	INFORMATION/CORRESPONDENT	AUTHOR
2/11/00	Part A Modification – addition of waste codes	Hydrite/O'Donnell
2/29/00	Approval of class 1 Mod – addition of waste codes	WDNR
5/9/00	FPOR – Addition of legitimate recovery With C1 and C2	Hydrite/O'Donnell
6/7/00	Notification of Regulated Waste Activity - Addition of waste codes	Hydrite/O'Donnell
10/27/00	FPOR Application Revisions	Hydrite/O'Donnell
11/6/00	FPOR Application Revisions	Hydrite/O'Donnell
12/11/00	Permit Mod – Installation of enclosure in North Warehouse	Hydrite/O'Donnell
12/14/00	Approval of Class 1 Mod – Reduction of Waste Storage space due to building of enclosure	WDNR
3/29/01	FPOR Application Response to WDNR Inquiry	Hydrite/O'Donnell
3/30/01	Permit Mod – Intent to use R6 for Hazardous Waste	Hydrite/Hay-Bassett
7/19/01	FPOR Updates – revision of Container Storage And Closure Plan	Hydrite/Housley
11/15/01	FPOR Application Response to WDNR Inquiry	Hydrite/Housley
11/20/01	Hazardous Waste License Renewal-Preliminary Determination	WDNR
11/27/01	Soil Pile Variance	Hydrite/Housley
11/30/01	FPOR – Public Comment Notice	WDNR
12/7/01	Request for Removal from Cercla List for receiving Hazardous Waste	Hydrite/Hay-Bassett
1/4/02	Hazardous Waste Operating License Application	Hydrite/Hay-Bassett
2/4/02	Closure of Hazardous Waste Pile Variance	WDNR
2/7/02	Facility Operating License Application	Hydrite/Hay-Bassett
7/22/02	US EPA Part B License and Hazardous Waste Operating License Renewal	US EPA Region V
8/25/03	Class I Mod – Inspection, Security, Waste Analysis Plan Revisions	Hydrite/Housley
10/20/03	Financial Responsibility – Closure Cost adjustment	Hydrite/Hay-Bassett
11/2/04	Financial Responsibility – Closure Cost adjustment	Hydrite/Hay-Bassett
2/10/05	Class I Mod – Contingency Plan Update (ER006CE)	Hydrite/Sansone
8/9/05	Class I Mod – Contingency Plan Update (ER006CE)	Hydrite/Sansone
10/11/05	Class I Mod – Contingency Plan Update (ER008CE)	Hydrite/Sansone
12/9/05	Class I Mod – Contingency Plan Update (ER007CG)	Hydrite/Sansone
12/9/05	Financial Responsibility – Closure Cost adjustment	Hydrite/Hay-Bassett
4/10/06	Class I Mod – Contingency Plan Update (ER010AF)	Hydrite/Sansone
6/13/06	Notification of fuel blending status -no longer an Exempted activity	WDNR/Schoen
7/6/06	Class I Mod – Contingency Plan Update (ER006CE)	Hydrite/Laughrin
8/11/06	Class I Mod – Contingency Plan Update (Emergency Responders)	Hydrite/Laughrin
9/12/06	Class I Mod – Contingency Plan Update (ER008CE)	Hydrite/Laughrin
10/13/06	Class I Mod – Contingency Plan Update (ER008CE)	Hydrite/Laughrin
12/19/06	Financial Responsibility – Closure Cost adjustment	Hydrite/Hay-Bassett

2/13/07	Class I Mod – Contingency Plan Update (ER009CE)	Hydrite/Laughrin
2/21/07	Acceptance of Closure Cost Estimates/LOC	WDNR/Hellenbrand
3/12/07	Class I Mod – Contingency Plan Update (ER006CE)	Hydrite/Laughrin
6/12/07	Class I Mod – Contingency Plan Update (ER001AF)	Hydrite/Laughrin
7/16/07	Class I Mod – Equipment replacement (L3 with L4) Relocation of Day tanks	Hydrite/Housley
8/15/07	Class I Mod – Contingency Plan Update (ER009CG)	Hydrite/Laughrin
8/20/07	Class I Mod acknowledgement to replace tanks	WDNR/Schoen
11/1/07	Class 2 Modification – Temporary Authorization Request To Fuel Blend	Hydrite/Housley
11/14/07	Class I Mod – Contingency Plan Update (ER008CE), Emergency Responders	Hydrite/Laughrin
12/7/07	Class 2 Mod – Temporary Authorization granted To Fuel Blend	WDNR/Schoen
5/30/08	Class 2 Mod – FPOR submitted to Fuel Blend	Hydrite/Housley
6/1/08	Class 1 Mod – Contingency Plan Update (ER010AF)	Hydrite/Laughrin
6/2/08	Class 2 Mod – Request for extension of Temporary Authorization to Fuel Blend	Hydrite/Housley
6/16/08	Class 2 Mod – Request for Extension of Temporary Authorization to Fuel Blend Granted	WDNR/Mitchell
7/1/08	Class 1 Mod – Contingency Plan Update (ER009CE)	Hydrite/Laughrin
10/27/08	Class 2 Mod – Approval to Fuel Blend (License 4437)	WDNR/Mack
12/1/08	Class 1 Mod – Contingency Plan Update (ER006CE)	Hydrite/Laughrin
12/1/08	Class 1 Mod – Contingency Plan Update (ER008CE)	Hydrite/Laughrin
2/1/09	Class 1 Mod – Contingency Plan Update (ER010AF)	Hydrite/Laughrin
3/1/09	Class 1 Mod – Contingency Plan Update (ER011CE	Hydrite/Laughrin
3/1/09	Class 1 Mod – Contingency Plan Update (ER009CG)	Hydrite/Laughrin
6/1/09	Class 1 Mod – Contingency Plan Update (ER001AF)	Hydrite/Laughrin
6/26/09	Financial Responsibility – Closure Cost Adjustment	Hydrite/Housley
7/20/09	Acceptance of Closure Cost Estimates/LOC	WDNR/Storck
8/1/09	Class 1 Mod – Contingency Plan Update (ER006CE)	Hydrite/Laughrin
11/30/09	Class 2 Mod – Temporary Authorization Request For Container Storage in CE100 Warehouse	Hydrite/Housley
1/1/10	Class 1 Mod – Contingency Plan Update (ER008CE)	Hydrite/Laughrin
1/21/10	Class 2 Mod – Temporary Authorization granted For Container Storage in CE100 Warehouse	Hydrite/Mack
3/1/10	Class 1 Mod – Contingency Plan Update (ER010AF)	Hydrite/Laughrin
5/1/10	Financial Responsibility – Closure cost Adjustment	Hydrite/Housley
8/17/10	Acceptance of Closure Cost Estimates/LOC	WDNR/Storck
11/18/10	Notice of Intent to Re-License	Hydrite/Housley
12/17/10	Acknowledgement of Notice of Intent to Re-License	WFSB/Schwarz
4/1/11	Class 1 Mod – Contingency Plan Update (ER010AF)	Hydrite/Laughrin
4/28/11	Financial Responsibility – Closure Cost Adjustment	Hydrite/Housley
6/1/11	Class 1 Mod – Contingency Plan Update (ER006CE)	Hydrite/Laughrin
6/1/11	Class 1 Mod – Contingency Plan Update (ER009CG)	Hydrite/Laughrin
6/21/11	Class 1 Mod – Tank 205 – Replacement In Kind	Hydrite/Housley
8/31/11	Acceptance of Closure Cost Estimates/LOC	WDNR/Storck
9/1/11	Class 1 Mod – Contingency Plan Update (ER009CG)	Hydrite/Laughrin
9/1/11	Class 1 Mod – Contingency Plan Update (ER010AF)	Hydrite/Laughrin
11/7/11	FPOR Submittal for Re-Licensure	Hydrite/Housley

Appendix X

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

August 31, 2011

FID # 113063390

Ms. Janice K. Housley
Facility Compliance Coordinator
Hydrite Chemical Company
114 N. Main Street
Cottage Grove WI 53527

Subject: Financial Responsibility for Closure Coverage
Hydrite Chemical Company Hazardous Waste Facility

EPA ID# 000808824

Dear Ms. Housley:

The Department acknowledges receipt of the amendment No. 5 to Irrevocable Standby Letter of Credit (LOC) for Closure # SB 9861 which was received on June 9, 2011. The amendment increased the amount of the LOC from $347,877.00 to $351,077.00 to adjust for annual inflation as required by ch. NR664.0142 (2) Wis. Adm. Code.

If you have any questions regarding this letter, please contact Dennis Gawronski at (608) 266-1486 (E-mail: Dennis.Gawronski@wisconsin.gov).

Sincerely,

Colleen Storck

Colleen Storck, Chief
Business Support & IT Section
Bureau of Waste and Materials Management

cc: Cynde English – SCR
Dennis Gawronski – WA/5
Mike Ellenbecker – Sturtevant Office

M&I Marshall & Ilsley Bank
Global Trade Services
401 North Executive Drive
Brookfield, WI 53005-6012
414 765-7700

NON-NEGOTIABLE COPY

Date: June 8, 2011

AMENDMENT TO IRREVOCABLE STANDBY LETTER OF CREDIT NO. SB 9861

BENEFICIARY:
State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison, WI 53707

APPLICANT:
Hydrite Chemical Co.
114 N. Main Street
Cottage Grove, WI 53527

Attn: Colleen Hellenbrandt

We hereby amend our Irrevocable Standby Letter of Credit No. SB 9861 dated July 31, 2007 as follows:

QUOTE:

This is Amendment No. Five (5).

Increase Letter of Credit by: USD3,200.00.
Maximum Amount: USD351,077.00.

All other terms and conditions remain the same.

UNQUOTE.

This Amendment becomes an integral part of the original Letter of Credit and must be attached thereto.

M&I MARSHALL & ILSLEY BANK

Authorized Signature

S:\LC\STANDBY AMENDMENTS\SBAMENDMENT 9001-54999\9861amd5.doc

TBlew

HYDRITE CHEMICAL CO. – COTTAGE GROVE, WI
CLOSURE COST SCHEDULE 2011
WID 000 808 824

Bulk Storage:	
10 – 6650 gallon (66,500 gallons) X $0.074/gallon	$ 4,925
Bulk Fuel Blending/LQG Storage:	
2 - 19750 gallon (39,500 gallons) X $0.074/gallon	$ 2,925
Container Storage:	
3000 55g drums, fuel-blendable (165,000g) X $0.074/gallon	$ 12,210
900 55g drums, liquid disposal x $45/DM	40,500
200 55g drums, flowable disposal X $72.10/DM	14,420
100 55g drums, solid disposal X $200/DM	20,000
Total Container Gallons: 231,000 permitted	
Sumps and Catch Basins:	
1000 gallons X $0.20/gallon	$ 200
Tank Rinsate Water Disposal:	
12,000 gallons X $0.60/gallon	$ 7,200
Analytical cost for Tank Rinsate:	
60 samples X $275/sample	$ 16,500
Water Blasting Tank Cleaning Service:	
12 Tanks X $6000/tank, includes water disposal	$ 72,000
Labor (warehouse, tanks and containment decontamination):	
144 days X 5 employees X 8hr/day @ $17/hr	$ 97,920
SUBTOTAL:	$ 288,800
Administration 5%	14,440
Contingency 10%	28,880
TOTAL (2008 Estimate):	$332,120
2009 Update-Use inflation factor of 1.0256	X1.0256
TOTAL (2009 Estimate):	$340,622
2010 Update-Use inflation factor of 1.0213	X1.0213
TOTAL (2010 Estimate):	$347,877
2011 Update-Use inflation factor of 1.0092	X1.0092
TOTAL (2011 Estimate):	$351,077.46

Revised: 04/20/11

HYDRITE CHEMICAL CO. – COTTAGE GROVE, WI
CLOSURE COST SCHEDULE 2012
WID 000 808 824

Bulk Storage:	
10 – 6650 gallon (66,500 gallons) X $0.45/gallon	$ 29925
Container Storage:	
2000 55g drums, fuel-blendable (110000) X $0.45/gallon	$ 49500
Bulk Fuel Blending/LQG Storage:	
2 - 19750 gallon (39,500 gallons) X $0.45/gallon	$ 17775
Sumps and Catch Basins:	
500 gallons X $1.20/gallon	$ 600
Cleaning Rinsate Water Disposal:	
6000 gallons X $1.20/gallon	$ 7200
Water Blasting Tank Cleaning Service:	
12 Tanks X $6000/tank, includes water disposal cost	$ 72000
Contracted Analytical Cost for Testing Cleaning Rinsate:	
60 samples X $350/sample	$ 21000
Contracted Labor (warehouse, tanks and containment decontamination):	
120 days X 5 employees X $250/Day Each	$ 150,000
SUBTOTAL:	**$ 348000**
Third Party Administration 5% Fee	$ 17400
Contingency 10%	$ 34800
TOTAL (2012 Estimate):	**$400200**

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/02/2011

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies)must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER

Willis of Wisconsin, Inc.
c/o 26 Century Blvd.
P. O. Box 305191
Nashville, TN 37230-5191

CONTACT NAME:
PHONE (A/C, NO, EXT): 877-945-7378 FAX (A/C, NO): 888-467-2378
E-MAIL ADDRESS: certificates@willis.com

INSURER(S)AFFORDING COVERAGE	NAIC#
INSURER A: Chartis Specialty Insurance Company	26883-001
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	
INSURER F:	

INSURED

Hydrite Chemical Co.
Stacey Roedl
300 N. Patrick Blvd.
Brookfield, WI 53045

COVERAGES **CERTIFICATE NUMBER:** 16998256 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADD'L INSRD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY			EG13963389	12/1/2011	12/1/2012	EACH OCCURRENCE	$ 1,000,000
	X COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurence)	$ 300,000
	CLAIMS-MADE X OCCUR						MED EXP (Any one person)	$ 25,000
	X Incl. Pollution						PERSONAL & ADV INJURY	$ 1,000,000
							GENERAL AGGREGATE	$ 2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG	$ 2,000,000
	POLICY PRO-JECT LOC							$
A	AUTOMOBILE LIABILITY			Truckers CA4691721	12/1/2011	12/1/2012	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	ANY AUTO						BODILY INJURY(Per person)	$
	X ALL OWNED AUTOS / SCHEDULED AUTOS						BODILY INJURY(Per accident)	$
	X HIRED AUTOS / NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
A	X UMBRELLA LIAB X OCCUR			EGU13963390	12/1/2011	12/1/2012	EACH OCCURRENCE	$ 5,000,000
	EXCESS LIAB CLAIMS-MADE						AGGREGATE	$ 5,000,000
	DED RETENTION $							$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N	N/A					WC STATU-TORY LIMITS / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?						E.L. EACH ACCIDENT	$
	(Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach Acord 101, Additonal Remarks Schedule, if more space is required)

CERTIFICATE HOLDER

For Informational Purposes Only

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

James H. Graber

Coll:3565488 Tpl:1370781 Cert:16998256

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/01/2011

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Kay Hannah
1-262-792-1710 Arthur J. Gallagher Risk Management Services, Inc. 17035 W. Wisconsin Avenue Suite 135 Brookfield, WI 53005 Vickie Taylor	PHONE (A/C, No, Ext): 262-792-2217 FAX (A/C, No): 262-792-1712 E-MAIL ADDRESS: kay_hannah@ajg.com
INSURED Hydrite Chemical Company 300 North Patrick Boulevard Brookfield, WI 53045	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A: LIBERTY MUT FIRE INS CO — 11748 INSURER B: INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES **CERTIFICATE NUMBER:** 24274646 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	GENERAL LIABILITY						EACH OCCURRENCE	$
	☐ COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
	☐ CLAIMS-MADE ☐ OCCUR						MED EXP (Any one person)	$
							PERSONAL & ADV INJURY	$
							GENERAL AGGREGATE	$
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG	$
	☐ POLICY ☐ PRO-JECT ☐ LOC							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$
	☐ ANY AUTO						BODILY INJURY (Per person)	$
	☐ ALL OWNED AUTOS ☐ SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	☐ HIRED AUTOS ☐ NON-OWNED AUTOS						PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR						EACH OCCURRENCE	$
	☐ EXCESS LIAB ☐ CLAIMS-MADE						AGGREGATE	$
	☐ DED ☐ RETENTION $							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		WC2Z41434302021	12/01/11	12/01/12	X WC STATU-TORY LIMITS ☐ OTH-ER	
							E.L. EACH ACCIDENT	$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER

For Informational Purposes Only

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

David R. Stratton

Complete one form for each site closure.

ıe information you provide may be used for secondary purposes [Privacy Law, s.15.04 (1)(m)].

CHECKLIST FOR TANK CLOSURE

CHECK ONE:
☐ UNDERGROUND
☒ ABOVEGROUND

FOR PORTIONS OF THE FORM THAT DO NOT APPLY, CHECK THE N/A BOX

RETURN COMPLETED CHECKLIST TO:
Wisconsin Department of Commerce
ERS Division
Bureau of Petroleum Products and Tanks
P.O. Box 7837
Madison, WI 53707-7837

A. IDENTIFICATION: (Please Print) Indicate whether closure is for: ☐ Tank System ☐ Tank Only ☐ Piping Only

1. Site Name	2. Owner Name
Hydrite Chemical Co.	Hydrite Chemical Co.
Site Street Address (not P.O. Box)	Owner Street Address
114 N. Main Street	114 N. Main Street
☐ City ☒ Village ☐ Town of: Cottage Grove	☐ City ☒ Village ☐ Town of: Cottage Grove; State: WI; Zip Code: 53527
State: WI; Zip Code: 53527; County: DANE	County: Dane; Telephone No. (include area code): (608) 839-4571
3. Closure Company Name (print)	Closure Company Street Address
Hydrite Chemical Co.	114 N. Main Street
Closure Company Telephone No. (include area code)	Closure Company City, State, Zip Code
(608) 839-8134	Cottage Grove, WI 53527
4. Name of Company Performing Closure Assessment	Assessment Company Street Address, City, State, Zip Code
Telephone No. (include area code) ( )	Certified Assessor Name (print) / Assessor Signature / Assessor Certification No.

Tank ID #	Closure	Temp. Closure	Closure in Place	Tank Capacity	Contents*	Closure Assessment
1.	☐	☐	☐			☐ Y ☐ N
2.	☐	☐	☐			☐ Y ☐ N
3	☐	☐	☐			☐ Y ☐ N
	☐	☐	☐			☐ Y ☐ N

Indicate which product: Diesel; Leaded; Unleaded; Fuel Oil; Gasohol; Aviation Fuel; Kerosene; Premix; Waste/Used Motor Oil; Flammable/Combustible Hazardous Waste; Chemical (indicate the chemical name(s) _____ and CAS number(s) _____ _____ _____; Other _____.

Written notification was provided to the local agent 15 days in advance of closure date. ☐ Y ☐ N
All local permits were obtained before beginning closure. ☐ Y ☐ N ☐ NA

Check applicable box at right in response to all statements in Sections B-E.

B. ☐ TEMPORARILY OUT OF SERVICE	Remover Verified	Inspector Verified	NA
1. Product Removed			
a. Product lines drained into tank (or other container) and liquid removed, AND	☐Y ☐N	☐	☐
b. All product removed to bottom of suction line, OR	☐Y ☐N	☐	☐
c. All product removed to within 1" of bottom.	☐Y ☐N	☐	☐
2. Fill pipe, gauge pipe, tank truck vapor recovery fittings, and vapor return lines capped.	☐Y ☐N	☐	☐
3. All product lines at the islands or pumps located elsewhere are removed and capped, OR	☐Y ☐N	☐	☐
4. Dispensers/pumps left in place but locked and power disconnected.	☐Y ☐N	☐	☐
5. Vent lines left open.	☐Y ☐N	☐	☐
6. Inventory form filed indicating Temporary-Out-Of-Service (TOS) closure.	☐Y ☐N		☐
C. ☐ CLOSURE BY REMOVAL			
1. Product from piping drained into tank (or other container).	☐Y ☐N	☐	☐
2. Piping disconnected from tank and removed.	☐Y ☐N	☐	☐
3. All liquid and residue removed from tank using explosion proof pumps or hand pumps.	☐Y ☐N	☐	☐
4. All pump motors and suction hoses bonded to tank or otherwise grounded.	☐Y ☐N	☐	☐
5. Fill pipes, gauge pipes, vapor recovery connections, submersible pumps and other fixtures removed.	☐Y ☐N	☐	☐
NOTE: DROP TUBE SHOULD NOT BE REMOVED IF THE TANK IS TO BE PURGED THROUGH THE USE OF AN EDUCTOR.			
6. Vent lines left connected until tanks purged	☐Y ☐N	☐	
7. Tank openings temporarily plugged so vapors exit through vent.	☐Y ☐N	☐	☐
8. Tank atmosphere reduced to 10% of the lower flammable range (LEL) - see Section E.	☐Y ☐N	☐	☐
9. Tank removed from excavation after **PURGING/INERTING**; placed on level ground and blocked to prevent movement.	☐Y ☐N	☐	☐
10. Tank cleaned before being removed from site.	☐Y ☐N	☐	☐

- CONTINUE ON NEXT PAGE -

11. Tank labeled in 2" high letters after removal but before being moved from site. ☐Y ☐N ☐ ☐

NOTE: COMPLETE TANK LABELING SHOULD INCLUDE WARNING AGAINST REUSE; FORMER CONTENTS; VAPOR STATE; VAPOR FREEING TREATMENT; DATE.

12. Tank vent hole (1/8" in uppermost part of tank) installed prior to moving the tank from site. ☐Y ☐N ☐ ☐
13. Site security is provided while the excavation is open. ☐Y ☐N ☐ ☐

D. ☐ CLOSURE IN PLACE

NOTE: CLOSURES IN PLACE ARE ONLY ALLOWED WITH THE PRIOR WRITTEN APPROVAL OF THE DEPARTMENT OF COMMERCE OR LOCAL AGENT.

1. Product from piping drained into tank (or other container). ☐Y ☐N ☐ ☐
2. Piping disconnected from tank and removed. ☐Y ☐N ☐ ☐
3. All liquid and residue removed from tank using explosion proof pumps or hand pumps. ☐Y ☐N ☐ ☐
4. All pump motors and suction hoses bonded to tank or otherwise grounded. ☐y ☐N ☐ ☐
5. Fill pipes, gauge pipes, vapor recovery connections, submersible pumps and other fixtures removed. .. ☐Y ☐N ☐ ☐

NOTE: Refer to section E for method of vapor freeing the tank

6. Vent lines left connected until tanks purged. ☐Y ☐N ☐ ☐
7. Tank openings temporarily plugged so vapors exit through vent. ☐Y ☐N ☐ ☐
8. Tank atmosphere reduced to 10% of the lower flammable range (LEL) see Section F. ☐Y ☐N ☐ ☐
9. Tank properly cleaned to remove all sludge and residue. ☐Y ☐N ☐ ☐
10. Solid inert material (sand, cyclone boiler slag, pea gravel recommended) introduced and tank filled. ☐Y ☐N ☐ ☐
11. Vent line disconnected or removed. ☐Y ☐N ☐ ☐
12. Inventory form filed by owner with the Department of Commerce indicating closure in place. ☐Y ☐N ☐ ☐

E. METHOD OF VAPOR FREEING TANK

☐ Displacement of vapors by Eductor or Diffused Air Blower
Eductor driven by compressed air, bonded and drop tube left in place; vapors discharged minimum of 12 feet above ground.
Diffused air blower bonded and drop tube removed. Air pressure not exceeding 5 psig.

☐ Inert Gas using Dry Ice or Liquid Carbon Dioxide
Dry Ice introduced at 1.5 pounds per 100 gallons of tank capacity. Dry ice crushed and distributed over the greatest possible tank area.

☐ Inert Gas using CO_2 or N_2 **NOTE: INERT GASSES PRODUCE AN OXYGEN DEFICIENT ATMOSPHERE. LEL METERS MAY NOT FUNCTION ACCURATELY. THE TANK MAY NOT BE ENTERED IN THIS STATE WITHOUT SPECIAL EQUIPMENT.**
Gas introduced through a single opening at a point near the bottom of the tank at the end of the tank opposite the vent.
Gas introduced under low pressure not to exceed 5 psig to reduce static electricity. Gas introducing device grounded.

☐ Readings of 10% or less of the lower flammable range (LEL) or 0% oxygen obtained before removing tank from ground.

☐ Tank atmosphere monitored for flammable or combustible vapor levels prior to and during cleaning and cutting.

☐ Calibrate combustible gas indicator and/or oxygen meter prior to use. Drop tube removed prior to checking atmosphere. Tank space monitored at bottom, middle and upper portion of tank.

F. CLOSURE ASSESSMENTS

NOTE: DETERMINE IF A CLOSURE ASSESSMENT IS REQUIRED BY REFERRING TO COMM 10.

1. Individual conducting the assessment has a closure assessment plan (written) which is used as the basis for their work on the site. ☐Y ☐N ☐ ☐
2. Do points of obvious contamination exist? ☐Y ☐N ☐ ☐
3. Was a field screening instrument used to pre-screen soil sample locations? ☐Y ☐N ☐ ☐
4. Was the DNR notified of suspected or obvious contamination? ☐Y ☐N ☐ ☐

Agency, office and person contacted: _____

5. Contamination suspected because of: ☐Odor ☐Soil Staining ☐Free Product ☐Sheen on Groundwater ☐Field Instrument Test

G. ☐ Form ERS-7437 or ERS-8731 filed by owner with the Dept. of Commerce indicating closure. ☐Y ☐N

H. NOTE SPECIFIC CLOSURE PROBLEMS OR CONCERNS BELOW

I. REMOVER/CLEANER INFORMATION

Remover Name (print)	Remover Signature	Remover Certification No.	Date Signed

I certify that the procedures and information that I have provided as the tank closure contractor are correct and comply with Comm 10.

J. INSPECTOR INFORMATION

spector Name (print)	Inspector Signature	Inspector Cert #	LPO Agency #:

FDID # For Location Where Inspection Performed	Inspector Telephone Number	Date Signed

TANK INVENTORY FORM ERS-7437 or ERS-8731 SIGNED BY THE OWNER MUST BE SUBMITTED WITH EACH CLOSURE CHECKLIST

Copy Distribution: White – Commerce Blue – Inspector Pink – Contractor Yellow - Owner

Appendix Y

Appendix A

AIR POLLUTION CONTROL OPERATION PERMIT REVISION

FACILITY NO: 113063390 OPERATION PERMIT NO:113063390-P12

TYPE:

Significant revision of a Part 70 source operation permit no. 113063390-P11

In compliance with the provisions of Chapter 285, Wis. Stats., and Chapters NR 400 to NR 499, Wis. Adm. Code,

Name of Source: Hydrite Chemical Company.

Street Address: 114 N Main Street,
Cottage Grove, Dane County, Wisconsin

Responsible Official, & Title: Joe Weishar, General Manager

is authorized to construct several reactors, P38, P39, P49; Tanks T804a-e, T804f,g, T805, T806a-c, modification of P41, and control system C31 as described in the plans and specifications dated May 11, 2010, with additional information submitted on May 14, 17, 26, June 4, 7, 2010 and operate a operate a chemical distribution, chemical blending, chemical manufacturing, and RCRA treatment, storage, and disposal facility engaged in recycling and fuel blending of solvents in conformity with the conditions herein.

The authority to construct, modify, replace and/or reconstruct any process covered in this Construction Permit expires eighteen (18) months from the date of issuance. This approved period to construct, modify, replace and/or reconstruct may be extended for up to 18 months upon request for cause, prior to expiration, unless otherwise specified by this construction permit. The conditions of this construction permit are permanent and may only be revised through a revision of the construction permit or through the issuance of a new construction permit. [s. 285.60(1), Wis. Stats.]

This revised operation permit expires on: **May 1, 2013** **[s. NR 407.09(1)(b)1., Wis. Adm. Code]**

No permittee may continue operation of a source after the operation permit expires, unless the permittee submits a timely and complete application for renewal of the permit. If a timely and complete application for renewal has been submitted, the existing operation permit will not expire until the renewal application has been finally acted upon by DNR. [ss. 227.51(2), Wis. Stats. and NR 407.04(2), Wis. Adm. Code]. A renewal application must be submitted at least 6 months, but not more than 18 months, prior to the expiration date of the revised operation permit listed above [ss. 285.66(3)(a), Wis. Stats. and NR 407.04(2), Wis. Adm. Code].

Conditions of the construction permit and the operation permit marked with an asterisk (*) have been created outside of the Wisconsin's federally approved State Implementation Plan (SIP) and are not federally enforceable.

This authorization requires compliance by the permit holder with the emission limitations, monitoring requirements and other terms and conditions set forth in Parts I and II hereof.

Dated at Fitchburg, Wisconsin September 9, 2011.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

By Thomas Roushar
Thomas Roushar
Environmental Engineer Supervisor

CG - TANK

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
HAZARDOUS WASTE FACILITY LICENSE

AUTHORIZED CONTACT:

JOHN GRAFF, CORP TRANS MGR
HYDRITE CHEMICAL CO
PO BOX 0948
BROOKFIELD, WI 53008-0948

LICENSE NO: 4437
TYPE OF FACILITY: Hazardous Waste Treatment - Tank
EFFECTIVE DATE: October 1, 2011
DATE OF EXPIRATION: September 30, 2012

U.S. EPA I.D. NUMBER: WID000808824

LICENSEE: HYDRITE CHEMICAL CO

NAME OF FACILITY: HYDRITE CHEMICAL CO

LOCATION OF FACILITY: NW 1/4 OF NE 1/4 OF SECTION 16, T7, R11E
114 N MAIN ST COTTAGE GROVE, VIL
DANE COUNTY, STATE OF WISCONSIN

THIS LICENSE IS SUBJECT TO AND CONDITIONED UPON COMPLIANCE WITH THE LICENSEE'S FEASIBILITY DETERMINATION AND PLAN OF OPERATION APPROVAL AND ALL SUBSEQUENT PLAN APPROVAL MODIFICATIONS.

WASTE TYPES ARE LIMITED TO THOSE LISTED ON THE PART-A APPLICATON.

This license authorizes the licensee to operate the hazardous waste facility described above during the term hereof except as modified by the Department. This license is subject to and conditioned upon compliance with chapter 291, Wis. Stats., and chapters NR 660-679, Wis. Adm. Code (hazardous waste), any plan approval and modifications thereof, and any special order and modifications thereof issued by the Department. Any exemptions from the requirements of chapters NR 660-679, Wis. Adm. Code, issued for the facility are listed above and on attached documents.

CG-CONT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
HAZARDOUS WASTE FACILITY LICENSE

AUTHORIZED CONTACT:

JOHN GRAFF, CORP TRANS MGR
HYDRITE CHEMICAL CO
PO BOX 0948
BROOKFIELD, WI 53008-0948

LICENSE NO: 6006
TYPE OF FACILITY: Hazardous Waste Storage - Container
EFFECTIVE DATE: October 1, 2011
DATE OF EXPIRATION: September 30, 2012

U.S. EPA I.D. NUMBER: WID000808824

LICENSEE: HYDRITE CHEMICAL CO

NAME OF FACILITY: HYDRITE CHEMICAL CO

LOCATION OF FACILITY: NW 1/4 OF NE 1/4 OF SECTION 16, T7, R11E
114 N MAIN ST COTTAGE GROVE, VIL
DANE COUNTY, STATE OF WISCONSIN

THIS LICENSE IS SUBJECT TO AND CONDITIONED UPON COMPLIANCE WITH THE LICENSEE'S FEASIBILITY DETERMINATION AND PLAN OF OPERATION APPROVAL AND ALL SUBSEQUENT PLAN APPROVAL MODIFICATIONS.

WASTE TYPES ARE LIMITED TO THOSE LISTED ON THE PART-A APPLICATON.

This license authorizes the licensee to operate the hazardous waste facility described above during the term hereof except as modified by the Department. This license is subject to and conditioned upon compliance with chapter 291, Wis. Stats., and chapters NR 660-679, Wis. Adm. Code (hazardous waste), any plan approval and modifications thereof, and any special order and modifications thereof issued by the Department. Any exemptions from the requirements of chapters NR 660-679, Wis. Adm. Code, issued for the facility are listed above and on attached documents.

CG - 5T

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
HAZARDOUS WASTE FACILITY LICENSE

AUTHORIZED CONTACT:

JOHN GRAFF, CORP TRANS MGR
HYDRITE CHEMICAL CO
PO BOX 0948
BROOKFIELD, WI 53008-0948

LICENSE NO: 3200
TYPE OF FACILITY: Hazardous Waste Storage - Tank
EFFECTIVE DATE: October 1, 2011
DATE OF EXPIRATION: September 30, 2012

U.S. EPA I.D. NUMBER: WID000808824

LICENSEE: HYDRITE CHEMICAL CO

NAME OF FACILITY: HYDRITE CHEMICAL CO

LOCATION OF FACILITY: NW 1/4 OF NE 1/4 OF SECTION 16, T7, R11E
114 N MAIN ST COTTAGE GROVE, VIL
DANE COUNTY, STATE OF WISCONSIN

THIS LICENSE IS SUBJECT TO AND CONDITIONED UPON COMPLIANCE WITH THE LICENSEE'S FEASIBILITY DETERMINATION AND PLAN OF OPERATION APPROVAL AND ALL SUBSEQUENT PLAN APPROVAL MODIFICATIONS.

WASTE TYPES ARE LIMITED TO THOSE LISTED ON THE PART-A APPLICATON.

This license authorizes the licensee to operate the hazardous waste facility described above during the term hereof except as modified by the Department. This license is subject to and conditioned upon compliance with chapter 291, Wis. Stats., and chapters NR 660-679, Wis. Adm. Code (hazardous waste), any plan approval and modifications thereof, and any special order and modifications thereof issued by the Department. Any exemptions from the requirements of chapters NR 660-679, Wis. Adm. Code, issued for the facility are listed above and on attached documents.

CG - STOR

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
SOLID WASTE FACILITY OPERATION LICENSE

AUTHORIZED CONTACT:

JOHN GRAFF, CORP TRANS MGR
HYDRITE CHEMICAL COMPANY
PO BOX 0948
BROOKFIELD, WI 53008-0948

LICENSE NO: 3774
TYPE OF FACILITY: SW Storage - Container

EFFECTIVE DATE: October 1, 2011
DATE OF EXPIRATION: September 30, 2012

LICENSEE: HYDRITE CHEMICAL COMPANY

NAME OF FACILITY: HYDRITE CHEMICAL CO

LOCATION OF FACILITY: NW 1/4 OF NE 1/4 OF SECTION 16, T7, R11E
114 N MAIN ST COTTAGE GROVE, VIL
DANE COUNTY, STATE OF WISCONSIN

This license authorizes the licensee to operate the solid waste facility described above during the term hereof except as modified by the Department. This license is subject to and conditioned upon compliance with the provisions of chapter 289, Wis. Stats., and chapters NR 500-590, Wis. Adm. Code, any plan approval and modifications thereof, and any special order and modifications thereof issued by the Department. Any exemptions from the requirements of chapters NR 500-590, Wis. Adm. Code, issued for the facility are listed above.

CG-1F

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
SOLID WASTE FACILITY OPERATION LICENSE

AUTHORIZED CONTACT:

JOHN GRAFF, CORP TRANS MGR
HYDRITE CHEMICAL COMPANY
PO BOX 0948
BROOKFIELD, WI 53008-0948

LICENSE NO: 3775
TYPE OF FACILITY: Solid Waste Processing Facility

EFFECTIVE DATE: October 1, 2011
DATE OF EXPIRATION: September 30, 2012

LICENSEE: HYDRITE CHEMICAL COMPANY

NAME OF FACILITY: HYDRITE CHEMICAL CO

LOCATION OF FACILITY: NW 1/4 OF NE 1/4 OF SECTION 16, T7, R11E
114 N MAIN ST COTTAGE GROVE, VIL
DANE COUNTY, STATE OF WISCONSIN

This license authorizes the licensee to operate the solid waste facility described above during the term hereof except as modified by the Department. This license is subject to and conditioned upon compliance with the provisions of chapter 289, Wis. Stats., and chapters NR 500-590, Wis. Adm. Code, any plan approval and modifications thereof, and any special order and modifications thereof issued by the Department. Any exemptions from the requirements of chapters NR 500-590, Wis. Adm. Code, issued for the facility are listed above.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

GENERAL PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM WPDES PERMIT NO. WI-S067857-3

TIER 2 INDUSTRIAL FACILITIES

In compliance with the provisions of ch. 283, Wis. Stats., and ch. NR 216, Wis. Adm. Code, any **Tier 2** private or, local, state or federal public facility as defined in ch. NR 216, Wis. Adm. Code, and located in the State of Wisconsin, excluding initial coverage within Indian Country after September 30, 2001, that discharges

STORM WATER ASSOCIATED WITH INDUSTRIAL ACTIVITY

and meeting the applicability criteria in Section 2. of this permit, is permitted to discharge such storm water to waters of the state provided that the discharge is in accordance with the conditions set forth in this permit.

This permit is issued by the Department of Natural Resources (Department) and covers storm water discharges from the facility as of the **Start Date** of permit coverage to the permittee. For initial permit coverage, the Department will transmit a cover letter to the permittee stating that the facility is covered under this permit. Initial coverage under this permit will become effective at a facility beginning upon the **Start Date** specified by the Department in the cover letter. For a facility with existing permit coverage under a previously issued version of the Tier 2 general permit, coverage under this permit will become effective at the facility beginning upon the **Issuance Date** below.

State of Wisconsin Department of Natural Resources
For the Secretary,

By _____
Russell A. Rasmussen, Deputy Administrator
Division of Water

May 13, 2011
Date Permit Signed

PERMIT ISSUANCE DATE: May 13, 2011 **PERMIT EXPIRATION DATE: April 30, 2016**

1. APPLICATION REQUIREMENTS

1.1 Initial Permit Coverage The owner or operator of a Tier 2 industrial facility type listed in s. NR 216.21 (2) (a), Wis. Adm. Code, shall submit a Notice of Intent (NOI) to the Department to apply for coverage under an industrial storm water discharge permit in accordance with s. NR 216.22, Wis. Adm. Code. The Department will evaluate the information submitted in the NOI to determine whether a facility will be covered under this permit or an individual permit, or whether coverage under a permit will be denied. If coverage under this permit is appropriate, the Department will transmit a cover letter to the owner or operator indicating the date upon which permit coverage becomes effective at the facility with instructions on where to download the permit from the Department's Internet website. In the alternative, a hard copy of the permit will be mailed to the owner or operator of the facility upon request.

Note: The Notice of Intent form and general permit are available for download from the Department's Internet website at: http://dnr.wi.gov/runoff/stormwater/industrialforms.htm
If, for any reason, you are unable to access the permit over the Internet, please telephone the Department at (608) 267-7694 for assistance.

1.2 Continuation of Existing Permit Coverage A Tier 2 industrial facility type listed in s. NR 216.21 (2) (a), Wis. Adm. Code, with existing general permit coverage is automatically covered under this permit as of the **Issuance Date**. The Department will notify the owner or operator of the facility's continued coverage under this permit with instructions on where to download the permit from the Department's Internet website. In the alternative, a hard copy of the permit will be mailed to the owner or operator of the facility upon request.

Note: The general permit is available for download from the Department's Internet website at: http://dnr.wi.gov/runoff/stormwater/industrialforms.htm
If, for any reason, you are unable to access the permit over the Internet, please telephone the Department at (608) 267-7694 for assistance.

1.3 No Exposure Certification The owner or operator of a facility not currently covered under this permit that has submitted a Conditional No Exposure Certification to the Department in accordance with s. NR 216.21 (3), Wis. Adm. Code, but that has been denied a No Exposure Exclusion by the Department shall apply for permit coverage in accordance with Section 1.1 of this permit within 14-working days of being notified by the Department of the denial. The owner or operator of a facility that has previously been granted a No Exposure Exclusion by the Department but that has had that exclusion revoked shall apply for permit coverage in accordance with Section 1.1 of this permit within 14-working days of being notified by the Department of the revocation.

1.4 Permit Coverage Transfers A permittee who will no longer control the permitted industrial facility may request that permit coverage be transferred to the person who will control the industrial facility. The transfer request shall be signed by both the permittee and the new owner or operator and sent via certified or registered mail to the Department contemporaneously with the transfer of control. The request to transfer permit covered shall be mailed to the appropriate Department regional office or mailed to the Department of Natural Resources, Storm Water Program – WT/3, Box 7921, Madison, WI 53707-7921. The Department may require additional information including an NOI to be filed prior to transferring permit coverage. Coverage is not transferred until the Department sends notification of transfer approval to the new owner or operator. The transfer request shall contain the following information:

1.4.1 The name and address of the facility.

applies to those portions of these facilities that are either involved in vehicle maintenance including rehabilitation, mechanical repairs, painting, fueling, lubrication, and associated parking areas, or involved in cleaning operations, or de-icing operations, or that are listed as a pollution source area under s. NR 216.02 (2) (d):

SIC	Description
40--	Railroad Transportation
41--	Local & Interurban Passenger Transit
42--	Trucking & Warehousing
43--	U.S. Postal Service
44--	Water Transportation
45--	Transportation by Air
5171	Petroleum Bulk Stations & Terminals

2.1.3 Facilities described by the following SIC codes, including active and inactive mining operations. This permit only applies where storm water runoff has come into contact with any overburden, raw material, intermediate product, finished product, by-product, or waste material.

SIC	Description
10--	Metal Mining
12--	Coal Mining
13--	Oil & Gas Extraction
14--	Non-metallic Minerals, except fuels

Note: An industry-specific permit has been developed that combines process and storm water requirements for 14-- (non-metallic mining) facilities. This permit does not apply to non-coal mining operations which have been released from applicable state or federal reclamation requirements after December 17, 1990; nor to coal mining operations released from the performance bond issued to the facility by the appropriate Surface Mining Control and Reclamation Act authority under 30 U.S.C. 1201 et seq. and 16 U.S.C. 470 et seq. Production, processing, or treatment operations or transmission facilities associated with oil and gas extraction are included only if there has been a discharge of storm water after November 16, 1987 containing a reportable quantity of a pollutant, or if a storm water discharge contributed to a violation of a water quality standard.

2.1.4 Facilities subject to storm water effluent limitation guidelines, new or existing source performance standards, or toxic pollutant effluent standards under 33 U.S.C. 1251, 1311, 1314 (b) and (c), 1316 (b) and (c), 1317 (b) and (c), 1326 (c), except for those facilities identified in paragraph A.(1) that do not have contaminated storm water.

2.1.5 Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of one million gallons per day or more, or required to have an approved pretreatment program. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and

2.4.4 Inactive, closed or capped landfills that have no potential for contamination of storm water. The Department shall make a determination of contamination potential on a case–by–case basis.

2.4.5 Remedial action discharges or discharges authorized by a WPDES permit for discharging contaminated or uncontaminated groundwater.

2.4.6 Areas located on plant lands that are segregated from the industrial activities of the plant, such as office buildings and accompanying parking lots, if the drainage from the segregated areas is not mixed with contaminated storm water drainage.

2.4.7 Storm water discharges into a municipal combined sewer system.

Note: Areas where this exclusion may apply include portions of the City of Milwaukee, the City of Superior, and the Village of Shorewood.

2.4.8 Storm water discharges from an industrial facility for which the owner or operator has submitted a Conditional No Exposure Certification to the Department in accordance with s. NR 216.21 (3), Wis. Adm. Code, provided that the Department concurs with the no exposure certification and the conditions under which a No Exposure Exclusion was granted remain in effect.

2.5 Discharges Not Covered by this Permit The following are not authorized under this permit:

2.5.1 Storm water discharges within Indian Country for which initial coverage under this permit is sought after September 30, 2001. Industrial storm water discharges within Indian Country from non-tribal lands that have state coverage under a general storm water permit prior to September 30, 2001, continue to be covered under this permit for purposes of state law.

Note: Contact the DNR Northeast Regional office at (920) 492-5800 or the DNR Central office at (608) 267-7694 for non-Indian storm water discharges within Indian Country to determine if state permit coverage from the Department is required

2.5.2 Discharges of hazardous substances that are required to be reported under ch. NR 706, Wis. Adm. Code.

2.5.3 Storm water discharges that affect wetlands, unless the Department determines that the storm water discharges comply with the wetland water quality standards provisions in ch. NR 103, Wis. Adm. Code.

2.5.4 Storm water discharges that affect endangered and threatened resources, unless the Department determines that the storm water discharges comply with the endangered and threatened resource protection requirements of s. 29.604, Wis. Stats., and ch. NR 27, Wis. Adm. Code.

2.5.5 Storm water discharges that affect any historic property that is listed property, or on the inventory or on the list of locally designated historic places under s. 44.45, Wis. Stats., unless the Department determines that the storm water discharges will not have an adverse effect on any historic property pursuant to s. 44.40 (3), Wis. Stats.

2.7.2 The permittee shall determine whether any part of its facility discharges storm water to an outstanding resource water (ORW) or exceptional resource water (ERW). ORWs and ERWs are listed in ss. NR 102.10 and 102.11, Wis. Adm. Code.

Note: A list of ORWs and ERWs may be found on the Department's Internet site at: http://dnr.wi.gov/org/water/wm/wqs/

2.7.3 The permittee may not establish a new storm water discharge of pollutants to an ORW or an ERW unless the storm water pollution prevention plan required under Section 3. of this permit is designed to prevent the discharge of pollutants to any ORW or ERW in excess of background levels within the water body.

2.7.3.1 "New storm water discharge" or "new discharge" means a storm water discharge that would first occur after the permittee's start date of coverage under this permit to a surface water to which the facility did not previously discharge storm water, and does not include an increase in a storm water discharge to a surface water to which the facility discharged on or before coverage under this permit.

2.7.4 If the permittee has an existing storm water discharge to an ERW, it may not increase the discharge of pollutants if the increased discharge would result in a violation of water quality standards.

2.7.5 If the permittee has an existing storm water discharge to an ORW, it may increase the discharge of pollutants provided all of the following are met:

2.7.5.1 The pollutant concentration within the receiving water and under the influence of the existing discharge would not increase as compared to the level that existed prior to coverage under this permit.

2.7.5.2 The increased discharge would not result in a violation of any water quality standard.

2.8 Impaired Water Bodies and Total Maximum Daily Load Requirements

2.8.1 "Pollutant(s) of concern" means a pollutant that is contributing to the impairment of a water body.

2.8.2 By February 15th of each calendar year, the permittee shall perform an annual check to determine whether its facility discharges a pollutant of concern via storm water to an impaired water body listed in accordance with section 303 (d) (1) of the Federal Clean Water Act, 33 USC §1313 (d) (1) (C), and the implementing regulation of the U.S. Environmental Protection Agency, 40 CFR §130.7 (c) (1). Impaired waters are those listed as not meeting applicable surface water quality standards. Results of the annual check shall be documented with the Annual Facility Site Compliance Inspection required under Section 4.3.1 of this permit.

Note: The section 303 (d) list of Wisconsin impaired surface water bodies may be obtained by contacting the Department or by searching for the section 303 (d) list on the Department's Internet site. The Department updates the section 303 (d) list approximately every two years. The updated

TMDL or a TMDL Implementation Plan prepared by the Department for implementation of the improvements, revisions or redesigns necessary to meet the wasteload allocation for the facility. The plan shall be implemented in accordance with the time schedule in the plan. If a specific wasteload allocation has not been assigned to the facility under a TMDL, compliance with this permit shall be deemed to be compliance with the TMDL.

2.9 Fish and Aquatic Life Waters

2.9.1 The permittee shall determine whether any part of its facility's storm water will discharge to a fish and aquatic life water as defined in s. NR 102.13, Wis. Adm. Code.

Note: Most receiving waters of the state are classified as a fish and aquatic life waters and this classification includes all surface waters of the state except ORW, ERW, Great Lakes system waters and variance water identified within ss. NR 104.05 through 104.10, Wis. Adm. Code.

2.9.2 The permittee may not establish a new storm water discharge of pollutants to a fish and aquatic life water unless the storm water pollution prevention plan (SWPPP) required under Section 3. of this permit is designed to prevent the significant lowering of water quality of any fish and aquatic life water. Significant lowering of water quality is defined within ch. NR 207, Wis. Adm. Code.

2.9.2.1 "New storm water discharge" or "new discharge" has the meaning given in Section 2.7.3.1 of this permit.

2.9.3 If the permittee's facility has an existing storm water discharge to a fish and aquatic life water, it may not increase the discharge of pollutants if the increased discharge would result in a violation of water quality standards.

2.10 Toxic Pollutants In accordance with s. NR 102.12 Wis. Adm. Code, new and increased discharges as defined in ch. NR 207, Wis. Adm. Code, of persistent, bioaccumulating toxic substances to the Great Lakes waters or their tributaries, shall be limited to the maximum extent practicable when such discharges result from the contamination of storm water by contact with raw materials, products, by-products or wastes used or stored by the permittee.

3. STORM WATER POLLUTION PREVENTION PLAN

3.1 Storm Water Pollution Prevention Plan Required In accordance with s. NR 216.27, Wis. Adm. Code, and Section 3.3 of this permit, the owner or operator of a facility requiring coverage under this permit shall prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to applying for permit coverage under s. NR 216.22, Wis. Adm. Code.

3.2 Incorporation by Reference When plans are developed or activities conducted in accordance with other federal, state or local regulatory programs that meet the requirements of Section 3.3.2 of this permit, the plans may be incorporated by the permittee into the SWPPP by reference.

3.3 Purpose and Content of a Storm Water Pollution Plan

3.3.1 Purpose of the Plan Any SWPPP prepared to comply with this permit shall do all of the following:

3.3.2.2.7 The surface area in acres draining to each outfall, including the percentage that is impervious such as paved, roofed or highly compacted soil, and the percentage that is pervious such as grassy areas and woods.

3.3.2.2.8 Existing structural storm water controls.

3.3.2.2.9 The name and location of receiving waters.

3.3.2.2.10 The location of activities and materials that have the potential to contaminate storm water.

3.3.2.3 Summary of Existing Sampling Data or Observations The SWPPP shall summarize any results of available storm water sampling data or other observations that characterize the quality of storm water discharges or identifying sources of storm water contamination. Available data that characterizes the quality of storm water discharges under dry weather flow conditions shall also be included, except when such data has been or will be reported to the Department under another WPDES permit.

3.3.2.4 Potential Sources of Storm Water Contamination The SWPPP shall identify any significant pollutants or activities associated with the storm water pollution source areas identified in this permit. When possible, specific pollutants likely to be present in storm water as a result of contact with specific materials shall also be listed. The SWPPP shall identify all potential source areas of storm water contamination, including but not limited to:

3.3.2.4.1 Outdoor manufacturing areas.

3.3.2.4.2 Rooftops contaminated by industrial activity, exhaust vents, or a pollution control device.

3.3.2.4.3 Industrial plant yards.

3.3.2.4.4 Storage and maintenance areas for material handling equipment.

3.3.2.4.5 Immediate access roads and rail lines.

3.3.2.4.6 Material handling sites including storage, loading, unloading, transportation, or conveyance of any raw material, finished product, intermediate product and by–product or waste areas.

3.3.2.4.7 Storage areas (including tank farms) for raw materials, finished and intermediate products.

3.3.2.4.8 Disposal or application of wastewater.

3.3.2.4.9 Areas containing residual pollutants from past industrial activity.

3.3.2.4.10 Areas of significant soil erosion.

with the applicable performance standards in s. NR 151.12 or s. NR 151.121, Wis. Adm. Code, for those areas that are described in s. NR 151.12 (2) or s. NR 151.121 (2), Wis. Adm. Code. Best management practices installed to meet the performance standards in s. NR 151.12 or s. NR 151.121, Wis. Adm. Code, shall be maintained to meet the treatment capability as originally designed.

3.3.2.8 Residual Pollutants The SWPPP shall identify pollutants that are likely to contaminate storm water discharges to waters of the state following implementation of source area control best management practices. Past sampling data collected at the facility or at sufficiently similar outfalls at other facilities may be used in making this determination. At a minimum, the following pollutants shall be considered for their potential to contaminate storm water:

3.3.2.8.1 Any pollutant for which an effluent limitation is contained in any discharge permit issued to the permittee, for this facility, by the Department.

3.3.2.8.2 Any pollutant contained in a categorical effluent limitation or pre-treatment standard to which the facility is subject.

3.3.2.8.3 Any SARA Title III Section 313 "Water Priority Chemical" (42 U.S.C. s. 11023 (c)) for which the permittee, for this facility, has reporting requirements and which has the potential for contaminating storm water.

3.3.2.8.4 Any other toxic or hazardous pollutants from present or past activity at the site that remain in contact with precipitation or storm water and which could be discharged to the waters of the state, and which are not regulated by another environmental program.

3.3.2.8.5 Any of the following parameters which might be present in significant concentrations: Oil and grease, pH, total suspended solids, 5-day biological oxygen demand, and chemical oxygen demand.

3.3.2.9 Storm Water Treatment Best Management Practices When source area control best management practices are not practicable or are inadequate to control storm water pollution, or when the Department determines source area control best management practices are inadequate to achieve a water quality standard, the SWPPP shall prescribe appropriate storm water treatment practices as needed to reduce the pollutants in contaminated storm water prior to discharge to waters of the state. Proposed or existing storm water treatment practices shall be shown on the facility drainage basin map described in Section 3.3.2.2 of this permit. The SWPPP shall provide for the following types of storm water treatment practices:

3.3.2.9.1 Storm water significantly contaminated with petroleum products shall be treated for oil and grease removal by an adequately sized, designed, and functioning wastewater treatment device. Coverage under a separate individual or general permit is required for discharges of storm water from oil/water treatment devices. Under s. 281.41, Wis. Stats., prior Department approval of plans for oil and grease removal devices may be required.

3.4.2 The comprehensive annual facility site compliance inspection, quarterly visual inspection of storm water quality, or other information reveals that the provisions of the SWPPP are ineffective in controlling storm water pollutants discharged to waters of the state.

3.4.3 Upon written notice that the Department finds the SWPPP to be ineffective in achieving the conditions of this permit.

3.5 Storm Water Discharges to Outstanding and Exceptional Resource Waters If the permittee's industrial storm water will discharge to an outstanding resource water or exceptional resource water, the permittee shall include a written section in the SWPPP that discusses and identifies the management practices and control measures the permittee will implement to prevent the discharge of any pollutant(s) in excess of the background level within the water body. This section of the permittee's plan shall specifically identify control measures and practices that will collectively be used to prevent the discharge of pollutants in excess of the background level within the water body.

4. MONITORING REQUIREMENTS

4.1 Purpose Monitoring includes site inspections and non-storm water discharge assessments. The purpose of monitoring is to evaluate storm water outfalls for the presence of non-storm water discharges, and to evaluate the effectiveness of the permittee's pollution prevention activities in controlling contamination of storm water discharges.

4.2 Evaluation of Non-Storm Water Discharges

4.2.1 The permittee shall evaluate all storm water outfalls for non-storm water contributions to the storm drainage system for the duration of this permit. Any monitoring shall be representative of non-storm water discharges from the facility. Evaluations shall take place during dry periods, and may include either end of pipe screening or detailed testing of the storm sewer collection system. Either of the following monitoring procedures is acceptable:

4.2.1.1 A detailed testing of the storm sewer collection system may be performed. Acceptable testing methods include dye testing, smoke testing, or video camera observation. The Department may require a re-test after 5 years or a lesser period as deemed necessary by the Department.

4.2.1.2 End of pipe screening shall consist of visual observations made at least twice per year at each outfall of the storm sewer collection system. Instances of dry weather flow, stains, sludge, color, odor, or other indications of a non-storm water discharge shall be recorded.

4.2.2 In addition to maintaining results on-site at the facility, results of the non-storm water evaluations shall be included in the SWPPP summary required in Section 5.1 of this permit and the Annual Facility Site Compliance Inspection report required in Section 5.2 of this permit. Information reported shall include the date of testing, test method, outfall location, testing results, and potential significant sources of non-storm water discovered through testing. Upon discovering non-storm water flows that are not covered under another WPDES permit, the permittee shall either immediately seek coverage under another permit from the Department or eliminate the non-storm water flow.

associated with the permittee's activities. The demonstration shall be presented in the SWPPP or AFCSI report and submitted to the Department for evaluation.

5. COMPLIANCE AND REPORTING REQUIREMENTS

5.1 SWPPP Compliance and Reporting Requirements

5.1.1 An owner or operator of a facility requiring coverage under this permit shall prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to applying for permit coverage under s. NR 216.22, Wis. Adm. Code, and shall submit a SWPPP summary to the Department when applying for coverage under this permit For existing facilities that previously operated without required permit coverage and without a SWPPP as required, the owner or operator shall immediately develop a SWPPP and submit a SWPPP summary to the Department, and implement the SWPPP to achieve compliance with this permit in the shortest practicable time.

5.1.2 The SWPPP shall conform to the requirements specified in s. NR 216.27 (3), Wis. Adm. Code, and Section 3.3 of this permit.

5.1.3 The SWPPP shall be kept at the facility and made available to the Department for inspection and copying upon request. If storm water discharges from the facility enter a municipal separate storm sewer system covered under a storm water permit pursuant to Subchapter I of ch. NR 216, Wis. Adm. Code, the SWPPP shall be made available to the owner or operator of the municipal separate storm sewer system for inspection and copying upon request.

5.1.4 The SWPPP summary shall be submitted to the Department on a form available from the Department.

Note: The SWPPP summary form is available for download from the Department's Internet website at: http://dnr.wi.gov/runoff/stormwater/industrialforms.htm If you are unable to access this form over the Internet, please contact the Department at (608) 267-7694 for assistance.

5.1.5 If the SWPPP summary is inadequate or incomplete, the Department shall notify the permittee, and may request a review of the entire SWPPP.

5.1.6 Unless an alternate implementation schedule is specified by the Department, the SWPPP shall be implemented in accordance with the implementation schedule developed under Section 3.3.2.11 of this permit.

5.1.7 The permittee shall keep the SWPPP current and amend it as necessary to correct deficiencies in the original SWPPP. The permittee shall amend the SWPPP and notify the Department in the event of any facility operational changes that could result in additional significant storm water contamination.

5.2 Monitoring Compliance and Reporting Requirements

5.2.1 The permittee shall conduct the first Annual Facility Site Compliance Inspection (AFSCI) within 12 months of the **Start Date** of coverage under this general permit. Subsequent AFSCIs shall be conducted and AFSCI reports prepared by the permittee by the anniversary of the **Start**

under general permits. Some of these requirements are outlined below in Sections 6.1 through 6.24 of this permit. Requirements not outlined below can be found in s. NR 205.07 (1) and (3), Wis. Adm. Code.

6.1 Work near Surface Waters and Wetlands Any work performed in wetland areas or within areas subject to local floodplain and shoreland regulations must conform to all applicable county or local ordinances. All applicable state permits and/or contracts required by chs. 30, 31 and 87, Wis. Stats. (or by Wisconsin Administrative Code adopted under these laws), and applicable federal permits must be obtained as necessary.

6.2 Duty to Comply Any act of noncompliance with this permit is a violation of this permit and is grounds for enforcement action or withdrawal of permit coverage under this permit and issuance of an individual permit. If the permittee files a request for an individual WPDES permit or a notification of planned changes or anticipated noncompliance, this action by itself does not relieve the permittee of any permit condition.

6.3 Continuation of the Expired General Permit The Department's goal is to reissue this general permit prior to its expiration date. However, if that does not occur, s. NR 205.08 (9), Wis. Adm. Code, specifies that an application for reissuance of the permit will be considered to have been submitted for all of the dischargers in the class or category covered by this general permit. The class application for general permit reissuance allows the conditions and requirements of the expired permit to remain in effect until the permit is reissued or revoked.

6.4 Duty to halt or reduce activity Upon failure or impairment of best management practices identified in the SWPPP, the permittee shall, to the extent deemed necessary by the Department to maintain compliance with its permit, modify or curtail operations until the best management practices are restored or an alternative method of storm water contamination control is provided.

6.5 Other Information When the permittee becomes aware that it has failed to submit any relevant facts or submitted incorrect information in the application or in plans in accordance with this permit, the permittee shall promptly submit such facts or information to the Department.

6.6 Records Retention The permittee shall retain records of all monitoring information and copies of all reports required by this permit for a period of at least 5 years from the date of the sample, measurement, report or application.

6.7 Notice of Termination If an owner or operator of a facility no longer claims coverage under this general permit, the permittee shall submit a signed notice of termination to the Department.

6.7.1 Notice of termination forms may be obtained from the regional offices of the Department or by writing to the Department of Natural Resources, Storm Water Program – WT/3, Box 7921, Madison, WI 53707-7921.

Note: The Notice of Termination form is also available for download from the Department's Internet website at:
http://dnr.wi.gov/runoff/stormwater/industrialforms.htm
If you are unable to access the permit over the Internet, please contact the Department at (608) 267-7694 for assistance.

6.14 Property Rights The permit does not convey any property rights of any sort, or any exclusive privilege. The permit does not authorize any injury or damage to private property or any invasion of personal rights, or any infringement of federal, state or local laws or regulations.

6.15 Severability The provisions of this permit are severable, and if any provisions of this permit or the application of any provision of this permit to any circumstance is held invalid the remainder of this permit shall not be affected thereby.

6.16 Transfers Coverage under this permit is not transferable to any person except after notice to the Department in accordance with Section 1.4 of this permit.

6.17 Inspection and Entry Upon the presentation of credentials, the permittee shall allow an authorized representative of the Department to:

6.17.1 Enter upon the permittee's premises where a regulated discharge or activity is located or conducted, or where records are required to be kept under the conditions of the permit.

6.17.2 Have access to and copy, at reasonable times, any records that are required under the conditions of the permit.

6.17.3 Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under the permit.

6.17.4 Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

6.18 Spill Reporting The permittee shall immediately notify the Department in accordance with ch. NR 706, Wis. Adm. Code, in the event that a spill or accidental release of any material or substance that results in the discharge of pollutants to the waters of the state. The Department shall be notified via the toll-free 24-hour spill hotline (1-800-943-0003).

6.19 Submitting Records Unless otherwise specified, any reports submitted to the Department of Natural Resources in accordance with this permit shall be submitted to the appropriate Department regional storm water contact or to Department of Natural Resources, Storm Water Program – WT/3, Box 7921, Madison, WI 53707-7921.

6.20 Notification of Noncompliance Reports of noncompliance with requirements contained in any compliance schedule of the permit shall be submitted by the permittee in writing within 14 days of the permittee becoming aware of the noncompliance. Any report of noncompliance shall include a description of the noncompliance; its cause; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and the effect of the noncompliance on the permittees ability to meet remaining schedules.

6.21 Enforcement Any violation of s. 283.33, Wis. Stats., ch. NR 216, Wis. Adm. Code, or this permit is enforceable under s. 283.89, Wis. Stats.

6.22 Permit Fee A storm water discharge permit fee shall be paid annually for each industrial facility covered under this permit. The permittee will be billed by the Department annually in May of each year and the fee is due by June 30 of each year in accordance with s. NR 216.30, Wis. Adm. Code.

Appendix Z

HYDRITE CHEMICAL CO.

300 N. PATRICK BLVD. (53045-5816)
DRAWER # 0948
BROOKFIELD, WI 53008-0948
OFFICE: 414/792-1450
FACSIMILE: 414/792-8721

STATEMENT OF CERTIFICATION
PROCESS THERMAL OXIDIZER
IN COMPLIANCE WITH WIS. ADM. CODE NR 631.08(2)

Signature of this statement certifies that the operating parameters used in the design analysis of the process thermal oxidizer at Hydrite Chemical Co., Cottage Grove, Wisconsin reasonably represents the conditions that exist when the hazardous waste management units are or would be operating at the highest load or capacity level reasonably expected to occur.

Paul Honkamp — 8/25/99

Paul Honkamp
Vice President/General Manager
Hydrite Division

Date

C&H *engineers, p.c.*
PROFESSIONAL ENGINEERING SERVICES

May 6, 1999

Mr. Keith Blaser
Air Compliance Coordinator
Hydrite Chemical Company
114 North Main Street
Cottage Grove, WI 53527

Re: Thermal Oxidizer Design Analysis
File: 36414 #2

Dear Mr. Blaser:

In accordance with our discussions, I am writing to provide documentation of the design analysis which was conducted in arriving at the system design for the process thermal oxidizer for the Cottage Grove facility. This letter will discuss the calculations which were conducted to arrive at the anticipated vent stream, including composition, flow rate, minimum/average temperatures, and operating characteristics of the thermal oxidizer. Portions of this letter are extracted from earlier correspondence.

GENERAL

It was initially Hydrite's intent to use the soil vapor extraction (SVE) system thermal oxidizer for process emissions, as well as the SVE system. In the initial steps of the project, Earthtech collected detailed operating information on the processes which would be discharging emissions to the thermal oxidizer. Information collected by Earthtech included the following:

1. A list of materials process in each of the columns and thin film evaporators (LUWAs) at the Hydrite facility;

2. Column preparation steps (such as methanol wash sequences) used to prepare the equipment for operation. (These sequences typically result in periods of high flow, high volatile organic compound (VOC) concentration, discharges to the proposed thermal oxidizer stream);

3. Information on the duration and operating conditions under which each piece of equipment is operated (condenser temperatures, system pressures, raw material feed rates, etc.);

4. Information on the vacuum pump flow rates for each of the vacuum pumps operated at the Hydrite facility; and

5. Information on constituents to be discharged to the emissions collection system.

Based on the information obtained and compiled by Earthtech, C & H Engineers conducted an evaluation to determine the normal, minimum, and peak process flows to the thermal oxidizer. These values were determined using a spreadsheet based computer simulation of the various combined processes operated by Hydrite. The computer simulation is discussed in additional detail below. The information determined with the computer simulation was then submitted to four thermal oxidizer vendors to obtain proposals for a thermal oxidizer system designed to oxidize the process emissions.

As a result of the execution of design elements of the process collection system, and discussions with thermal oxidizer vendors, it was decided that the process thermal oxidizer system would be limited to control of non-halogenated process emissions from the Cottage Grove facility. It was determined that the process requirements (primarily materials of construction and post oxidation caustic scrubbing) for handling halogenated process emissions, along with the very limited number of halogenated streams currently processed by Hydrite, would make the design and construction of a process thermal oxidizer to handle both halogenated and non-halogenated process emissions unnecessarily expensive to build and operate. It was determined that emissions from future processing operations which may discharge halogenated process emissions, would be handled separately by processing these emissions through a dedicated carbon adsorption system or some other method of treatment.

BASIS OF DESIGN FLOWS AND BTU LOADING

C & H Engineers conducted a detailed computer simulation of process exhausts which used information gathered by Earthtech, and other information obtained from Hydrite personnel, to determine a minute by minute process emissions rate which was used in the final thermal oxidizer sizing. The computer simulation used three primary data points from each system in order to determine the process flows. These data points included the following:

1. Vacuum pump flow curves which provided cubic foot per minute (cfm) flow rates at specified vacuum pump inlet pressures;

2. The temperature of the gas at the discharge of the non-contact condenser on the overhead stream of each column or LUWA (this temperature provides the temperature at the inlet to the vacuum pump); and

3. The atmospheric pressure (absolute) at which the column or LUWA is operating throughout the run.

Using this information, the standard cubic feet per minute (scfm) air flow from each process was determined. This volumetric flow rate was then combined with the vapor pressure of the organic constituents being processed in each piece of equipment to determine the VOCs concentration and loading for each process emissions stream.

The computer simulation then added all of the emissions on one minute intervals, over a thirty-six (36) hour period. As identified by Earthtech, process runs extended from 6 to in excess of 30 hours. The program simulated start-up and shut-down emissions, as well as methanol washouts and other procedures which are conducted on all of the pieces of equipment as they are operated. The program took into consideration the following:

1. Process emissions and volumetric flow rates for each piece of equipment are at the highest levels when the vacuum pump begins its initial "pull down" of the piece of equipment. The flow rates are high because the process equipment is at it the highest pressure which it will be at during the run. As the pressure in the piece of equipment (column or LUWA) decreases, the actual scfm pulled into the vacuum pump and discharged to the emissions point decreases. In general, the pull down periods for any of the columns last between 5 and 25 minutes. These "pull downs" are simulated in the program.

2. Also simulated in the program are the methanol washouts for each piece of equipment. Although each piece of equipment is not subjected to such cleaning procedure, the program includes a cleaning procedure in order to simulate conservative VOC emissions prior to the start-up of each process. Although the methanol washouts themselves are conducted at atmospheric pressure without the vacuum pumps in operation, it was assumed that the interior of the equipment is coated with methanol, and that there may be residual methanol in the tower when vacuum is initially applied to the equipment, resulting in a methanol emission from the process.

3. The process simulation calculations also take into consideration the specific VOCs discharged from the various operations, and uses weighted averaging of the lower explosive limit (LEL) for each constituent in the combined flow to determine a dilution flowrate necessary to maintain the collected process emissions at below 50% of the LEL. This will be accomplished by monitoring the LEL of the gas stream, and admitting dilution air to the gas collection system to dilute the air in order to maintain the 50% (or less) of LEL concentration.

4. The computer program simulation included other simulation factors such as individual system downtimes between runs, variability of feed rates, and column air leakage rates.

5. The simulation included cooling air streams used by the three Cobra vacuum pumps.

6. The program uses heat of combustion values for each individual VOC to determine the overall heating value of the gas stream and thermal oxidizer.

7. The program uses an average of 108 scfm gas stream from the south side reactor operations.

On the basis of this simulation, it was determined that simultaneous initial pull downs of more than one piece of equipment could result in an emissions flow rate which would be twice that encountered if the pull downs could be staggered by 20 minutes to 30 minutes. Operating personal agreed that simultaneous pull downs would be rare, and that scheduling of operations could be used to avoid simultaneous pull downs all together. The system has been designed to prohibit simultaneous pull downs of operating systems, in order to minimize the potential for excessive flow rates to the thermal oxidizer.

The program calculated the following values which were used as the Basis of Design:

- Average process flow – 331 scfm
- Average dilution air flow – 864 scfm
- Peak process flow – 564 scfm
- Peak dilution air flow – 1,729 scfm

The calculated maximum thermal oxidizer gas flow for the existing system at the Cottage Grove facility is 2,293 scfm (including both process and dilution air flows). The average thermal oxidizer process gas flow for the operating systems currently at the Cottage Grove facility is 1,177 scfm, which includes 331 scfm of process gas flow and 864 scfm of dilution air.

Based on anticipated future expansion and use of the proposed thermal oxidizer for treatment of non-halogenated organic compounds, Hydrite added an expansion factor of 125% of current system design to the 2,293 scfm gas flow. In addition, the thermal oxidizer supplier (MEGTEC) used a less precise method of calculating LEL for the gas than C & H Engineers used, and determined a slightly higher dilution air flow rate to reach 125% of system design. Application of the MEGTEC calculated dilution air flow to C & H Engineers' process simulation indicates that the oxidizer is designed to handle between 125% to 138% of the maximum current Hydrite emissions capacity at the Cottage Grove facility.

VENT STREAM COMPOSITION

Hydrite operates a variety of batch type operations which discharge a variety of emissions to the collection system which will be treated in the thermal oxidizer. The attached Table entitled "Summary of Potential Emissions Constituents" includes a listing of the organic constituents which may be discharged to the thermal oxidizer. These are the constituents on which C & H Engineers' process simulation was based. Although both flow rates, organic constituents, and organic compound concentrations will vary extensively on an hour to hour and day to day basis, the system has been designed for effective thermal oxidation of all of the compounds listed in the attached table, at concentrations significantly in excess of the anticipated average and maximum values. The program calculated that the average vent stream VOC concentration will be 2.87% by volume prior to the introduction of dilution air, with a maximum VOC concentration of 9% by volume prior to the introduction of the dilution air. The average heating value will be 1.86 million BTUs per hour, and the maximum heating value of the vent stream will be 3.0 million BTUs per hour. The volume percent of the gas following addition of dilution air will be approximately 0.78% by volume. These concentrations will vary slightly, depending on the specific LELs of constituents in processes and operating conditions for specific processes. The system will include real time monitoring of the LEL, with automatic addition of dilution air, to maintain the vent stream conditions within the range discussed above.

As with concentration and flow, the vent stream temperature will also vary depending on which processes are operating, and at what stage in the process the systems are operating. It is anticipated that process emissions temperatures at the discharge of some of the vacuum pumps may be as high as 220°F.

Following combination with cooling air streams from Cobra pumps and dilution air as discussed above, it is anticipated that the normal process emissions temperature will be between 100° and 140°F.

THERMAL OXIDIZER DESIGN

The design residence time for the thermal oxidizer at the full process flow, including the future expansion capacity is 0.5 seconds. At the calculated average process flow rate, the residence time will be 1.35 seconds. At the anticipated maximum flow rate for existing equipment, the residence time will be 0.69 seconds. The combustion chamber temperature will be maintained at a minimum of 1600°F with the addition of natural gas fuel.

Based on the above described operating conditions, MEGTEC has designed a thermal oxidizer with a combustion chamber which is 36" in diameter and 24' long (interior dimensions). This combustion chamber will provide the residence times discussed above, and VOC destruction is guaranteed at 99% for one year.

We trust that this document meets your requirements with regard to the documentation of the proposed system design. In addition to the Table listing the compounds which Hydrite anticipates processing in the thermal oxidizer, C & H Engineers has also attached a computer printout of the process simulation program which identifies the minute by minute emissions over a 36 hour period.

If you have any questions, please feel free to contact me at your convenience.

Very truly yours,

C & H ENGINEERS, P.C.

Thomas W. Heenan, P.E.
Principal

TWH:kar

Enclosures

HYDRITE CHEMICAL CO.

114 N. MAIN ST.
COTTAGE GROVE, WI 53527
OFFICE: (608) 839-4571
FACSIMILE (608) 839-4293

March 20, 2009

Jennifer Hamill
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

SUBJECT: Stack Test Report, Permit # 08-SML-076, 113063390-P11, FID 113063390

Dear Jennifer:

Attached you will find two copies of the stack test report for the Hydrite Chemical Co. Plant Thermal Oxidizer located in Cottage Grove, WI. The stack test was performed on December 23rd, 2008 in accordance with the requirements in permit 08-SML-076 and proposed 113063390-P11.

The average destruction efficiency demonstrated during the test was 99.92%. This destruction efficiency may be assumed for all HAPs with an autoignition temperature of 1319°F or less, when our thermal oxidizer chamber temperature is 1419°F or greater. Please reference the attached report for more information.

Please contact me if you have any questions.

Sincerely,

Angela Watry

Angela Watry
EHS Manager – Cottage Grove, WI

cc: Catherine Hay-Bassett, legal file
attachment: Stack Test Report

Appendix AA

Appendix A

HYDRITE CHEMICAL CO.

114 North Main Street
Cottage Grove, WI 53527
Main 608.839.4571
Fax 608.839.4293
www.hydrite.com

STATEMENT OF CERTIFICATION
HAZARDOUS WASTE TANKS
IN COMPLIANCE WITH WIS. ADM. CODE NR 664 SUBCHAPTER CC

Signature of this statement certifies that hazardous waste storage tanks at Hydrite Chemical, Co., Cottage Grove, Wisconsin that would otherwise be subject to NR 664 Subchapter CC (NR664.1084) are equipped with and operating air emission controls according to the requirements in 40 CFR 63, Subpart DD, as outlined in the current source operation permit no. 113063390-P12. None of the hazardous waste storage tanks utilize air emission controls that include an enclosure.

5/31/2012

Joseph J. Weishar
Vice President – Operations
Hydrite Chemical Co.

Date

HYDRITE CHEMICAL CO.

114 North Main Street
Cottage Grove, WI 53527
Main 608.839.4571
Fax 608.839.4293
www.hydrite.com

STATEMENT OF CERTIFICATION
HAZARDOUS WASTE CONTAINERS
IN COMPLIANCE WITH WIS. ADM. CODE NR 664 SUBCHAPTER CC

Signature of this statement certifies that hazardous waste container storage areas at Hydrite Chemical, Co., Cottage Grove, Wisconsin meet the requirements of NR 664 Subchapter CC.

Joseph J. Weishar
Vice President – Operations
Hydrite Chemical Co.

5/31/2012
Date

HYDRITE CHEMICAL CO.

114 North Main Street
Cottage Grove, WI 53527
Main 608.839.4571
Fax 608.839.4293
www.hydrite.com

STATEMENT OF CERTIFICATION
PROCESS VENTS
IN COMPLIANCE WITH WIS. ADM. CODE NR 664 SUBCHAPTER AA

Signature of this statement certifies that all of the process vents at Hydrite Chemical, Co., Cottage Grove, Wisconsin that would otherwise be subject to NR 664 Subchapter AA are equipped with and operating air emission controls according to the process vent requirements in 40 CFR 63, Subpart DD, as outlined in the current source operation permit no. 113063390-P12.

Joseph J. Weishar
Vice President – Operations
Hydrite Chemical Co.

5/31/2012
Date

HYDRITE CHEMICAL CO.

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STATEMENT OF CERTIFICATION
PROCESS THERMAL OXIDIZER
IN COMPLIANCE WITH WIS. ADM. CODE NR 631.08(2)

Signature of this statement certifies that the operating parameters used in the design analysis of the process thermal oxidizer at Hydrite Chemical Co., Cottage Grove, Wisconsin reasonably represents the conditions that exist when the hazardous waste management units are or would be operating at the highest load or capacity level reasonably expected to occur.

Paul Honkamp — 8/25/99

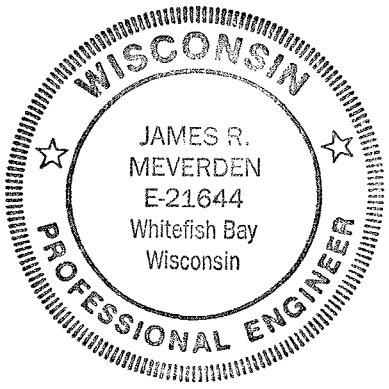
Paul Honkamp
Vice President/General Manager
Hydrite Division

Date

Appendix BB

I, James R. Meverden, hereby certify that I am a registered Professional Engineer in the State of Wisconsin in accordance with ch. A-E 4, Wisconsin Administrative Code and that this report has been prepared in accordance with the Rules of Professional Conduct in ch A-E 8, Wisconsin Administrative Code.

James R. Meverden, P.E.



Date: 09/29/98

E-21644
Registration No.

7/31/00
Expires

INTERNATIONAL PRODUCTION SPECIALISTS

35006 WASHINGTON AVENUE - HONEY CREEK, WISCONSIN 53105
PHONE: (262) 534-3130 FAX: (262) 534-4748 www.ipstanks.com email: sales@ipstanks.com

STORAGE TANKS ASME PRESSURE VESSELS STI-P3 MEMBER FIELD SERVICES

To Whom It May Concern:

RE: Hydrite Chemical Storage Tank per IPS drawing HC-V-19182,R3

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, 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 and imprisonment for knowing violations."

D. Jay Barclay 12/20/07

SPECTRUM ENGINEERING INCORPORATED

262-783-7725
FAX 262-783-7726

December 21, 2007

Mr. Jay Bandholz
International Production Specialists
35006 Washington Avenue
Honey Creek, Wisconsin 53138

Subject: **Hydrite Chemical/IPS Project No. 19182 - Vertical Mixing Tank**
Vertical Tank Drawing No. HC-V-19182, dated 12/20/07, Rev. 3
Conditions of Professional Engineer's Certification
Spectrum Engineering Project No. 07671

Dear Mr. Bandholz:

This letter has been prepared to describe the conditions associated with the Professional Engineer's certification, dated December 21, 2007, provided on the above referenced drawings and calculations. This letter confirms that Spectrum Engineering Incorporated has reviewed the referenced drawings and calculation documents which were prepared by International Production Specialists (IPS). Spectrum Engineering has verified that the calculation and design details are in general consistent with the requirements of Underwriter's Laboratories Inc. (UL-142) as the standard for *"Steel Aboveground Tanks for Flammable and Combustible Liquids"* for joints, thickness calculations of the ends, shell, manhole, fittings, and testing.

It must be noted that this review does not give rise to any liability of Spectrum Engineering Incorporated for general and specific manufacturing liabilities for this project or for a safe and fully operational system. IPS will remain the sole responsible party for the tank design and fabrication to meet the requirements of the purchaser.

Please call me if you have any questions regarding the conditions of the certification.

Sincerely,
SPECTRUM ENGINEERING INCORPORATED

F. Mohsenian

WISCONSIN
FARHAD
MOHSENIAN
E-26234
MEQUON
WI
PROFESSIONAL ENGINEER

Farhad Mohsenian, P.E.
President

Enclosure: Four (4) copies of Drawings HC-V-19182, dated 12/20/07, Rev. 3
Four (4) copies of Calculations for Vertical Mixing Tank, dated 12/21/07

CALCULATIONS FOR

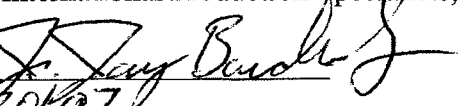
ABOVEGROUND VERTICAL TANK
ON SUPPORT LEGS
20,000 GALLON
IPS DWG# HC-V-19182,R3

CONSTRUCTION UNDER

UNDERWRITERS LABORATORIES
UL 142 STANDARD, 8TH EDITION

FOR HYDRITE CHEMICAL
114 N. MAIN STREET
COTTAGE GROVE,WI 53527

Prepared By: International Production Specialists, Inc.

Signature: 

Date: 12/20/07

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WISCONSIN
FARHAD MOHSENIAN
E-26234
MEQUON
WI
PROFESSIONAL ENGINEER

Hydrite Chemical
Mixing Tank 19182

F. Mohsenian 12-21-07

Per Conditions of Professional
Engineer's Certification letter, 12-21-07

TANK DATA

Size: 12' 0" I.D. x 22' 6" straight side
Nom. Capacity: 20,000 gallons
Product: Flammable or Combustible Solvent
Product sp. gr.: < 1.2
Design pressure: Atmospheric
Design Temp.: -20° F (min.) to 100° F (max.)
Materials of Construction:
Shell – A-240 304 S.S.
Cone Top & Bottom - A-240 304 S.S.
Nozzles – A-312 TP304
Manway – A-240 304 S.S.
Flanges – A-181 F304
Couplings – A-181 F304
Allowable stress:
(From API 620 Standard)
S = 15,000 psi A-240 304 S.S.
(From ASME Code)
S = 20,000 psi A-240 304 S.S.
(From AISC Manual)
S = Per Tables A-36 Mild C.S.
Sb = Fb = Syield (0.6) = 36,000(0.6) = 21,600 psi (in bending)

GENERAL CONSTRUCTION:

Tank constructed per U.L. 142 standard. Sections 1-11 shall be applied where required for construction and specifically Sections 14-15 for vertical tanks shall be followed. Also applied will be Section 45 for manufacturing and production tests. All tank construction and design not expressly shown below shall follow the U.L 142 Standard.

TANK SHELL REQUIREMENTS:

Per UL 142 Section 15 the shell thickness shall be per Table 15.1 or a minimum of 0.115" for tank volume over 1100 gallons. Per Fig. 6.1 shell joints used were No. 1 for circumferential and No. 3 for longitudinal joints.
(Since using 3/8" lower shell and remaining 3/16" thick shell than O.K.)

Check shell thickness because of suspended cone type bottom:

Per API 620 3.10.2 determine the shell thickness

$t = T(max.) / S E$

where:
t = required cone thickness, in.
T(max.) = greater of T_{1s} and T_{2s}, lbs./in.
S = allowable stress, psi
E = joint efficiency at cone to shell junction

$T_{1s} = (R/2) [P + (W + F)/A]$

$T_{2s} = R P$

Where:
R = tank radius, in.
P = pressure due to static head, psi (P = 0.433Hs = 0.433(22.5)(1.2) = 11.7 psi)
W = weight below spring line acting in same direction of P, sum of metal weight and product weight in cone, lbs.
Tank cone wt. = 2300 lbs. Content wt. in cone =1175 gal. x 10 lbs/gal = 11,750 lbs.
F = additional vertical loads on vessel bottom, lbs.
A = cross sectional area of tank, sq. in. ($A = \pi R^2 = \pi (72)^2 = 16286$ sq. in.)

$T_{1s} = 72 [11.7 + ((2300+11750) + 0)/16286] / 2 = 453$ lbs./in.

$T_{2s} = 72 (11.7) = 843$ lbs./in. (governs)

Therefore;

$t = T_{2s} / S E = 843 / (15000) (0.7) = 0.08$ in.

(Since using 3/8" plate than O.K.)

TANK BOTTOM REQUIREMENTS:

Per UL 142 Section 15 the bottom thickness shall be per Table 15.1 or a minimum of 0.158" for tank volume over 1100 gallons. Per Fig. 6.1 bottom joints used were No. 1 for circumferential and No. 1 for longitudinal. Also Per Fig. 6.3 for cone to shell, joint No. 5 was used at a 125° angle.
(Since using 3/8" thick bottom than O.K.)

Check bottom thickness for suspended cone type:

Per API 620 3.10.2 determine the cone bottom thickness

t = T(max.) / S E

where:
t = required cone thickness, in.
T(max.) = greater of T_1 and T_2, lbs./in.
S = allowable stress, psi
E = joint efficiency at cone to shell junction

$T_1 = (R/2\cos a)\,[P + (W + F/A)]$

$T_2 = (R/\cos a)\,[P]$

Where:
R = tank radius, in.
a = ½ the cone apex angle, deg
P = pressure due to static head, psi
W = weight below spring line acting in same direction of P, sum of metal weight and product weight in cone, lbs.
Tank cone wt. = 2300 lbs. Content wt. in cone =1175 gal. x 10 lbs/gal = 11,750 lbs.
F = additional vertical loads on vessel bottom, lbs.
A = cross sectional area of tank, sq. in. ($A = \pi R^2 = \pi (72)^2 = 16286$ sq. in.)

$T_1 = 72\ [11.7 + ((2300+11750) + 0)/16286]\ /\ 2 \cos 55.22 = 794$ lbs./in.

$T_2 = 72\ (11.7) / \cos 55.22 = 1477$ lbs./in. (governs)

Therefore;

$t = T_2 / S\,E = 1477 / (15000)\ (0.7) = 0.141$ in.

(Since using 3/8" plate than O.K.)

Check compression ring area because of suspended cone type bottom:

Per API 620 3.12.4 determine the compression ring requirements

$w_h = 0.6\ [(R/\cos a)\ (t_h - c)]^{1/2}$

$w_c = 0.6\ [(R)\ (t_c - c)]^{1/2}$

where:
w_h = width of bottom plate used for reinforcement, in.
w_c = width of shell plate used for reinforcement, in.
a = ½ the the apex angle of the cone, deg
R = tank radius, in.
t_h = thickness of bottom plate used for reinforcement, in.

t_c = thickness of shell plate used for reinforcement, in.
c = corrosion allowance, in.

$w_h = 0.6\ [(72/\cos 55.22)\ (0.375 - 0)]^{1/2} = 4.13$ in.

$w_c = 0.6\ [(72)\ (0.375 - 0)]^{1/2} = 2.55$ in.

$Q = T_2\ w_h + T_{2s}\ w_c - T_1\ R \sin a$

Where:
Q = circumferential force at compression ring, lbs.

$Q = 1477(4.13) + 843(2.55) - 794(72)(\sin 55.22) = -38705$ lbs.

The required compression ring area is,

$Ac = Q / Fc$

Where:
Ac = required compression ring area, sq. in.
Fc = allowable compressive stress per API 620 footnote to API 650, App. F.7.2 and modified per App. S.3.5.3 = 20,000(30,000/32000) = 18,750 psi

$Ac = 38705 / 18{,}750) = 2.06$ sq. in.

The actual compression ring area available from the plate is,

$A = t_h\ w_h + t_c\ w_c = 0.375(4.13) + 0.375(2.55) = 2.18$ sq. in.

(Since A > Ac then no additional compression ring is required)

TANK ROOF REQUIREMENTS:

Per UL 142 Section 15 the top thickness shall be per Table 15.1 or a minimum of 0.086" for tank volume over 1100 gallons. For a cone height of 1/12 the tank radius, the minimum thickness must be 0.167 in. (Since using 3/16" thick x 6" high top than O.K.) Per Fig. 6.4 the roof to shell joint used was No. 2.

TANK EMERGENCY VENTING REQUIREMENTS:

Per UL 142 Section 8.7 the emergency vent shall be per Table 8.1 based on the square footage of the shell,As, and suspended bottom,Ac.

D = diameter in ft.; R = D/2; H = shell height in ft.
Shell area = As = π D H = π (12) (22.5) = 848
Cone area = Ac = π R $(R^2+coneht^2)^{1/2}$ = π (6) $(6^2 + 4.167^2)^{1/2}$ = 138

Total wetted surface area A = 848 + 138 = 986 sq. ft.

Per Table 8.1 the required vent size is a 10" opening.
(Since tank has a 10" opening then O.K.)

LEG SUPPORTS:

Per UL 142 Section 30.3 a tank on leg supports shall be evaluated by calculation.

Use a W 12" beam at 45#/ft with the following properties;
Moment of inertia about strong axis Ix = 350 $in.^4$
Moment of inertia about weak axis Iy = 50.0 $in.^4$
Section modulus about strong axis Zx = 58.1 $in.^3$
Section modulus about weak axis Zy = 12.4 $in.^3$
Least radius of gyration ry = 1.94 in.
Cross sectional area of beam A = 13.2 $in.^2$
Beam depth d = 12.06 in.

Per Pressure Vessel Design Manual (Moss) and Pressure Vessel Design Handbook (Bednar) determine the imposed stresses.

Determine the operating weight:

Dead Loads:

Tank top	= 970#
4' Shell	= 2520#
18.5' Shell	= 6000#
Bottom	= 2300#
24" manway	= 200#
20" manway	= 100#
Fittings	= 300#
Baffles	= 900#
Legs	= 2500#
Mixer Bridge	= 1400#
Mixer	= 1500#
Lugs	= 110#
Railing	= 300#
Total	= 19,100#

Contents Load: (full of product)
19036(shell) + 1175(cone) gallons x 10#/gal = 202,110#

Wo = 19,100 + 202,110 = 221,210# (use 224,000#)

Determine the maximum eccentric load, f1, applied to the leg at vessel:

f1 = -Fv/N

where:
Fv = total weight of tank when full, Wo, lbs.
N = number of legs

f1 = -224000/4 = - 56,000 lbs.

Determine the axial stress, fa, in the legs:

fa = f1 / A

fa = 56,000 / 13.2 = 4242 psi

Determine the bending stress, fb, in the legs:

fb = M / Zx = f1(e) / Zx

where:
e = eccentricity of leg load = leg depth / 2, in.

fb = 56,000 (6.03) / 58.1 = 5812 psi

Determine the allowable stresses, Fa and Fb, from AISC Manual:

Find the slenderness ratio Kl / r

where:
K = effective length factor
l = maximum length of leg at base to cone to shell junction (spring line), in.
r = least radius of gyration for leg chosen, in.

Kl / r = 1.2(80) / 1.94 = 49.5

From the AISC Manual the value of Fa = 18,350 psi

From the AISC Manual Fb = Fy(0.6) = 36,000(0.6) = 21,600 psi

Evaluate the combined stresses:

fa / Fa = 4242 / 18350 = 0.23 $\geq$ 0.15 therefore;

check fa / Fa + Cm fb / [(1- fa/Fe')Fb] < 1.0

where:
Cm = 0.85 (end restraint coefficient)
Fe' = 12 π^2 E / [23 $(Kl/r)^2$] (Euler formula)

Fe' = 12 π^2 $(29.5x10^6)$ / [23 $(49.5)^2$] = 61,996 psi

Then;
4242 / 18350 + 5812 (0.85) / [(1-4242/61996) 21600] = 0.47 < 1.0 (SO O.K.)

Max. local stress in compression in shell at leg:

Above the Leg maximum localized stress:

$f_C = f_l / L_1 t$

where,
f_l = max. axial load at leg, lbs.
$L_1 = h + 2(Rt)^{1/2}$, in.
h = leg flange width,in.
R = tank radius, in.

$(Rt)^{1/2} = (72 \times 0.375)^{1/2} = 5.2$

$L_1 = 8 + 2 (5.2) = 18.4$ in.

$f_C = 56000 / 18.4(0.375) = 8116$ psi

General longitudinal stress:

fc = Wo / π D t

where,
D = tank diameter, in.
t = shell thickness at leg, in.

fc = (224000) / π (144)(.375) = 1321 psi

Compare fc to max. allowable compressive stress, Fc:

Fc = B (per UG-23(b) of ASME Code, Section VIII)

A = 0.125/(R/t) = 0.125/(72/.375) = 0.00065

From chart in Section II, Part D, Subpart 3: B = 9,500 psi

Since Fc > f_C above then O.K.

Base Plate Size:

From AISC Manual choose the greater of;

$tb = m\,(3p/Fb)^{1/2}$ or
$tb = n\,(3p/Fb)^{1/2}$

m = ½(a – 0.95d)
n = ½(b – 0.8h)

where:
tb = base plate thickness, in.
p = bearing pressure, psi
Fb = allowable bending stress, psi
a = lenth of base plate, in.
b = width of base plate, in.
h = width of beam, in.
d = depth of beam, in.

For a base plate a = 16, b = 14"

m = ½(16 – 0.95(12.06)) = 2.27

n = ½(14 – 0.8(8)) = 3.8

The bearing pressure:

p = f1 / (a) (b)

p = 56000 / (16)(14) = 250 psi

The maximum bearing pressure allowed, p(max.)

$p(max.) = 0.25\ fc' = 0.25(3000) = 750$ psi (for 3000 psi concrete)

Therefore:

$tb = n\ (3p/Fb)^{1/2} = 3.8\ (3(250) / 21600)^{1/2} = 0.708$ in.

(Since using 1" plate thickness then O.K.)

Check the length of the leg to shell connection, L = 46 in.:

$t = T_1 / Fa = (f1 / L) / Fa$
or
$L = f1 / t\ Fa$

where:
T_1 = longitudinal shell compression force f1/L at the leg support, lbs./in.
Fa = allowable compressive force (Boardman Formula), psi
t = shell thickness, in.

$Fa = 2x10^6\ (t/R)(1 - 100t / 3R)$

$Fa = 2x10^6\ (0.375/72)\ (1 - 100(0.375) / 3(72)) = 8608$ psi (max. 10,000 psi)

$L = 56000 / (.375)(8608) = 17.3$ in.

(Since using 46" then O.K.)

MIXER LOADINGS:

Data:
Vertical Down Load,F: 1680 lbs.
Bending Moment,M: 60,000 in-lbs.
Torque,T: 10,000 in-lbs.
Safety Factor,SF: 2.5
Allowable bending Stress: Sb = 0.6Sy = 21600 psi
Allowable Stress: Sa = 20000 psi
Mixer Beams: C12" at 30#/ft (as specified by the mixer mfg.)
Section Moduli: Zx = 27 cu.in.; Zy = 2.06 cu.in.
Span: L = 144 in.
Vertical Supports: Midspan – C6" at 8.2#/ft with ¼"x6"x10" repad;
Ends - C12" at 30#/ft with ¼"x6"x16" repad

Beam Size Check:

Required Section Modulus Per Beam Due to Bending Moment Plus Down Load:

Zxr = 0.5(M +Md) S.F./ Sb

Where:
Md = moment due to F at center based on simple supported beam, in-lbs.

Md = F L/4 = 1680(144)/4 = 60480 in-lbs.

Then,

Zxr = 0.5(60,000 + 60480)(2.5) / 21,600 = 6.97 cu.in.

Since actual Zx > Zxr required then O.K.

Required Section Modulus Per Beam Due to Torque:

Zyr = 0.5(T) S.F./ Sb

Zyr = 0.5(10,000)(2.5) / 21,600 = 0.58 cu.in.

Since actual Zy > Zyr required then O.K.

Loads Applied to Vertical Supports:

(For simply supported beam with two mid supports to account for 1/3 the load and two end supports to account for 2/3 the load.)

P = 0.5F/(2) = (0.5)(1680) / 2 = 420 lbs.
Pm = 1/3 P = (420) / 3 = 140 lbs.
Pe = 2/3 P = 2(420) / 3 = 280 lbs.

Mm = 0.5(M)/3 = 0.5(60000) / 3 = 10,000 in-lbs.
Me = 0.5(2)(M)/3 = 0.5(2)(60000) / 3 = 20,000 in-lbs.

Reactions:

Mid support
Rm = Pm + Mm/Lm = 140 + 10000/30 = 473 lbs.

End Support
Re = Pe + Me/L = 280 + 20000/66 = 583 lbs.

Attachment Parmeters:
(using Moss, Pressure Vessel Design Manual pg. 229)

Nomenclature:
Pr = external load,lbs
M = external moment,in-lb
Rm = radius of cone = $R(R^2 \times h^2)^{1/2}$,in.
R = shell radius,in.
h = cone height,in.
ro = equivalent radius of attachment,in
C1 = half distance of attachment in meridional direction,in
C2 = half distance of attachment in latitudinal direction,in
Nx = membrane force in meridional direction,in
No = membrane force in latitudinal direction,in
Kn,Kb = stress concentration factors (Pressure Vessel Design Manual pg. 217)
for 2r/h = 2(fillet radius)/attachment thickness
U,S = coefficients used for Charts Fig. 30 A/B and Fig. 31 A/B
Sx = meridional stress, psi
So = latitudinal stress, psi
T = cone thickness, in.
Tp = reinforcing pad thickness,in.
Te = equiv. thickness of cone with repad,$(T^2 \times Tp^2)^{1/2} = (0.1875^2 \times 0.25^2)^{1/2} = 0.3125$"
x = distance from center of attachment to point of analysis

For Mid Supports:

(using Moss, Pressure Vessel Design Manual pg. 215)

To convert a channel to a rectangular attachment with dimensions b = 2" x h = 6"

C1 = 0.3b = 0.3(2) = 0.6
C2 = 0.5h = 0.5(6) = 3.0

Equivalent rectangle = 2C1 x 2C2 or 1.2" x 6.0"

Pr = Pm
M = 0
Rm = $72(72^2 \times 6^2)^{1/2}$ = 867 in.
ro = $(2C1 \times 2C2)^{1/2}$ = $(1.2\ (6.0))^{1/2}$ = 2.68
Kn = 1.23 for 2r/h = 2(0.375)/0.1875 = 4 and Fig. 5-20
Kb = 1.0 for 2r/h = 2(0.375)/0.1875 = 4 and Fig. 5-20

At The Edge of The Support x = ro, and S = U

$S = U = 1.82ro / (Rm \times Te)^{1/2} = 1.82(2.68) / (867 \times 0.3125)^{1/2} = 0.296$

From Fig. 30A; NxT/Pr = -0.25
From Fig. 30B; NoT/Pr = -0.075
From Fig. 31A; Mx/Pr = +0.22
From Fig. 31B; Mo/Pr = +0.07

Stresses in cone top:

Membrane Stresses;

$Sx = (NxT/Pr)\ KnPr/T^2 = (-0.25)(1.23)(473) / (0.3125)^2 = -1490$ psi

$So = (NoT/Pr)\ KnPr/T^2 = (-0.075)(1.23)(473) / (0.3125)^2 = -447$ psi

Bending Stresses;

$Sx = (Mx/Pr)\ 6KbPr/T^2 = (0.22)(6)(1.0)(473) / (0.3125)^2 = 6393$ psi

$So = (Mo/Pr)\ 6KbPr/T^2 = (0.07)(6)(1.0)(473) / (0.3125)^2 = 2034$ psi

Total Combined Stresses:

Sx = Sx(membrane) + Sx(bending)

Sx = 1490 + 6393 psi = 7883 psi

So = So(membrane) + So(bending)

So = 447 + 2034 psi = 2481 psi

Allowable Stresses:
In Compression Sa = 1.2S = 1.2(20,000) = 24,000 psi
In Tension Sa = 1.5SE = 1.5(20,000)(0.7) = 21,000 psi

(Since the combined stresses are < Sa then O.K.)

At The Edge of The Repad x = 5,

$S = 1.82x / (Rm \times T)^{1/2} = 1.82(5) / (867 \times 0.1875)^{1/2} = 0.714$

$U = 1.82ro / (Rm \times T)^{1/2} = 1.82(2.68) / (867 \times 0.1875)^{1/2} = 0.383$

From Fig. 30A; NxT/Pr = -0.175
From Fig. 30B; NoT/Pr = -0.11
From Fig. 31A; Mx/Pr = +0.078
From Fig. 31B; Mo/Pr = +0.065

Stresses in cone top:

Membrane Stresses;

$Sx = (NxT/Pr)\ KnPr/T^2 = (-0.175)(1.23)(473) / (0.1875)^2 = -2897$ psi

$So = (NoT/Pr)\ KnPr/T^2 = (-0.11)(1.23)(473) / (0.1875)^2 = -1820$ psi

Bending Stresses;

$Sx = (Mx/Pr)\ 6KbPr/T^2 = (0.078)(6)(1.0)(473) / (0.1875)^2 = 6297$ psi

$So = (Mo/Pr)\ 6KbPr/T^2 = (0.065)(6)(1.0)(473) / (0.1875)^2 = 5247$ psi

Total Combined Stresses:

Sx = Sx(membrane) + Sx(bending)

Sx = 2897 + 6297 psi = 9194 psi

So = So(membrane) + So(bending)

So = 1820 + 5247 psi = 7067 psi

Allowable Stresses:
In Compression Sa = 1.2S = 1.2(20,000) = 24,000 psi
In Tension Sa = 1.5SE = 1.5(20,000)(0.7) = 21,000 psi

(Since the combined stresses are < Sa then O.K.)

For End Supports:

(using Moss, Pressure Vessel Design Manual pg. 215)

To convert a channel to a rectangular attachment with dimensions b = 3.17" x h = 12"

C1 = 0.3b = 0.3(3.17) = 0.951
C2 = 0.5h = 0.5(12) = 6.0

Equivalent rectangle = 2C1 x 2C2 or 1.9" x 12.0"

Pr = Pm
M = 0
$Rm = 72(72^2 \times 6^2)^{1/2} =$ 867 in.
$ro = (2C1 \times 2C2)^{1/2} = (1.9\ (12.0))^{1/2} = 4.77$
Kn = 1.28 for 2r/h = 2(0.625)/0.5 = 2.5 and Fig. 5-20
Kb = 1.17 for 2r/h = 2(0.625)/0.5 = 2.5 and Fig. 5-20

At The Edge of The Support x = ro, and S = U

$S = U = 1.82ro / (Rm \times Te)^{1/2} = 1.82(4.77) / (867 \times 0.3125)^{1/2} = 0.522$

From Fig. 30A; NxT/Pr = -0.198
From Fig. 30B; NoT/Pr = -0.061
From Fig. 31A; Mx/Pr = +0.15
From Fig. 31B; Mo/Pr = +0.045

Stresses in cone top:

Membrane Stresses;

$Sx = (NxT/Pr)\ KnPr/T^2 = (-0.198)(1.28)(583) / (0.3125)^2 =$ -1513 psi

$So = (NoT/Pr)\ KnPr/T^2 = (-0.061)(1.28)(583) / (0.3125)^2 =$ -466 psi

Bending Stresses;

$Sx = (Mx/Pr)\ 6KbPr/T^2 = (0.15)(6)(1.17)(583) / (0.3125)^2 =$ 6286 psi

$So = (Mo/Pr)\ 6KbPr/T^2 = (0.045)(6)(1.17)(583) / (0.3125)^2 =$ 1886 psi

Total Combined Stresses:

Sx = Sx(membrane) + Sx(bending)

Sx = 1513 + 6286 psi = 7799 psi

So = So(membrane) + So(bending)

So = 466 + 1886 psi = 2352 psi

Allowable Stresses:
In Compression Sa = 1.2S = 1.2(20,000) = 24,000 psi
In Tension Sa = 1.5SE = 1.5(20,000)(0.7) = 21,000 psi

(Since the combined stresses are < Sa then O.K.)

At The Edge of The Repad x = 9,

$S = 1.82x / (Rm \times T)^{1/2} = 1.82(9) / (867 \times 0.1875)^{1/2} = 1.285$

$U = 1.82ro / (Rm \times T)^{1/2} = 1.82(4.77) / (867 \times 0.1875)^{1/2} = 0.682$

From Fig. 30A; NxT/Pr = -0.125
From Fig. 30B; NoT/Pr = -0.055
From Fig. 31A; Mx/Pr = +0.022
From Fig. 31B; Mo/Pr = +0.025

Stresses in cone top:

Membrane Stresses;

$Sx = (NxT/Pr)\ KnPr/T^2 = (-0.125)(1.28)(583) / (0.1875)^2 = -2653$ psi

$So = (NoT/Pr)\ KnPr/T^2 = (-0.055)(1.28)(583) / (0.1875)^2 = -1167$ psi

Bending Stresses;

$Sx = (Mx/Pr)\ 6KbPr/T^2 = (0.022)(6)(1.17)(583) / (0.1875)^2 = 2561$ psi

$So = (Mo/Pr)\ 6KbPr/T^2 = (0.025)(6)(1.17)(583) / (0.1875)^2 = 2910$ psi

Total Combined Stresses:

Sx = Sx(membrane) + Sx(bending)

Sx = 2653 + 2561 psi = 5214 psi

So = So(membrane) + So(bending)

So = 1167 + 2910 psi = 4077 psi

Allowable Stresses:
In Compression Sa = 1.2S = 1.2(20,000) = 24,000 psi
In Tension Sa = 1.5SE = 1.5(20,000)(0.7) = 21,000 psi

(Since the combined stresses are < Sa then O.K.)

APPENDICES

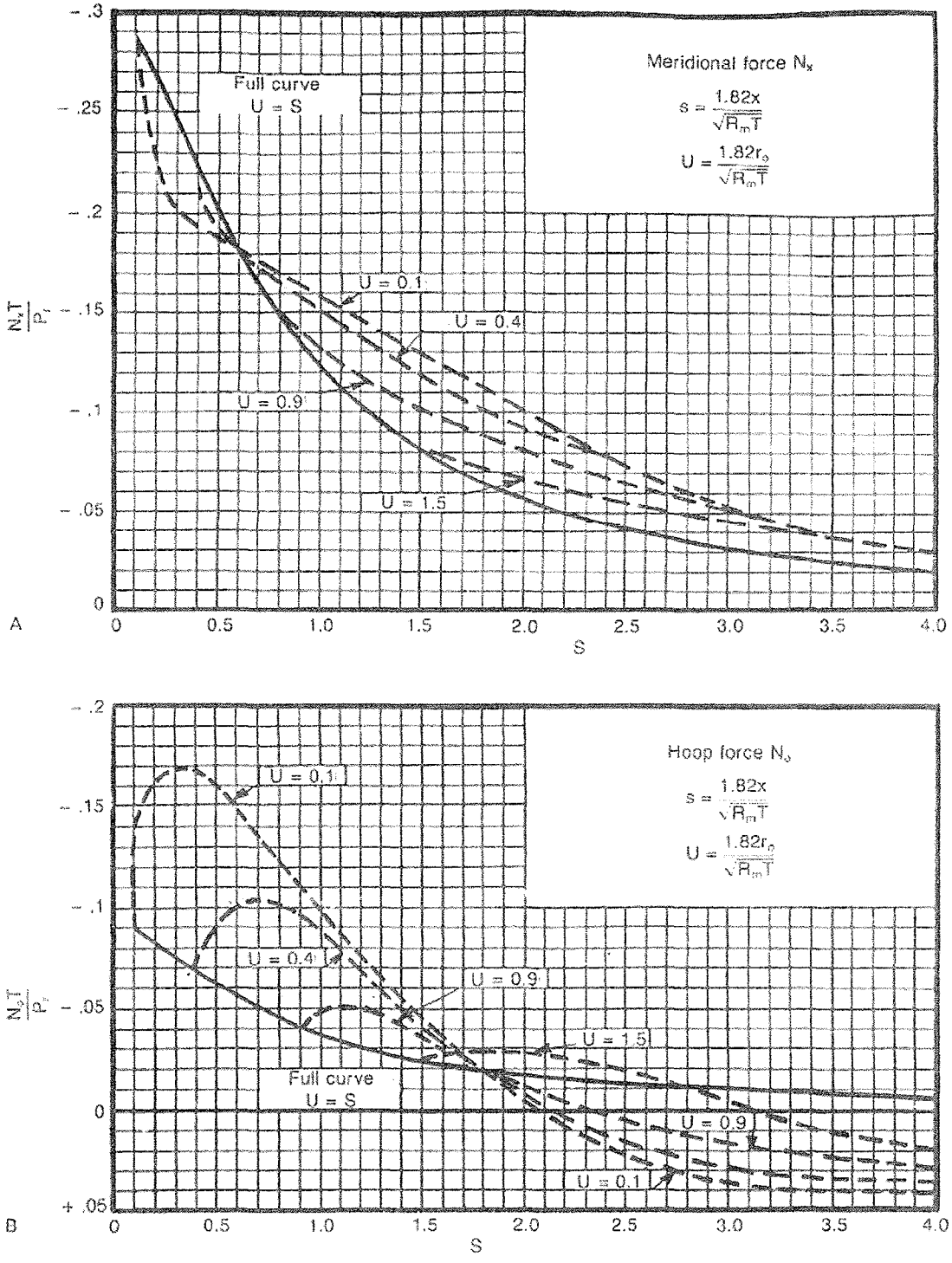
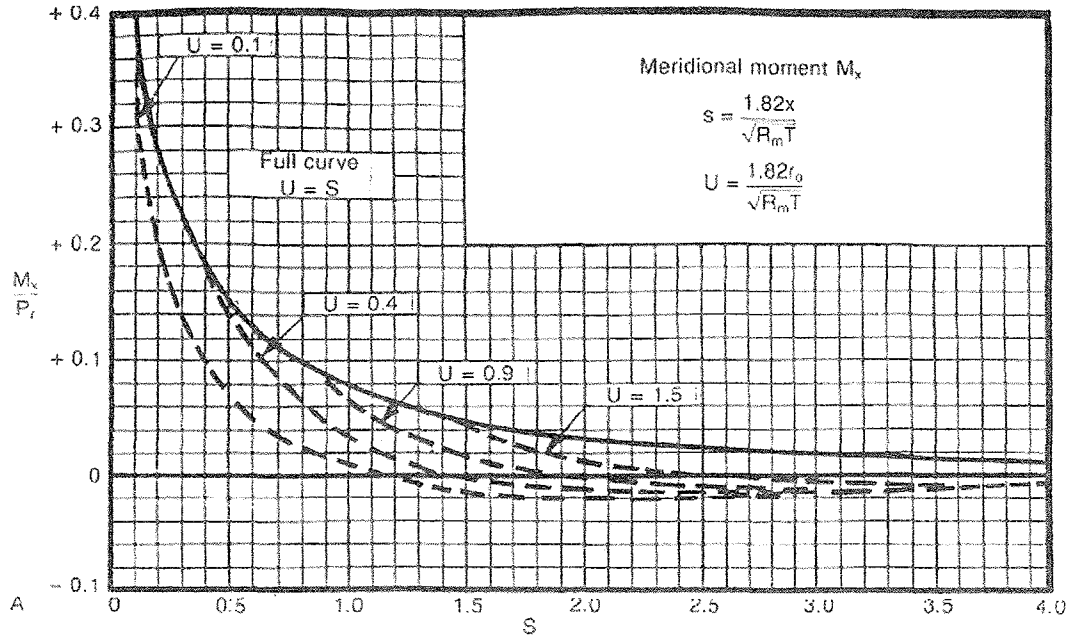


Figure 5-30. Membrane force due to P_r. (Extracts from BS 5500:1985 are reproduced by permission of the British Standards Institution, 2 Park Street, London, W1A 2BS, England. Complete copies can be obtained from national standards bodies.)



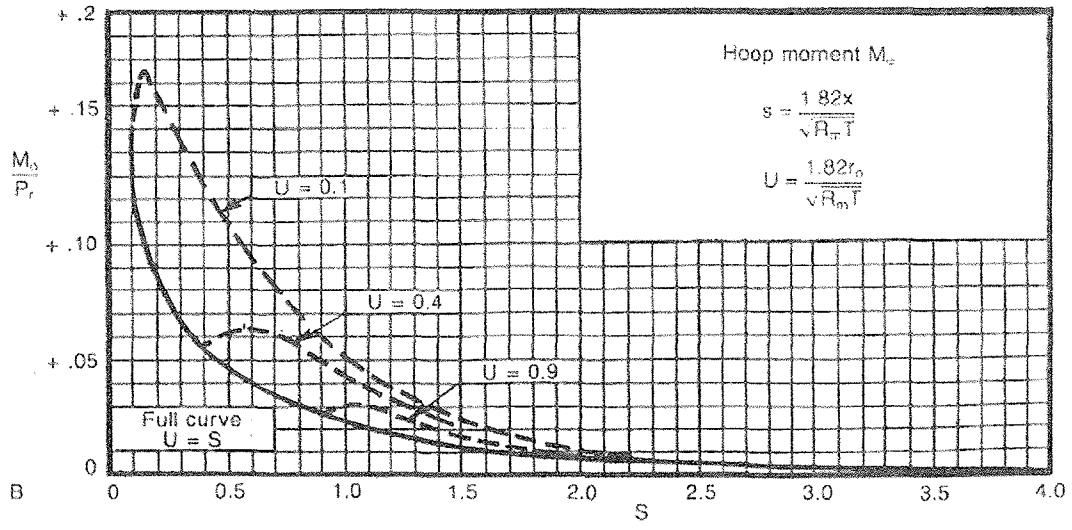


Figure 5-31. Bending moment due to P_r. (Extracts from BS 5500:1985 are reproduced by permission of the British Standards Institution, 2 Park Street, London, W1A 2BS, England. Complete copies can be obtained from national standards bodies.)

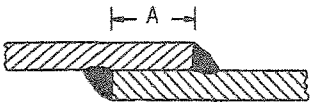
Figure 6.1
Shell joints

NO. 1

Double-welded U, V, bevel, or square groove butt joint.

NO. 2

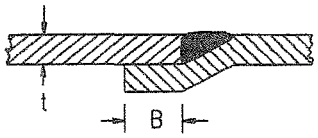
Full penetration and complete fusion.



NO. 3

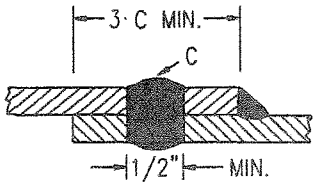
Double-welded full fillet lap joint, or single-welded full fillet lap joint on outside with 1-inch (25.4-mm) intermittent weld spaced not over 12 inches (0.3 m) on inside; minimum overlap, "A" – 1/2 inch (12.7 mm) for tank diameters 48 inches (1.2 m) or less, 3/4 inch (19.1 mm) for tank diameters over 48 inches (1.2 m).

S2054C



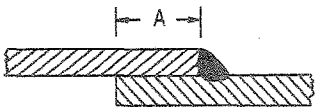
NO. 4

Groove weld equivalent in thickness to "t"; full penetration and complete fusion; minimum overlap, "B" – 1/2 inch (12.7 mm).



NO. 5

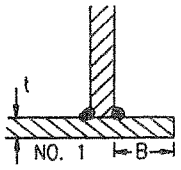
Full fillet weld on outside; "C" is 1/2 inch (12.7 mm) minimum diameter lock weld spaced not over 12 inches.



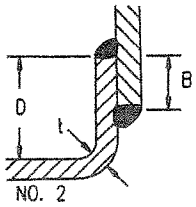
NO. 6

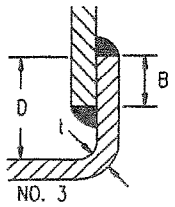
Single-welded full fillet lap joint; minimum overlap, "A" – 1/2 inch (12.7 mm) for tank diameters 48 inches (1.2 m) or less, 3/4 inch (19.1 mm) for tank diameters over 48 inches (1.2 m). This joint shall not be used on tanks with a diameter greater than 65 inches (1.65 m) unless it is used on the shell of the secondary containment tank where the secondary containment shell is in direct contact with the primary tank.

Figure 6.3
Bottom joints for vertical cylindrical tanks

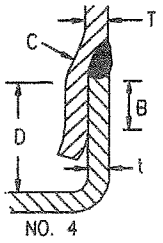


Double-welded full fillet joint; minimum overlap, "B" – 1/2 inch (12.7 mm) or 1-1/2 t, whichever is greater.

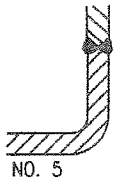




Double-welded full fillet lap joint; minimum overlap, "B" – 1/2 inch (12.7 mm) or 1-1/2 t, whichever is greater; "D" is 5 t or greater, but not less than 1 inch (25.4 mm).



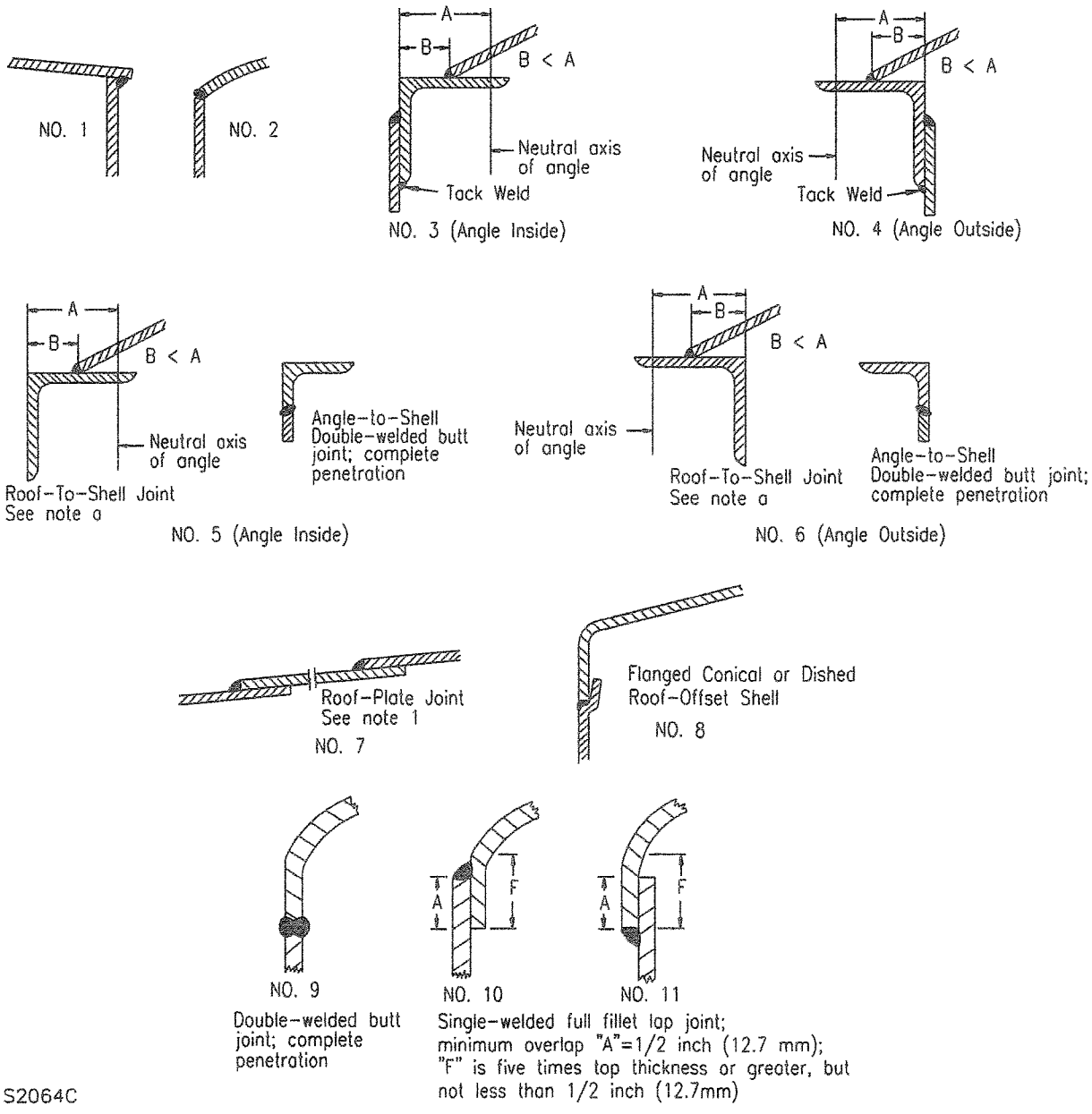
Groove weld at least equivalent in thickness to that of thinner member joined; minimum overlap, "B" – 1/2 inch (12.7 mm) or 1-1/2 t, whichever is greater; depth of offset, "C" – equals T; "D" is 5 t or greater, but not less than 1/2 inch (12.7 mm).



Double-welded U, V, bevel, or square groove butt joint; full penetration and complete fusion.

S2063D

Figure 6.4
Roof joints for vertical cylindrical tanks



NOTE – Unless otherwise indicated, all welds are to be full fillet welds, at least 1/8-inch (3.2-mm) radius.

[a]See 15.5.5.

BUILDING & PROCESS ENGINEERING, INC.

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I. AFFIDAVIT

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James R. Brachtl, P.E.

WISCONSIN JAMES R. BRACHTL No. 39541 MIDDLETON WI PROFESSIONAL ENGINEER

11-04-2011
Date

Appendix CC

Appendix 5G

WARZYN
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Soil Borings
Surveying

1409 Emil Street
P.O. Box 8538, Madison, WI 53715
Tel. (608) 257-3848

SUBSURFACE INVESTIGATION
PROPOSED BUILDING ADDITION
HYDRITE CHEMICAL COMPANY
COTTAGE GROVE, WI
C 9555

WARZYN
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Consulting Engineers • Civil • Structural • Geotechnical • Materials Testing • Soil Borings • Surveying

1409 EMIL STREET, P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

November 21, 1980
C 9555

Klug and Smith Company
4425 West Mitchell Street
Milwaukee, WI 53214

Attention: Mr. Bob Keppner

Re: Subsurface Investigation
Proposed Building Addition
Hydrite Chemical Company
Cottage Grove, WI

Gentlemen:

As authorized, we have performed a subsurface investigation for the subject project. We are herewith submitting three (3) copies of our report, which includes appendices and logs of test borings. Thirty days following the date of this report, soil samples obtained in the investigation will be discarded, unless we are directed otherwise.

This report presents our interpretations of the subsurface conditions encountered at the site. Based on these observations, conclusions and recommendations are presented for foundation support and site development of the proposed addition. If you have any questions pertaining to the information presented in this report, or if we may be of further assistance during final design or construction, please contact us.

Thank you for your consideration.

Very truly yours,

WARZYN ENGINEERING INC.

Steven F. Moldt
Geotechnical Engineer

SFM/amh
enc: As Stated

WARZYN ENGINEERING INC

SUBSURFACE INVESTIGATION
PROPOSED BUILDING ADDITION
HYDRITE CHEMICAL COMPANY
COTTAGE GROVE, WISCONSIN

Job No. C 9555

Date November 21, 1980

INTRODUCTION

This report presents the findings of the subsurface investigation for the proposed building addition to the Hydrite Chemical Company, located in Cottage Grove, Wisconsin. Work was authorized by letter on November 14, 1980, by Mr. Bob Keppner of Klug and Smith Company, Milwaukee, Wisconsin. The purpose of this report is to delineate subsurface conditions encountered at the building site and to present recommendations concerning site development and foundation support.

The analyses and recommendations presented in this report are based on the available subsurface and project information. The report does not reflect potential variations which may occur between or beyond limits of the borings performed on this site. The nature and extent of variations may not become evident until the course of construction. If subsurface variations are encountered or the project scope is altered, these recommendations may require modification.

PROJECT DESCRIPTION

It is our understanding that the proposed addition, measuring approximately 70' x 55', will be a one story, slab-on-grade building. The addition is assumed to be similar in construction to the existing plant facilities, with a steel frame and load-bearing exterior masonry walls. We understand that the floor slab of the addition will match the grade of the existing building at Elevation 93.5.

While foundation loads were not provided, we estimate that continuous wall loadings of about 3-5 KLF and column loads on the order of 50-75 kips are possible.

A tank farm is being proposed to the east of the addition. While design information on the storage tanks is limited, we understand that the structures will rest on approximately 2' thick concrete mats. Since no borings were requested or performed in the vicinity of the proposed tank farm, we can provide only general recommendations regarding foundation support of the structures.

INVESTIGATIVE PROCEDURES

On November 12, 1980, a total of four standard penetration test borings were performed on the site. Boring locations were selected by Klug and Smith Company at the corners of the proposed building. The borings were extended to a depth of 20' before termination, considered an adequate exploration depth for the understood project scope. The site location plan, Drawing C 9555-A1, shows the relative locations of the borings performed and the existing plant facilities. The site location plan and the boring logs are attached at the end of the report.

Previous soil borings were performed on the site on April 1 through 6, 1976, by our Milwaukee Testing Division. Approximate locations of the previous borings were noted on Drawing C 9555-A1. The boring logs from that investigation are included at the end of the report.

Ground surface elevations noted in this report and on the boring logs were provided by Klug and Smith Company.

During the field investigation, soil samples were obtained at regular intervals in accordance with procedures described in Appendix B. Samples were taken to our laboratory where they were visually classified by a geotechnical engineer, using the Unified Soil Classification System. Limited laboratory testing was performed on a selected sample to determine engineering characteristics. The results of visual classification and laboratory testing appear on the boring logs.

SITE DESCRIPTION

The site for the proposed building addition is located immediately to the north of the existing plant facilities. It is our understanding that some minor site grading and stripping had been performed prior to the start of drilling operations. Based on the ground surface elevation at the boring locations, it appears that the site is relatively level, with a gradual slope to the north. The maximum difference in elevation of the ground surface at the boring locations is on the order of three feet.

Because of previous site grading, no topsoil was encountered in the borings; however, a layer of crushed stone fill, approximately 1' thick, was encountered at Borings B2 and B4. The subsoils consist of brown, fine and silty fine sands with some gravel and occasional cobbles or boulders. Standard penetration test readings, in blows per foot, were consistently above 24 and in some instances greater than 60, indicating that the sand exhibits a medium to very dense relative density.

At Boring B2, a stratum of firm, brown, silty clay, approximately 3' thick was encountered immediately beneath the crushed stone fill.

Limited laboratory testing indicates that the silty clay has a relatively low to moderate compressibility.

The soil samples obtained from Boring B2 exhibited a chemical odor, noticeable to a depth of approximately 15'.

Free groundwater was not encountered in the borings; however, based on the relative moisture of the samples and the measured depths to cave-in in the boreholes, we would estimate that the present groundwater level on the site is at approximately 15' beneath the ground surface (corresponding to approximately Elevation 75).

On April 1 through 6, 1976, seven standard penetration test borings were performed for the existing building and tank farm by our Milwaukee Testing Division. Six of the borings were performed within the existing building and tank farm limits, as shown on Drawing C 9555-A1. The subsurface conditions as revealed by the previous borings were in general agreement with the findings of the present investigation. However, in the previous borings, substantial quantities of loose sand fill and more extensive amounts of clayey silts were encountered overlying medium to very dense sands and silty sands.

DISCUSSION AND RECOMMENDATIONS

A. Site Preparation

We recommend that any existing topsoil or vegetation be initially removed from the building area. The lateral extent of stripping should extend a minimum of 5 feet beyond proposed construction limits, where possible.

Floor grades should then be established by cutting or filling, as required. It appears that approximately 3 to 4 feet of compacted fill may

be required toward the north side of the building. We recommend that a minimum of 6 inches of relatively clean granular fill be compacted into place directly under the floor slab to provide an adequate bearing surface, and to act as a drainage blanket. We recommend that fill be placed in accordance with the attached specifications, with compaction monitored with periodic field density testing.

B. Foundation Design and Construction Considerations

In our opinion, the proposed building addition may be founded on a conventional shallow foundation system. Based on the available subsurface information, footings designed to bear within the natural medium to very dense, fine and silty fine sands on the site can adequately support foundation loads at the presumed bearing pressure of 3,000 PSF. If warranted, we believe that somewhat larger bearing pressures on the order of 6,000 PSF could be utilized. However, to avoid disproportionately small footing dimensions, we would recommend that continuous wall footings be dimensioned at least 18" wide, while column footing should be a minimum of 24" square. Footings subjected to seasonal temperature variations should be extended a minimum of 4' beneath finished grade, to provide adequate frost protection.

Prior to the placement of foundations, we recommend that footing subgrades be observed by a qualified geotechnical engineer, to confirm the adequacy of the bearing strata. The footing subgrades should be compacted with a hand-guided vibratory compactor, to densify any areas that may have been loosened during excavation. Loose or soft zones encountered should be recompacted, or removed and replaced with compacted granular fill, placed in accordance with the attached specifications.

It should be noted that soil containing appreciable amounts of silt, such as the silty sand on the site, are sensitive to disturbance,

especially if they become wet. Therefore, we recommend that the footing excavations be made by a backhoe operating outside the actual cut area and supplemented with hand trimming, where necessary.

Care should be exercised if excavations are performed near existing structures, so that existing footings are not undermined.

It is our opinion that foundations designed in accordance with the preceding recommendations will not experience significant settlement. We estimate a maximum possible total settlement of less than 1 inch, with a resulting differential settlement less than 1/2 inch, are possible The majority of any settlement will probably occur with the application of the building dead load, during construction.

C. Tank Farm

Since no soil borings were performed in the vicinity of the proposed tank farm, we can only provide general comments regarding foundation support of the tank structures. Based on the available subsurface information on the site, we would anticipate that the subsurface stratification would consist of dense sands underlying a firm, brown silty clay, similar to the conditions encountered at Boring B2. However, in order to confirm the subsurface conditions, we recommend that either additional exploratory borings be performed or shallow test pits be made in the area of the tanks.

It appears that silty clay soil, if encountered, and if similar in consistency to the firm, brown silty clay encountered at Boring B2, can probably remain in place beneath the tank mats. However, we recommend that this be confirmed in the field by a qualified geotechnical engineer

prior to the forming or pouring of foundations. If the clay does not appear competent, it should be undercut and replaced with compacted granular fill, placed in accordance with the attached specifications.

CLOSING REMARKS

We trust that this report meets with your immediate concerns on this project. If there are any questions with its contents, or if we may be of additional assistance, please contact us.

Respectively submitted,

WARZYN ENGINEERING INC.

Steven F. Moldt
Geotechnical Engineer

William W. Wuellner
Professional Engineer

SFM/WWW/amh
[WEI 13-19]
enc: Appendices A & B
General Specification No. 1
Drawing C 9555-A1
Boring Logs

APPENDIX "A"

Subsurface Investigation

GENERAL REMARKS

We have endeavored to evaluate subsurface conditions and physical properties of the subsoil as revealed by the borings and laboratory testing. A problem inherent in this evaluation is the variability in engineering properties within soil strata involved, and specifically in any location variation in the soil which is located between borings. Due to natural or man-made causes, subsurface conditions may change with time.

Conclusions drawn and recommendations given in this report are for a specific proposed use of this site. They are our opinions and are based upon conditions that existed at the boring locations and such parameters as proposed site usage, soil loading, elevations, etc..

Since subsurface conditions depend on seasonal moisture variations, frost action, construction methods, and the inherent natural variations, careful observations must be made during construction. These should be brought to our attention as it may be necessary to modify the conclusions and recommendations presented herein.

APPENDIX "B"

FIELD METHODS for EXPLORATION AND SAMPLING SOILS

A. Boring Procedures Between Samples

The bore hole is extended downward, between samples, by a continuous flight auger, driven and washed-out casing, or rotary boring with drilling mud or water.

B. Standard Penetration Test and Split-Barrel Sampling of Soils (ASTM* Designation: D 1586)

This method consists of driving a 2" outside diameter split barrel sampler using a 140 pound weight falling freely through a distance of 30 inches. The sampler is first seated 6" into the material to be sampled and then driven 12". The number of blows required to drive the sampler the final 12" is recorded on the log of borings and known as the Standard Penetration Resistance. Recovered samples are first classified as to texture by the driller. Later, in the laboratory the driller's classification is reviewed by a soils engineer who examines each sample.

C. Thin-walled Tube Sampling of Soils (ASTM* Designation: D 1587)

This method consists of forcing a 2" or 3" outside diameter thin wall tube by hydraulic or other means into soils, usually cohesive types. Relatively undisturbed samples are recovered.

D. Soil Investigation and Sampling by Auger Borings (ASTM* Designation: D 1452)

This method consists of augering a hole and removing representative soil samples from the auger flight or bucket at 5'0" intervals or with each change in the substrata. Relatively disturbed samples are obtained and its use is therefore limited to situations where it is satisfactory to determine approximate subsurface profile.

E. Diamond Core Drilling for Site Investigation (ASTM* Designation: D 2113)

This method consists of advancing a hole in hard strata by rotating downward a single tube or double tube core barrel equipped with a cutting bit. Diamond, tungsten carbide, or other cutting agents may be used for the bit. Wash water is used to remove the cuttings. Normally a 2" O.D. by 1 3/8" I.D. coring bit is used unless otherwise noted. The rock or hard material recovered within the core barrel is examined in the field and laboratory. Cores are stored in partitioned boxes and the length of recovered material is expressed as a percentage of the actual distance penetrated.

*American Society for Testing and Materials, Philadelphia, Pennsylvania

COMPACTED FILL SPECIFICATIONS

The fill shall be a material free from topsoil, vegetation, ash, wood or other foreign materials and free of all stones larger than four (4) inches. No frozen materials shall be placed nor shall the fill be placed on frozen ground. Fifty (50) pound representative samples of the proposed fill material shall be submitted to an independent laboratory for particle size analysis and optimum moisture-maximum density determinations prior to the start of any filling operations.

The approved material shall be placed in uniform layers not exceeding six (6) inches in depth after compaction. Moisture shall be added or the material shall be dried out as required to permit proper compaction. Each layer shall be uniformly spread and then compacted by mechanical means to the minimum percentage indicated in Table I. It is the responsibility of the Contractor to provide all necessary compaction equipment and other grading equipment that may be required to obtain the specified compaction. Compaction by travel of grading equipment will not be considered adequate for uniform compaction. Hand guided vibratory or tamping compactors will be required whenever fill may be placed adjacent to walls, footings, columns or in confined areas.

Maximum and minimum density of the fill soil for compaction of percentage compaction or relative density shall be determined in accordance with ASTM Test Designation D 1557, Method D, or ASTM Test Designation D 2049, respectively.

Table I

Area	Percent Compaction Fine-Grained Soil	Coarse-Grained Soil	Relative Density*
Within 10 feet of building lines under footings, floor slabs, and structures attached to buildings (i.e., walls, stoops, steps)	90%	95%	70%
10 feet beyond building lines under walks, aprons and paving, including subgrade preparation	85%	90%	60%
10 feet beyond building lines under seeded, sodded and landscaped areas	80%	90%	---

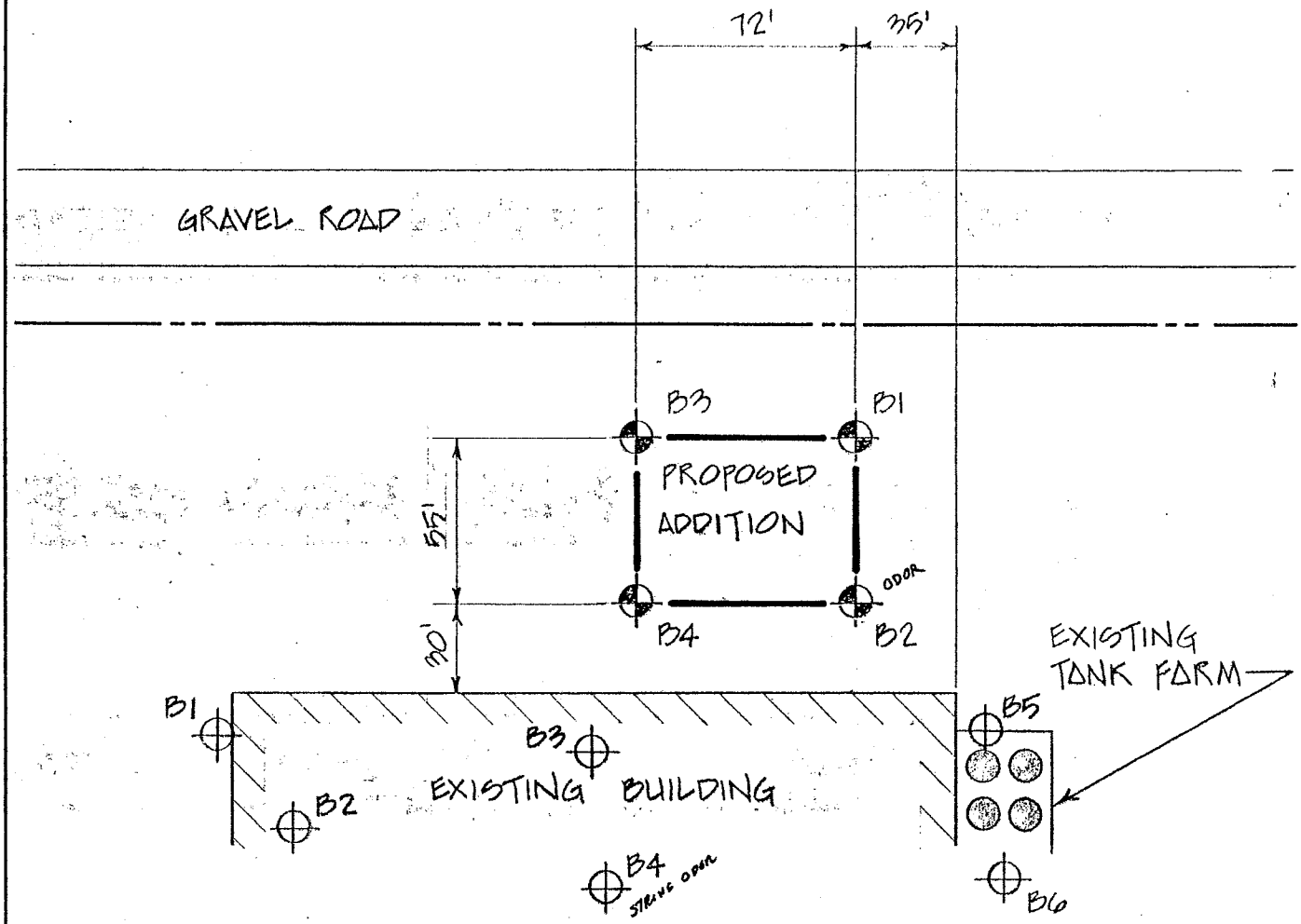
Coarse-grained soils are classified as those soils with more than 50% (by weight) larger than the No. 200 mesh sieve and with a plastic index less than 4.

*Minimum relative density requirements apply to coarse-grained soils and apply only in cases where the percentage compaction requirements are not being reached.

Field density tests for determining the compaction of the fill shall be performed by a qualified testing laboratory in accordance with standard recognized procedures for making such tests. These tests shall be made at one (1) foot intervals of fill elevation at locations selected by the Soils Engineer.

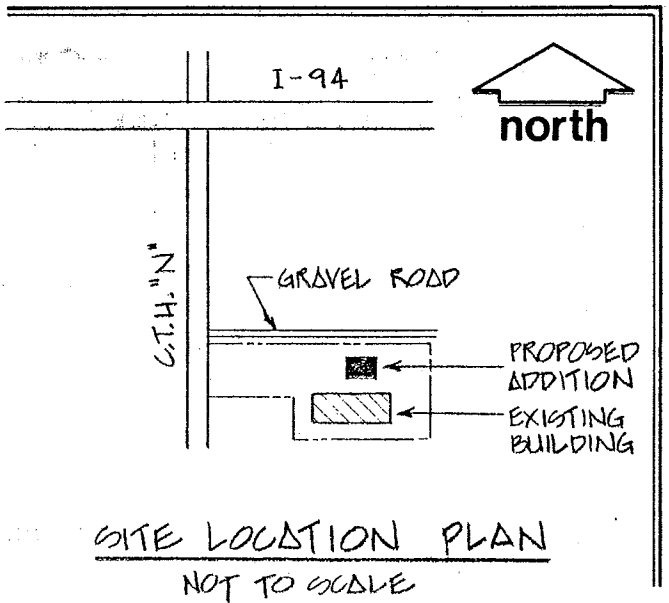
The testing laboratory shall be selected by the Owner or Architect and all passing tests will be paid for by the Owner. Tests not meeting the specified compaction will be paid for by the Contractor.

WARZYN ENGINEERING & SERVICE CO., INC.
1409 Emil Street Madison, Wisconsin



SOIL BORINGS PERFORMED BY WARZYN ENGINEERING INC. ON NOVEMBER 12, 1980.

SOIL BORINGS PERFORMED BY MILWAUKEE TESTING LABORATORY ON APRIL 1-6, 1976 (LOCATIONS APPROX.).



SITE LOCATION PLAN
NOT TO SCALE

SCALE : 1" = 60'

WARZYN ENGINEERING INC

SOIL BORING LOCATION PLAN HYDRITE CHEMICAL CO. COTTAGE GROVE, WISCONSIN

DWN TMS	CHK'D SFM	APP'D	DATE 11-20-80	C9555-A1

UNIFIED SOIL CLASSIFICATION SYSTEM

COARSE-GRAINED SOILS

(More than half of material is larger than No. 200 seive size.)

GRAVELS More than half of coarse fraction larger than No. 4 sieve size

Clean Gravels (Little or no fines)

GW	Well-graded gravels, gravel-sand mixtures, little or no fines
GP	Poorly graded gravels, gravel-sand mixtures, little or no fines

Gravels with Fines (Appreciable amount of fines)

GM_u^d	Silty gravels, gravel-sand-silt mixtures
GC	Clayey gravels, gravel-sand-clay mixtures

SANDS More than half of coarse fraction smaller than No. 4 sieve size

Clean Sands (Little or no fines)

SW	Well-graded sands, gravelly sands, little or no fines
SP	Poorly graded sands, gravelly sands, little or no fines

Sands with Fines (Appreciable amount of fines)

SM_u^d	Silty sands, sand-silt mixtures
SC	Clayey sands, sand-clay mixtures

FINE-GRAINED SOILS

(More than half of material is smaller than No. 200 sieve.)

SILTS AND CLAYS Liquid limit less than 50%

ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
OL	Organic silts and organic silty clays of low plasticity

SILTS AND CLAYS Liquid limit greater than 50%

MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
CH	Inorganic clays of high plasticity, fat clays
OH	Organic clays of medium to high plasticity, organic silts

HIGHLY ORGANIC SOILS

PT	Peat and other highly organic soils

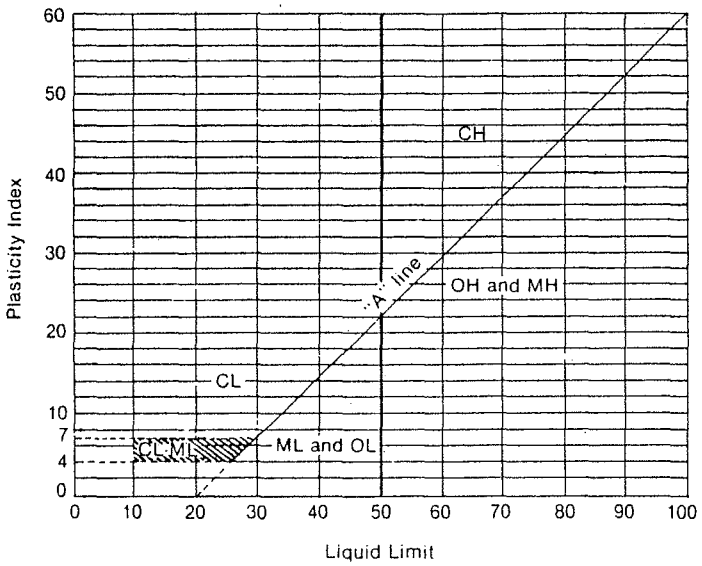
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} X D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} X D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for SW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in hatched zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 per cent	GW, GP, SW, SP
More than 12 per cent	GM, GC, SM, SC
5 to 12 per cent	Borderline cases requiring dual symbols

PLASTICITY CHART



For classification of fine-grained soils and fine fraction of coarse-grained soils.

Atterberg Limits plotting in hatched area are borderline classifications requiring use of dual symbols.

Equation of A-line: PI = 0.73 (LL - 20)

LOG OF TEST BORING

General Notes

Descriptive Soil Classification

GRAIN SIZE TERMINOLOGY

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse	¾" to 3"	¾" to 3"
Fine	4.76 mm to ¾"	#4 to ¾"
Sand: Coarse	2.00 mm to 4.76 mm	#10 to #4
Medium	0.42 mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm	#200 to #40
Silt	0.005 mm to 0.074 mm	Smaller than #200
Clay	Smaller than 0.005 mm	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

GENERAL TERMINOLOGY

Physical Characteristics
Color, moisture, grain shape, fineness, etc.

Major Constituents
Clay, silt, sand, gravel

Structure
Laminated, varved, fibrous, stratified, cemented, fissured, etc.

Geologic Origin
Glacial, alluvial, eolian, residual, etc.

RELATIVE DENSITY

Term	"N" Value
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

RELATIVE PROPORTIONS OF COHESIONLESS SOILS

Proportional Term	Defining Range By Percentage of Weight
Trace	0%- 5%
Little	5%-12%
Some	12%-35%
And	35%-50%

CONSISTENCY

Term	q_u-tons/sq. ft.
Very Soft	0.0 to 0.25
Soft	0.25 to 0.50
Medium	0.50 to 1.0
Stiff	1.0 to 2.0
Very Stiff	2.0 to 4.0
Hard	Over 4.0

ORGANIC CONTENT BY COMBUSTION METHOD

Soil Description	Loss on Ignition
Non Organic	Less than 4%
Organic Silt/Clay	4-12%
Sedimentary Peat	12-50%
Fibrous and Woody Peat	More than 50%

PLASTICITY

Term	Plastic Index
None to Slight	0-4
Slight	5-7
Medium	8-22
High to Very High	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" pentrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

Symbols

DRILLING AND SAMPLING

CS—Continuous Sampling
RC—Rock Coring: Size AW, BW, NW, 2" W
RQD—Rock Quality Designator
RB—Rock Bit
FT—Fish Tail
DC—Drove Casing
C—Casing: Size 2½", NW, 4", HW
CW—Clear Water
DM—Drilling Mud
HSA—Hollow Stem Auger
FA—Flight Auger
HA—Hand Auger
COA—Clean-Out Auger
SS—2" Diameter Split-Barrel Sample
2ST—2" Diameter Thin-Walled Tube Sample
3ST—3" Diameter Thin-Walled Tube Sample
PT—3" Diameter Piston Tube Sample
AS—Auger Sample
WS—Wash Sample
PTS—Peat Sample
PS—Pitcher Sample
NR—No Recovery
S—Sounding
PMT—Borehole Pressuremeter Test
VS—Vane Shear Test
WPT—Water Pressure Test

LABORATORY TESTS

q_p—Penetrometer Reading, tons/sq. ft.
q_u—Unconfined Strength, tons/sq. ft.
W—Moisture Content, %
LL—Liquid Limit, %
PL—Plastic Limit, %
SL—Shrinkage Limit, %
LI—Loss on Ignition, %
D—Dry Unit Weight, lbs./cu. ft.
pH—Measure of Soil Alkalinity or Acidity
FS—Free Swell, %

WATER LEVEL MEASUREMENT

▽—Water Level at time shown
NW—No Water Encountered
WD—While Drilling
BCR—Before Casing Removal
ACR—After Casing Removal
CW—Caved and Wet
CM—Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Building Addition
Hydrite Chemical Co.
Location: Cottage Grove, Wisconsin

Boring No. 1
Surface Elevation 89.98
Job No. C 9555
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture				q_u	W	LL	PL	D
No.	Type	↓	↓	N	Depth						
1	SS	X	M	40		Medium Dense, Brown, Fine SAND, Trace Silt, Little to Some Coarse Sand and Fine to Coarse Gravel, Occasional Cobbles (SP)					
2	SS	X	M	48	5						
3	SS	X	M	37							
4	SS	X	M	52	10	Medium to Very Dense, Brown, Silty Fine SAND, Some Fine to Coarse Gravel, Occasional Cobbles and Boulders (SM)					
5	SS	X	M	60/6"	15						
6	SS	X	W	60/4"	20	End Boring at 20'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling ¼ hour
Depth to Water
Depth to Cave In 15'CW

GENERAL NOTES

Start 11/12/80 Complete 11/12/80
Crew Chief JVS Rig B-40
Drilling Method CS 0-10'
FA 10-20'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Building Addition
Hydrite Chemical Co.
Location: Cottage Grove, Wisconsin

Boring No. 2
Surface Elevation 92.94
Job No. C 9555
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture				q_u	W	LL	PL	D
No.	Type	↓	↓	N	Depth						
						FILL: Crushed Stone					
1	SS	X	M	13		Brown, Silty CLAY, Trace to Little Fine Sand (CL)		23.6	38.2	20.9	
2	SS	X	M	24	5	Medium to Very Dense, Brown, Silty Fine SAND, Some Fine to Coarse Gravel, Occasional Cobbles and Boulders (SM)					
3	SS	X	M	37							
4	SS	X	M	39	10	Chemical Odor from 0 to 15'±					
5	SS	X	M	60/8"	15						
6	SS	X	M	60/6"	20	End Boring at 20'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling ¼ hour
Depth to Water
Depth to Cave In 16'CM

GENERAL NOTE

Start 11/12/80 Complete 11/12/80
Crew Chief JVS Rig B-40
Drilling Method CS 0-10'
FA 10-20'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Building Addition
Hydrite Chemical Company
Location: Cottage Grove, Wisconsin

Boring No. 3
Surface Elevation 89.51
Job No. C 9555
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE No.	Type	Recovery ↓	Moisture ↓	N	Depth	VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES q_u	W	LL	PL	D
1	SS	X	M	33		Medium to Very Dense, Brown, Silty Fine SAND, Some Fine to Coarse Gravel, Occasional Cobbles and Boulders (SM)					
2	SS	X	M	28	5						
3	SS	X	M	31							
4	SS	X	M	47	10						
5	SS	X	M	60/6"	15	Hit Boulder at 15'					
6	SS	X	M	60/6"	20	End Boring at 20'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling ¼ hour
Depth to Water
Depth to Cave In 14'CM

GENERAL NOTES

Start 11/12/80 Complete 11/12/80
Crew Chief JVS Rig B-40
Drilling Method CS 0-10'
FA 10-20'

WARZYN ENGINEERING INC

LOG OF TEST BORING

Project: Building Addition
Hydrite Chemical Company
Location: Cottage Grove, Wisconsin

Boring No. 4
Surface Elevation 91.74
Job No. C 9555
Sheet 1 of 1

1409 EMIL STREET • P.O. BOX 9538, MADISON, WIS. 53715 • TEL. (608) 257-4848

SAMPLE						VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
Recovery			Moisture								
No.	Type	↓	↓	N	Depth		q_u	W	LL	PL	D
						FILL: Crushed Stone					
1	SS	X	M	28		Medium Dense, Brown, Fine SAND, Trace to Little Silt, Little to Some Coarse Sand and Fine to Coarse Gravel, Occasional Cobbles (SP)					
2	SS	X	M	38	5						
3	SS	X	M	52							
4	SS	X	M	56	10	Medium to Very Dense, Brown, Silty Fine SAND, Some Fine to Coarse Gravel, Occasional Cobbles and Boulders (SM)					
5	SS	X	W	30	15						
6	SS	X	W	27	20	End Boring at 20'					
					25						
					30						
					35						
					40						

WATER LEVEL OBSERVATIONS

While Drilling
Upon Completion of Drilling
Time After Drilling ¼ hour
Depth to Water
Depth to Cave In 15'CW

GENERAL NOTES

Start 11/12/80 Complete 11/12/80
Crew Chief JVS Rig B-40
Drilling Method CS 0-10'
FA 10-20'

MILWAUKEE TESTING LABORATORY

2135 SOUTH 116TH STREET
MILWAUKEE, WISCONSIN 53227
TELEPHONE: 321-0100

MC-540

Log of Boring No. 1 Sheet 1 of 7

Project PROPOSED SOLVENT CHEMICAL PLANT, Cottage Grove, Wisconsin

Reported to: Klug & Smith Co., 4425 W. Mitchell St.,Milwaukee, Wi. 53214

Drive Pipe: O.D. ____" Wt. ____ # fall ____" Location: See Drawing No. MC-540-1
Sampler O.D. 2" Wt. 140 # fall 30" Existing Surface on Date of Boring 88.8

Ground Water Observations
Date | Time | Depth | Remarks

Party: J. Grieger, J. Spurley
Date: Start 4-2-76 Finish 4-2-76
Truck No. ____ Rig B-40

Moisture: Dry; D = Damp; M = Moist; W = Wet

Sample No.	Moisture	% Moisture	PL-% LL-%	Blows on Sampler per Foot	Sample	CLASSIFICATION AND REMARKS	Depth in Feet	Elevation	Unconf. Str.-Ton Field Penet.	Unconf. Str. Lb. per Sq. Ft. Laboratory Test	Dr. Pipe Blows
						Light brown SAND, trace silt, occasional gravel	0				
1	M			10		stone chip					
						Dark brown SILT					
2	M			6		Light grey, clayey SILT, mottled	5		.7		
3	M			8		Grey, mottled, sandy, clayey SILT, occasional gravel			2.0		
4	W			6			10				
						Grey, silty SAND					
5	W			22		Grey SAND, trace to little silt, occasional gravel and stone chip. Trace silt @ 15-ft.	15				
6	W			60/7"			20				
						End Boring 20'					
						Ground Water Observations:					
						At drilling 13'	25				
						½ hr. after drilling 11'3"					
						3 days after drilling 13'0"					
							30				
							35				
							40				

MILWAUKEE TESTING LABORATORY
2135 SOUTH 116TH STREET
MILWAUKEE, WISCONSIN 53227
TELEPHONE: 321-0100

MC-540

Log of Boring No. 2 Sheet 2 of 7

Project PROPOSED SOLVENT CHEMICAL PLANT, Cottage Grove, Wisconsin

Reported to: Klug & Smith Co., 4425 W. Mitchell St., Milwaukee, Wi. 53214

Drive Pipe: O.D. ____" Wt. ____ # fall ____" Location: See Drawing No. MC-540-1

Sampler O.D. 2" Wt. 140 # fall 30" Existing Surface on Date of Boring 89.8

Ground Water Observations

Date	Time	Depth	Remarks

Party: J. Grieger, J. Spurley

Date: Start 4/2/76 Finish 4/2/76

Truck No. ____ Rig B-40

Moisture: Dry; D = Damp; M = Moist; W = Wet

Sample No.	Moisture	% Moisture	PL-% LL-%	Blows on Sampler per Foot	Sample	CLASSIFICATION AND REMARKS	Depth in Feet	Elevation	Uncon. Str.-Ton Field Penet.	Uncon. Str., Lb. per Sq. Ft. Laboratory Test	Dr. Pipe Blows
						4" CONCRETE	0				
1	M			6		FILL. Brown sand, trace silt, occasional gravel and stone chip.					
2	M			5		Cinders, silt, gravel at 5-ft.	5				
3	M			16							
						Dark brown SILT					
4				17		Grey, mottled, clayey SILT, occasional gravel, trace to little sand	10		1.5		
5	W			11		Grey, very fine to medium, silty SAND					
6	W			60			15				
7	W			60/6"		Light grey and occasional dary grey, very fine to medium SAND, trace to little silt, occasional gravel and stone chips	20				
						End Boring 25'	25				
							30				
						Ground Water Observations: 1¼ hr. after drilling 14'6" 3 days after drilling 15' 4 days after drilling 15'	35				
							40				

MILWAUKEE TESTING LABORATORY
2135 SOUTH 116TH STREET
MILWAUKEE, WISCONSIN 53227
TELEPHONE: 321-0100

MC-540

Log of Boring No. 3 Sheet 3 of 7

Project: PROPOSED SOLVENT CHEMICAL PLANT, Cottage Grove, Wisconsin

Reported to: Klug & Smith Co., 4425 W. Mitchell St., Milwaukee, Wi. 53214

Drive Pipe: O.D. ____" Wt. ____ # fall ____" Location: See Drawing No. MC-540-1

Sampler O.D. 2 " Wt. 140 # fall 30 " Existing Surface on Date of Boring 90.5

Ground Water Observations

Date	Time	Depth	Remarks

Party: J. Grieger, J. Spurley

Date: Start 4/5/76 Finish 4/5/76

Truck No. ____ Rig B-40

Moisture: Dry; D = Damp; M = Moist; W = Wet

Sample No.	Moisture	% Moisture	PL-% LL-%	Blows on Sampler per Foot	Sample	CLASSIFICATION AND REMARKS	Depth in Feet	Elevation	Uncons. Str.-Ton Field Penet.	Uncons. Str. Lbs. per Sq. Ft. Laboratory Test	Dr. Pipe Blows
						6" crushed ROCK	0				
1	M			9		Brown, silty SAND, occasional gravel and stone chips					
2	M			6			5				
3	M			2							
4	M			8		Light brown, very fine to coarse SAND, trace silt, occasional gravel and stone chips	10				
5	W			60/8"		Brown, silty SAND, occasional gravel and stone chips	15				
6	W			48		Light brown SAND, trace silt with stone chips and gravel	20				
						End Boring 20'	25				
							30				
							35				
							40				

Ground Water Observations:

At drilling	15'
¼ hr. after drilling	16'
24 hrs. after drilling	16'4"

MILWAUKEE TESTING LABORATORY

2135 SOUTH 116TH STREET
MILWAUKEE, WISCONSIN 53227
TELEPHONE: 321-0100

MC-540

Boring No. 4 Sheet 4 of

PROPOSED SOLVENT CHEMICAL PLANT, Cottage Grove, Wisconsin

Reported to: Klug & Smith Co., 4425 W. Mitchell St., Milwaukee, Wi. 53214

Drive Pipe: O.D. ___" Wt. ___ # fall ___" Location: See Drawing No. MC-540-1

Sampler O.D. 2" Wt. 140 # fall 30" Existing Surface on Date of Boring 90.1

Ground Water Observations

Date	Time	Depth	Remarks

Party: J. Grieger, J. Spurley

Date: Start 4/1/76 Finish 4/1/76

Truck No. ___ Rig B-40

Moisture: Dry; D = Damp; M = Moist; W = Wet

Sample No.	Moisture	% Moisture	PL-% LL-%	Blows on Sampler per Foot	Sample	CLASSIFICATION AND REMARKS	Depth in Feet	Elevation	Unconf. Str.-Ton Field Penet.	Unconf. Str. Lb. per Sq. Ft. Laboratory Test	Dr. Pipe Blows
						1' crushed ROCK	0				
1	M			64		FILL. Light brown, very fine to coarse SAND, trace silt, occasional gravel and stone chips					
2	M			60/10"			5				
3	M			23		Brown, silty SAND, occasional gravel and stone chips					
4	M			26			10				
5				43		Occasional seams of clean, wet, sand at 13 - 17-ft. (Wet, not saturated)	15				
6	W			60/6"		Brown and grey, very fine to medium SAND occasional gravel, coarse sand, trace to little silt. Strong odor noted.	20				
7	W			60/7"			25				
8	W			60/11"			30				
						Ground Water Observations:					
						¼ hr. after drilling 18'6"					
						1 day " " 16'6"					
						4 days " " 16'2"					
						5 days " " 16'	35				
							40				

MILWAUKEE TESTING LABORATORY

2135 SOUTH 116TH STREET
MILWAUKEE, WISCONSIN 53227
TELEPHONE: 321-0100

MC-540

Log of Boring No. 5 Sheet 5 of 7

Project PROPOSED SOLVENT CHEMICAL PLANT, Cottage Grove, Wisconsin

Reported to: Klug & Smith Co., 4425 W. Mitchell St., Milwaukee, Wi. 53214

Drive Pipe: O.D. ____" Wt. ____ # fall ____" Location: See Drawing No. MC-540-1

Sampler O.D. 2." Wt. 140 # fall 30" Existing Surface on Date of Boring 90.3

Ground Water Observations

Date	Time	Depth	Remarks

Party: J. Grieger, J. Spurley

Date: Start 4/1/76 Finish 4/1/76

Truck No. ____ Rig b-40

Moisture: Dry; D = Damp; M = Moist; W = Wet

Sample No.	Moisture	% Moisture	PL-% LL-%	Blows on Sampler per Foot	Sample	CLASSIFICATION AND REMARKS	Depth in Feet	Elevation	Uncnf. Str.-Ton Field Penet.	Uncnf. Str. Lb. per Sq. Ft. Laboratory Test	Dr. Pipe Blows
						1' crushed ROCK	0				
1	M			10		Brown clayey SILT			2.0		
2	M			46		Light brown, very fine to coarse SAND, occasional gravel and stone chips, tr. silt	5				
3	M			16							
4	M			18		Brown, silty SAND, occasional gravel and stone chips, a little silt	10				
5	M			40			15				
6	W			60/6"			20				
7	W			60/3"		Grey brown SAND and GRAVEL, trace silt	25				
						End boring 25'					
						Ground Water Observations:	30				
						¼ hr. after drilling 17'2"					
						3 days " " 17'0"					
						5 days " " 17'0"	35				
							40				

MILWAUKEE TESTING LABORATORY

2135 SOUTH 116TH STREET
MILWAUKEE, WISCONSIN 53227
TELEPHONE: 321-0100

Log of Boring No. 6 Sheet 6 of 7

Project PROPOSED SOLVENT CHEMICAL PLANT, Cottage Grove, Wisconsin

Reported to: Klug & Smith Co., 4425 W. Mitchell St., Milwaukee, Wi. 53214

Drive Pipe: O.D. ____" Wt. ____ # fall ____" Location: See Drawing No. MC-53214
Sampler O.D. 2" Wt. 140 # fall 30" Existing Surface on Date of Boring 89.4

Ground Water Observations
Date | Time | Depth | Remarks

Party: J. Grieger, J. Spurley
Date: Start 4/6/76 Finish 4/6/76
Truck No. ____ Rig B-40

Moisture: Dry; D = Damp; M = Moist; W = Wet

Sample No.	Moisture	% Moisture	PL-% LL-%	Blows on Sampler per Foot	Sample	CLASSIFICATION AND REMARKS	Depth in Feet	Elevation	Unconf. Str.-Ton Field Penet.	Unconf. Str. Lb. per Sq. Ft. Laboratory Test	Dr. Pipe Blows
						4" crushed ROCK	0				
1	M			15		Brown, clayey SILT			2.5		
2	M			50		Light brown, SAND, trace silt with gravel and some chips	5				
3	M			20							
4	M			18		Brown, silty SAND, occasional gravel and stone chips	10				
5	M			56			15				
6	W			26		Light brown to brown and grey SAND, trace to little silt with gravel and stone chips	20				
						End Boring 20'					
						Ground Water Observations:	25				
						¼ hr. after drilling 16'					
						½ hr. after drilling 16'	30				
							35				
							40				

MILWAUKEE TESTING LABORATORY

2135 SOUTH 116TH STREET
MILWAUKEE, WISCONSIN 53227
TELEPHONE: 321-0100

MC-540

Log of Boring No. 7 Sheet 7 of 7

Project PROPOSED SOLVENT CHEMICAL PLANT, Cottage Grove, Wisconsin

Reported to: Klug & Smith Co., 4425 W. Mitchell St., Milwaukee, Wi. 53214

Drive Pipe: O.D. ____" Wt. ____ # fall ____" Location: See Drawing No. MC-540-1

Sampler O.D. 2 " Wt. 140 # fall 30 " Existing Surface on Date of Boring 89.5

Ground Water Observations

Date | Time | Depth | Remarks

Party: J. Grieger, J. Spurley

Date: Start 4-5-76 Finish 4-5-76

Truck No. ____ Rig B-40

Moisture: Dry; D = Damp; M = Moist; W = Wet

Sample No.	Moisture	% Moisture	PL-% LL-%	Blows on Sampler per Foot	Sample	CLASSIFICATION AND REMARKS	Depth in Feet	Elevation	Uncon. Str.-Ton Field Penet.	Uncon. Str. Lb. per Sq. Ft. Laboratory Test	Dr. Pipe Blows
						6" TOPSOIL	0				
1	M					Brown clayey SILT					
2	M					Brown, silty SAND, occasional gravel and stone chips	5				
3	M										
4	M					Light brown, SAND, trace to little silt with gravel and stone chips	10				
5	W						15				
6	W						20				
						End boring 25'	25				
						Ground Water Observations:	30				
						While drilling 17'					
						¼ hr. after drilling 18'	35				
						24 hr. after drilling 17'6"					
							40				

Appendix DD

Epigraph

RCRA Su[illegible]er BB
Master [illegible]it List

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
NPR-BV-900	NPR	North Process Room	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
NPR-BV-905	NPR	North Process Room	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
NPR-BV-910	NPR	North Process Room	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
NPR-BV-915	NPR	North Process Room	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
NPR-BV-920	NPR	North Process Room	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
NPR-BV-925	NPR	North Process Room	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
NPR-BV-930	NPR	North Process Room	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
NPR-CV-923	NPR	North Process Room	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
NPR-S-900	NPR	North Process Room	T-205	S	Strainer	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
NPR-TP-910	NPR	North Process Room	T-205	TP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
SOD-BV-100	SOD	Suck Out Dock	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
SOD-BV-105	SOD	Suck Out Dock	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
SOD-BV-120	SOD	Suck Out Dock	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
SOD-BV-125	SOD	Suck Out Dock	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
SOD-BV-130	SOD	Suck Out Dock	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
SOD-BV-135	SOD	Suck Out Dock	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
SOD-BV-140	SOD	Suck Out Dock	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
SOD-RCV-110	SOD	Suck Out Dock	400 TF PUMP HEADER	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
SOD-S-115	SOD	Suck Out Dock	400 TF PUMP HEADER	S	Strainer	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
SOD-TP-900	SOD	Suck Out Dock	400 TF PUMP HEADER	TP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T204-AG-100	T204	Tank 204	T-204	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T204-BV-110	T204	Tank 204	T-204	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T204-BV-115	T204	Tank 204	T-204	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T204-BV-125	T204	Tank 204	T-204	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T204-BV-130	T204	Tank 204	T-204	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T204-BV-140	T204	Tank 204	T-204	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T204-BV-305	T204	Tank 204	T-204	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T204-BV-305	T204	Tank 204	T-204	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T204-CV-120	T204	Tank 204	T-204	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T204-CV-300	T204	Tank 204	T-204	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T204-FA-300	T204	Tank 204	T-204	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T204-FL-100	T204	Tank 204	T-204	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T204-FV-105	T204	Tank 204	T-204	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T204-FV-135	T204	Tank 204	T-204	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T204-FV-145	T204	Tank 204	T-204	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T204-GV-100	T204	Tank 204	T-204	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T204-LSH-100	T204	Tank 204	T-204	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T204-PSE-100	T204	Tank 204	T-204	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T204-PVRV-300	T204	Tank 204	T-204	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T204-TP-100	T204	Tank 204	200 TF PUMP HEADER	TP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-AG-100	T205	Tank 205	T-205	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T205-BV-102	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-104	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-106	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-108	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-110	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-112	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-114	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-116	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-118	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-120	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-122	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-124	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-128	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-130	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-132	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-134	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-138	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-142	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-146	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-148	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-154	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-156	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-158	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-160	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-162	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-162	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-164	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
T205-BV-168	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-170	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-174	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-176	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-180	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-184	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-186	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-188	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-BV-190	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-192	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-BV-196	T205	Tank 205	T-205	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-CV-121	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-CV-126	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-CV-136	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-CV-144	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-CV-150	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-CV-152	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-CV-166	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-CV-172	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-CV-178	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-CV-182	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T205-CV-300	T205	Tank 205	T-205	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-FA-300	T205	Tank 205	T-205	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T205-LSH-100	T205	Tank 205	T-205	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T205-LT-100	T205	Tank 205	T-205	LT	Level Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T205-PSE-100	T205	Tank 205	T-205	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T205-PVRV-300	T205	Tank 205	T-205	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T205-RCV-100	T205	Tank 205	T-205	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-RCV-140	T205	Tank 205	T-205	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T205-RCV-194	T205	Tank 205	T-205	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T212-AG-100	T213	Tank 212	T-212	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T212-BV-110	T214	Tank 212	T-212	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T212-BV-120	T215	Tank 212	T-212	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T212-BV-125	T218	Tank 212	T-212	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T212-BV-130	T212	Tank 212	T-212	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T212-BV-145	T220	Tank 212	T-212	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T212-CV-135	T212	Tank 212	T-212	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T212-CV-300	T242	Tank 212	T-212	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T212-FA-300	T212	Tank 212	T-212	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T212-FL-115	T401	Tank 212	T-212	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T212-FV-105	T402	Tank 212	T-212	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T212-FV-140	T212	Tank 212	T-212	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T212-GV-100	T212	Tank 212	T-212	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T212-LSH-100	T212	Tank 212	T-212	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T212-PSE-100	T212	Tank 212	T-212	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T212-PVRV-300	T212	Tank 212	T-212	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T213-AG-100	T213	Tank 213	T-213	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T213-BV-110	T213	Tank 213	T-213	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T213-BV-120	T213	Tank 213	T-213	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T213-BV-125	T213	Tank 213	T-213	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T213-BV-130	T213	Tank 213	T-213	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T213-BV-145	T213	Tank 213	T-213	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T213-CV-135	T213	Tank 213	T-213	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T213-CV-300	T213	Tank 213	T-213	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T213-FA-300	T213	Tank 213	T-213	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T213-FL-115	T213	Tank 213	T-213	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T213-FV-105	T213	Tank 213	T-213	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T213-FV-140	T213	Tank 213	T-213	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T213-GV-100	T213	Tank 213	T-213	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T213-LSH-100	T213	Tank 213	T-213	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T213-PSE-100	T213	Tank 213	T-213	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T213-PVRV-300	T213	Tank 213	T-213	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T214-AG-100	T214	Tank 214	T-214	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T214-BV-110	T214	Tank 214	T-214	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T214-BV-120	T214	Tank 214	T-214	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T214-BV-125	T214	Tank 214	T-214	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T214-BV-130	T214	Tank 214	T-214	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T214-BV-145	T214	Tank 214	T-214	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,[illegible]	X

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
T214-BV-160	T214	Tank 214	T-214	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T214-BV-165	T214	Tank 214	T-214	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T214-CV-135	T214	Tank 214	T-214	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T214-CV-155	T214	Tank 214	T-214	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T214-CV-300	T214	Tank 214	T-214	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T214-FA-300	T214	Tank 214	T-214	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T214-FL-115	T214	Tank 214	T-214	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T214-FV-105	T214	Tank 214	T-214	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T214-FV-140	T214	Tank 214	T-214	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T214-FV-150	T214	Tank 214	T-214	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T214-GV-100	T214	Tank 214	T-214	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T214-LSH-100	T214	Tank 214	T-214	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T214-PSE-100	T214	Tank 214	T-214	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T214-PVRV-300	T214	Tank 214	T-214	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T215-AG-100	T215	Tank 215	T-215	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T215-BV-110	T215	Tank 215	T-215	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T215-BV-120	T215	Tank 215	T-215	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T215-BV-125	T215	Tank 215	T-215	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T215-BV-130	T215	Tank 215	T-215	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T215-BV-145	T215	Tank 215	T-215	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T215-BV-160	T215	Tank 215	T-215	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T215-BV-165	T215	Tank 215	T-215	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T215-CV-135	T215	Tank 215	T-215	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T215-CV-155	T215	Tank 215	T-215	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T215-CV-300	T215	Tank 215	T-215	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T215-FA-300	T215	Tank 215	T-215	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T215-FL-115	T215	Tank 215	T-215	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T215-FV-105	T215	Tank 215	T-215	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T215-FV-140	T215	Tank 215	T-215	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T215-FV-150	T215	Tank 215	T-215	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T215-GV-100	T215	Tank 215	T-215	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T215-LSH-100	T215	Tank 215	T-215	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T215-PSE-100	T215	Tank 215	T-215	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T215-PVRV-300	T215	Tank 215	T-215	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T218-AG-100	T218	Tank 218	T-218	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T218-BV-105	T218	Tank 218	T-218	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T218-BV-110	T218	Tank 218	T-218	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T218-BV-125	T218	Tank 218	T-218	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T218-BV-140	T218	Tank 218	T-218	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T218-BV-150	T218	Tank 218	T-218	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T218-CV-145	T218	Tank 218	T-218	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T218-CV-300	T218	Tank 218	T-218	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T218-FA-300	T218	Tank 218	T-218	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T218-FL-130	T218	Tank 218	T-218	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T218-FV-115	T218	Tank 218	T-218	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T218-FV-120	T218	Tank 218	T-218	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T218-FV-135	T218	Tank 218	T-218	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T218-GV-100	T218	Tank 218	T-218	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T218-LSH-100	T218	Tank 218	T-218	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T218-PSE-100	T218	Tank 218	T-218	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T218-PVRV-300	T218	Tank 218	T-218	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T219-AG-100	T219	Tank 219	T-219	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T219-BV-110	T219	Tank 219	T-219	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T219-BV-115	T219	Tank 219	T-219	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T219-BV-120	T219	Tank 219	T-219	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T219-BV-125	T219	Tank 219	T-219	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T219-BV-135	T219	Tank 219	T-219	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T219-BV-145	T219	Tank 219	T-219	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T219-CV-140	T219	Tank 219	T-219	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T219-CV-300	T219	Tank 219	T-219	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T219-FA-300	T219	Tank 219	T-219	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T219-FV-105	T219	Tank 219	T-219	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T219-FV-130	T219	Tank 219	T-219	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T219-GV-100	T219	Tank 219	T-219	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T219-LSH-100	T219	Tank 219	T-219	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T219-PSE-100	T219	Tank 219	T-219	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T219-PVRV-300	T219	Tank 219	T-219	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T220-AG-100	T220	Tank 220	T-220	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
T220-BV-110	T220	Tank 220	T-220	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-BV-115	T220	Tank 220	T-220	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-BV-120	T220	Tank 220	T-220	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-BV-125	T220	Tank 220	T-220	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T220-BV-130	T220	Tank 220	T-220	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T220-BV-135	T220	Tank 220	T-220	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T220-BV-145	T220	Tank 220	T-220	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-BV-155	T220	Tank 220	T-220	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-BV-165	T220	Tank 220	T-220	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-CV-140	T220	Tank 220	T-220	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T220-CV-160	T220	Tank 220	T-220	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-CV-300	T220	Tank 220	T-220	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-FA-300	T220	Tank 220	T-220	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T220-FV-105	T220	Tank 220	T-220	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-FV-150	T220	Tank 220	T-220	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-GV-100	T220	Tank 220	T-220	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T220-LSH-100	T220	Tank 220	T-220	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T220-PSE-100	T220	Tank 220	T-220	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T220-PVRV-300	T220	Tank 220	T-220	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T221-AG-100	T221	Tank 221	T-221	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T221-BV-110	T221	Tank 221	T-221	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T221-BV-115	T221	Tank 221	T-221	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T221-BV-120	T221	Tank 221	T-221	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T221-BV-125	T221	Tank 221	T-221	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T221-BV-135	T221	Tank 221	T-221	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T221-BV-145	T221	Tank 221	T-221	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T221-CV-140	T221	Tank 221	T-221	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T221-CV-300	T221	Tank 221	T-221	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T221-FA-300	T221	Tank 221	T-221	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T221-FV-105	T221	Tank 221	T-221	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T221-FV-130	T221	Tank 221	T-221	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T221-GV-100	T221	Tank 221	T-221	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T221-LSH-100	T221	Tank 221	T-221	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T221-PSE-100	T221	Tank 221	T-221	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T221-PVRV-300	T221	Tank 221	T-221	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T222-BV-110	T222	Tank 222	T-222	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-BV-115	T222	Tank 222	T-222	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-BV-125	T222	Tank 222	T-222	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-BV-135	T222	Tank 222	T-222	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-BV-140	T222	Tank 222	T-222	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-BV-150	T222	Tank 222	T-222	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T222-BV-300	T222	Tank 222	T-222	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-CD-300	T222	Tank 222	T-222	CD	Carbon Drum	≥ 10%	Gas or Vapor Service	Monthly Monitoring - Method 21	500	
T222-CV-120	T222	Tank 222	T-222	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-CV-130	T222	Tank 222	T-222	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-CV-305	T222	Tank 222	T-222	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-FA-300	T222	Tank 222	T-222	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T222-FV-105	T222	Tank 222	T-222	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-FV-145	T222	Tank 222	T-222	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T222-GV-100	T222	Tank 222	T-222	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T222-LI-100	T222	Tank 222	T-222	LI	Level Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T222-LSH-100	T222	Tank 222	T-222	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T222-PSE-100	T222	Tank 222	T-222	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T222-PVRV-300	T222	Tank 222	T-222	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	X
T228-BV-110	T228	Tank 228	T-228	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T228-BV-115	T228	Tank 228	T-228	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T228-BV-125	T228	Tank 228	T-228	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T228-BV-300	T228	Tank 228	T-228	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T228-CD-300	T228	Tank 228	T-228	CD	Carbon Drum	≥ 10%	Gas or Vapor Service	Monthly Monitoring - Method 21	500	
T228-CV-305	T228	Tank 228	T-228	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T228-FA-300	T228	Tank 228	T-228	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T228-FV-105	T228	Tank 228	T-228	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T228-FV-120	T228	Tank 228	T-228	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T228-GV-100	T228	Tank 228	T-228	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T228-LI-100	T228	Tank 228	T-228	LI	Level Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T228-LSH-100	T228	Tank 228	T-228	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T228-PSE-100	T228	Tank 228	T-228	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T228-PVRV-300	T228	Tank 228	T-228	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	X

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
T235-BV-110	T235	Tank 235	T-235	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-BV-115	T235	Tank 235	T-235	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-BV-120	T235	Tank 235	T-235	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-BV-125	T235	Tank 235	T-235	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-BV-130	T235	Tank 235	T-235	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-BV-138	T235	Tank 235	T-235	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-BV-145	T235	Tank 235	T-235	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-BV-155	T235	Tank 235	T-235	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T235-BV-300	T235	Tank 235	T-235	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-CD-300	T235	Tank 235	T-235	CD	Carbon Drum	≥ 10%	Gas or Vapor Service	Monthly Monitoring - Method 21	500	
T235-CV-135	T235	Tank 235	T-235	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-CV-140	T235	Tank 235	T-235	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-CV-305	T235	Tank 235	T-235	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-FA-300	T235	Tank 235	T-235	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T235-FV-105	T235	Tank 235	T-235	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-FV-150	T235	Tank 235	T-235	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T235-GV-100	T235	Tank 235	T-235	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T235-LI-100	T235	Tank 235	T-235	LI	Level Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T235-LSH-100	T235	Tank 235	T-235	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T235-PSE-100	T235	Tank 235	T-235	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T235-PVRV-300	T235	Tank 235	T-235	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	X
T241-AG-100	T241	Tank 241	T-241	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T241-BV-110	T241	Tank 241	T-241	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T241-BV-115	T241	Tank 241	T-241	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T241-BV-120	T241	Tank 241	T-241	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T241-BV-125	T241	Tank 241	T-241	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T241-BV-133	T241	Tank 241	T-241	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T241-BV-135	T241	Tank 241	T-241	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T241-BV-140	T241	Tank 241	T-241	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T241-BV-145	T241	Tank 241	T-241	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T241-CV-130	T241	Tank 241	T-241	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T241-FA-300	T241	Tank 241	T-241	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T241-FV-105	T241	Tank 241	T-241	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T241-GV-100	T241	Tank 241	T-241	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T241-LSH-100	T241	Tank 241	T-241	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T241-PSE-100	T241	Tank 241	T-241	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
T241-PVRV-300	T241	Tank 241	T-241	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T242-AG-100	T242	Tank 242	T-242	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T242-BV-110	T242	Tank 242	T-242	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T242-BV-115	T242	Tank 242	T-242	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T242-BV-120	T242	Tank 242	T-242	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T242-BV-128	T242	Tank 242	T-242	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T242-BV-130	T242	Tank 242	T-242	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T242-BV-135	T242	Tank 242	T-242	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T242-BV-140	T242	Tank 242	T-242	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T242-CV-125	T242	Tank 242	T-242	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T242-FA-300	T242	Tank 242	T-242	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T242-FV-105	T242	Tank 242	T-242	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T242-GV-100	T242	Tank 242	T-242	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T242-LSH-100	T242	Tank 242	T-242	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T242-PSE-100	T242	Tank 242	T-242	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T242-PVRV-300	T242	Tank 242	T-242	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T400-BV-100	T400	Tank 400	400 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T400-CD-300	T400	Tank 400	400 TF VENT HEADER	CD	Carbon Drum	≥ 10%	Gas or Vapor Service	Monthly Monitoring - Method 21	500	
T400-CV-300	T400	Tank 400	400 TF VENT HEADER	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T401-AG-100	T401	Tank 401	T-401	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T401-BV-110	T401	Tank 401	T-401	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T401-CV-120	T401	Tank 401	T-401	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T401-CV-300	T401	Tank 401	T-401	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T401-FA-300	T401	Tank 401	T-401	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T401-FV-105	T401	Tank 401	T-401	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T401-GV-100	T401	Tank 401	T-401	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T401-LSH-100	T401	Tank 401	T-401	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T401-LT-100	T401	Tank 401	T-401	LT	Level Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T401-PSE-100	T401	Tank 401	T-401	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T401-PVRV-300	T401	Tank 401	T-401	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T401-RCV-115	T401	Tank 401	T-401	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T402-AG-100	T402	Tank 402	T-402	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
T402-BV-110	T402	Tank 402	T-402	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T402-CV-120	T402	Tank 402	T-402	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
T402-CV-300	T402	Tank 402	T-402	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T402-FA-300	T402	Tank 402	T-402	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T402-FV-105	T402	Tank 402	T-402	FV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T402-GV-100	T402	Tank 402	T-402	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
T402-LSH-100	T402	Tank 402	T-402	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T402-LT-100	T402	Tank 402	T-402	LT	Level Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T402-PSE-100	T402	Tank 402	T-402	PSE	Pressure-Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
T402-PVRV-300	T402	Tank 402	T-402	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	
T402-RCV-115	T402	Tank 402	T-402	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
TF100-BV-105	TF100	Tank Farm 100	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF100-BV-110	TF100	Tank Farm 100	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF100-BV-115	TF100	Tank Farm 100	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF100-BV-120	TF100	Tank Farm 100	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
TF100-CV-100	TF100	Tank Farm 100	400 TF PUMP HEADER	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF100-RCV-125	TF100	Tank Farm 100	400 TF PUMP HEADER	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
TF200-BV-300	TF200	Tank Farm 200	200 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-315	TF200	Tank Farm 200	200 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-320	TF200	Tank Farm 200	200 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
TF200-BV-325	TF200	Tank Farm 200	200 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
TF200-BV-330	TF200	Tank Farm 200	200 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
TF200-BV-335	TF200	Tank Farm 200	200 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
TF200-BV-900	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-905	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-915	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-920	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-925	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-930	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-935	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-945	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-950	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-953	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-955	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-960	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-965	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-970	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-975	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-980	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-985	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-BV-990	TF200	Tank Farm 200	200 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-CD-305	TF200	Tank Farm 200	200 TF VENT HEADER	CD	Carbon Drum	≥ 10%	Gas or Vapor Service	Monthly Monitoring - Method 21	500	
TF200-CV-310	TF200	Tank Farm 200	200 TF VENT HEADER	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-CV-340	TF200	Tank Farm 200	200 TF VENT HEADER	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
TF200-CV-940	TF200	Tank Farm 200	200 TF PUMP HEADER	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF200-S-910	TF200	Tank Farm 200	200 TF PUMP HEADER	S	Strainer	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
TF200-TP-910	TF200	Tank Farm 200	200 TF PUMP HEADER	TP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-300	TF400	Tank Farm 400	400 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-305	TF400	Tank Farm 400	400 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-315	TF400	Tank Farm 400	400 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-320	TF400	Tank Farm 400	400 TF VENT HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-900	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-905	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-910	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
TF400-BV-915	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-920	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-930	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-935	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-940	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-945	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-950	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-955	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
TF400-BV-960	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-961	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-962	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-963	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-964	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-965	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,0[illegible]	

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
TF400-BV-967	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-968	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-970	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-975	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-BV-980	TF400	Tank Farm 400	400 TF PUMP HEADER	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-FA-300	TF400	Tank Farm 400	400 TF VENT HEADER	FA	Flame Arrestor	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
TF400-PVRV-300	TF400	Tank Farm 400	400 TF VENT HEADER	PVRV	Pressure / Vacuum Relief Vent	≥ 10%	Gas or Vapor Service	No Detectable Emissions	500	X
TF400-S-900	TF400	Tank Farm 400	400 TF PUMP HEADER	S	Strainer	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
TF400-TP-900	TF400	Tank Farm 400	400 TF PUMP HEADER	TP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
TF400-TP-910	TF400	Tank Farm 400	400 TF PUMP HEADER	TP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-T-100	PT900	Pot Still	VP-Pot Still	T	Tank	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
PT900-BV-100	PT900	Pot Still	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-BV-101	PT900	Pot Still	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-BV-102	PT900	Pot Still	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-BV-103	PT900	Pot Still	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-BV-105	PT900	Pot Still	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-BV-106	PT900	Pot Still	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-BV-107	PT900	Pot Still	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-BV-108	PT900	Pot Still	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-CV-110	PT900	Pot Still	VP-Pot Still	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-CV-115	PT900	Pot Still	VP-Pot Still	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
PT900-F-305	PT900	Pot Still	VP-Pot Still	F	Filter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
PT900-LSH-100	PT900	Pot Still	VP-Pot Still	LSH	Level Switch-High	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
PT900-FL-100	PT900	Pot Still	VP-Pot Still	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-BV-100	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-101	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-105	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-106	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-125	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-200	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-205	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-208	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-210	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-215	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-216	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-218	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-220	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-222	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-225	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-230	C001	Column 1	C001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-300	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-301	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-400	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-401	C001	Column 1	C001 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-405	C001	Column 1	C001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-406	C001	Column 1	C001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-410	C001	Column 1	C001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-411	C001	Column 1	C001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-414	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-415	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-416	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-417	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-418	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-419	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-420	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-421	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-422	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-425	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-426	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-427	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-428	C001	Column 1	C001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-429	C001	Column 1	C001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-430	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-431	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-435	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-436	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-437	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-439	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
C001-BV-440	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-441	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-443	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-445	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-446	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-447	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-450	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-451	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-455	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-BV-456	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-457	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-460	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-461	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-BV-465	C001	Column 1	C001 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-C-400	C001	Column 1	C001 Overheads	C	Column	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-CT-400	C001	Column 1	C001 Receiver	CT	Cut Tank	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-CV-103	C001	Column 1	C001 Reboiler	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-CV-305	C001	Column 1	C001 Receiver	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-DP-400	C001	Column 1	C001 Receiver	DP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-DPT-400	C001	Column 1	C001 Overheads	DPT	Differential Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-DPT-405	C001	Column 1	C001 Overheads	DPT	Differential Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-FL-200	C001	Column 1	C001 Reboiler	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-FT-400	C001	Column 1	C001 Receiver	FT	Flow Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-GV-403	C001	Column 1	C001 Receiver	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-GV-412	C001	Column 1	C001 Receiver	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-HX-200	C001	Column 1	C001 Reboiler	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-HX-400	C001	Column 1	C001 Overheads	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-HX-405	C001	Column 1	C001 Receiver	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-LI-400	C001	Column 1	C001 Receiver	LI	Level Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-LS-100	C001	Column 1	C001 Reboiler	LS	Level Switch	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-PCV-400	C001	Column 1	C001 Receiver	PCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-PHS-400	C001	Column 1	C001 Reboiler	PHS	Phase Separator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-PI-400	C001	Column 1	C001 Overheads	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-PI-405	C001	Column 1	C001 Reboiler	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-PI-410	C001	Column 1	C001 Receiver	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-PI-415	C001	Column 1	C001 Receiver	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-PSE-300	C001	Column 1	C001 Reboiler	PSE	Pressure Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-PT-400	C001	Column 1	C001 Reboiler	PT	Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-PV-108	C001	Column 1	C001 Reboiler	PV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-PV-203	C001	Column 1	C001 Reboiler	PV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-RB-100	C001	Column 1	C001 Reboiler	RB	Reboiler	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-RCR-400	C001	Column 1	C001 Receiver	RCR	Receiver	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-RCV-400	C001	Column 1	C001 Receiver	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-RCV-410	C001	Column 1	C001 Receiver	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C001-RP-200	C001	Column 1	C001 Reboiler	RP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C001-SG-200	C001	Column 1	C001 Overheads	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-SG-400	C001	Column 1	C001 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-SG-405	C001	Column 1	C001 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-SG-410	C001	Column 1	C001 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-TI-400	C001	Column 1	C001 Overheads	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-TI-415	C001	Column 1	C001 Receiver	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-TI-420	C001	Column 1	C001 Receiver	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-TI-425	C001	Column 1	C001 Receiver	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-TI-430	C001	Column 1	C001 Reboiler	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-TT-100	C001	Column 1	C001 Reboiler	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-TT-405	C001	Column 1	C001 Overheads	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-TT-420	C001	Column 1	C001 Overheads	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-TT-425	C001	Column 1	C001 Receiver	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C001-TT-430	C001	Column 1	C001 Receiver	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C001-TT-435	C001	Column 1	C001 Receiver	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-100	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-101	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-110	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-111	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-115	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-117	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-118	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-120	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
C003-BV-150	C003	Column 3	C003 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-200	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-205	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-210	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-220	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-230	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-232	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-234	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-235	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-250	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-260	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-300	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-305	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-310	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-315	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-320	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-322	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-325	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-330	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-400	C003	Column 3	C003 Reboiler	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-410	C003	Column 3	C003 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-415	C003	Column 3	C003 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-418	C003	Column 3	C003 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-420	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-425	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-430	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-431	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-432	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-433	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-434	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-435	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-436	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-437	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-438	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-439	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-440	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-441	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-442	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-443	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-444	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-445	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-447	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-450	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-452	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-455	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-456	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-457	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-458	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-460	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-462	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-463	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-465	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-466	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-467	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-470	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-471	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-475	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-476	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-477	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-480	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-481	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-482	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-BV-485	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-487	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-488	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-BV-490	C003	Column 3	C003 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-C-400	C003	Column 3	C003 Overheads	C	Column	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-CT-400	C003	Column 3	C003 Receiver	CT	Cut Tank	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
C003-CV-312	C003	Column 3	C003 Receiver	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-CV-405	C003	Column 3	C003 Receiver	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-CV-406	C003	Column 3	C003 Receiver	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-DP-400	C003	Column 3	C003 Receiver	DP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-DP-405	C003	Column 3	C003 Receiver	DP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-DPT-400	C003	Column 3	C003 Overheads	DPT	Differential Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-DPT-405	C003	Column 3	C003 Overheads	DPT	Differential Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-FL-200	C003	Column 3	C003 Reboiler	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-FT-100	C003	Column 3	C003 Reboiler	FT	Flow Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-FT-400	C003	Column 3	C003 Receiver	FT	Flow Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-FT-405	C003	Column 3	C003 Receiver	FT	Flow Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-GV-204	C003	Column 3	C003 Reboiler	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-GV-303	C003	Column 3	C003 Receiver	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-GV-407	C003	Column 3	C003 Receiver	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-GV-412	C003	Column 3	C003 Receiver	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-GV-413	C003	Column 3	C003 Receiver	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-GV-414	C003	Column 3	C003 Receiver	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-HX-200	C003	Column 3	C003 Reboiler	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-HX-400	C003	Column 3	C003 Overheads	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-HX-405	C003	Column 3	C003 Overheads	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-HX-410	C003	Column 3	C003 Receiver	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-PCV-400	C003	Column 3	C003 Receiver	PCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-PHS-400	C003	Column 3	C003 Reboiler	PHS	Phase Separator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-PI-230	C003	Column 3	C003 Reboiler	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-PI-400	C003	Column 3	C003 Reboiler	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-PI-415	C003	Column 3	C003 Receiver	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-PI-445	C003	Column 3	C003 Receiver	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-PI-450	C003	Column 3	C003 Receiver	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-PI-480	C003	Column 3	C003 Receiver	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-PSE-300	C003	Column 3	C003 Reboiler	PSE	Pressure Safety Element	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-PT-400	C003	Column 3	C003 Reboiler	PT	Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-PT-405	C003	Column 3	C003 Overheads	PT	Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-PT-410	C003	Column 3	C003 Overheads	PT	Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-PT-415	C003	Column 3	C003 Receiver	PT	Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-PV-203	C003	Column 3	C003 Reboiler	PV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-RB-100	C003	Column 3	C003 Reboiler	RB	Reboiler	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-RCR-400	C003	Column 3	C003 Receiver	RCR	Receiver	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-RCV-300	C003	Column 3	C003 Receiver	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-RCV-400	C003	Column 3	C003 Receiver	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-RCV-410	C003	Column 3	C003 Receiver	RCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
C003-RP-200	C003	Column 3	C003 Reboiler	RP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
C003-SG-400	C003	Column 3	C003 Overheads	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-SG-405	C003	Column 3	C003 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-SG-410	C003	Column 3	C003 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-SG-415	C003	Column 3	C003 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-SG-420	C003	Column 3	C003 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-SG-425	C003	Column 3	C003 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-SG-430	C003	Column 3	C003 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-TI-100	C003	Column 3	C003 Reboiler	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-TI-230	C003	Column 3	C003 Reboiler	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-TI-416	C003	Column 3	C003 Receiver	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-TI-417	C003	Column 3	C003 Receiver	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-TT-100	C003	Column 3	C003 Reboiler	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-TT-105	C003	Column 3	C003 Reboiler	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-TT-400	C003	Column 3	C003 Overheads	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-TT-405	C003	Column 3	C003 Overheads	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-TT-410	C003	Column 3	C003 Overheads	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
C003-TT-415	C003	Column 3	C003 Receiver	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
C003-TT-420	C003	Column 3	C003 Reboiler	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L001-AG-100	L001	LUWA 1	L001 Evaporator	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-BP-200	L001	LUWA 1	L001 Evaporator	BP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-100	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-101	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-102	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-103	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-104	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-105	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-106	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,0	

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
L001-BV-107	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-108	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-109	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-BV-110	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-BV-111	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-BV-200	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-201	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-202	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-203	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-204	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-205	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-206	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-207	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-208	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-BV-209	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-300	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-BV-301	L001	LUWA 1	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-BV-400	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-401	L001	LUWA 1	L001 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-402	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-BV-403	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-404	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-405	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-406	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-407	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-408	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-409	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-BV-410	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-BV-420	L001	LUWA 1	L001 Overheads	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-CV-310	L001	LUWA 1	L001 Overheads	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-CV-417	L001	LUWA 1	L001 Overheads	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-DP-400	L001	LUWA 1	L001 Overheads	DP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-DPT-400	L001	LUWA 1	L001 Evaporator	DPT	Differential Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-FL-100	L001	LUWA 1	L001 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L001-FL-200	L001	LUWA 1	L001 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-FL-205	L001	LUWA 1	L001 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-FL-400	L001	LUWA 1	L001 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-FL-405	L001	LUWA 1	L001 Overheads	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L001-FP-105	L001	LUWA 1	L001 Evaporator	FP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-FT-100	L001	LUWA 1	L001 Overheads	FT	Flow Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-FT-105	L001	LUWA 1	L001 Evaporator	FT	Flow Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L001-GV-305	L001	LUWA 1	L001 Overheads	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L001-GV-415	L001	LUWA 1	L001 Overheads	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L001-HX-400	L001	LUWA 1	L001 Overheads	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-LS-100	L001	LUWA 1	L001 Evaporator	LS	Level Switch	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L001-LT-400	L001	LUWA 1	L001 Overheads	LT	Level Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L001-PI-300	L001	LUWA 1	L001 Overheads	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L001-PT-400	L001	LUWA 1	L001 Overheads	PT	Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L001-PT-405	L001	LUWA 1	L001 Evaporator	PT	Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-RCR-400	L001	LUWA 1	L001 Overheads	RCR	Receiver	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-SG-200	L001	LUWA 1	L001 Evaporator	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-SG-400	L001	LUWA 1	L001 Overheads	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-SG-405	L001	LUWA 1	L001 Overheads	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-SG-410	L001	LUWA 1	L001 Overheads	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-SG-415	L001	LUWA 1	L001 Overheads	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-SG-420	L001	LUWA 1	L001 Overheads	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-TFE-100	L001	LUWA 1	L001 Evaporator	TFE	Thin Film Evaporator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-TT-400	L001	LUWA 1	L001 Overheads	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L001-TT-405	L001	LUWA 1	L001 Evaporator	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-AG-100	L004	LUWA 4	L004 Evaporator	AG	Agitator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-BP-200	L004	LUWA 4	L004 Bottoms	BP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-100	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-101	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-102	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-103	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-104	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-105	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-106	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
L004-BV-107	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-108	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-110	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-115	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-120	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-125	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-160	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-180	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-185	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-190	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-195	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-200	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-210	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-215	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-220	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-225	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-230	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-235	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-240	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-245	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-250	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-255	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-260	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-265	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-266	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-270	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-275	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-280	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-285	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-290	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-295	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-297	L004	LUWA 4	L004 Bottoms	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-300	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-305	L004	LUWA 4	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-306	L004	LUWA 4	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-310	L004	LUWA 4	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-400	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-401	L004	LUWA 4	L004 Evaporator	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-402	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-404	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-406	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-408	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-410	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-412	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-414	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-416	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-418	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-422	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-424	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-425	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-426	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-428	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-430	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-435	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-BV-438	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-BV-442	L004	LUWA 4	L004 Receiver	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-CV-405	L004	LUWA 4	L004 Receiver	CV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-DP-400	L004	LUWA 4	L004 Receiver	DP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-DP-405	L004	LUWA 4	L004 Receiver	DP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-FL-100	L004	LUWA 4	L004 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-FL-110	L004	LUWA 4	L004 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L004-FL-120	L004	LUWA 4	L004 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-FL-125	L004	LUWA 4	L004 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-FL-180	L004	LUWA 4	L004 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-FL-210	L004	LUWA 4	L004 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-FL-300	L004	LUWA 4	L004 Receiver	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L004-FL-400	L004	LUWA 4	L004 Evaporator	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-FL-405	L004	LUWA 4	L004 Receiver	FL	Flex Line	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10	X

Equipment ID Number	Hazardous Waste Management Unit ID	Hazardous Waste Management Unit Description	Facility Plot Plan Reference	Type of Equipment ID	Type of Equipment Description	Total Organics (% by Wt)	State of Hazardous Waste	Method of Compliance	Leak Rate (ppm)	Difficult-to-Monitor
L004-FP-100	L004	LUWA 4	L004 Evaporator	FP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-FT-100	L004	LUWA 4	L004 Evaporator	FT	Flow Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-FT-400	L004	LUWA 4	L004 Receiver	FT	Flow Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L004-GV-109	L004	LUWA 4	L004 Evaporator	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-GV-429	L004	LUWA 4	L004 Receiver	GV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-HX-200	L004	LUWA 4	L004 Bottoms	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-HX-400	L004	LUWA 4	L004 Overheads	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-HX-405	L004	LUWA 4	L004 Receiver	HX	Heat Exchanger	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L004-LT-400	L004	LUWA 4	L004 Receiver	LT	Level Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L004-PCV-300	L004	LUWA 4	L004 Receiver	PCV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
L004-PI-100	L004	LUWA 4	L004 Evaporator	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L004-PI-105	L004	LUWA 4	L004 Evaporator	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-PI-205	L004	LUWA 4	L004 Bottoms	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-PI-260	L004	LUWA 4	L004 Bottoms	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-PI-400	L004	LUWA 4	L004 Receiver	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L004-PT-400	L004	LUWA 4	L004 Evaporator	PT	Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-PT-405	L004	LUWA 4	L004 Receiver	PT	Pressure Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	X
L004-RCR-400	L004	LUWA 4	L004 Receiver	RCR	Receiver	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-SG-200	L004	LUWA 4	L004 Bottoms	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-SG-400	L004	LUWA 4	L004 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-SG-405	L004	LUWA 4	L004 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-SG-410	L004	LUWA 4	L004 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-SG-415	L004	LUWA 4	L004 Receiver	SG	Sight Glass	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-TFE-100	L004	LUWA 4	L004 Evaporator	TFE	Thin Film Evaporator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-TI-400	L004	LUWA 4	L004 Receiver	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-TP-105	L004	LUWA 4	L004 Evaporator	TP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
L004-TT-200	L004	LUWA 4	L004 Bottoms	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-TT-205	L004	LUWA 4	L004 Bottoms	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-TT-400	L004	LUWA 4	L004 Evaporator	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
L004-TT-405	L004	LUWA 4	L004 Receiver	TT	Temperature Transmitter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
VP104-BV-300	VP104	VP104	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
VP104-BV-302	VP104	VP104	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
VP104-BV-303	VP104	VP104	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
VP104-BV-310	VP104	VP104	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
VP104-BV-320	VP104	VP104	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
VP104-BV-321	VP104	VP104	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
VP104-BV-330	VP104	VP104	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Monthly Monitoring - Method 21	10,000	
VP104-F-310	VP104	VP104	VP-Pot Still	F	Filter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
VP104-KOP-400	VP104	VP104	VP-Pot Still	HX	Knock Out Pot	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
VP104-LS-300	VP104	VP104	VP-Pot Still	LS	Level Switch	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
VP104-PI-300	VP104	VP104	VP-Pot Still	PI	Pressure Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
VP104-TI-300	VP104	VP104	VP-Pot Still	TI	Temperature Indicator	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
VP104-VP-300	VP104	VP104	VP-Pot Still	VP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	
VP425-BV-301	VP425	VP425	VP-Pot Still	BV	Valve	≥ 10%	Gas, Vapor, or Light Liquid Service	Semi-Annual Monitoring - Method 21	10,000	X
VP425-F-300	VP425	VP425	VP-Pot Still	F	Filter	≥ 10%	Flange or Other Connector	Semi-Annual Monitoring - Method 21	10,000	
VP425-VP-300	VP425	VP425	VP-Pot Still	VP	Pump	≥ 10%	Light Liquid Service	Monthly Monitoring - Method 21	10,000	

C&H *engineers, p.c.*
PROFESSIONAL ENGINEERING SERVICES

May 6, 1999

Mr. Keith Blaser
Air Compliance Coordinator
Hydrite Chemical Company
114 North Main Street
Cottage Grove, WI 53527

Re: Thermal Oxidizer Design Analysis
File: 36414 #2

Dear Mr. Blaser:

In accordance with our discussions, I am writing to provide documentation of the design analysis which was conducted in arriving at the system design for the process thermal oxidizer for the Cottage Grove facility. This letter will discuss the calculations which were conducted to arrive at the anticipated vent stream, including composition, flow rate, minimum/average temperatures, and operating characteristics of the thermal oxidizer. Portions of this letter are extracted from earlier correspondence.

GENERAL

It was initially Hydrite's intent to use the soil vapor extraction (SVE) system thermal oxidizer for process emissions, as well as the SVE system. In the initial steps of the project, Earthtech collected detailed operating information on the processes which would be discharging emissions to the thermal oxidizer. Information collected by Earthtech included the following:

1. A list of materials process in each of the columns and thin film evaporators (LUWAs) at the Hydrite facility;

2. Column preparation steps (such as methanol wash sequences) used to prepare the equipment for operation. (These sequences typically result in periods of high flow, high volatile organic compound (VOC) concentration, discharges to the proposed thermal oxidizer stream);

3. Information on the duration and operating conditions under which each piece of equipment is operated (condenser temperatures, system pressures, raw material feed rates, etc.);

4. Information on the vacuum pump flow rates for each of the vacuum pumps operated at the Hydrite facility; and

5. Information on constituents to be discharged to the emissions collection system.

Based on the information obtained and compiled by Earthtech, C & H Engineers conducted an evaluation to determine the normal, minimum, and peak process flows to the thermal oxidizer. These values were determined using a spreadsheet based computer simulation of the various combined processes operated by Hydrite. The computer simulation is discussed in additional detail below. The information determined with the computer simulation was then submitted to four thermal oxidizer vendors to obtain proposals for a thermal oxidizer system designed to oxidize the process emissions.

As a result of the execution of design elements of the process collection system, and discussions with thermal oxidizer vendors, it was decided that the process thermal oxidizer system would be limited to control of non-halogenated process emissions from the Cottage Grove facility. It was determined that the process requirements (primarily materials of construction and post oxidation caustic scrubbing) for handling halogenated process emissions, along with the very limited number of halogenated streams currently processed by Hydrite, would make the design and construction of a process thermal oxidizer to handle both halogenated and non-halogenated process emissions unnecessarily expensive to build and operate. It was determined that emissions from future processing operations which may discharge halogenated process emissions, would be handled separately by processing these emissions through a dedicated carbon adsorption system or some other method of treatment.

BASIS OF DESIGN FLOWS AND BTU LOADING

C & H Engineers conducted a detailed computer simulation of process exhausts which used information gathered by Earthtech, and other information obtained from Hydrite personnel, to determine a minute by minute process emissions rate which was used in the final thermal oxidizer sizing. The computer simulation used three primary data points from each system in order to determine the process flows. These data points included the following:

1. Vacuum pump flow curves which provided cubic foot per minute (cfm) flow rates at specified vacuum pump inlet pressures;

2. The temperature of the gas at the discharge of the non-contact condenser on the overhead stream of each column or LUWA (this temperature provides the temperature at the inlet to the vacuum pump); and

3. The atmospheric pressure (absolute) at which the column or LUWA is operating throughout the run.

Using this information, the standard cubic feet per minute (scfm) air flow from each process was determined. This volumetric flow rate was then combined with the vapor pressure of the organic constituents being processed in each piece of equipment to determine the VOCs concentration and loading for each process emissions stream.

The computer simulation then added all of the emissions on one minute intervals, over a thirty-six (36) hour period. As identified by Earthtech, process runs extended from 6 to in excess of 30 hours. The program simulated start-up and shut-down emissions, as well as methanol washouts and other procedures which are conducted on all of the pieces of equipment as they are operated. The program took into consideration the following:

1. Process emissions and volumetric flow rates for each piece of equipment are at the highest levels when the vacuum pump begins its initial "pull down" of the piece of equipment. The flow rates are high because the process equipment is at it the highest pressure which it will be at during the run. As the pressure in the piece of equipment (column or LUWA) decreases, the actual scfm pulled into the vacuum pump and discharged to the emissions point decreases. In general, the pull down periods for any of the columns last between 5 and 25 minutes. These "pull downs" are simulated in the program.

2. Also simulated in the program are the methanol washouts for each piece of equipment. Although each piece of equipment is not subjected to such cleaning procedure, the program includes a cleaning procedure in order to simulate conservative VOC emissions prior to the start-up of each process. Although the methanol washouts themselves are conducted at atmospheric pressure without the vacuum pumps in operation, it was assumed that the interior of the equipment is coated with methanol, and that there may be residual methanol in the tower when vacuum is initially applied to the equipment, resulting in a methanol emission from the process.

3. The process simulation calculations also take into consideration the specific VOCs discharged from the various operations, and uses weighted averaging of the lower explosive limit (LEL) for each constituent in the combined flow to determine a dilution flowrate necessary to maintain the collected process emissions at below 50% of the LEL. This will be accomplished by monitoring the LEL of the gas stream, and admitting dilution air to the gas collection system to dilute the air in order to maintain the 50% (or less) of LEL concentration.

4. The computer program simulation included other simulation factors such as individual system downtimes between runs, variability of feed rates, and column air leakage rates.

5. The simulation included cooling air streams used by the three Cobra vacuum pumps.

6. The program uses heat of combustion values for each individual VOC to determine the overall heating value of the gas stream and thermal oxidizer.

7. The program uses an average of 108 scfm gas stream from the south side reactor operations.

On the basis of this simulation, it was determined that simultaneous initial pull downs of more than one piece of equipment could result in an emissions flow rate which would be twice that encountered if the pull downs could be staggered by 20 minutes to 30 minutes. Operating personal agreed that simultaneous pull downs would be rare, and that scheduling of operations could be used to avoid simultaneous pull downs all together. The system has been designed to prohibit simultaneous pull downs of operating systems, in order to minimize the potential for excessive flow rates to the thermal oxidizer.

The program calculated the following values which were used as the Basis of Design:

- Average process flow – 331 scfm
- Average dilution air flow – 864 scfm
- Peak process flow – 564 scfm
- Peak dilution air flow – 1,729 scfm

The calculated maximum thermal oxidizer gas flow for the existing system at the Cottage Grove facility is 2,293 scfm (including both process and dilution air flows). The average thermal oxidizer process gas flow for the operating systems currently at the Cottage Grove facility is 1,177 scfm, which includes 331 scfm of process gas flow and 864 scfm of dilution air.

Based on anticipated future expansion and use of the proposed thermal oxidizer for treatment of non-halogenated organic compounds, Hydrite added an expansion factor of 125% of current system design to the 2,293 scfm gas flow. In addition, the thermal oxidizer supplier (MEGTEC) used a less precise method of calculating LEL for the gas than C & H Engineers used, and determined a slightly higher dilution air flow rate to reach 125% of system design. Application of the MEGTEC calculated dilution air flow to C & H Engineers' process simulation indicates that the oxidizer is designed to handle between 125% to 138% of the maximum current Hydrite emissions capacity at the Cottage Grove facility.

VENT STREAM COMPOSITION

Hydrite operates a variety of batch type operations which discharge a variety of emissions to the collection system which will be treated in the thermal oxidizer. The attached Table entitled "Summary of Potential Emissions Constituents" includes a listing of the organic constituents which may be discharged to the thermal oxidizer. These are the constituents on which C & H Engineers' process simulation was based. Although both flow rates, organic constituents, and organic compound concentrations will vary extensively on an hour to hour and day to day basis, the system has been designed for effective thermal oxidation of all of the compounds listed in the attached table, at concentrations significantly in excess of the anticipated average and maximum values. The program calculated that the average vent stream VOC concentration will be 2.87% by volume prior to the introduction of dilution air, with a maximum VOC concentration of 9% by volume prior to the introduction of the dilution air. The average heating value will be 1.86 million BTUs per hour, and the maximum heating value of the vent stream will be 3.0 million BTUs per hour. The volume percent of the gas following addition of dilution air will be approximately 0.78% by volume. These concentrations will vary slightly, depending on the specific LELs of constituents in processes and operating conditions for specific processes. The system will include real time monitoring of the LEL, with automatic addition of dilution air, to maintain the vent stream conditions within the range discussed above.

As with concentration and flow, the vent stream temperature will also vary depending on which processes are operating, and at what stage in the process the systems are operating. It is anticipated that process emissions temperatures at the discharge of some of the vacuum pumps may be as high as 220°F.

Following combination with cooling air streams from Cobra pumps and dilution air as discussed above, it is anticipated that the normal process emissions temperature will be between 100° and 140°F.

THERMAL OXIDIZER DESIGN

The design residence time for the thermal oxidizer at the full process flow, including the future expansion capacity is 0.5 seconds. At the calculated average process flow rate, the residence time will be 1.35 seconds. At the anticipated maximum flow rate for existing equipment, the residence time will be 0.69 seconds. The combustion chamber temperature will be maintained at a minimum of 1600°F with the addition of natural gas fuel.

Based on the above described operating conditions, MEGTEC has designed a thermal oxidizer with a combustion chamber which is 36" in diameter and 24' long (interior dimensions). This combustion chamber will provide the residence times discussed above, and VOC destruction is guaranteed at 99% for one year.

We trust that this document meets your requirements with regard to the documentation of the proposed system design. In addition to the Table listing the compounds which Hydrite anticipates processing in the thermal oxidizer, C & H Engineers has also attached a computer printout of the process simulation program which identifies the minute by minute emissions over a 36 hour period.

If you have any questions, please feel free to contact me at your convenience.

Very truly yours,

C & H ENGINEERS, P.C.

Thomas W. Heenan, P.E.
Principal

TWH:kar

Enclosures

HYDRITE CHEMICAL CO.

114 N. MAIN ST.
COTTAGE GROVE, WI 53527
OFFICE: (608) 839-4571
FACSIMILE (608) 839-4293

2008 TOX Stack Test Report

March 20, 2009

Jennifer Hamill
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

SUBJECT: Stack Test Report, Permit # 08-SML-076, 113063390-P11, FID 113063390

Dear Jennifer:

Attached you will find two copies of the stack test report for the Hydrite Chemical Co. Plant Thermal Oxidizer located in Cottage Grove, WI. The stack test was performed on December 23rd, 2008 in accordance with the requirements in permit 08-SML-076 and proposed 113063390-P11.

The average destruction efficiency demonstrated during the test was 99.92%. This destruction efficiency may be assumed for all HAPs with an autoignition temperature of 1319°F or less, when our thermal oxidizer chamber temperature is 1419°F or greater. Please reference the attached report for more information.

Please contact me if you have any questions.

Sincerely,

Angela Watry

Angela Watry
EHS Manager – Cottage Grove, WI

cc: Catherine Hay-Bassett, legal file
attachment: Stack Test Report

Appendix EE

HYDRITE COTTAGE GROVE RCRA CORRECTIVE ACTION HISTORY

Hydrite Chemical Co. owns and operates a chemical business located at 114 North Main Street, Cottage Grove, Wisconsin (the Cottage Grove Facility). Prior to June of 1970, the Cottage Grove facility, then owned and operated by a predecessor of Hydrite Chemical Co., North Central Chemical Co. (NCC), included several tank farms and a drum storage area. NCC accumulated approximately 1,000 to 3,000 drums of spent chlorinated and light hydrocarbon solvents in this storage area. Many of these drums in this storage area released their contents, sometimes after their arrival at the Cottage Grove Facility and before the beginning of the solvent reclamation operation at this facility, and damaged natural resources by contaminating soil and groundwater. Hydrite and its consultants determined that damage to natural resources exists on Hydrite Chemical Co. property and on adjacent property as a result of operations at the Cottage Grove Facility. Hydrite Chemical Co. and its consultants determined that damage to natural resources, primarily groundwater, exists beneath Hydrite Chemical Co. property and adjacent property to the south of the Cottage Grove Facility.

On November 20, 1995, the State of Wisconsin (the State) commenced legal action in the circuit Court, Dane County, Wisconsin, State of Wisconsin vs. Hydrite Chemical Co. Case No. 95-CV-2911 (Cir. Ct, Dane County), against Hydrite Chemical Co. alleging that Hydrite Chemical Co. was liable for damaged natural resources. In its complaint, the State seeks compensation for the damaged natural resources pursuant to the Wisconsin spill Statute. S292.11, Stats., the common law theory of nuisance, and CERCLA. This lawsuit has been stayed by order of the court.

The State of Wisconsin and Hydrite Chemical Co. entered into a Partial Settlement Agreement effective April 9, 1996. In accordance with this Partial Settlement, Hydrite Chemical Co. paid $1.5 million in damages to the State of Wisconsin. The State of Wisconsin deposited the money into a segregated account owned by the State and entitled "Groundwater Repair/Restoration/Rehabilitation Settlement Fund for Cottage Grove, Wisconsin" (the "Cottage Grove Settlement Fund"). The Cottage Grove Settlement Fund was used solely for the purpose of paying for certain activities related to the investigation, repair, restoration and/or rehabilitation of injured natural resources, including groundwater, at the Cottage Grove Facility and at other property adjacent to the Cottage Grove Facility in which the State of Wisconsin has an interest. These activities were specifically set forth as exhibits to the Partial Settlement Agreement and included additional investigation and a groundwater monitoring program as well as the design, installation, start-up and operation of a groundwater restoration system.

The Partial Settlement Agreement was incorporated into Hydrites conditional plan of operation modification dated June 26, 1997. Accordingly, Hydrite Chemical Co's May 17, 1988, conditional plan of operation approval was modified to incorporate the Partial Settlement Agreement, subject to compliance with Chapters NR 600-685 and certain other conditions set forth in the modification.

The State of Wisconsin and Hydrite Chemical Co. entered into a Second Partial Settlement Agreement in connection with the action entitled State of Wisconsin v. Hydrite Chemical Co., Case No. 95-CV-2911 (cir. Ct. Dane County) effective August 3, 1998. Pursuant to the Second Partial Settlement Agreement, Hydrite Chemical Co. pays an additional $1.2 million in damages to the State of Wisconsin. The State deposits the money into the Cottage Grove Settlement fund, and the Cottage Grove Settlement Fund shall be used solely for the purpose of paying for those activities set forth in the Second Partial Settlement Agreement to further investigate, repair, restore and/or rehabilitate injured natural resources, including groundwater at the Cottage Grove facility and at other property adjacent to the Cottage Grove Facility in which the State has an interest. These activities are incorporated into the plan of operation, subject to compliance with Chapters NR 600-685.

The soil and groundwater contamination at the site was caused during the period from 1950 to 1970 which was prior to site ownership by Hydrite. No additional soil or groundwater contamination has been caused by Hydrites storage and handling of hazardous waste since the last reissuance of its hazardous waste storage permit in 2001. The pre-existing contamination is being cooperatively managed between Hydrite and the State of Wisconsin through Partial Settlement Agreements to an Environmental Damage lawsuit, State of Wisconsin v. Hydrite Chemical Co. Dane County Circuit Court, Case No. 95 CV 2911.

By letter dated May 28, 1999, the Company forwarded a draft of the third partial settlement agreement to the State along with exhibits thereto consisting of the following: Exhibit A, Phase III Work Plan, Groundwater Restoration Program dated February 23, 1999; Exhibit B, Groundwater and Surface Water Monitoring Plan prepared by HSI Geotrans dated March 4, 1999; and Exhibit C, April 30, 1999 Addendum to the Phase III Work Plan (Exhibit A) and the Groundwater and Surface Water Monitoring Plan (Exhibit B). By letter dated July 6, 1999, the State provided comments to the draft third partial settlement agreement and exhibits forwarded by letter dated May 23, 1999.

In connection with negotiation of the third-partial settlement agreement and activities conducted pursuant to the Second Agreement, the Company completed a pilot test for the proposed deep dense non-aqueous phase liquid ("DNAPL") recovery program. In June, 1999, twelve private water supply wells were sampled (discussed in Paragraph 8, below). A Status Report prepared by HSI Geotrans dated July 15, 1999 was completed which reviewed data and supplemental field activities conducted in connection with the DNAPL removal pilot tests that were conducted in May and June, 1999.

By letter dated July 23, 1999, the Company responded to the July 6, 1999 comments of the State on the third partial settlement agreement and submitted a Revised Addendum to the February 23, 1999 Phase III Work Plan for Groundwater Restoration Program and the March 4, 1999 Groundwater and Surface Water Monitoring Plan. The Company also provided to the State a copy of the Status Report prepared by HSI Geotrans dated July 15, 1999.

On or about September 3, 1999, the Company and the State entered into a Third Partial Settlement Agreement ("Third Agreement"). In the Third Agreement, the State confirmed the Company's performance of its obligations pursuant to the Second Agreement through the performance of activities and submittal of reports as required by the Second Agreement.

In accordance with the terms of the Third Agreement, the Company agreed to pay an additional $975,000 in compensation for damages to natural resources. The Company again had the opportunity to act as a contractor for the State in performing additional work to restore damaged natural resources referred to in the Third Agreement as the "Third Phase Activities," in accordance with the following technical reports negotiated with the State: Phase III Work Plan Groundwater Restoration Program dated February 23, 1999, attached to the Third Agreement as Exhibit A; Groundwater and Surface Water Monitoring Plan dated March 4, 1999, attached to the Third Agreement as Exhibit B; Revised Addendum to February 23, 1999 Phase III Work Plan Groundwater Restoration Program and March 4, 1999 Groundwater and Surface Water Monitoring Plan dated July 15, 1999, attached to the Third Agreement as Exhibit C; and all required Wisconsin Department of Natural Resources' approvals, attached to the Third Agreement as Exhibit D).

In the Third Agreement, the State agreed that if the Company satisfactorily performed the Third Phase Activities as a contractor, then the State would pay the Company from a segregated fund owned by the State in which damages paid by the Company were deposited by the State.In 1999, the Company paid $585,000 as required by the terms of the Third Agreement.

In 1999, the Company implemented the work required by the Third Agreement including, but not limited to: taking action to address the off-site deep DNAPL source area that was contributing hazardous substances to the groundwater plume; conducting a pilot test for removal of LNAPL that was a source of shallow groundwater impacts beneath and downgradient of the facility; investigating and reporting on any special construction specifications required for the homes in the Arrowwood Estates subdivision due to the presence of impacted groundwater underlying such homes; determining the most effective operational mode for the AS/SVE system; considering the need for expansion of the existing AS/SVE system and/or the need to apply other groundwater restoration technologies; continuing monitoring and evaluating the degree and extent of injured natural resources including downgradient properties and private water supply wells and revising the groundwater and surface water monitoring plan.

In 1999, the Company submitted the following additional technical reports: Second Quarter 1999 Progress Report dated August 31, 1999; Third Quarter 1999 Progress Report dated November 29, 1999; and DNAPL Removal Report dated December 14, 1999.

In 2000, the Company continued to implement the work required by the Third Agreement including the sampling of groundwater monitoring wells and private water

supply wells. By letter dated January 10, 2000, the Company sent the following analytical results to the State: (1) table summarizing the December 1999 private water supply groundwater analytical results; and (2) a set of letters and analytical results from private water supply wells sampled in December, 1999.

By letter dated March 2, 2000, the State responded to the Company's submittals of the First, Second and Third Quarterly Progress Reports for 1999, the July 15, 1999 Status Report on DNAPL pumping activities, and the DNAPL Removal Report dated December 14, 1999 indicating that the reports were generally satisfactory and providing several comments. This letter also confirmed that the Fourth Quarter Progress Report for 1999 would be submitted in March, 2000, and that a Phase III Report summarizing recent investigation and restoration activities undertaken would be submitted by March 31, 2000. The State requested in this letter that the Phase III report set forth recommendations for additional and/or expanded investigation and restoration to be used as a basis for negotiations regarding a fourth partial settlement agreement.

By letter dated March 10, 2000, the Company submitted the Fourth Quarter 1999 Progress Report to the State documenting activities undertaken by the Company in accordance with the Third Agreement. By letter dated April 10, 2000, the Company submitted the Phase III Report dated March 31, 2000 to the State.

By letters dated May 9, 2000, July 18, 2000, and September 29, 2000, the Company sent the following analytical results to the State: (1) tables summarizing the first, second and third quarter private water supply groundwater analytical results; and (2) sets of letters and analytical results from private water supply wells sampled during the first, second and third quarters of 2000.

In 2000, the Company submitted the following additional technical reports to the State documenting implementation of the Third Agreement: First Quarter 2000 Progress Report dated May 29, 2000; Second Quarter 2000 Progress Report dated August 7, 2000; Third Quarter 2000 Progress Report dated November 9, 2000, and Revised Groundwater and Surface Water Monitoring Plan dated December 18, 2000.

In 2000, the Company paid an additional $390,000 as required by the terms of the Third Agreement. In 2000, the Company continued to implement work required by the Third Agreement and began preparations for commencement of negotiations of a fourth partial settlement agreement.

In 2001, the Company continued negotiations with the State regarding a fourth partial settlement agreement. The Company proposed a phased approach to groundwater restoration due to the complex nature of the contamination at and migrating from the Cottage Grove Facility.

By letter dated February 5, 2001 the Company sent the following analytical results to the State: (1) table summarizing the fourth quarter 2000 private water supply

groundwater analytical results; and (2) a set of letters and analytical results from private water supply wells sampled in December, 2000.

On February 28, 2001, the Company had a settlement meeting with the State to discuss the fourth partial settlement agreement, including a plan for addressing private drinking water well impacts, and a plan, scope, schedule and potential alternative funding sources for additional restoration activities.

By letter dated March 12, 2001, the Company sent the following analytical results to the State: (1) table summarizing fourth quarter through February 2001 sampling records of private water supply groundwater sample analytical results; and (2) a set of letters and analytical results from private water supply wells sampled in February 2001.

On March 21, 2001, the Company submitted a Revised Phase IV Work Plan to the State ("Phase IV Work Plan"). In the Phase IV Work Plan, the Company proposed (1) to replace the private drinking water supply wells of affected property owners, and (2) install a hydraulic barrier system to contain the migration of the contaminated groundwater plume. By letter dated March 29, 2001, the State commented on the approach set forth in the Phase IV Work Plan and in negotiations with the State of the fourth partial settlement agreement. The State requested comprehensive long-term approach with deadlines for selection of remedies. By letter dated April 9, 2001, the State partially approved the Company's revised Phase IV Work Plan, approving the private water supply well replacement and installation of the hydraulic barrier system.

On April 10, 2001, the Company submitted the Fourth Quarter 2000 Progress Report to the State detailing the activities completed by the Company during November 7, 2000 through February 28, 2001. Activities undertaken during this reporting period included the completion and submission of the Third Quarter 2000 Progress Report, review of the groundwater and surface water monitoring plan, quarterly sampling of monitoring wells and private water supply wells, installation of eight (8) additional monitoring wells and two (2) recovery wells, pump tests, free product and static water level measurements, and groundwater flow model re-calibration and preliminary hydraulic control system design.

On April 12, 2001, the Company submitted the following analytical results to the State: (1) table summarizing samples collected in private water supply wells in March, 2001, and (2) a set of letters and analytical results from private water supply wells sampled in March, 2001. On April 23, 2001, the State informed the residents of the Village of Cottage Grove and the Cottage Grove Township of the designation by the State of a Special Well Casing Area imposing requirements relating to a new and replacement private water supply wells within the area. On April 30, 2001, the Company and the WDNR held a joint public meeting in Cottage Grove, Wisconsin to discuss the well replacement plan and the special well casing area.

On May 2, 2001, the Company sent the following analytical results to the State: (1) table summarizing samples collected from private water supply wells in April, 2001; and

(2) a set of letters and analytical results from private water supply wells sampled in April, 2001.

By letter dated May 8, 2001, the State approved the Fourth Quarter 2000 Progress Report submitted by the Company on April 10, 2001. On May 29, 2001, the Company submitted the First Quarter 2001 Progress Report to the State detailing the activities completed by the Company during March 1, 2001 through May 12, 2001. The activities completed during this reporting period included the collection of data on the operation and performance of the groundwater restoration system for the period of January 1 through March 31, 2001, annual water level measurements, quarterly groundwater and surface water sampling, and private water supply wells sampling.

On June 18, 2001, the Company submitted to the State a set of letters and analytical reports for groundwater samples collected from private water supply wells in May 2001. On July 16, 2001, the Company submitted the following analytical results to the State: (1) a table summarizing May through June 2001 sampling rounds for private water supply groundwater sample analytical results; and (2) set of letters and analytical reports for groundwater collected from private water supply wells in June 2001. On August 3, 2001, the Company submitted to the State a set of letters and analytical reports for groundwater samples collected from private water supply wells on July 27, 2001. On August 9, 2001, the Company submitted to the State the following analytical results: (1) a table summarizing May through August 2001 sampling rounds of private water supply well groundwater sampling analytical results; and (2) a set of letters to homeowners and analytical reports for private water supply well groundwater samples collected on July 25 and August 2, 2001. On August 31, 2001, the Company submitted to the State the following analytical results: (1) a table summarizing May through August, 2001 sampling rounds for private water supply well groundwater sample analytical results; and (2) a set of letters to homeowners and analytical reports for private water supply well groundwater samples collected on August 22, 2001.

In the early fall of 2001, the Company began negotiations with property owners which resulted in a Well Replacement Agreement. In accordance with the terms and conditions of the Well Replacement Agreement, the Company, at the Company's sole cost and expense would abandon the existing drinking water well and install a new replacement drinking water well for affected landowners. Twenty-three (23) replacement wells were installed. Upon completion of installation of the twenty-three (23) replacement wells, groundwater samples were taken from the new drinking water wells to ensure no detections of VOCs in excess of drinking water standards.

In addition to installation and sampling of the replacement wells, the Company began negotiations with other property owners regarding the installation and operation on their property of wells and related appurtenances necessary for the hydraulic barrier system.

On September 5, 2001, the Company submitted to the State the Second Quarter 2001 Progress Report detailing the activities completed during May 13, 2001 through August 24, 2001. The activities completed during this reporting period included: (1) installation

of a total of six (6) monitoring wells; (2) groundwater and private water supply well sampling of existing and six additional private water supply wells; (3) surface water sampling; (4) and private water supply well replacement work.

On November 19, 2001, the Company submitted to the State the Third Quarter 2001 Progress Report detailing the activities completed during August 24 through November 19, 2001. Activities completed during this reporting period included: (1) groundwater sampling of on and off-site monitoring wells; (2) surface water sampling; (3) free product measurements; (4) private well replacement wells; and (5) soil boring to the top of bedrock along the east side of Koshkonong Creek to investigate depth to bedrock in the vicinity of the creek.

On February 1, 2002, Hydrite and the State entered into a Fourth Partial Settlement Agreement, ("Fourth Agreement"). In the Fourth Agreement, the State confirmed Hydrite's performance of its obligations pursuant to the Third Agreement through the performance of activities and submittal of reports as required by the Third Agreement. On February 7, 2002, Hydrite submitted to the State the hydraulic barrier system design and draft operation and maintenance plan. Work performed pursuant to the Fourth Agreement included the following: groundwater sampling; surface water sampling; annual water level measurements; free product measurements; private water supply replacement and private water supply sampling; bedrock characterization; surveys, easement and/or access agreements with various parties and an extraction well installation, all related to the installation of the hydraulic barrier system; negotiations with the Village of Cottage Grove related to the hydraulic barrier system; negotiations with WDNR related to the relocation of the Glacial Drumlin Trail; and submission of quarterly progress reports to WDNR.

In 2003, Hydrite continued to implement the work required by the Fourth Agreement. On March 27, 2003, Hydrite submitted to the WDNR the Additional Characterization Deep DNAPL Bedrock Zone Report. On or about April 1, 2003, Hydrite entered into an agreement with the Village of Cottage Grove relating to the Village's acceptance of groundwater discharges from the hydraulic barrier system into the Village's sanitary sewer system. Additional work performed in accordance with the Fourth Agreement included the following: groundwater sampling; surface water sampling; annual water level measurements; free product measurements; private water supply replacement work and private water supply sampling; installation of additional monitoring wells to monitor the performance of the hydraulic barrier system; installation and construction of the hydraulic barrier system; and submission of quarterly progress reports to WDNR.

On July 1, 2003, Hydrite and the University of Waterloo entered into a Membership Agreement whereby Hydrite became a corporate sponsor for research activities to be conducted at the Cottage Grove facility by the University Consortium Solvents-In-Groundwater Research Program ("University Consortium"), which involves principal researchers from Canadian and American Universities undertaking leading research of chlorinated solvents in groundwater. The University Consortium determined that the

Cottage Grove site presented a unique opportunity to conduct research and on-site investigations involving DNAPL and its dissolved phase plume in fractured bedrock.

On October 6, 2003, Hydrite submitted to WDNR the final operation and maintenance for the hydraulic barrier system.

On November 17, 2003, Hydrite and the State entered into a Fifth Partial Settlement Agreement ("Fifth Agreement"). In the Fifth Agreement, the State confirmed Hydrite's performance of its obligations pursuant to the Fourth Agreement through the performance of activities and submittal of reports as required by the Fourth Agreement. Hydrite started and tested the hydraulic barrier system on October 8 through 13, 2003. Full scale testing of the hydraulic barrier system (with all four extraction wells simultaneously) began October 14, 2003. On December 16, 2003, Hydrite submitted its Monthly Discharge Monitoring Report regarding the hydraulic barrier system to the Madison Metropolitan Sewerage District as required by Hydrite's wastewater discharge permit.
These Monthly Discharge Monitoring Reports have been submitted continually on a monthly basis to the Madison Metropolitan Sewerage District since the start-up of the hydraulic barrier system.

In 2004, Hydrite continued to implement the work required by the Fifth Agreement. In January of 2004, Hydrite provided an overview of the hydraulic barrier system operation to the Madison Metropolitan Sewerage District Commission and the Village of Cottage Grove. Early in 2004, Hydrite also met with the Town of Cottage Grove Board to provide an update on the status of the hydraulic barrier system operation and private water supply replacements. Hydrite also provided updates to the Village of Cottage Grove Utility Commission and sampled the Village of Cottage Grove Municipal Wells Nos. 1 and 2, and VOCs were not detected in these samples.

In 2004, Hydrite continued to implement activities set forth in the Fifth Agreement, and this work included the following: groundwater sampling; surface water sampling; annual water level measurements; free product measurements; private water supply well replacement work and private water supply well sampling; continued operation of the hydraulic barrier system; continued University Consortium research and investigation at the Cottage Grove Site, including installation of additional multi-port monitor wells, collection of field measurements from multi-port monitor wells, survey of the locations and elevations of the multi-port monitor wells, onsite research of the shallow groundwater system, completion of borehole logs, installation of the multi-level groundwater sampling system and performance of slug tests; and submission of quarterly progress reports to WDNR.

In 2005, Hydrite continued to implement the activities set forth in the Fifth Agreement, and this work included the following: groundwater sampling; surface water sampling; annual water level measurements; annual free product measurements; private water supply well replacement work and private water supply well sampling; continued University Consortium investigation and research at the Cottage Grove Site, including

installation of a Westbay MP-38 system multi-level monitor well; continued operation of the hydraulic barrier system; submission of the Shallow Plume Study to WDNR on February 7, 2005; submission to WDNR of a revised surface water and groundwater monitoring plan; and submission of quarterly progress reports to WDNR.

Effective July 1, 2005, Hydrite and the University of Waterloo entered into the Cottage Grove Site Renewal Agreement-2005 in connection with the continuation of the research and investigation work of the University Consortium at the Cottage Grove Site.

In 2006, Hydrite continued to implement the activities set forth in the Fifth Agreement and these activities included the following: groundwater sampling; surface water sampling; continued University Consortium investigation and research at the Cottage Grove Site including installation of a multi-level monitor well MP-15; continued operation of the hydraulic barrier system; annual water level measurements; annual free product measurements; private water supply well replacement work and private water supply well sampling; and submission of quarterly progress reports to WDNR.
Effective July 1, 2006, Hydrite and the University of Waterloo entered into the Cottage Grove Site Renewal Agreement-2006 in connection with the continuation of the investigation and research by the University Consortium at the Cottage Grove Site.

On December 29, 2006, Hydrite and the State entered into a five (5) year Sixth Partial Settlement Agreement ("Sixth Agreement"). In the Sixth Agreement, the State confirmed Hydrite's performance of its obligations pursuant to the Fifth Agreement through the performance of activities and submittal of reports as required by the Fifth Agreement.

Effective January 1, 2007, Hydrite and the University of Waterloo entered into the Cottage Grove Site Renewal Agreement-2006-Extension in connection with the continuation of the research and investigation by the University Consortium at the Cottage Grove Site.

Effective April 1, 2007, Hydrite and the University of Guelph entered into a one (1) year Restricted Grant Agreement ("Grant Agreement") in connection with the continuation of the research and investigation by the University Consortium at the Cottage Grove Site. The principal scientific researchers relocated from the University of Waterloo to the University of Guelph, and this relocation necessitated the preparation of the Grant Agreement with the University of Guelph. The Grant Agreement has been renewed annually through March 31, 2012.

In 2007, Hydrite continued to implement the activities set forth in the Sixth Agreement, and these activities included the following: groundwater sampling; surface water sampling; annual water level measurements; annual free product measurements; private water supply well sampling; continued operation of the hydraulic barrier system; continued University Consortium investigation and research at the Cottage Grove Site including completion of the coring of MP-16 and MP-18 boreholes, hydrophysical testing and Westbay System Multi-Level Monitor Well installation at the three regional

boreholes, MP-16, MP-17 and MP-18; and submission of quarterly progress reports to WDNR.

In 2008, Hydrite and the University of Guelph negotiated the terms and conditions of a Cottage Grove Site Agreement. This Agreement is retroactive to April 1, 2007, covers the field research conducted by the University Consortium at the Cottage Grove Site and is a successor to its predecessor agreement between Hydrite and the University of Waterloo.

In 2008, Hydrite continued to implement the activities set forth in the Sixth Agreement, and this work included: groundwater sampling; surface water sampling; annual water level measurements; annual free product measurements; private water supply replacement work and private water supply sampling; continued operation of the hydraulic barrier system; continued University Consortium research and investigation at the Cottage Grove Site; submission of quarterly progress reports to WDNR.
In 2009, Hydrite continued to implement the activities set forth in the Sixth Agreement, and this work included the following: Hydrite submitted, and WDNR approved, a revised groundwater monitoring plan for the Cottage Grove Site; groundwater sampling; surface water sampling; annual free product measurements; annual water level measurements; continued operation of the hydraulic barrier system; continued University Consortium investigation and research at the Cottage Grove Site; conducting a soil investigation to delineate the extent of soil impacts above the water table beneath a building addition that was being constructed at Hydrite's Cottage Grove facility along with the design and installation of a passive sub-slab ventilation system for the building addition as well as soil vapor extraction piping for future soil vapor extraction, if needed; and submission of quarterly progress reports to WDNR.

Since 2010, Hydrite continued to implement the activities set forth in the Sixth and Seventh Agreement, and this work included the following: groundwater sampling; surface water sampling; annual water level measurements; annual free product measurements; private water supply replacement work and private water supply sampling; continued operation of the hydraulic barrier system; continued University Consortium research and investigation at the Cottage Grove Site; and submission of quarterly progress reports to WDNR.

In 2011, Hydrite continued to implement the activities set forth in the Sixth Agreement, and this work included the following: groundwater sampling; surface water sampling; annual free product measurements; private water supply sampling; continued operation of the hydraulic barrier system; and continued University Consortium research and investigation at the Cottage Grove Site including data evaluation, water level measurements, channel profiles and stream gauge installations for the purpose of supporting the groundwater flow model.

The termination date for the Sixth Agreement was October 31, 2011. The WDNR has informed Hydrite that it is satisfied with Hydrite's performance of its obligations pursuant to the Sixth Agreement through the performance of activities and submittal of reports as

required by the Sixth Agreement. Hydrite and the State are in the process of negotiating a Seventh Partial Settlement Agreement for the Cottage Grove site.

Also in 2011, the WDNR issued a call-in letter for the re-licensure of the Part B Hazardous Storage Permit that informed Hydrite that the financial responsibility for Corrective Action applied to the facility.

On March 30, 2012, Hydrite and the State entered into a five year, five month Seventh Partial Settlement Agreement that included the continuation of groundwater sampling; surface water sampling; annual water level measurements; annual free product measurements; private water supply replacement work and private water supply sampling; continued operation of the hydraulic barrier system; continued University Consortium research and investigation at the Cottage Grove site; and the submission of quarterly progress reports to the WDNR.

Date of Incident	Area (N, NW, S, CE100, CEWH, CW, Maint, Office)	Quantity of spill or release (lbs)	Item or area of origin (drum, vessel, tanker, line, mezzanine, boxtrailer, rack, etc)	Failed item/part/SOP/path (valve, instrument, SOP step, operator, filter, etc)	Report(s) / Incident Investigation: Description of Incident	Root Cause	Corrective Action (or MOC #)	O/C or Date closed
8/11/2002	North dock	Glacial Acetic Acid; Quantity to air Unk; RQ 5000#	Line	Operator	leaking transfer line released unknown amount of GAA into containment; material hot so unspecified amount may have evaporated to atmosphere (<RQ)	Leaking line	Replace transfer line	C
2/3/2003	200TF	250 gal (1433#) Heptane; RQ 100#	Tank	Operator	250 gallons of Heptane overflowed product tank T237	Math error in capacity calculation; Failure to get a second operator check	Employee reprimand and retrained in transfer procedures	C
3/24/2003	NW Loading Dock	30 gal (227#) Ethylenediamine; RQ 5000#	CT4 cut tank	Mass meter was turned off	CT4 overfilled, releasing ~30 gallons of EDA onto roof of NW Process Bldg, which then flowed down rainspout and ran out onto Badger Rd. Operators used floor dry to corral and collect the spill - then flushed the area with water. The rinse water was sucked into a	Mass Meter turned off	Change direction of rain spout to drain into the NW loading dock containment; Install overfill alarms on tank	C
6/27/2003	300TF	300 gal (2100#) Process Cleanout Solvent (LT)	Product Tank	Operator error	Approx 300 gallons of Process Cleanout solvent was released into containment while unloading tanker into the storage tank	Inattentive operator	Reprimand / Retrain operator	C
8/13/2003	400TF	30 gal waste water w/organics	T405	Open valve	Approx 30 gallons of waste water, containing organics was released into the 400TF when an operator failed to close the T405 valve proir to transfer	Failure to follow SOP	Reprimand / retrain operator	C
1/27/2004	Warehouse (N)	~50 gal (350#) Acetone; RQ 5000#	Enzinger Filter	Leading filter	Approx 50 gallons of Acetone product leaked from Enzinger Filter	Leaking Filter	Replace Filter	1/27/2004
7/2/2004	400TF	100 gal (700#) hazwaste; RQ 100#	T401	Sonic Level Indicator	Hazardous waste was being transferred to T401. The sonic level indicator showed a lower level in the tank than actual; ~100 gallons overflowed the tank	Sonic Level Indicator malfunctioned; No interlocked valve for automated shut-off	Update SOP; follow up training already conducted. Operators instructed to allow the sonic level control display to cycle a couple times and note any discrepancies in readouts. If readouts change ddramaticlly, halt transfer and confirm level in tank. Documentation of	8/1/2004
10/12/2004	NW Loading Dock	300 gal (2524#) AEEA; RQ 5000#	CR4 Cut Tank	Overfillec Tank	Overfilled cut tank of CR4; material released to roof and flowed down drain into concrete containment (NW loading dock).	Not recorded	Not recorded	C
2/22/2005	Loading Dock	300 gal (2100#) non-chlorintated solvent	Pump	Broken connection	Operator broke connection while transferring material - causing pump damage and release. Cleaned up with oil absorbents.	Not recorded	Not recorded	C
8/24/2006	200TF	75 gal (525#) RCLT; < lowest RQ	T218	Overfilled Tank	T218 overfilled during transfer of RC solvent product.	Not recorded	Not recorded	C

Date of Incident	Area (N, NW, S, CE100, CEWH, CW, Maint, Office)	Quantity of spill or release (lbs)	Item or area of origin (drum, vessel, tanker, line, mezzanine, boxtrailer, rack, etc)	Failed item/part/SOP/path (valve, instrument, SOP step, operator, filter, etc)	Report(s) / Incident Investigation			
					Description of Incident	Root Cause	Corrective Action (or MOC #)	O/C or Date closed
2/23/2007	Warehouse (N)	~10 gal Formaldehyde product	Drum	Loose Bung	Drum being moved on a pallet with forklift. Drum slid off pallet causing loose bung to fall off, spilling product.	Inadequate Training of Operator	Retrain Operator; Toolbox Safety talk regarding load integrity	11/5/2007
1/8/2008	Warehouse	Waste LT; 15 gal	Drum	Operator	Drum Hit by Forklift	Operator Error	Retrain Operator	C
2/5/2008	300TF	200 gal (1400#) RC MEOH; RQ 5000	T345	Tank Tape	RC MEOH was being transferred to T345 and tank overfilled	Tank tape Stuck; Failure to follow SOP - did not calculate available capacity	Disciplinary action for employee - faiulre to verify available space; Tank tape adjusted	2/5/2008
5/13/2008	400TF	50 gal (400#) hazwaste; < RQ for constituents	T405	Valve	The valve on T405 broke causing approx 50 gallon of waste water w/solvent to release into containment. Spill sucked up and transferred to T401; area cleaned	Equipment Failure	Implement a Mechanical Integrity Program - already set as 2008 goal	C
6/8/2008	Warehouse Dock (S)	30 gal Waste Propanol / Propyl Acetate	Drum	Drum	Leaking Drum	Leaking Drum	Contact Generator regarding drum integrity for waste	6/8/2008
6/24/2008	Warehouse (N)	~15 gal waste ink solvent	Drum	Drum	Leaking Drum	Leaking Drum; Drum had been in storage for 3 months	Contact Generator regarding drum integrity for waste	6/24/2008
8/12/2008	200TF	30 gal (201#) MEK; RQ 5000#	T226	Operator	While adding virgin MEK to T226, approx 30 gallons of MEK released into containment. Sucked out to T205 and transferred to fuels.	Failure to follow SOP; not ensuring that adequate space was available in tank	Headspace allowances have been established for tanks with aitators. Operators need to check for this prior to transferring material	C
12/24/2008	Warehouse (S)	12 gal waste propanol / propyl acetate	Drum	Drum	Leaking Drum	Leaking Drum	Same generator as 6/8/08; Contacted	1/5/2009
1/24/2009	Warehouse (S)	15 gal waste propanol / propyl acetate	Drum	Drum	Leaking Drum	Leaking Drum	Generator contacted regarding integrity of drum	1/24/2009
2/22/2009	Warehouse (S)	25 gal	Drum	Drum	Leaking Drum	Leaking Drum	Generator contacted regarding integrity of drum	2/22/2009

Date of Incident	Area (N, NW, S, CE100, CEWH, CW, Maint, Office)	Quantity of spill or release (lbs)	Item or area of origin (drum, vessel, tanker, line, mezzanine, boxtrailer, rack, etc)	Failed Item/part/SOP/path (valve, instrument, SOP step, operator, filter, etc)	Report(s)	Incident Investigation		
					Description of Incident	Root Cause	Corrective Action (or MOC #)	O/C or Date closed
5/26/2009	Warehouse Dock (S)	54 gal waste propanol / propyl acetate	Drum	Drum	Bottom of drum gave way	Rusted out drum	Generator contacted regarding integrity of drum	5/26/2009
7/11/2009	200TF	50 gal (400#) hazwaste; <RQ for constituents	T205	Union valve was loose	While Hazardous waste bottoms were being transferred from Luwa1 to T205, operator investigated an odor and discovered the union valve was loose and waste was releasing into 200 tank farm.	Loose valve	Tighten valve and resumed transfer	7/11/2009
7/27/2009	Warehouse (S)	20 gal waste propanol / propyl acetate	Drum	Drum	Drum leaking at bottom chime	Leaking Drum	Generator contacted regarding integrity of drum	7/27/2009
8/9/2009	NW Process	~6644# Xylene; 1433# ethylbenzene; 6# toluene	R10 Reactor	Flex joint failure	The 18" flex joint on R10 vent line failured during production, releasing ~ 4000# xylene vapors	Mechanical failure of flex joint; inadequate design of R10 emergency relief piping	Relief system to be redesigned and PHA completed before restarting R10. Pressure reactions will not be run until failure analysis is complete and all corrective actions implemented	C
12/2/2009	NW Truck Dock	262# (52# butyl acetate); RQ 5000# for butyl acetate	Tanker	Bleed valve	Operator was loading tanker and noticed material coming our of the bleed valve, located behind the load pipe. Bleed valve closed. Spill cleaned up.	Bleed valve left open during filling operation; Failure to follow SOP	Employee reprimand and retrained in loading/unloading procedures.	12/2/2009
7/15/2010	Warehouse (S)	30 gal Waste Propanol / Propyl Acetate	Drum	Drum	Leaking Drum	Leaking Drum	Generator contacted regarding integrity of drum	C
1/2/2011	N Truck Dock	~1300# styrene; RQ 1000# (148# lost to air)	Hose	Operator	~1300# of styrene monomer was released to dock containment from a hose connected to a tanker truck.	Operator Error	No material reached soil or wter, but an estimated 148# were lost to atmosphere	8/14/2011
2/10/2011	N Process Rm	~20 gal (160#) BHMT Heel; RQ 100# D002	Hose	Equipment	While pumping BHMT Heel from the reboiler to the waste fuel tank, the connecting hose sprang a leak. Valve immediately closed and spill was cleaned up	Inadequate SOP / Does not speacify proper hose for this task	Update BHMT SOP with hose type.	2/10/2011
4/4/2011	400 TF	~50 gal (410#) hazwaste	T401; The spill report recorded T401, but the release was actually on the T405 waste line that runs from the tank to the waste transfer pump TP-820.	Valve	A valve failed (cracked) and waste back fed through the valve, causing the spill	This incident was caused by the pressure that develops in short lengths of pipe when filled with liquid that is trapped by the valves on either end. This line is electrically heat traced and the heat causes the liquid to expand and built pressure to the point the valve failed.	Replaced valve in like kind - brass threaded (4/4/11); Additional: On 6/20/11, the seal on TP-820 was changed and operator noted the valve had started to crack and was in danger of failure again. The valve was then changed to a flanged iron valve and the heat trace turned off. Recommendation: Turn off heat trace each spring when weather warms.	4/4/2011

Date of Incident	Area (N, NW, S, CE100, CEWH, CW, Maint, Office)	Quantity of spill or release (lbs)	Item or area of origin (drum, vessel, tanker, line, mezzanine, boxtrailer, rack, etc)	Failed Item/part/SOP/path (valve, instrument, SOP step, operator, filter, etc)	Report(s)	Incident Investigation		
					Description of Incident	Root Cause	Corrective Action (or MOC #)	O/C or Date closed
5/1/2011	200 TF	50 gal (410#) hazwaste	Tank (T205)	High Alarm; Alarm did not sound even though the light came on when tested.	Tank T205 was overfilled, and the high alarm did not work. Approximately 50-60 gallons of general waste was released into containment area. The containment area was hosed down using approximately 50-gallons of water and waste was transferred to T401.	Equipment Failure; Failure to follow SOP - no calculation of available capacity	Prior to replacing the tank top fitting, T205 developed a slow leak; tank was removed June 9 and a new tank with new high level alarm installed November 10, 2011.	11/10/2011
6/17/2011	Warehouse (S)	40 gal waste propanol / propyl acetate	Drum	Drum	Leaking Drum	Leaking Drum	Generator contacted regarding integrity of drum	6/17/2011
7/28/2011	400 TF	615 gal hazwaste	T402	Level Indicator/Operator	Two waste streams, T402 to self and T205 transfer to T402, were occuring at the same time and together filled up T402 to overflow. The alarm sounded but the waste was coming so fast it overflowed before shut off could be hit.	Equipment Failure: High level float was cracked and didn't sound. When the alarm sounds, there should be 2' of head space in the tank and ample time to shut off flow before tank overflows.	1. High level switch float was replaced. 2. Level control device recalculated to give an accurate level in tank.	7/29/2011
10/16/2011	Back Lot	20lbs Butyl Acrylate (No RQ)	Tanker	Packing Nut loosened.	Leaking tanker was found in the back lot. Small puddle under the tanker. Packing nut tightened.	Loosened nut valve; Tanker just returned from cleaning prior to filling	* All monomer tankers moved and stored between the Lab and Maintenance buildings on pavement. *Tanker inspection checklist instructs operators to check monomer tankers twice per shft. *2012 - Capital Expense - Pave/cement and curb backlot. *Long-term plan is to install more b ulk storage tanks, therefore reducing the use of tankers.	11/7/2011
1/19/2012	100TF (South Pit)	75 gal (525#) RCLT; < lowest RQ	Process Vessel	Filter Basket	During transfer of RCLT solvent product, filter basket started leaking	Leaking Filter Basket	Replaced Filter	1/19/2012

WISCONSIN
DEPT. OF NATURAL RESOURCES
George E. Meyer
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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May 9, 1996

File Ref: 113063390
Dane
HW/LIC

Mr. Tom Miazga
Director of Regulatory, Health and Safety
Hydrite Chemical Company
300 North Patrick Blvd.
Brookfield, WI 53047

SUBJECT: Final Determination: Plan of Operation Modification - Addition of State Corrective Action Requirements;
Hydrite Chemical Company, 114 N. Main Street, Cottage Grove, Dane County, Wisconsin 53527
U.S. EPA I.D. No.: WID 000808824.

Dear Mr. Miazga:

On April 24, 1992, the U.S. EPA authorized the State of Wisconsin to implement the RCRA Corrective Action program to address releases from Solid Waste Management Units (SWMUs) at facilities required to have a hazardous waste operating license. The attached final determination modifies Hydrite's plan of operation approval issued on May 17, 1988 to incorporate provisions for state authorized corrective action.

The Department provided public notice of this plan modification starting July 24, 1995 and closing on September 7, 1995. Notice of the public comment period was provided in the *Milwaukee Journal-Sentinel* and in the *Wisconsin State Journal.* An information hearing, which you attended, was held on August 16, 1995. No substantial comments were received during the hearing. Two letters were submitted on behalf of Hydrite regarding this modification during the public comment period. Due to the extensive discussions that have occurred between Hydrite and the Department regarding corrective action at the Hydrite facility, a response memo has not been prepared to address these comments as they have been resolved in other forums.

The draft approval contained five conditions that required Hydrite to initiate numerous actions including additional ground-water investigations and preliminary interim measures. All five proposed conditions were the subject of settlement negotiations regarding the lawsuit filed by the Department of Justice (DOJ) on November 20, 1995. As you are aware, a partial settlement agreement was signed on April 9, 1996 that included the specific work elements that Hydrite would undertake through August, 1997. Therefore, the conditions in

the draft approval have been modified as follows to reflect the agreements set forth in the partial settlement.

Condition No. 1 required Hydrite to implement a quarterly ground-water monitoring program at the facility. On January 12, 1996 Hydrite's consultant submitted a proposed ground-water monitoring plan and on February 1, 1996 the Department provided written comments to Hydrite on the plan. A detailed monitoring program was set forth in the April, 1996 partial settlement agreement and therefore this condition has been modified to reflect that agreement.

Condition No. 2 required that Hydrite submit a plan for completing the investigations necessary to define the degree and extent of soil and ground-water contamination. On January 12, 1996 Hydrite's consultant submitted a proposed workplan to install an additional well southeast of the facility and perform a third and fourth RFI sampling round. The Department provided written comments on the proposed plan on February 1, 1996. The partial settlement agreement requires that the results of the sampling be submitted to the Department for review by July 1, 1996. The report also is to contain recommendations for future monitoring at the facility. As with Condition No. 1, this condition has been modified to reflect the settlement agreement.

Condition No. 3 required that Hydrite prepare cost estimates for completing the work required by the draft approval and then establish proof of financial responsibility to ensure the availability of funds for completing the required activities. In the report entitled: "Proposed Work Plan to Restore/Rehabilitate Damaged Groundwater" dated January 31, 1996 a summary of the major work efforts to be completed through August, 1997 and their associated costs were presented.

As part of the settlement negotiations an agreement was reached that Hydrite would pay $1,500,000 into a Settlement Fund Account. The money would be used for funding certain activities associated with investigation, repair, restoration, and/or rehabilitation of injured natural resources, including ground water. Provisions also were included for Hydrite to be reimbursed once these activities were completed. Since funding has been made available to cover a majority of the work to be completed between now and August, 1997 this condition has been removed from the final plan approval.

Condition No. 4 required that Hydrite submit a detailed workplan that provides for implementation of Interim Remedial Measures to remove light, non-aqueous phase liquids (LNAPL's) and other constituents from the shallow flow system. This condition also required removal or treatment of highly contaminated soil that may be serving as a continuing source of contaminant releases to the ground water. On April 16, 1996 Hydrite's consultant submitted a "Design Basis Report" that provides a conceptual plan for initiating a first phase of ground-water damage restoration at the facility.

The Department notified Hydrite verbally on April 29, 1996 of our general agreement with the concepts outlined in this plan. This condition has been renumbered Condition No. 3 and

revised to require that final design plans be submitted by June 1, 1996. The Department understands the tight timeframes associated with the implementation of this project and will make every effort to issue a final approval within 14 days from the date that final plan is received.

Condition No. 5 required that Hydrite submit a Corrective Measures Study (CMS) following WDNR guidance. Hydrite has requested that the ground-water restoration program be implemented in phases and the Department acknowledges that this type of approach is appropriate for this facility. The Design Basis Report indicates that an evaluation of the Phase I Air Sparging/Soil Vapor Extraction (AS/SVE) system will be submitted to the Department by August 1, 1997. This report will also make recommendations on whether the existing system should be expanded and will evaluate other technologies, if applicable.

As a result, the Phase I Report will be similar in scope and content to a focused CMS as set forth in WDNR guidance. This condition has been renumbered Condition No. 4 and revised to require that Hydrite submit a focused CMS following the Department's Task II guidance by August 1, 1997.

Now that this plan modification is approved, Hydrite may request that the U.S. EPA remove the RCRA Corrective Action provisions currently contained in the Federal Permit issued to Hydrite on July 30, 1989.

The draft version of this modification contained a State Corrective Action Plan or CAP (TASK I and TASK II) as part of the plan approval modification to provide additional guidance and direction. Hydrite must follow those documents when preparing the reports and plans necessary to address on-going investigation/remediation activities at the facility.

If you have any questions regarding this letter, please contact Mike Netzer at 608/267-7570 or Tim Mulholland at 608/266-0061.

Sincerely,

Barbara J. Zellmer, Chief
Hazardous Waste Management Section
Bureau of Solid & Hazardous Waste Management

BJZ:tsm

Enclosures: Final Determination to Modify a Plan of Operation Approval
State Corrective Action Tasks Plan I and II

cc: J. Brusca/M. Degen/L. Hannefeld - SD
M. Gordon - SW/3 (w/o attachments)
E. Kavanaugh - LC/5
E. Lynch - SW/3 (w/o attachments)
T. Mulholland - SW/3 (w/o attachments)
M. Netzer - SW/3
G. Hamper - U.S. EPA Region V (HRP-8J)
J. Gromnicki - U.S. EPA Region V (HRM-7J)

BEFORE THE STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
CONDITIONAL PLAN OF OPERATION MODIFICATION
STATE OF WISCONSIN CORRECTIVE ACTION REQUIREMENTS

HYDRITE CHEMICAL COMPANY
114 N. MAIN STREET
COTTAGE GROVE, WISCONSIN 53527
FID 113063390
U.S. EPA I.D. No.: WID 000808824

FINDINGS OF FACT:

Owner/Operator: Hydrite Chemical Company
300 N. Patrick Boulevard
Brookfield, Wisconsin 53008-0948

Contact: Mr. Tom Miazga
Hydrite Chemical Company
414/792-1450 (x796)

Location: Hydrite Chemical Company; 114 N. Main Street; Cottage Grove, WI 53527.

Description:

Hydrite Chemical Company ("Hydrite"; formerly known as Avganic Industries) is a licensed hazardous waste storage facility with tank storage of 72,000 gallons and container storage of 231,000 gallons for a total capacity of 303,000 gallons. Storage occurs in drums, barrels and tanks ranging in size from seven to 6,650 gallons. The facility has been in operation since the mid-1970s. Services include the transportation, storage, recycling and laboratory analyses of hazardous waste, and the arrangement of treatment and disposal services for its clients.

Hydrite operates a hazardous waste recycling and storage facility at this location. The facility takes a variety of hazardous wastes, primarily solvents, and separates usable product from waste materials through various forms of distillation. Reclaimed product solvents are sold to customers, while byproducts are managed as generated hazardous waste. Hydrite also blends liquid and solid hazardous wastes for use as hazardous waste fuels by facilities designed to utilize these waste materials. Hydrite received its feasibility and plan of operation approval from the Department on May 17, 1988 and was licensed in April, 1989. The hazardous waste storage license number for containers is 06006, while the hazardous waste tank storage license number is 03200.

The Hydrite facility is surrounded by the Village of Cottage Grove. Presently, commercial and residential development is found primarily on the north and west sides of the facility. Expanding residential development is expected to occur on the south and east sides over the near future.

The Hydrite site is underlain by a layer of unconsolidated deposits (40 to 90 feet), which overlies bedrock. First, however, is a layer of fill (up to ten feet in depth) that has been brought in to elevate and even out the soil foundation under the production and storage areas. The unconsolidated material under the fill layer consists of up to five feet of silty clay till (Horicon Formation). Sand and gravel outwash deposits are found beneath the Horicon till. This unconsolidated layer serves as an aquifer beneath the Hydrite facility. The uppermost bedrock unit at the Hydrite site is the St. Peter Sandstone, which primarily consists of sandstone with interbedded conglomerates, siltstone and shale. The St. Peters Sandstone is approximately fifty feet thick beneath the site, although it disappears about a half mile south of Hydrite.

Beneath the St. Peter Sandstone is the Prairie du Chien Group, which is principally a hard dolomite. The Prairie du Chien layer is estimated to be 25 to 35 feet thick beneath Hydrite.

A second major aquifer is found beneath the Prairie du Chien Group. At the deepest known levels, an ancient layer of sandstone is found, which may be 660 to 1100 feet thick. These layers of sandstone are primarily composed of sandstone with shale, siltstone and dolomite.

Ground-water flow in the major aquifers is primarily to the southeast of the Hydrite facility. The two major aquifers are not isolated from each other; the dominant vertical flow is generally downward, although local geological or meteorological conditions can cause ground water to flow upward.

The Wisconsin Department of Natural Resources ("Department" or "DNR") finds that:

1. Hydrite operates a hazardous waste storage facility, as defined in s. NR 600.03(216), Wis. Adm. Code. Hydrite is a licensed hazardous waste tank and container storage facility located at 114 N. Main Street, Village of Cottage Grove, NW 1/4 of the NE 1/4 of Section 16, T7N, R11E, Town of Cottage Grove, Dane County, Wisconsin. In addition to the licensed hazardous waste storage activities, Hydrite recycles hazardous waste solvents and blends hazardous waste solids and liquids to form hazardous waste fuels for energy recovery. Hydrite is a large quantity hazardous waste generator.

2. Hydrite received a license on April 1, 1989 to store hazardous wastes in accordance with conditions of the feasibility and plan of operation approval dated May 17, 1988. Hydrite's hazardous waste storage tank license number is 03200 and its hazardous waste container license number is 06006.

3. On June 30, 1989, the U.S. Environmental Protection Agency issued the Federal portion of the Resource Conservation and Recovery Act (RCRA) permit for Hydrite. This letter noted that the effective date of the permit was June 30, 1989. Section III, Corrective Action, imposed on Hydrite conditions requiring a corrective action plan at the facility, including a RCRA Facility Investigation, Corrective Measures Study and Corrective Measures Implementation.

4. Section III.A of the June 30, 1989 Federal permit conditions issued by the U.S. Environmental Protection Agency noted the following solid waste management units (SWMUs) at Hydrite from which releases of hazardous wastes or hazardous materials have or may have occurred:

   a. Rail Area: Hydrite shipped reclaimed solvent and secondary fuel via rail cars on a railroad spur south of its facility. A 500 to 1,000 gallon spill occurred on July 31, 1987 when a rail car was overfilled. Hydrite does not claim ownership of the property on which the spill occurred.

   b. Container Storage: Prior to Hydrite ownership in 1970, the previous owner (North Central Chemical (NCC)) stored approximately 1,500 deteriorating drums on site. When the facility began operating under Hydrite, about half of the drums were reportedly empty. Later construction activities revealed chemical odors below the ground surface and ground-water contamination was found in monitoring wells.

   c. Tank Farm Units: Numerous spills have occurred within tank farm secondary containment areas. Although spills were reported to the Wisconsin Department of Natural Resources and addressed, the integrity of the secondary containment is unknown and may have allowed releases to underlying soil.

   d. Reclamation Units: Three thin film evaporators and one pot still operate on site. No releases, other than to the atmosphere, are known to have occurred from these units.

   e. Ground-water Treatment System: A pilot ground-water treatment system was temporarily operated. No known releases occurred from this unit.

5. Section III.B of the June 30, 1989 Federal permit conditions issued by U.S. Environmental Protection Agency required investigation and/or corrective action for at least three of the SWMUs: the rail area, container storage and tank farm units. Attachments A through D to the June 30, 1989 letter provided the Scopes of Work for each of the following activities at Hydrite:

   a. RCRA Facility Investigation (RFI);
   b. Corrective Measures Study (CMS);
   c. Corrective Measures Implementation (CMI); and,
   d. Interim Measures (IM).

6. Attachment A, RFI Scope of Work (SOW), of the June 30, 1989 Federal permit conditions issued by U.S. Environmental Protection Agency notes on pages 1 through 3 numerous reports submitted by Hydrite detailing various soil and ground-water investigations and results. These reports will not be repeated, but are incorporated by this reference.

7. In a letter dated July 12, 1989, the U.S. Environmental Protection Agency informed Hydrite that the effective date for the Federal portion of the RCRA license was thirty (30) days after the servicing letter was sent (June 30, 1989). Therefore, Hydrite's Federal permit became effective on July 30, 1989.

8. In a letter dated July 27, 1992, the U.S. Environmental Protection Agency revised the Federal portion of Hydrite permit, based on a petition by Hydrite dated August 5, 1989. These revisions affected Attachment A, the RFI SOW, and page 11 of 11 of the USEPA permit.

9. Table 1 presents information on ground-water contamination that has been detected by Hydrite at and near its facility. Those values in Table 1 that appear as shaded cells represent exceedances of ch. NR 140, Wis. Adm. Code, public health groundwater quality enforcement standards. All other reported constituent concentrations presented in this table represent exceedances of the ch. NR 140, Wis. Adm. Code, public health groundwater quality preventive action limits. Wells P22, P23 and P24 represent on-site ground-water monitoring wells; wells P20, P21 and P30 represent off-site ground-water monitoring wells.

Table 1. Ground-water concentrations of selected constituents of concern at selected wells at the Hydrite facility.

All concentrations reported in µg/L.

Well/Sample Date	P22	P22	P23	P23	P24	P24	P30	P21	P21	P20	NR 140
Constituent	7/13/87	7/13/87	7/23/87	7/23/87	7/22/87	7/23/87	9/18/88	1/18/88	1/18/88	1/18/88	Enforcement Standard
Methylene Chloride	450,000	280,000	320,000	42,000	710,000	1,200,000	5,400,000		892	7,040	150
cis-1,2-Dichloroethylene	9,500	8,100	27,000	3,300	4,500	7,800	330,000		19,500	12,100	70
1,1-Dichloroethylene	2,900	2,300	4,400	830	120				2,390		7
Trichloroethylene	330,000	260,000	270,000	40,000	95,000	150,000	110,000	120	288	50,200	5
Methylethyl Ketone	160,000	110,000	12,000		310,000	2,500,000	960,000		3,910		460
Methylisobutyl Ketone	569,000	440,000	120,000	20,000	270,000	470,000	6,200	**260**	**476**		500
Toluene	185,000	150,000	88,000		31,000	46,000	20,000	1,600	2,760	578	343
Xylene	66,000	50,000	30,000	7,400	12,000	16,000	14,000	**160**	**364**	**318**	620
1,1,1-Trichloroethane	340,000	300,000	390,000	56,000	150,000	100,000	220,000	26,000	5,880	5,490	200
1,1-Dichloroethane	1,600					65,000		**400**	1,080		850

Source: Table 3, Historical Water Quality Data, October, 1982 through January, 1988; *from* Phase V, Subsurface Investigations, Avganic Industries, Inc. Solvent Reclamation Facility, Cottage Grove, Wisconsin. Prepared by Hydro-Search, Inc. May 11, 1988.

Shaded values represent exceedances of enforcement standards; values in bold type represent exceedances of preventive action limits.

10. Chapter NR 140, Wis. Adm. Code, preventive action limits and enforcement standards for substances of health and welfare concern have been attained or exceeded at the point of standards application at the Hydrite facility as presented in Table 1. In addition to those preventive action limit and enforcement standard exceedances presented in Table 1, preventive action limit (PAL) and enforcement standard (ES) exceedances also have been detected at the Hydrite facility for benzene (ES), chloroform (ES), *trans*-1,2-dichloroethylene (ES), 1,1,2-trichloroethane (ES), vinyl chloride (ES), 1,2-dichloropropane (PAL), carbon tetrachloride (ES), tetrachloroethylene (ES), acetone (ES), ethylbenzene (ES) and 1,4-dichlorobenzene (ES).

11. Exceedances of ch. NR 140, Wis. Adm. Code, public health groundwater quality standards (enforcement standards or preventive action limits) have occurred in at least the following monitoring wells for one or more constituents of concern: W14, W13, W1, W7, P34, P33, W2, W4, P5, W3, P6, P22, P23, W28, P24, W17, P25, P16, P10, P30, P29, P19, P18, P20, P21, P32, P39, P40, P41, OW57 and RW58.

12. In a report entitled "Interim Corrective Measures Phase II Pilot Testing Results, Hydrite Chemical Company, Cottage Grove, Wisconsin," Volumes I, II and III dated July 23, 1993 and prepared by Groundwater Technology, Inc., Hydrite presented additional information regarding significant and continuing ground-water contamination. This report describes additional wells that are contaminated with the same constituents of concern as presented above. Numerous figures are presented that depict the extent and degree of groundwater contamination.

13. Hydrite has not submitted validated groundwater monitoring results that were presented in the report entitled "Interim Corrective Measures Phase II Pilot Testing Results, Hydrite Chemical Company, Cottage Grove, Wisconsin", Volumes I, II and III dated July 23, 1993 and prepared by Groundwater Technology, Inc.

14. On December 2, 1991, the U.S. Environmental Protection Agency approved Hydrite's Quality Assurance Project Plan (QAPP), as a part of Hydrite's RCRA Facility Investigation.

15. The Department approved a minor plan modification (transfer of ownership) for Hydrite on September 14, 1992. Prior to this date, the facility operated under the name of Avganic Industries. The Department determined that the facility was operated by Hydrite Chemical Company, rather than Avganic, beginning on September 14, 1992.

16. On April 24, 1992, the U.S. Environmental Protection Agency authorized the State of Wisconsin to implement the RCRA corrective action program to address releases from

solid waste management units at facilities required to have a hazardous waste operating license.

17. In a letter dated July 19, 1995, the Department provided Hydrite with a preliminary determination to modify its plan of operation approval to include State hazardous waste corrective action requirements. A public notice of this proposed plan modification appeared in the *Milwaukee Journal-Sentinel* and the *Wisconsin State Journal* on July 24, 1995. The public comment period was open from July 24, 1995 until September 7, 1995.

18. An informational hearing on this proposed plan modification was held on August 16, 1996 at the Village of Cottage Grove Municipal Building. Two persons attended this hearing, in addition to DNR staff. No substantive comments were received at the hearing.

19. In response to the public comment period, two written comments were received. These comments were prepared on behalf of Hydrite. One letter contained general, legal comments regarding the proposed plan modification. The other letter contained detailed technical responses to monitoring and remedial issues regarding the proposed plan modification.

    A memo in response to these comments has not been prepared by the Department. The general and legal comments were not sufficiently specific to address point by point. The technical concerns raised in a comment letter have been further considered by Hydrite and the Department in settlement negotiations and are addressed in documents submitted to the Department as a part of partial settlement negotiations and an agreement.

20. On November 20, 1995, the State of Wisconsin filed suit against Hydrite Chemical Co. regarding alleged releases of hazardous substances to the environment which have caused injury to natural resources, including ground water and property in which the State has interest and located in and around the Hydrite facility.

21. As a part of negotiations with the DNR and Department of Justice regarding the lawsuit, Hydrite submitted three workplans regarding proposed investigatory and remedial activities at the Cottage Grove facility. These plans are:

    a. "RCRA Facility Investigation Work Plan Addendum, Hydrite Chemical Co., Cottage Grove, Wisconsin," dated January 12, 1996 and prepared by Hydro-Search, Inc. on behalf of Hydrite;

b. "Proposed Quarterly Ground-Water Monitoring Program, Hydrite Chemical Company, Cottage Grove, Wisconsin," dated January 12, 1996 and prepared by Hydro-Search, Inc. on behalf of Hydrite; and,

c. "Hydrite Chemical Co., Cottage Grove Recycling Facility, Proposed Work Plan to Restore/Rehabilitate Damaged Groundwater," dated January 31, 1996 and prepared by Groundwater Technology Inc. on behalf of Hydrite;

These documents detail Hydrite's proposed workplans for performing additional monitoring at the facility and performing initial and/or interim remedial activities.

22. By letter dated February 1, 1996 sent to Hydrite, the Department approved Hydrite's ground-water monitoring and investigation plans ("Proposed Quarterly Ground-Water Monitoring Program" dated January 12, 1996 and "RCRA Facility Investigation Work Plan Addendum," date January 12, 1996).

23. The DNR, Department of Justice and Hydrite finalized a partial settlement agreement regarding the November 20, 1995 state lawsuit on April 9, 1996. The partial settlement agreement contains alterations to the three work plans presented in the previous Finding of Fact.

24. In a submittal dated April 12, 1996 and received by the Department on April 16, 1996, Hydrite proposed a preliminary design for ground-water restoration beneath the facility. This report is entitled "Hydrite Chemical Co., Cottage Grove Solvent Recycling Facility, Design Basis Report, Phase I Groundwater Restoration," (Design Basis Report) prepared for Hydrite by Groundwater Technology, Inc. of Cleveland, OH. This submittal details the technical information that is required for the design of an air sparging/soil vapor extraction system beneath the Hydrite facility to address light non-aqueous phase liquids (LNAPLs).

25. Releases have occurred from Solid Waste Management Units (SWMUs) at the Hydrite facility. These releases included materials that are hazardous wastes as defined in s. 144.61(5), Wis. Stats., and s. NR 605.04, Wis. Adm. Code, and materials that are hazardous substances as defined in s. 144.01(m), Wis. Stats., and s. NR 158.03(4), Wis. Adm. Code.

26. This conditional plan approval modification is necessary to protect human health and the environment and comply with ch. NR 140, Wis. Adm. Code and s. NR 635.17, Wis. Adm. Code.

CONCLUSIONS OF LAW

1. The Department has promulgated chapters NR 600 through NR 685, Wis. Adm. Code, establishing minimum requirements for hazardous waste management under the authority of ss. 144.60 through 144.74, Wis. Stats.

2. The Department has the authority under s. 144.735, Wis. Stats. and s. NR 635.17, Wis. Adm. Code, to require corrective action if a release from a Solid Waste Management Unit (SWMU) has occurred, including corrective action beyond the facility property boundary.

3. The Department has authority to impose monitoring requirements at a hazardous waste facility pursuant to ss. NR 600.07 and 640.13(3), Wis. Adm. Code.

4. The Department has authority to require a response under s. 160.23, Wis. Stats., and s. NR 140.24, Wis. Adm. Code, if a preventive action limit for a substance of health or welfare concern has been attained or exceeded at a point of standards application.

5. The Department has authority to require additional samples or other changes in the monitoring program at a facility, practice or activity under s. NR 140.24(c)(2), Wis. Adm. Code.

6. The Department has authority to require a response under s. 160.25, Wis. Stats., and s. NR 140.26, Wis. Adm. Code, if an enforcement standard for a substance of health or welfare concern has been attained or exceeded at a point of standards application.

7. The Department has authority to modify a plan approval and license pursuant to ss. 144.44(3)(d) and 144.735, Wis. Stats. and ss. NR 635.17 and 680.07, Wis. Adm. Code, if modifications are necessary to ensure compliance with chs. NR 600 through 685, Wis. Adm. Code.

8. Based on the foregoing findings, the Department has the authority, pursuant to s. 144.44(3)(d), Wis. Stats., to issue the following plan modification.

CONDITIONAL PLAN OF OPERATION MODIFICATION APPROVAL HYDRITE CHEMICAL COMPANY (HYDRITE)

Based on the Findings of Fact and Conclusions of Law, the Department has the authority pursuant to ss. 144.44(3)(d) and 144.735, Wis. Stats., to issue this modification to Hydrite's May 17, 1988 conditional plan of operation approval, subject to compliance with chs. NR 600 through 685 and NR 140, Wis. Adm. Code, and the following conditions.

1. Hydrite shall implement a quarterly ground-water monitoring program as set forth in the following condition:

   a. Monitoring Wells:

MW-8	MW-42	MW-46	MW-47	MW-48
MW-49	MP1-1	MP2-1	MP3-1	MP4-1
MP1-2	MP2-2	MP3-2	MP4-2	MP1-4
MP2-4	MP3-4	MP4-5	MP1-6	MP2-6
MP3-6	MP4-6	MP1-7	MP2-7	MP3-7
MP4-7	MP4-8	MP4-9	P-6	P-10
P-16	P-18	P-19	P-21	P-22
P-29	P-30	P-35	P-38	P-39
P-51	P-52	P-54	P-66	P-67
P-68	P-69	P-70	P-71	P-72
P-76	P-77	P-78	P-79	P-80

   b. Analytes: Hydrite shall analyze all quarterly ground-water samples for the volatile organic compounds presented in Section 2 of the January 12, 1996 "Proposed Groundwater Monitoring Program."

   c. Analytical Methods: Analytical Methods shall be consistent with the requirements contained in s. NR 140.16, Wis. Adm. Code, or the USEPA-approved QAPP, whichever is more stringent.

   d. Reporting: Hydrite shall report the results of the quarterly monitoring to the Department within 60 (sixty) days of each sampling event using monitoring forms supplied by the Department.

   e. Sampling events for monitoring wells shall occur within 15 (fifteen) days of March 1, June 1, September 1 and December 1 of each year.

   f. Section 3 of the Proposed Quarterly Ground-Water Monitoring Program shall be modified to provide that the second quarter of ground-water sampling for 1996 shall be performed in July, 1996, the third quarter of ground-water sampling for 1996 shall be performed in September, 1996, and the fourth quarter of ground-water sampling for 1996 shall be performed in December, 1996. Beginning in 1997 quarterly ground-water sampling shall be performed during the months of March, June, September and December.

2. Hydrite shall submit to the Department a RCRA Facility Investigation (RFI) Status Report, including any proposed revisions to the quarterly ground-water monitoring program, on or before July 1, 1996. This RFI Status Report shall contain the results of Hydrite's RFI sampling rounds and recommendations for quarterly ground-water monitoring revisions, primarily regarding the need for continued semivolatile organic chemical (SVOC) and polychlorinated biphenyl (PCB) analyses. The RFI Status Report also will contain a recommendation regarding the need to perform scheduled quarterly ground-water monitoring in July, 1996 (refer to Condition #1.f.). The Department shall review and may approve any remaining RFI work proposed in the RFI Status Report, as well as the proposed quarterly ground-water monitoring changes.

3. a. The Department hereby approves Hydrite's Design Basis Report, dated April 12, 1996.

   b. Hydrite shall prepare a final design for the Phase I Ground-Water Restoration, consisting of an air sparging/soil vapor extraction (AS/SVE) system along the southern boundary of the Hydrite property. The AS/SVE system shall be designed to remove non-aqueous phase liquids (NAPLs) from the soil and ground-water system. The final design shall be submitted to the Department by June 1, 1996 for review and approval.

4. By August 1, 1997 Hydrite shall submit a focussed Corrective Measures Study (CMS) that is prepared in accordance with the Department's Task II guidance (attached). The focussed CMS shall include an evaluation of the Phase I AS/SVE system performance and make recommendations on whether the system should be expanded. The report shall also evaluate other technologies, if appropriate.

The Department retains the right to modify this determination and to require additional information at any time. Nothing in this conditional plan approval shall relieve Hydrite of its legal obligation to comply with applicable federal, state and local approvals. In the event new information regarding soils, ground water or surface water becomes available to the Department subsequent to Hydrite's submission of the RFI Status Report and the Department or Hydrite reasonably determine that such new information requires additional ground-water monitoring or soil sampling at the facility, then the Department or Hydrite may propose to the other additional ground-water monitoring or soil sampling.

Hydrite Chemical Company
Final Determination: Plan of Operation Modification to Add Corrective Action Authority - May 9, 1996

NOTIFICATION OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to ss. 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file you petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to s. 227.48(2), Wis. Stats.

Dated: MAY 09 1996

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

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