JEFFERSON COUNTY
LOCAL EMERGENCY PLANNING COMMITTEE

COMMITTEE MEMBERS: GAIL SCOTT, ADAM BOLS (Chair), ROBERT DEWOLFE, DONNA HAUGOM, SHERIFF PAUL MILBRATH, SAM LAMURO, PAUL HABLE, HALEY HOFFMAN, CHIEF WES BENISCH , ANGELA SWINEHART, CHIEF KRAIG BIEFELD (Vice-Chair), WARDEN Lt. JOHN SINCLAIR, TYLER KUBICEK, REP. CODY HORLACHER, RICK THOMAS, SHANA BEAL, CAPT. TRAVIS MAZE

You are invited to a Zoom meeting.
When: Wednesday, February 17, 2021 01:00 PM Central Time (US and Canada)

Join Zoom Meeting
https://zoom.us/j/98742479993?pwd=NFp6SW8rd05RSEpaSDUvanBSalcxUT09

Meeting ID: 987 4247 9993
Passcode: 967690
One tap mobile
+13126266799,,98742479993# US (Chicago)
+16465588656,,98742479993# US (New York)

Wednesday, February 17, 2021 at 1:00 p.m.

1. Call to Order
2. Roll Call (establish a quorum)
3. Certification of Compliance with the Open Meetings Law
4. Review of the Agenda
5. Public Comment (Members of the public who wish to address the committee on specific agenda items must register their request at this time)
6. Discussion and approval of the August 19, 2020 Meeting Minutes.
7. Communications
8. Spill Reports
9. Off-site Plans 2021
    a. Watertown Water Department (West Street)
    b. Wis Pak – Watertown
    c. Lakeland Cold Storage – Lake Mills
10. Agency Updates
    a. American Red Cross
    b. Salvation Army
    c. South Central WI Healthcare Emergency Readiness Coalition (SCWIHERC)
11. Set Time/Date Next Meeting Tentative – May 19, 2021 at 1:00 p.m., UW-Extension Room 12 or other location to be determined at a later date.
12. Adjourn

A quorum of any Jefferson County Committee, Board, Commission or other body, including the Jefferson County Board of Supervisors, may be present at this meeting.

Individuals requiring special accommodations for attendance at this meeting should contact the County Administrator 24 hours prior to the meeting at (920) 674-7101 so appropriate arrangements can be made

JEFFERSON COUNTY
LOCAL EMERGENCY PLANNING COMMITTEE

UW-Extension (Lower level of Workforce Development Center) Room 12
864 Collins Road, Jefferson WI 53549

Wednesday, August 19 at 1:00 p.m.

MEETING MINUTES

1. **Call to Order –** The meeting was called to order at 1:10 p.m. by Chair Adam Bols.

2. **Roll Call – Members Present:** Adam Bols (Chair), Chief Wes Benish, Chief Kraig Biefeld, Paul Hable, Donna Haugom, Tyler Kubicek, Kevin Hollis, Sam LaMuro, Captain Travis Maze, Sheriff Paul Milbrath, Ben Schliesman, Gail Scott, Alex Brooks

   Others Present: Mary Roberts, Haley Hoffman (Program Assistant)

3. **Certifications of Compliance with the Open Meetings Law –** In compliance.

4. **Review of the Agenda** – The agenda was reviewed; motion to approve agenda as is made by Milbrath, 2nd Benish – all ayes. Motion carried.

5. **Public Comments** – None.

6. **Discussion and Possible Approval for February 19, 2020 Minutes** – Motion made to approve minutes by Milbrath, Second by Benish – all ayes. Motion Carried.

7. **Communications** – None

8. **Spill Reports–** Postponed until November meeting.

9. **Off-site Plans 2020 –** Postponed approval of plans.
   a. Valero Renewable Fuels Company (Update) – Johnson Creek – Sulfuric Acid 153,500 lbs.
   b. Nasco Education (Update) – Fort Atkinson – Formaldehyde 37% 7,382 lbs., Phenol 90% 6,275 lbs., Sulfuric Acid 2,000 lbs.
   c. Nestle' Purina (Update) – Jefferson – Sulfuric Acid 47,006 lbs.
   d. Airgas an Air Liquide Company (Update) – Jefferson – Anhydrous Ammonia 6,500 lbs.
   e. Topcon Agriculture Americas (Update) – Fort Atkinson – Sulfuric Acid 2,632 lbs.
   f. Watertown Wastewater Treatment (New) – Watertown – this is currently showing up on the planning list but Tier II does not show any EHS over the planning quantity – materials and quantities will need to be verified

g. Jefferson County Wide Farm Plan – as of the responses that I have received today we do not currently have any farms that are storing EHS on site. I will be sending out a second mailing to verify.

10. **Agency Updates**
    a. **American Red Cross –** No representative present
    b. **Salvation Army** – No representative present.
    c. **South Central Wisconsin Healthcare Coalition –** Scott gave brief update.

11. **Next Meeting Date** – November 18, 2020 at 1:00 pm – Rm 12 UW-Extension or another location to be named at a later date.

12. **Meeting Adjourned –** Motion was made by Scott to adjourn at 1:35, Second by Benish – all ayes. Motion Carried.

JEFFERSON COUNTY

EPCRA HAZARDOUS MATERIALS RESPONSE PLAN TRANSMITTAL
OFF-SITE FACILITY PLAN FORM

☐ **NEW** ☒ **UPDATE**

This plan has been prepared in accordance with state and local requirements and is ready to be made a part of the Emergency Operations Plan (EOP)/ Emergency Response Plan (ERP) upon Wisconsin Emergency Management (WEM) / State Emergency Response Commission (SERC) acceptance. This plan meets off-site planning guidance as established by WEM / SERC. Acceptance of this plan is for planning purposes and does not verify facility compliance with the requirements of EPCRA.

OFF-SITE FACILITY PLAN FOR: (Facility ID #): **003773- 0**

Facility Name: **WATERTOWN WATER DEPARTMENT – WEST TREATMENT PLANT**
Location Address: **1000 WEST STREET WATERTOWN WI 53094**
Note pages and sections revised: COMPLETE REVISION

FACILITY SIGNATURES:

I have reviewed the attached plan and to the best of my knowledge, all facility information is true, accurate, and complete. The plan is consistent with off-site facility procedures.

_____ _____
Facility Coordinator Date

COUNTY SIGNATURES

I have reviewed the attached plan and to the best of my knowledge, all information is true, accurate, and complete.

_____ _____
County Local Emergency Planning Committee Chair Date

_____ _____
County Emergency Management Director Date

WEM / SERC ACCEPTANCE:

This plan has been reviewed and meets the off-site planning guidance as established by WEM / SERC.

_____ _____
WEM Regional Director Date

_X__ Review guide attached

OFF-SITE PLAN REVIEW GUIDE

FOR **JEFFERSON** COUNTY FACILITY ID **003773**- **0**

FACILITY NAME: **WATERTOWN WATER DEPARTMENT – WEST TREATMENT PLANT**

LOCATION ADDRESS: **1000 WEST STREET WATERTOWN WI 53094**

EPCRA Facility Off-Site Plan		Page #
1)	The facility identification with address.	**1**
2)	Facility Coordinator / Alternate Coordinator	**1**
3)	Extremely Hazardous Substances (EHS) chemicals Identified with CAS numbers and maximum amount	**1**
4)	Primary emergency responders identified	**1-2**
5)	Support and resources available from facility	**2**
6)	Outside resources available	**2**
7)	General Information / Assumptions (Disclaimer)	**3**
8)	Hazard analysis summary	**3-4**
9)	Special facilities affected	**4**
10)	Population protection	**5**
11)	Special considerations	**5-6**
12)	Transportation	**3, Hazard Analysis**
13)	Distribution list: Facility Fire Department of jurisdiction, Wisconsin Emergency Management- Region Office, Designated Hazmat team County Emergency Management Office Adjacent County Emergency Management Office when impacted by vulnerability zone	**6**

Attachments

16)	Facility site plan	**7**
17)	Hazardous Materials Worksheet / Calculations or computer generated Vulnerability Zone calculations	**13-14**
18)	Vulnerability Zone map highlighting special facilities	**8**
19)	Transportation route(s) map	**9**
20)	Safety Data Sheet (SDS) for each EHS	**15-22**

EPCRA Off-Site Facility Plan

For

Watertown Water Department – West Treatment Plant
WEM Facility ID: 003773-0
1000 West Street
Watertown, WI 53094

Date of Plan Approval:

TABLE OF CONTENTS

I. FACILITY NAME:

Name: Watertown Water Department – West Treatment Plant
Location Address: 1000 West Street
Watertown, WI 53094
Phone Number: 920-262-4075
Facility ID # Assigned by WEM: 003773-0

Knox Box Location: West Street entrance door

II. FACILITY EMERGENCY COORDINATOR/ALTERNATE COORDINATOR

FACILITY EMERGENCY COORDINATOR:
Name: Peter Hartz
Position: Manager
Email: phartz@cityofwatertown.org
Business Phone Number: 920-262-4085
24 Hr Phone Number: 920-285-4088

ALTERNATE COORDINATOR:
Name: Terry Schultz
Position: Plant Operator
Business Phone Number: 920-262-4075
24 Hr Phone Number: 920-261-6660

III. CHEMICALS ON SITE: EXTREMELY HAZARDOUS SUBSTANCES

EHS CHEMICALS FROM THE LATEST TIER II:

CAS Number	Chemical Name/Trade Name	Max. Quantity (lbs.)	Vulnerability Zone
7782-50-5	Chlorine	750 lbs.	0.4 miles

Formatted: Highlight

Formatted: Highlight

OTHER CHEMICALS: (OPTIONAL)

CAS Number	Chemical Name	Max. Quantity (lbs.)
16961-83-4	Hydrofluorosilic Acid	3,056 lbs.
1310-73-2	Sodium Hydroxide	15,950 lbs.

IV. EMERGENCY RESPONDERS

Responders Name:	Watertown Fire Department
Contact Details: Address:	Emerg. Ph#: 911 106 Jones St Watertown WI 53094

Responders Name:	Watertown Police Department
Contact Details:	Emerg. Ph#: 911
Address:	106 Jones St Watertown WI 53094

Responders Name:	Jefferson County Sheriff's Office
Contact Details:	Emerg. Ph#: 911
Address:	411 S. Center Ave Jefferson WI 53549

V. SUPPORT AVAILABLE FROM FACILITY

All equipment is stored in the Filter Building by the main filter tanks.

- Gas detection instrument
- Safety glasses
- Boots and gloves
- Helmets with face shield and goggles
- Absorbent material
- Emergency Lighting

There are fire extinguishers located in the Chlorine Room. Showers are located in the Sodium Hydroxide and Hydrofluorosilic Acid Rooms. All staff must complete an annual safety training which includes proper handling of hazardous chemicals as well as what to do if a release should occur.

OUTSIDE RESOURCES AVAILABLE:

National Response Center	800-424-8802
Wisconsin Emergency Management 24 Hour Duty Office	800-943-0003
Martelle Water	608-314-4999
Hawkins Water Treatment Group	920-923-1850

VI. GENERAL INFORMATION AND ASSUMPTIONS: (Disclaimer)

The vulnerability zones set forth in this plan are based on the EPA's Technical Guidance for Hazards Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an air-borne release of a single EHS chemical occur.

The vulnerability zones identified in this plan are NOT to be used as a guide for population protection in fire related incidents. Fire incidents were considered in the development of this plan and the plan provides basic information about the facility for first responders to employ.

However, in an actual fire situation at this facility, the incident commander is strongly recommended to reference the fire department's own individual agency pre-emergency plans and standard operating procedures as well as the County's Comprehensive Emergency Management Plan (CEMP) – Emergency Support Function 4.

Additional fire departments responding to an incident at this facility are strongly encouraged to meet with facility representatives to determine ways to minimize an event at the facility and to determine what additional information and factors should be taken into consideration.

The field incident commander shall determine the actual response to an incident. The affected area may vary from the vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein. The vulnerability zones determined in the plan are for general planning purposes.

VII. HAZARD ANALYSIS SUMMARY

Brief Description of Facility

Watertown Water Department – West Treatment Plant is located at 1000 West Street. The facility is located on the northwest edge of the city.

Chlorine is the one extremely hazardous substance on site. The Chlorine is stored in 150 lbs. cylinders. The maximum amount on site at any one time would be approximately 750 lbs. or five cylinders. Four cylinders are delivered before the last cylinder is completely empty. The Chlorine is purchased from Martelle Water out of Janesville and is transported by truck. Major transportation routes include STH 26.

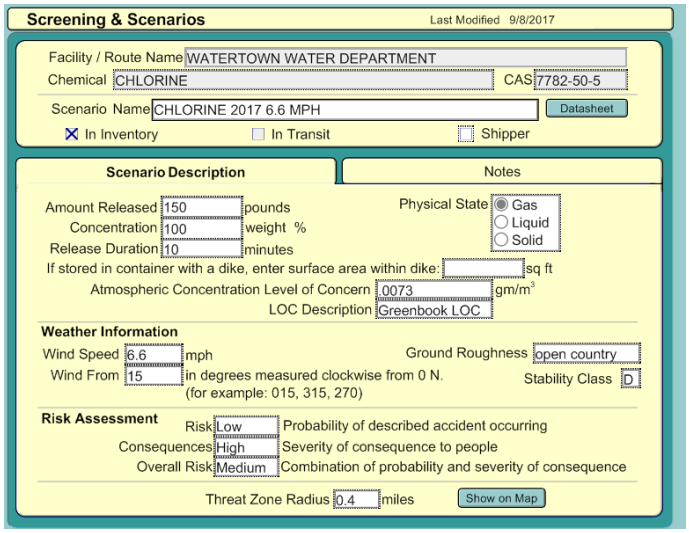
Two cylinders are ~~Only one cylinder is~~ hooked up at a time to a vacuum system. The room where the Chlorine is stored is connected to an alarm system that goes to the Water Treatment Plant. If the alarm is not acknowledged at the Water Treatment Plant (after hours), it will contact the person on call. There are always two people on call, to be contacted at home, via cell phone text message or by the police department.

Greatest Potential for Release (Container sizes, storage types, storage facilities, seasonal information)

The most credible worst case scenario would involve the main mount breaking causing the release of 150 lbs. of Chlorine. This would create a vulnerability zone of 0.4 miles. The vulnerability zone was developed with the aid of the CAMEO computer system.

Formatted: Highlight

Vulnerability Zone for each EHS Chemical (including parameters used to arrive at the Vulnerability Zone such as wind speed, atmospheric stability, class, level of concern, duration of release)



Possible Limitations or Problems that Could Arise

None Noted

Estimate of Population Affected

A vulnerability zone of 0.4 miles would affect approximately 744 people with shelter being needed for approximately 224 people.

Formatted: Highlight

Hazards Analysis Calculation

According to calculations derived from using CAMEO for Hazard Analysis, 150 lbs. of Chlorine would pose a hazard of 0.4 miles.

Formatted: Highlight

VIII. SPECIAL FACILITIES AFFECTED

There are no special facilities within the vulnerability zone of 0.4 miles.

Formatted: Highlight

IX. POPULATION PROTECTION

The determination to shelter in place or evacuate will be made by the on-scene commander, as appropriate.

The lead time for a hazmat incident could be from 0-30 minutes. As a result, this short time may not allow for a safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter in place. Preferred areas for protective sheltering would be interior hallways, rooms without windows or exterior doors, enclosed stairways and rooms on the side of the building away from where the hazard is approaching.

Doors, windows and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside of the risk zone. With approximately 744 people being affected shelter would be needed for approximately 224 people.

SHELTERS

Watertown Senior High School
825 Endeavor Drive
Watertown WI 53094
PH#: 920-262-7500 (school)

Bill Surdick
Head Maintenance
PH#: 920-285-4428 (24 Hr.)
4918 People

Riverside Middle School
131 Hall Street
Watertown WI 53094
PH#: 920-262-1480 (school)
2589 People

Wynn Schultz
Head Custodian
PH#: 920-342-1024 (Cell)
PH#: 920-261-8813 (Home)

X. SPECIAL CONSIDERATIONS: (NOTE: AS APPROPRIATE)

Address Environmental Concerns at Facility and in Vulnerability Zone

In the event of an incident, the following special considerations may need to be considered by the incident commander:

- The facility is located directly across from a residential subdivision
- Local businesses within the vulnerability zone include (note: this list is not all inclusive):
    - Watertown Humane Society Inc., 418 Tower Court, 920-261-1270
    - Maas Bros Construction, 410 Water Tower Court, 920-261-1682
    - Hepps Warehousing, 409 Water Tower Court
    - Machined Products Inc., 413 Water Tower Court, 920-206-9464
    - J and L Vending LLC, 421 Water Tower Court, 920-261-3477
    - Redington Glass Furnaces, 416 Water Tower Court, 920-206-0215

- Wis-Pak Inc., 860 West Street, 920-262-6300
- Clasen Quality Chocolate, 420 E Horseshoe Road, 920-206-9966
- Skate Express, N9668 Frohling Lane, 920-206-0555
- Streets may need to be temporarily closed; West, Benton and Dayton Streets.

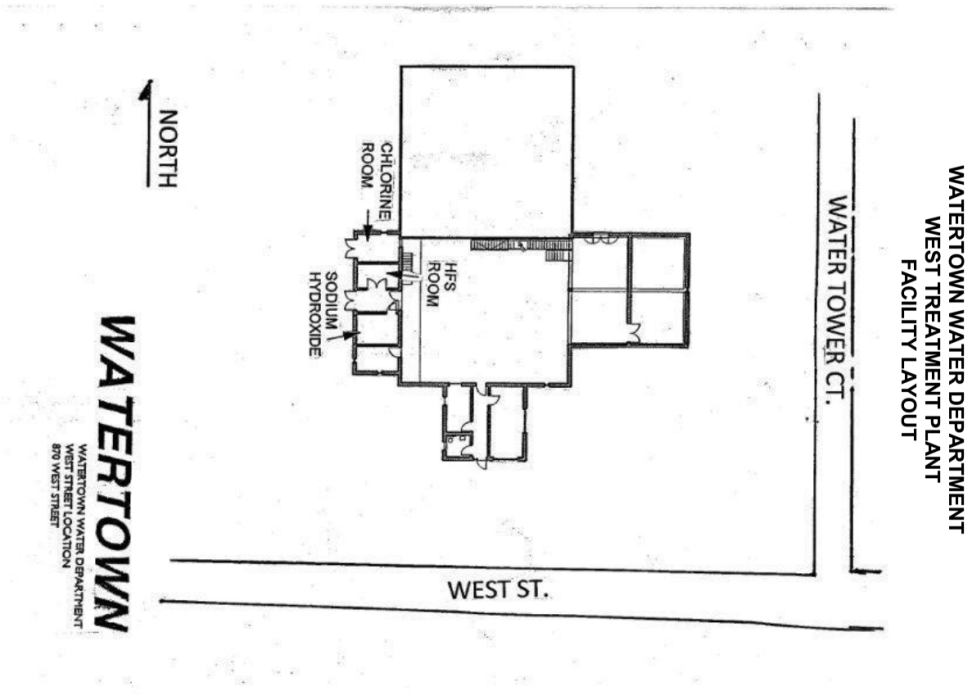
Potential for Affecting Other Jurisdictions

The vulnerability zone does approach the Dodge County border at Highway 19 but does not cross into Dodge County.

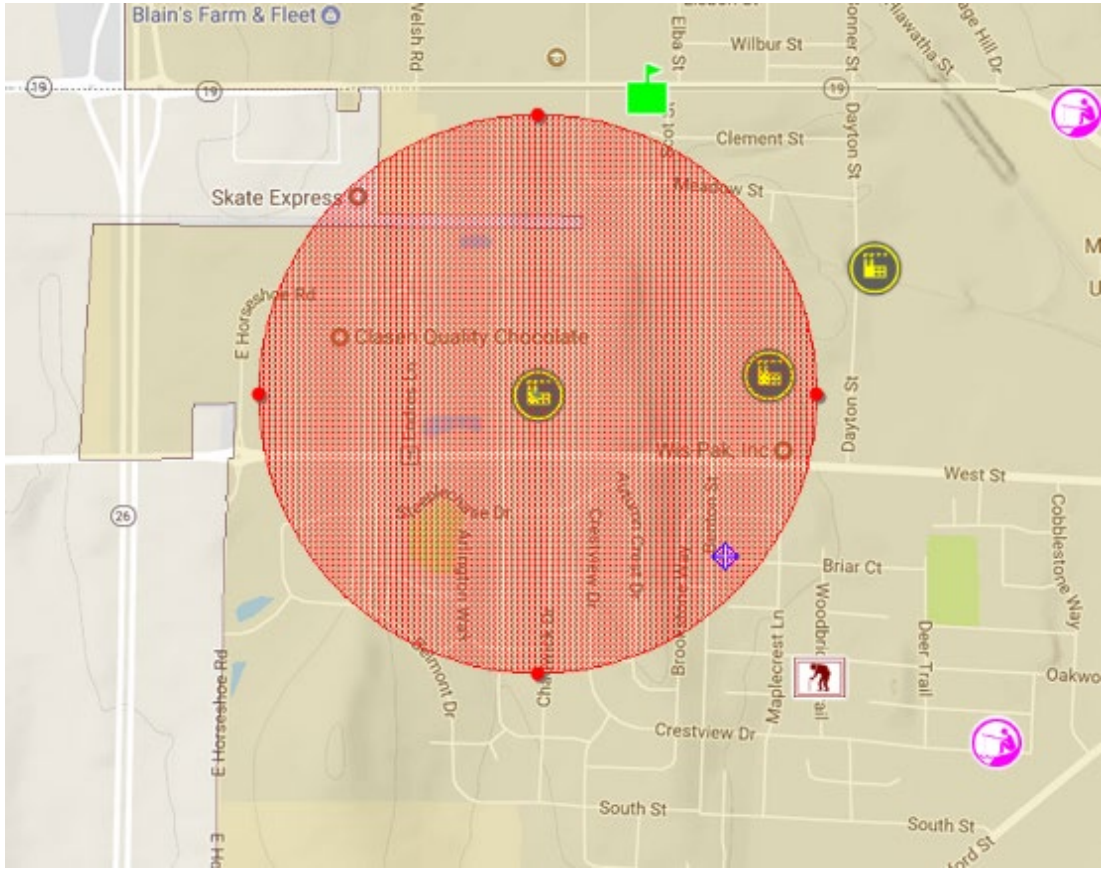
XI. DISTRIBUTION LIST

Watertown Water Department – West Treatment Plant
Watertown Fire Department
Watertown Police Department
Jefferson County Emergency Management
Wisconsin Emergency Management – Southeast Region

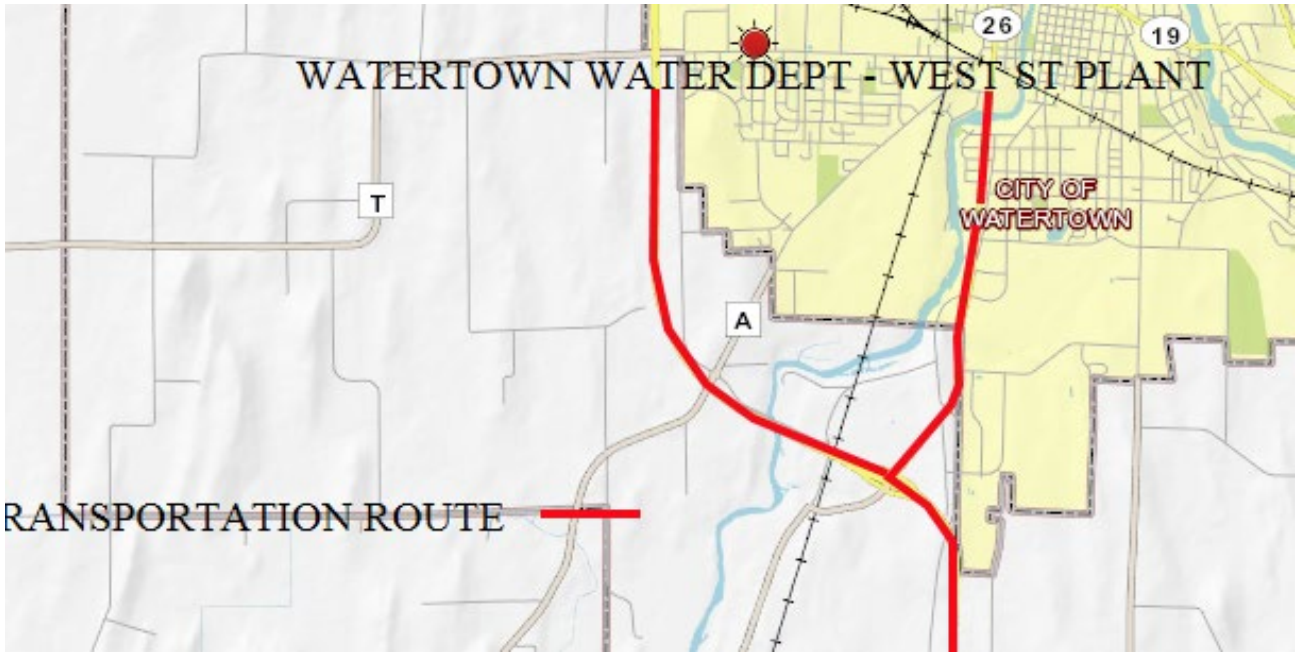
FACILITY LAYOUT MAP



VULNERABILITY ZONE MAP



TRANSPORTATION MAP



CHLORINE CYLINDER IN USE – NORTHWEST CORNER OF FILTRATION BUILDING

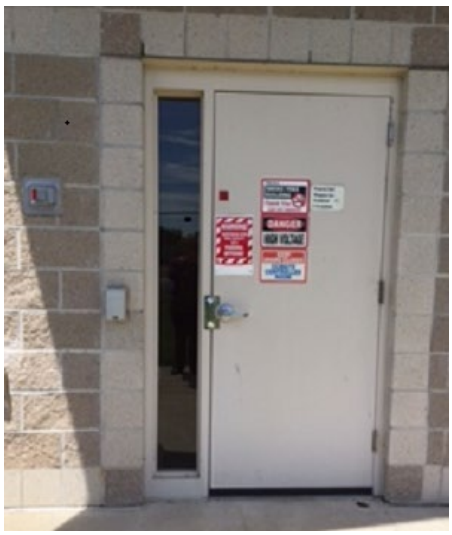
CHLORINE CYLINDERS IN STORAGE – 4 FULL, 4 EMPTY – JUST TO LEFT OF CYLINDER IN USE

HYDROFLUOROSILIC ACID – NORTHWEST CORNER OF FILTRATION BUILDING (NEXT TO CHLORINE ROOM)

EYEWASH/SHOWER IN ROOM WITH HYDROFLUOROSILIC ACID

SODIUM HYDROXIDE – WEST END OF FILTRATION BUILDING ACROSS HALL FROM CHLORINE AND HYDROFLUOROSILIC ROOMS

WEST STREET ENTRANCE – KNOX BOX



HAZARDOUS MATERIALS WORKSHEET

Utilize this calculation worksheet if you are not using a computer generated vulnerability zone calculation.

County: **JEFFERSON**

Facility Name: **WATERTOWN WATER DEPARTMENT – WEST TREATMENT PLANT** Facility ID: **003773**- **0**

EHS CHEMICAL: **CHLORINE**

CAS #: **7782-50-5**

THRESHOLD PLANNING QUANTITY (TPQ): **100 LBS.**

☐SOLID ☐LIQUID ☒GAS

☒PURE ☐MIXTURE - % Mixture = _____

LEVEL OF CONCERN (LOC): **0.0073**
(LOC found in Appendix C – Exhibit C-1)

LIQUID FACTOR AMBIENT (if applicable): **N/A**

LIQUID FACTOR BOILING (if applicable): **N/A**

LIQUID FACTOR MOLTEN (if applicable): **N/A**
(Above factors found in Appendix C – Exhibit C-1)

MAXIMUM QUANTITY AT RISK – QUANTITY STORED (lbs) x CONCENTRATION

a. Largest individual shipment of EHS chemical or its' mixture. (Pounds) **600 LBS. (4 CYLINDERS)**

b. Largest container size or groups of interconnected containers of EHS chemical to its' mixture. (Pounds) **150 LBS. (1 CYLINDER)**

c. If EHS chemical is in a mixture, indicate from the Safety Data Sheet (SDS), percentage of EHS chemical. **99.5% PURE**

d. Maximum amount of EHS chemical stored. (Pounds) **750 LBS. (5 CYLINDERS)**

Is EHS Chemical used stored in a diked area? ☐ YES ☒NO

If so, how large? **N/A** sq. ft.

CALCULATIONS

County: **JEFFERSON**

Facility Name: **WATERTOWN WATER DEPARTMENT – WEST TREATMENT PLANT**

Facility ID #: **003773**- **0**

Extremely Hazardous Substance (EHS) name: **CHLORINE**

CAS #:**7782-50-5**

VULNERABILITY ZONE

LOW WIND SPEED - 3.4 mph **0.7 MILES**
Rural - Exhibit 3-1
Urban - Exhibit 3-2

HIGH WIND SPEED - 11.9 **0.3 MILES**
Rural - Exhibit 3-3
Urban - Exhibit 3-4

Select either rural or urban and circle your choice. Choice must be the same under low wind and high wind conditions. (See Technical Guidance for Hazards Analysis p. 3-9, Step 3, to determine which to choose.)

AVERAGE WIND SPEED 6.6 mile wind* = 0.4 miles vulnerability zone

*Per the National Weather Service the average wind speed for Jefferson County is 6.6 mph. This average wind speed was utilized for plume modeling.

VIKING CHEMICAL COMPANY

Safety Data Sheet

1 – PRODUCT and COMPANY IDENTIFICATION

PRODUCT NAME: ..... CHLORINE,2.3, UN1017, RQ (JC)
PRODUCT NUMBER:.....07901
CHEMICAL NAME/CLASS/SYNONYMS: .....CHLORINE

RECOMMENDED USE: ..... CHLORINATING AND OXIDIZING AGENT, WATER TREATMENT CHEMICALS, PHARMACEUTICAL, SYNTHESIS, DISINFECTANTS AND GENERAL BIOCIDAL PRODUCTS, PLASTICS

DISTRIBUTOR: **VIKING CHEMICAL**
1827 - 18TH AVENUE
P.O. BOX 1595
ROCKFORD, IL 61110
(815) 397-0500

EMERGENCY PHONE: ..... (800) 424-9300 (CHEMTREC)

2 – HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Oxidizing Gases (1) Gases Under Pressure (Liquefied Gas)
Acute Aquatic Toxicity (1)
Acute Toxicity Inhalation (2)
Skin Corrosion/Irritation (1A)
Serious Eye Damage/Eye Irritation (1)
Target Organ Toxicity- Single Exposure (3)

GHS LABEL:

SIGNAL WORD: ..... Danger

HAZARD STATEMENTS:

H270: May cause or intensify fire; oxidizer
H280: Contains gas under pressure; may explode if heated
H314: Causes severe skin burns and eye damage
H330: Fatal if inhaled
H400: Very toxic to aquatic life

PRECAUTIONARY STATEMENTS:

P202: Do not handle until all safety precautions have been read and understood
P244: Keep valves and fittings free from oil and grease.

P260: Do not breathe dust/fume/gas/mist/vapors/spray
P264: Wash exposed area thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection
P284: [In case of inadequate ventilation] wear respiratory protection
P370+376: In case of fire: Stop leak if safe to do so
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P310: Immediately call a POISON CENTER/doctor/physician
P320: Specific treatment is urgent.
P363: Wash contaminated clothing before reuse
P403+233: Store in a well ventilated place. Keep container tightly closed
P405: Store locked up
P501: Dispose of contents/container to comply with local, state and federal regulations

3 – COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE/MIXTURE:

CHEMICAL NAME	CAS NUMBER	Wt/Wt%
CHLORINE	7782-50-5	98-100%

4 – FIRST-AID MEASURES

INHALATION:..... Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. SEEK IMMEDIATE MEDICAL ATTENTION!

EYE CONTACT: ..... Rinse eyes gently with water for at least 15 minutes while holding eyelids apart. Remove contact lenses, if present and easy to do - continue rinsing. Seek immediate medical attention.

SKIN CONTACT:..... Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse.

INGESTION: ..... Ingestion is not a typical route of exposure for gases or liquefied gases. Contact with liquid form may cause frostbite. Immediately call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIANS: ..... For liquid contact, treat the affected person for frostbite if necessary. If the product is ingested, probable mucosal damage may contraindicate the use of gastric lavage. Treat the affected person appropriately. Provide general supportive measures and treat symptomatically. Symptoms may be delayed.

5 – FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: ..... Use fire-extinguishing media appropriate for surrounding materials. Unsuitable extinguishing media: Direct water spray. Direct water spray jet.

UNUSUAL FIRE AND EXPLOSION HAZARDS: ..... May cause fire or explosion; strong oxidizer. Contents under pressure. Pressurized container may explode when exposed to heat or flame. Contact with reactive metals e.g., aluminum, zinc and tin may result in the generation of flammable hydrogen gas. Water used for fire extinguishing, which has been in contact with the product, may be corrosive. Water spray on active leak may promote accelerated corrosion of container and accelerate rate of leakage.

SPECIAL FIRE FIGHTING PROCEDURES: ..... In case of fire and/or explosion do not breathe fumes. Remove pressurized gas cylinders from the immediate vicinity. Cylinders can burst violently when heated, due to excess pressure build-up. Cool containers / tanks with water spray. Evacuate area and fight fire remotely due to the risk of explosion. Firefighters should wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to: boots gloves, hard hat, splash-proof goggles, full face shield and impervious clothing, i.e. chemically impermeable suit. Compatible materials for response to this material are neoprene and butyl rubber.

6 – ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: ... Immediately evacuate personnel to safe areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Keep people away from and upwind of spill/leak. Keep out of low areas. Keep unnecessary personnel away. Ventilate closed spaces before entering them. Wear appropriate protective equipment and clothing during clean-up. Local authorities should be advised if significant spillages cannot be contained.
For response to Chlorine gas it is recommended to use as a minimum level "B " protection that is compatible to Chlorine. For Liquid spills it is recommended to utilize as a minimum enhanced level "B" (Enhanced Level "B" is the addition of a splash hood). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Responders can reference Chlorine Institute pamphlet #65 on PPE.

ENVIRONMENTAL PRECAUTIONS: ..... Avoid discharge into drains, water courses or onto the ground. Contact local authorities in case of spillage to drain/aquatic environment.

MEASURES FOR CONTAINMENT AND CLEANING UP: Extinguish all flames in the vicinity. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Ventilate well, stop flow of gas or liquid if possible. If possible, turn leaking containers so that gas escapes rather than liquid. Dike far ahead of spill for later disposal. Isolate area until gas has dispersed. Neutralize spilled material with crushed limestone, soda ash or lime. Collect spillage.
Never return spills to original containers for re-use. Clean up in accordance with all applicable regulations.

7 – HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: ..... Avoid heat, sparks, open flames and other ignition sources. Keep away from clothing and other combustible materials. Use only chlorine-compatible lubricants. Do not use greases and oils. Do not breathe gas. Do not get in eyes, on skin, on clothing. Use in a sealed system and/or a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment.

PRECAUTIONS FOR SAFE STORAGE, INCLUDING INCOMPATIBILITIES: Contents under pressure. Keep away from heat, sparks and open flame. Secure cylinders in an upright position at all times, close all valves when not in use. Store in a well-ventilated place. Store away from incompatible materials.
Store at temperatures not exceeding 55°C/131°F. For the above specified temperature the system pressure is 225 psig (1551kPa).

8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:
COMPONENT (CAS NUMBER): CHLORINE (7782-50-5)
ACGIH ..... 0.5ppm TWA, 1ppm STEL
OSHA ..... 3 mg/m3/ 1ppm Ceiling

APPROPRIATE ENGINEERING CONTROLS: ..... Should be handled in closed systems, if possible. Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation. Eye wash facilities and emergency shower must be available when handling this product.

PERSONAL PROTECTIVE EQUIPMENT:
RESPIRATORY PROTECTION: . .....If exposure limits are exceeded, NIOSH approved respiratory protection should be worn. A NIOSH approved respirator for organic vapors is generally acceptable for concentrations up to 10 times the PEL. For higher concentrations, unknown concentrations and for oxygen deficient atmospheres, use a NIOSH approved air-supplied respirator. Engineering controls are the preferred means for controlling chemical exposures. Respiratory protection may be needed for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA 29 CFR 1910.134.
SKIN PROTECTION: ....Avoid skin contact. Wear gloves impervious to conditions of use. Additional protection may be necessary to prevent skin contact including use of apron, face shield, boots or full body protection. A safety shower should be located in the work area.
EYE PROTECTION: ....Wear goggles/face shield. Gas-proof goggles are recommended.
ADDITIONAL MEASURES:..... .....Ensure that eyewash stations and safety showers are close to the workstation location.

9 – PHYSICAL / CHEMICAL PROPERITES

APPEARANCE/ODOR: ..... Compressed liquefied gas/ Yellow green./ Pungent Odor
ODOR THRESHOLD: ..... 1.7 ppm

pH: ..... N.A.
MELTING/FREEZING POINT: -149.8 °F (-101 °C) (1 atm)
BOILING POINT/RANGE: -29.27 °F (-34.04 °C) (1 atm)
FLASH POINT:..... N.A.
EVAPORATION RATE:..... N.A.
FLAMMABILITY: ..... N.A.
LOWER EXPLOSIVE LIMIT: .. N.A.
UPPER EXPLOSIVE LIMIT: .... N.A.
VAPOR PRESSURE:……113 psia (25°C/77°F)
779 kPa (25 °C/77 °F)
4800 mm Hg (25°C/77°F)
VAPOR DENSITY (AIR=1):..... 2.5
SPECIFIC GRAVITY OR RELATIVE DENSITY::...N.A.
SOLUBILITY(IES): 0.73 g/100g H20 (20°C/68°F) (760 mm Hg)
PARTITION COEFFICIENT: ... N.A.
AUTOIGNITION TEMP: ..... N.A.
DECOMPOSITION TEMP: ..... N.A.

10 – STABILITY and REACTIVITY

STABILITY:..... Stable under normal temperature conditions and recommended use.
POSSIBILITY OF HAZARDOUS REACTIONS:.....Contact with combustible material may cause fire. Hazardous polymerization does not occur.
CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources. Titanium will react vigorously, resulting in spontaneous ignition, when contacted by Dry Chlorine. Combustion will be supported in carbon steel systems and equipment containing a Chlorine environment at temperatures greater than 480 °F (248.9 °C). Properly purge systems and equipment PRIOR to conducting Hot Work.
INCOMPATIBLE MATERIALS:.....Reducing agents. Organic material. Alkalis.
HAZARDOUS DECOMPOSITION PRODUCTS:.....N.A. Hydrogen chloride. Hypochlorous acid.

11 – TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE: ..... Inhalation, ingestion, skin and/or eye contact.
SYMPTOMS OF EXPOSURE:
SKIN CONTACT:..... Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.
EYE CONTACT: ..... Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling. Can cause blurred vision, redness, pain, severe tissue burns and eye damage.
INHALATION: ..... Fatal if inhaled. Irritating to respiratory system.
INGESTION:..... Causes digestive tract burns.

ACUTE TOXICITY:
LD/LC50 VALUES THAT ARE RELEVANT FOR CLASSIFICATION:
ORAL LD50 ..... N.A.
DERMAL LD50 ..... N.A.
INHALATION LC50 ..... (1h) Rat 293 ppm

ADDITIONAL TOXICOLOGICAL INFORMATION:

CARCINOGENIC CATEGORIES:……This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

GERM CELL MUTAGENICITY:…… No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

REPRODUCTIVE TOXICITY: …….. No data available.

CHRONIC EFFECTS:…… Prolonged exposure may cause chronic effects.

FURTHER INFORMATION:….. Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure.

12 – ECOLOGICAL INFORMATION

ECOTOXICITY (AQUATIC AND TERRESTRIAL, WHERE AVAILABLE):

Crustacea ..... LC50 Pacific oyster (Crassostrea gigas) 637.5 mg/l, 1 hours
Water flea (Daphnia magna) 0.017 mg/l, 46 hours

Fish ..... LC50 Bluegill (Lepomis macrochirus) 0.44 mg/l, 96 hours
Bullhead, catfish (Ictalurus sp.) 0.07 mg/l, 96 hours
Yellow perch (Perca flavescens) 0.88 mg/l, 1 hours

PERSISTENCE AND DEGRADABILITY: .....No data available.

BIOACCUMULATIVE POTENTIAL:.....Will not bio-accumulate.

MOBILITY IN SOIL: ..... The Gas will disperse in the air. This product is miscible in water.

OTHER ADVERSE EFFECTS: . No data available.

13 –DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:…… Product should be disposed in an environmentally safe manner in accordance with local, state and federal regulations. Since emptied cylinders may retain product residue, follow label warnings even after cylinder is emptied.
Hazardous waste code**:** D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]

UNCLEANED PACKAGING:….'Empty' containers retain residue (liquid and/or vapor) and may be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION: THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. 'Empty' drums should be completely drained, properly bunged and should be disposed of in an environmentally safe manner and in accordance with local, state and governmental regulations. For work on tanks, please refer to Occupational Safety and Health Administration regulations. ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other governmental and industrial contemplated operations.

14 – TRANSPORTATION INFORMATION

UN/NA NUMBER: UN1017
UN PROPER SHIPPING NAME: .....CHLORINE
TRANSPORT HAZARD CLASS: .....2.3 (5.1) & (8)
PACKAGING GROUP : ..... N.A.

MARINE POLLUTANT: ..... YES
REPORTABLE QUANTITY:..... 10 LB
SPECIAL PRECAUTIONS: ..... Read safety instructions, SDS and emergency procedures before handling.

15 – REGULATORY INFORMATION

Contents of this SDS comply with the OSHA Hazard Communication Standard 29CFR 1910.1200

EPA SARA Title III Chemical Listings:
HAZARD CATEGORIES:
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - Yes
Reactivity Hazard - Yes
SARA 302 Extremely hazardous substance: Yes
SARA 311/312 Hazardous chemical: Yes
SARA 313 (TRI reporting): Listed: Chlorine

OTHER FEDERAL REGULATIONS:
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
CHLORINE (CAS 7782-50-5)
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
CHLORINE (CAS 7782-50-5)
Clean Water Act (CWA)
Section 112(r) (40 CFR 68.130)
Hazardous substance
Safe Drinking Water Act (SDWA)
4 mg/l
4.0 mg/l
Food and Drug Administration (FDA)
Not regulated

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

16 – OTHER INFORMATION

PREVIOUS SDS REVISION DATE: 5/15/15

ABBREVIATIONS AND ACRONYMS:

ACGIH - American Conference of Governmental Industrial Hygienists
CAS - Chemical Abstract Service Number
DOT – U.S. Department of Transportation
IDLH – Immediately dangerous to life and health
N.A. – Not Available
NIOSH - National Institute of Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
PEL – Permissible exposure Limit
ppm – Parts per million
RCRA – Resource Conservation and Recovery Act
SARA – Superfund Amendments and Reauthorization Act
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act

DISCLAMER: The information contained herein is accurate to the best of our knowledge. No warranty of any kind, expressed or implied, concerning the safe use of this material in your process or in combination with other substances.

JEFFERSON COUNTY

EPCRA HAZARDOUS MATERIALS RESPONSE PLAN TRANSMITTAL
OFF-SITE FACILITY PLAN FORM

☐ **NEW** ☒ **UPDATE**

This plan has been prepared in accordance with state and local requirements and is ready to be made a part of the Emergency Operations Plan (EOP)/ Emergency Response Plan (ERP) upon Wisconsin Emergency Management (WEM) / State Emergency Response Commission (SERC) acceptance. This plan meets off-site planning guidance as established by WEM / SERC. Acceptance of this plan is for planning purposes and does not verify facility compliance with the requirements of EPCRA.

OFF-SITE FACILITY PLAN FOR: (Facility ID #): **001292- 4**

Facility Name: **WIS-PAK OF WATERTOWN**
Location Address: **860 WEST ST. AND 401 DAYTON ST. WATERTOWN WI 53094**
Note pages and sections revised: COMPLETE REVISION

FACILITY SIGNATURES:

I have reviewed the attached plan and to the best of my knowledge, all facility information is true, accurate, and complete. The plan is consistent with off-site facility procedures**.**

_____ _____
Facility Coordinator Date

COUNTY SIGNATURES

I have reviewed the attached plan and to the best of my knowledge, all information is true, accurate, and complete.

_____ _____
County Local Emergency Planning Committee Chair Date

_____ _____
County Emergency Management Director Date

WEM / SERC ACCEPTANCE:

This plan has been reviewed and meets the off-site planning guidance as established by WEM / SERC.

_____ _____
WEM Regional Director Date

_X__ Review guide attached

OFF-SITE PLAN REVIEW GUIDE

FOR **JEFFERSON** COUNTY FACILITY ID **001292**- **4**

FACILITY NAME: **WIS-PAK OF WATERTOWN**

LOCATION ADDRESS: **860 WEST ST AND 401 DAYTON ST WATERTOWN WI 53094**

EPCRA Facility Off-Site Plan		Page #
1)	The facility identification with address.	**1**
2)	Facility Coordinator / Alternate Coordinator	**1**
3)	Extremely Hazardous Substances (EHS) chemicals Identified with CAS numbers and maximum amount	**1**
4)	Primary emergency responders identified	**2**
5)	Support and resources available from facility	**2-3**
6)	Outside resources available	**3**
7)	General Information / Assumptions (Disclaimer)	**3-4**
8)	Hazard analysis summary	**4-8**
9)	Special facilities affected	**8**
10)	Population protection	**8-9**
11)	Special considerations	**9**
12)	Transportation	**4-5, Hazard Analysis**
13)	Distribution list: Facility Fire Department of jurisdiction, Wisconsin Emergency Management- Region Office, Designated Hazmat team County Emergency Management Office Adjacent County Emergency Management Office when impacted by vulnerability zone	**9**

Attachments

16)	Facility site plan	**10-11**
17)	Hazardous Materials Worksheet / Calculations or computer generated Vulnerability Zone calculations	**23-28**
18)	Vulnerability Zone map highlighting special facilities	**12-13**
19)	Transportation route(s) map	**14**
20)	Safety Data Sheet (SDS) for each EHS	**29-56**

EPCRA Off-Site Facility Plan

For

Wis-Pak of Watertown
WEM Facility ID: 001292-4
860 West St
401 Dayton St
Watertown, WI 53094

Date of Plan Approval:

TABLE OF CONTENTS

I. FACILITY NAME:

Name: Wis-Pak of Watertown
Location Address: 860 West St
401 Dayton St
Watertown WI 53094
Phone Number Main Office: 920-262-6300
Security Office: 920-262-6301 Ext. 7812 or 920-390-0423
Facility ID # Assigned by WEM: 001292-4

Knox Box Location: Near entrances W-1 and E-10 (see map)
At gated entrance east side of property

II. FACILITY EMERGENCY COORDINATOR/ALTERNATE COORDINATOR

FACILITY EMERGENCY COORDINATOR:

Name: Steve West
Position: Safety Coordinator
Email: wests@wis-pak.com
Business Phone Number: 920-262-6300
24 Hr Phone Number: 920-988-9612 (cell)

ALTERNATE COORDINATOR:

Name: Mike Weihert
Position: Maintenance Manager
Email: weihertm@wis-pak.com
Business Phone Number: 920-262-6300
24 Hr Phone Number: 920-261-3487 (home)

III. CHEMICALS ON SITE: EXTREMELY HAZARDOUS SUBSTANCES

EHS CHEMICALS FROM THE LATEST TIER II:

CAS Number	Chemical Name/Trade Name	Max. Quantity (lbs.)	Vulnerability Zone
7664-41-7	Anhydrous Ammonia	3,850 lbs.	49 yards
7664-93-9	Sulfuric Acid (in batteries)	44,298 lbs.	<.1 miles
7664-93-9	Sulfuric Acid (water treatment)	23,567 lbs.	<.1 miles

OTHER CHEMICALS: (OPTIONAL)

CAS Number	Chemical Name	Max. Quantity (lbs.)
124-38-9	Carbon Dioxide	100,000 lbs.
7705-08-0	Ferric Chloride	56,000 lbs.
7727-39-9	Nitrogen	100,000 lbs.
1310-72-2	Sodium Hydroxide	103,500 lbs.

IV. EMERGENCY RESPONDERS

Responders Name:	Kuhlman Incorporated (Don Berg)
Contact Details:	Ph#: 262-252-9400 Emerg Ph # 414-510-6399

Responders Name:	Watertown Fire Department
Contact Details: Address:	Emerg. Ph#: 911 106 Jones St Watertown WI 53094

Responders Name:	Watertown Police Department
Contact Details: Address:	Emerg. Ph#: 911 106 Jones St Watertown WI 53094

Responders Name:	Jefferson County Sheriff's Office
Contact Details: Address:	Emerg. Ph#: 911 411 S. Center Ave Jefferson WI 53549

Responders Name:	Jefferson County HAZMAT Team
Emergency PH#: Address:	911 120 Veterans Lane Lake Mills WI 53551

V. SUPPORT AVAILABLE FROM FACILITY

Wis-Pak has a response team; 10 individuals are trained. Each of these individuals completes initial training and an annual 8-hour refresher course. Wis-Pak also has ammonia sensors located in the Line 1

- Filler Room, Line 2 Filler Room, Line 3 Filler Room, Line 5 Filler Room, Line 7 Filler Room and the Ammonia Compressor Room. The control panel for the sensors is located in the Maintenance Department.
-
- **PROTECTIVE EQUIPMENT**
- Various emergency repair equipment and containment clean up materials can be found in the Parts Department (Extension 7569). This includes the following:

    - Oil dry
    - Socks
    - Mop and bucket
    - Shop-vac
    - Lime
    - Lined steel barrels (in annex waste area)
    - Plastic barrels (chemical spills)
    - Boots
    - Gloves (rubber)
    - Rain gear
    - Goggles
    - Face shields
    - Self-contained breathing apparatus (SCBA) – 6 (checked annually; tested monthly)
    - Shovels
    - Brooms
    - Squeegee

Two way radios – Parts Department (Extension 7569)
Production Office (Extension 7540)
Shipping Office (Extension 7534

OUTSIDE RESOURCES AVAILABLE:

Maas Brothers Constructions	920-261-1682
National Response Center	800-424-8802
Wisconsin Emergency Management 24 Hour Duty Office	800-943-0003

NON-HAZARDOUS

United Liquid Waste	888-558-9611
Superior (24 hrs.)	800-228-1856

HAZARDOUS

Superior	800-688-4005
Clean Harbor	773-646-5111

VI. GENERAL INFORMATION AND ASSUMPTIONS: (Disclaimer)

The vulnerability zones set forth in this plan are based on the EPA's Technical Guidance for Hazards Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an air-borne release of a single EHS chemical occur.

The vulnerability zones identified in this plan are NOT to be used as a guide for population protection in fire related incidents. Fire incidents were considered in the development of this plan and the plan provides basic information about the facility for first responders to employ.

However, in an actual fire situation at this facility, the incident commander is strongly recommended to reference the fire department's own individual agency pre-emergency plans and standard operating procedures as well as the County's Comprehensive Emergency Management Plan (CEMP) – Emergency Support Function 4.

Additional fire departments responding to an incident at this facility are strongly encouraged to meet with facility representatives to determine ways to minimize an event at the facility and to determine what additional information and factors should be taken into consideration.

The field incident commander shall determine the actual response to an incident. The affected area may vary from the vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein. The vulnerability zones determined in the plan are for general planning purposes.

VII. HAZARD ANALYSIS SUMMARY

Brief Description of Facility

Wis-Pak of Watertown, located at 860 West Street in the City of Watertown, manufactures bottled and canned soft drinks. Wis-Pak of Watertown, located at 401 Dayton Street in the City of Watertown is a warehouse facility (across the street from West St. location). They employ approximately 30 people in the corporate office that mainly work 8-5 p.m. There are approximately 125 to 140 (depending on the season) people in production on multiple 10 hour shifts, 5-7 days a week . There are three first shifts; two second shifts and one third shift; with an estimated 60 employees on first shift, 50 employees on second shift and 20 employees on third shift. Wis-Pak has two extremely hazardous substances on-site, Anhydrous Ammonia and Sulfuric Acid.

AMMONIA

Wis-Pak uses the Ammonia as a refrigerant during their canning process. The maximum amount on-site is 3,850 lbs. The largest vessel is a high pressure receiver located in the ammonia compressor room. This vessel operates at 30% capacity. Wis-Pak downsized the system in early 2020. The latest ammonia received was 2 – 100 lb. vessels. These vessels were delivered and emptied into the system by Kuhlman Incorporated.

SULFURIC ACID

Wis-Pak has two uses for sulfuric acid; as a pretreatment chemical for its water treatment, reverse osmosis system and in the electrolyte solution within batteries that are used to power light industrial vehicles.

For Sulfuric Acid as a pretreatment chemical for its water treatment, reverse osmosis system, the maximum amount on-site is 23,567 lbs (solution is 93% Sulfuric Acid, 7% water). The Sulfuric Acid is stored in a 1,540 gallon poly tank located in the water treating room within the facility. There is a spill containment system that can hold up to 110% capacity of the tank. Wis-Pak orders Sulfuric Acid every five to six weeks in 1,000 gallon(15,303 lbs) to 1,300 gallon(19,894 lbs.) shipments from Univar in Illinois. The delivery route would most likely be STH 26 in Jefferson County to Watertown.

Regarding the Sulfuric Acid contained in forklift batteries; Wis-Pak has 64 batteries on-site at the West Street facility and 5 batteries on-site at the Dayton Street facility. All forklift batteries are the same size and weigh approximately 3,210 lbs. Per the SDS, the Sulfuric Acid content in one battery is between 10 to 30%. For the purpose of planning 20% was used which equals 642 lbs. of Sulfuric Acid per battery; the maximum amount on-site is 44,298 lbs. Less than six batteries are replaced a year and are done so as needed. Batteries are supplied by EnerSys in New Berlin, WI with the most probable route within Jefferson County being I94 and STH 26.

Greatest Potential for Release (Container sizes, storage types, storage facilities, seasonal information)

AMMONIA

A worst case scenario for the Ammonia would involve the release of a pop valve on the receiver. The pop valves are checked and replaced every five years. Utilizing ALOHA for release calculations, approximately 591 lbs. of ammonia would release into the atmosphere over a period of 1-hour.

SULFURIC ACID (WATER TREATMENT)

A worst case scenario would involve the valve being left open and the line being disconnected, draining the entire tank or 23,567 lbs. of Sulfuric Acid. If this should occur, the Sulfuric Acid would be drained into the facility's containment system; leaking across the floor and into a floor drain and therefore being held within the wastewater treatment facility.

SULFURIC ACID (BATTERIES)

A worst case scenario would involve the cracking of one battery releasing 642 lbs. of Sulfuric Acid.

Vulnerability Zone for each EHS Chemical (including parameters used to arrive at the Vulnerability Zone such as wind speed, atmospheric stability, class, level of concern, duration of release)

ANHYDROUS AMMONIA

SITE DATA:
Location: WATERTOWN, WI, WISCONSIN
Building Air Exchanges Per Hour: 0.93 (unsheltered single storied)
Time: March 6, 2017 1317 hours CST (using computer's clock)

CHEMICAL DATA:

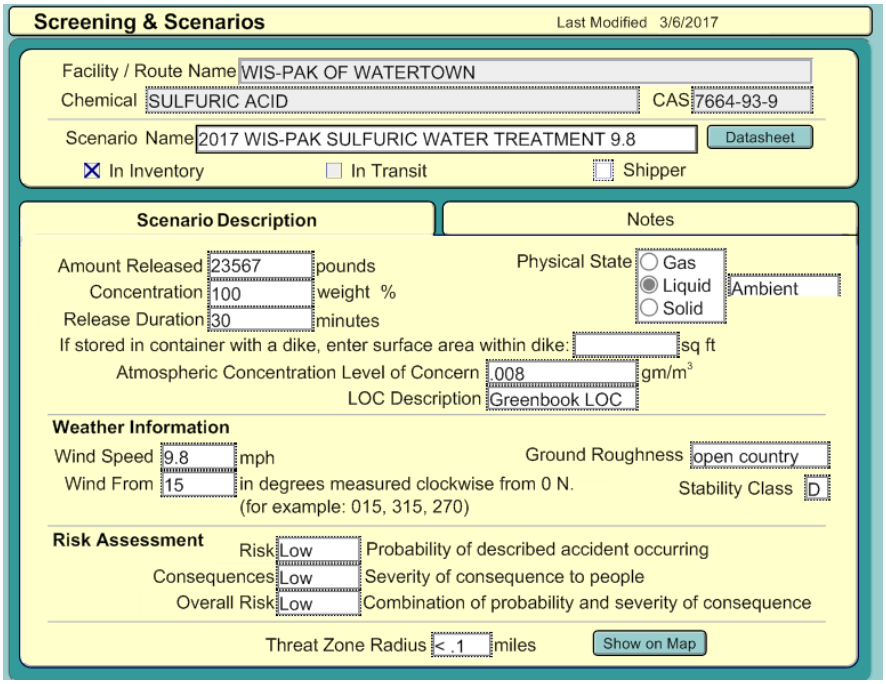
Chemical Name: AMMONIA
CAS Number: 7664-41-7 Molecular Weight: 17.03 g/mol
AEGL-1 (60 min): 30 ppm AEGL-2 (60 min): 160 ppm AEGL-3 (60 min): 1100 ppm
IDLH: 300 ppm LEL: 150000 ppm UEL: 280000 ppm
Ambient Boiling Point: -29.2° F
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 9.8 miles/hour from NW at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 61° F Stability Class: D
No Inversion Height Relative Humidity: 50%

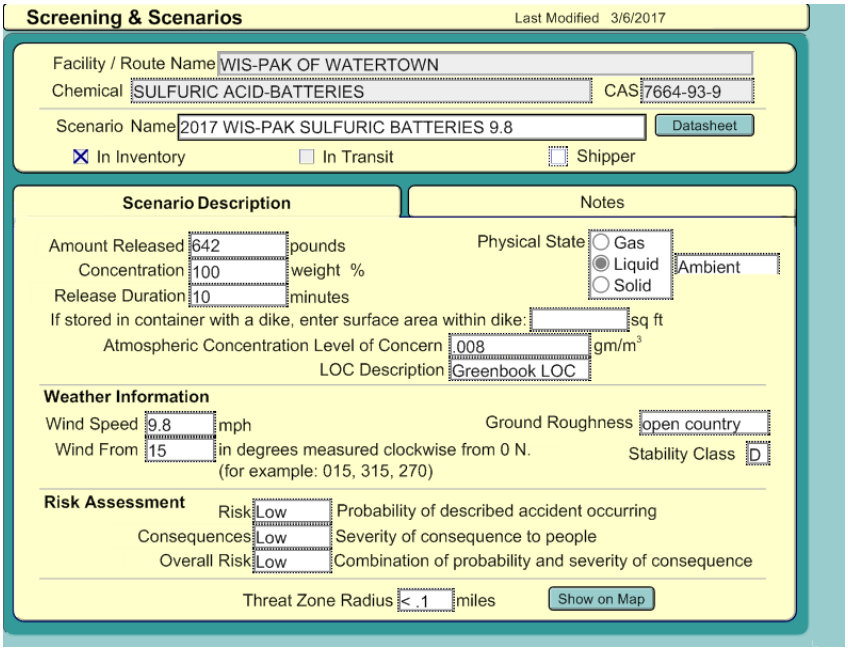
SOURCE STRENGTH:
Leak from short pipe or valve in horizontal cylindrical tank
Flammable chemical escaping from tank (not burning)
Tank Diameter: 4 feet Tank Length: 18 feet
Tank Volume: 1,692 gallons
Tank contains liquid Internal Temperature: 61° F
Chemical Mass in Tank: 7584 pounds Tank is 87% full
Circular Opening Diameter: .5 inches
Opening is 4.00 feet from tank bottom
Release Duration: ALOHA limited the duration to 1 hour
Max Average Sustained Release Rate: 13.5 pounds/min
(averaged over a minute or more)
Total Amount Released: 591 pounds
Note: The chemical escaped from the tank as a gas.

THREAT ZONE:
Model Run: Gaussian
Red : 49 yards --- (1100 ppm = AEGL-3 [60 min])
Note: Threat zone was not drawn because effects of near-field patchiness
make dispersion predictions less reliable for short distances.
Orange: 132 yards --- (160 ppm = AEGL-2 [60 min])
Yellow: 323 yards --- (30 ppm = AEGL-1 [60 min])

SULFURIC ACID WATER TREATMENT



SULFURIC ACID BATTERIES



The vulnerability zones were developed with the aid of the CAMEO and ALOHA Computer Programs.

Possible Limitations or Problems that Could Arise

None Noted

Estimate of Population Affected

The Ammonia would release into the atmosphere and the vulnerability zone is calculated at 49 yards; the employees would be affected within the vulnerability zone.

The Sulfuric Acid release scenarios from the water treatment and the batteries have a vulnerability zone of <.1 miles, therefore both types of spills would be contained within the facility and would affect employees.

Hazards Analysis Calculation

AMMONIA

According to calculations derived from using ALOHA for Hazard Analysis, a release of 591 lbs. of Anhydrous Ammonia would pose a hazard of 49 yards.

SULFURIC ACID (WATER TREATMENT)

According to calculations derived from using CAMEO for Hazard Analysis, a release of 23,567 lbs. of Sulfuric Acid would pose a hazard of <.1 miles.

SULFURIC ACID (BATTERIES)

According to calculations derived from using CAMEO for Hazard Analysis, a release of 642 lbs. of Sulfuric Acid would pose a hazard of <.1 miles.

VIII. SPECIAL FACILITIES AFFECTED

There are no special facilities located within the vulnerability zone.

IX. POPULATION PROTECTION

The determination to shelter in place or evacuate will be made by the on-scene commander, as appropriate.

The lead time for a hazmat incident could be from 0-30 minutes. As a result, this short time may not allow for a safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter in place. Preferred areas for protective sheltering would be interior hallways, rooms without windows or exterior doors, enclosed stairways and rooms on the side of the building away from where the hazard is approaching.

Doors, windows and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside of the risk zone.

The Ammonia would release into the atmosphere and the vulnerability zone is calculated at 96 yards; the employees would be affected within the vulnerability zone.

The Sulfuric Acid release scenarios from the water treatment plant and the batteries have a vulnerability zone of <.1 miles, therefore both types of spills would be contained within the facility and would affect employees.

SHELTERS

Watertown High School
825 Endeavor Drive
Watertown WI 53094
PH#: 920-262-7500 (school)

Bill Surdick
Head Maintenance
PH#: 920-285-4428 (24 Hr.)
4918 People

Riverside Middle School
131 Hall Street
Watertown WI 53094
PH#: 920-262-1480 (school)
2589 People

Wynn Schultz
Head Custodian
PH#: 920-342-1024 (Cell)
PH#: 920-261-8813 (Home)

X. SPECIAL CONSIDERATIONS: (NOTE: AS APPROPRIATE)

Limited Access to Facility

None Noted

Address Environmental Concerns at Facility and in Vulnerability Zone

None Noted

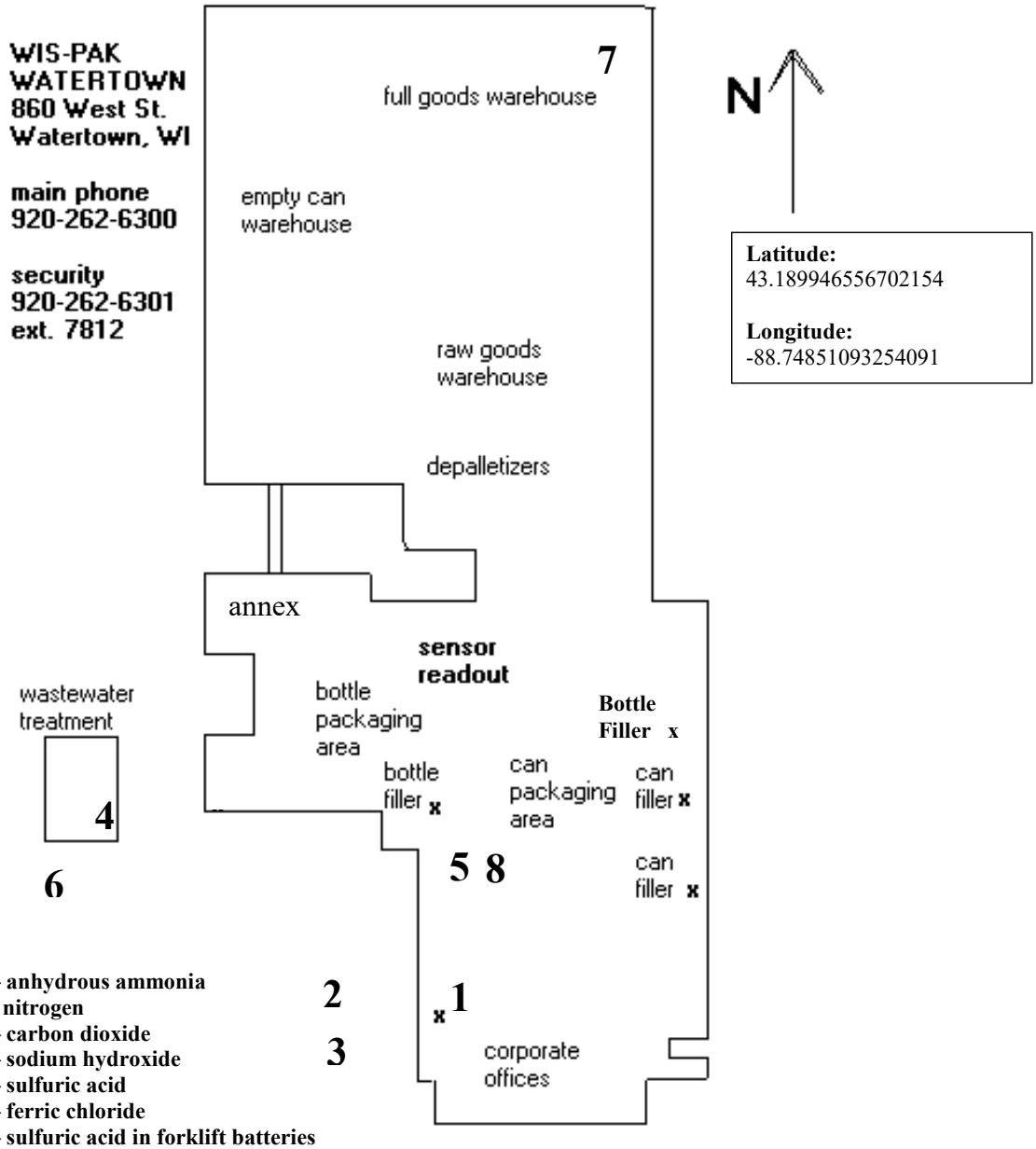
Potential for Affecting Other Jurisdictions

No Potential for affecting other jurisdictions

XI. DISTRIBUTION LIST

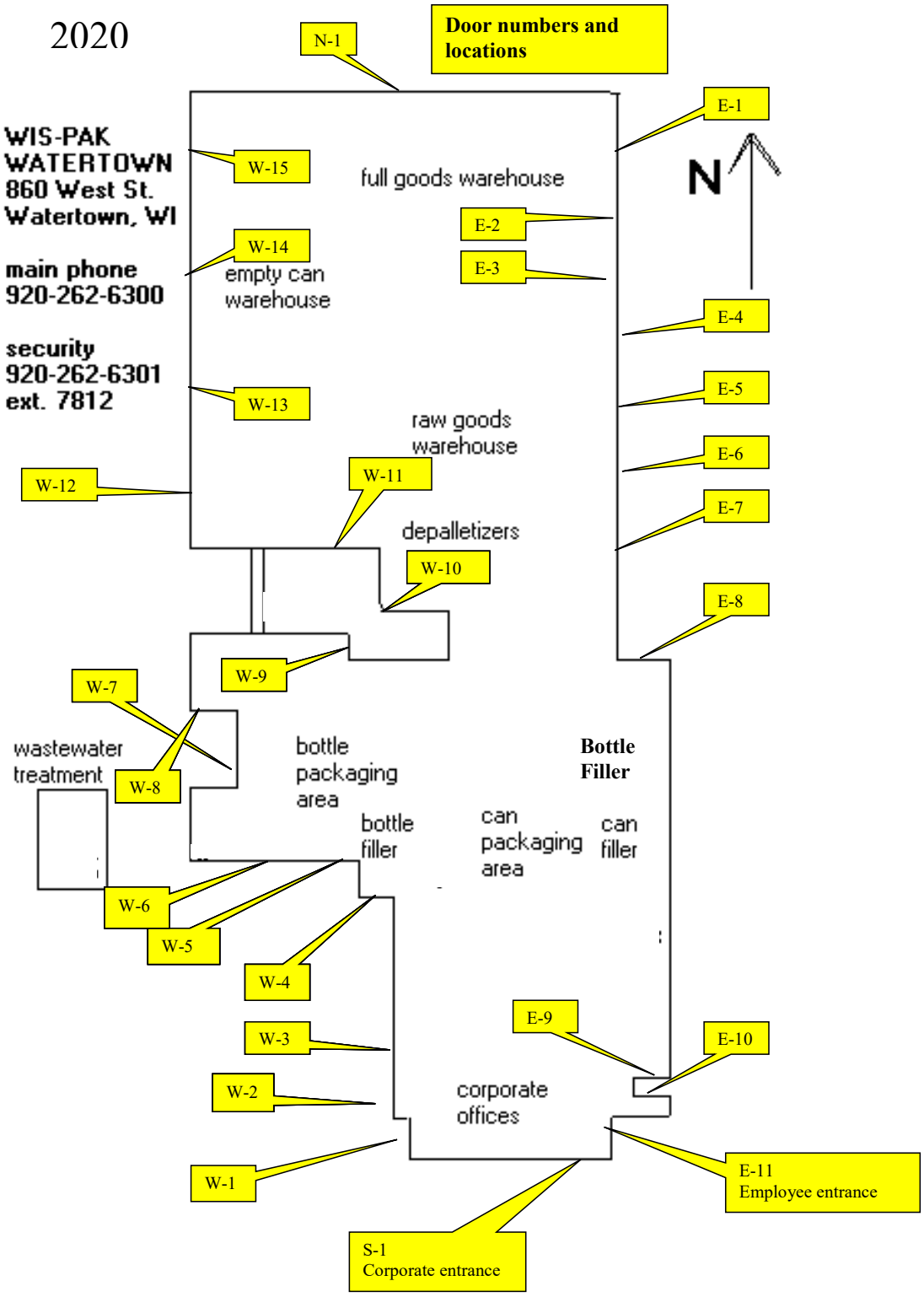
Wis-Pak of Watertown
Watertown Fire Department
Watertown Police Department
Jefferson County Emergency Management
Jefferson County HAZMAT Team
Wisconsin Emergency Management – Southeast Region

2020

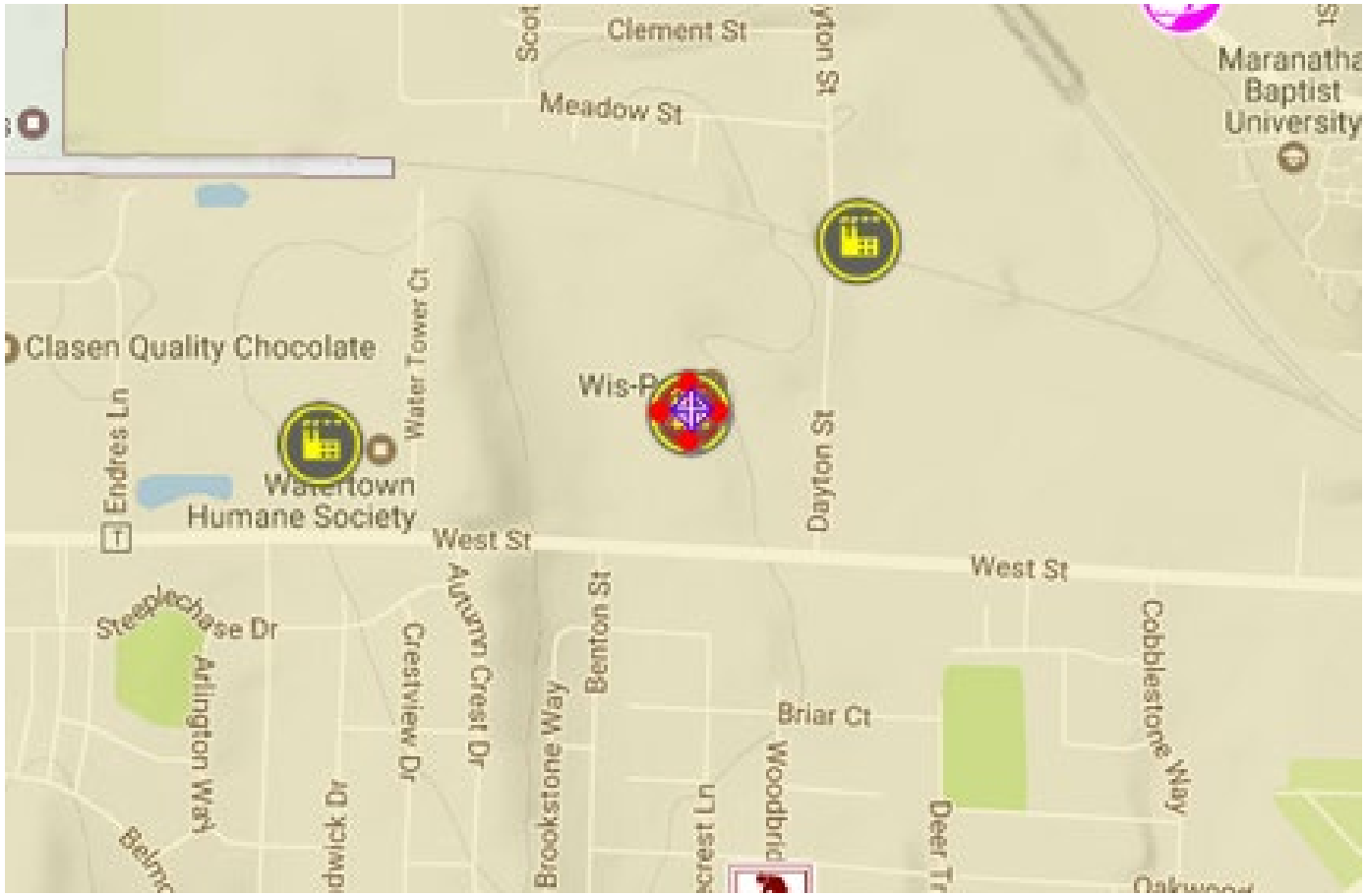


1 – anhydrous ammonia
2 - nitrogen
3 – carbon dioxide
4 – sodium hydroxide
5 – sulfuric acid
6 – ferric chloride
7 – sulfuric acid in forklift batteries charging / storage area
7 – lead in forklift batteries charging / storage area
8 – sodium hydroxide
x – ammonia sensors

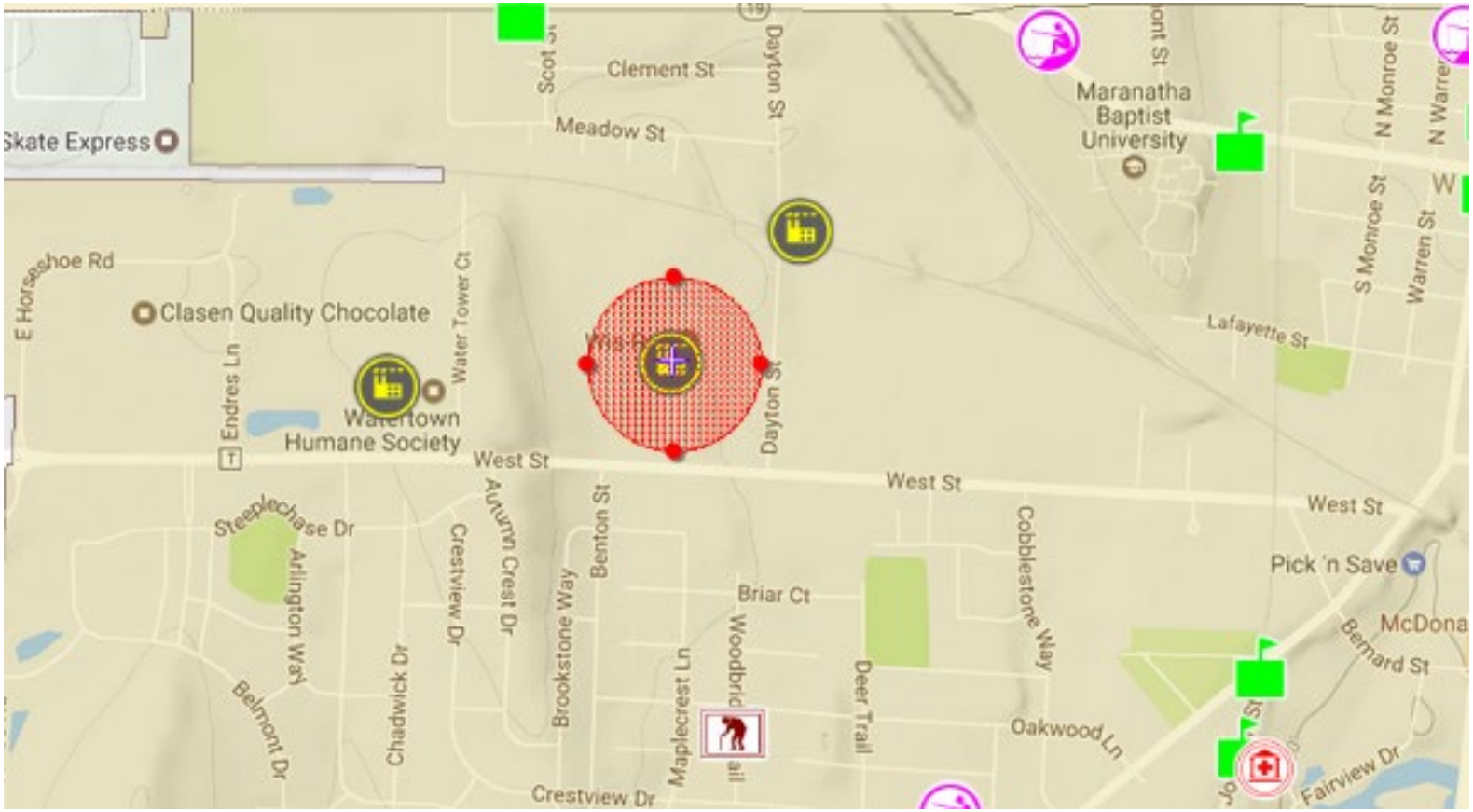
2020


Door numbers and locations
N-1
E-1
WIS-PAK
WATERTOWN
860 West St.
Watertown, WI
main phone
920-262-6300
security
920-262-6301
ext. 7812
W-15
full goods warehouse
N
E-2
W-14
E-3
empty can warehouse
E-4
E-5
W-13
raw goods warehouse
E-6
W-12
W-11
E-7
depalletizers
W-10
E-8
W-9
W-7
wastewater treatment
W-8
bottle packaging area
Bottle Filler
bottle filler
can packaging area
can filler
W-6
W-5
W-4
E-9
W-3
E-10
W-2
corporate offices
W-1
E-11
Employee entrance
S-1
Corporate entrance

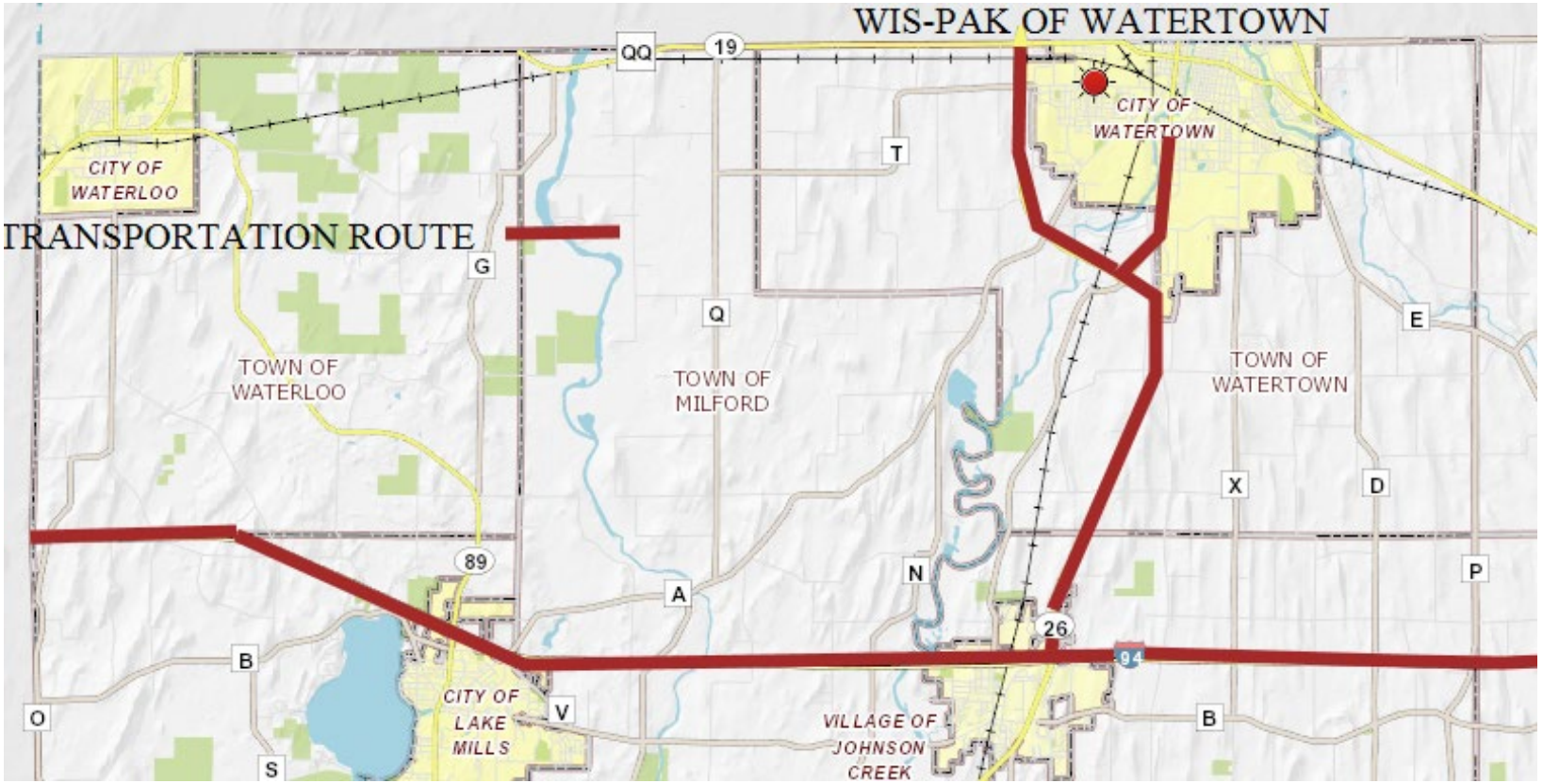
VULNERABILITY ZONE MAP – ANHYDROUS AMMONIA



VULNERABILITY ZONE MAP – SULFURIC ACID (WATER TREATMENT AND BATTERIES)



TRANSPORTATION MAP

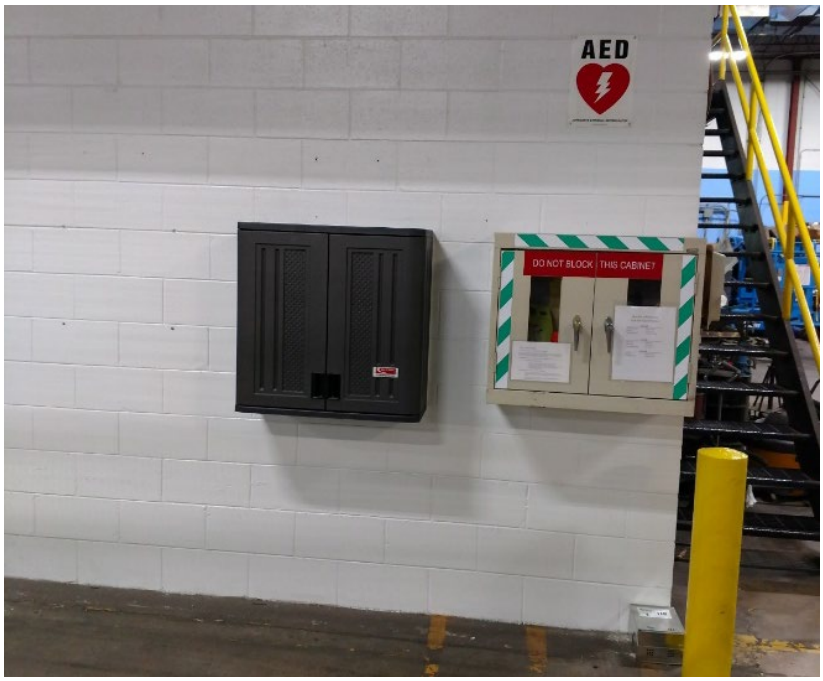


Anhydrous Ammonia Receiver, Inside Ammonia Compressor Room

Anhydrous Ammonia Accumulator – Ammonia Compressor Room

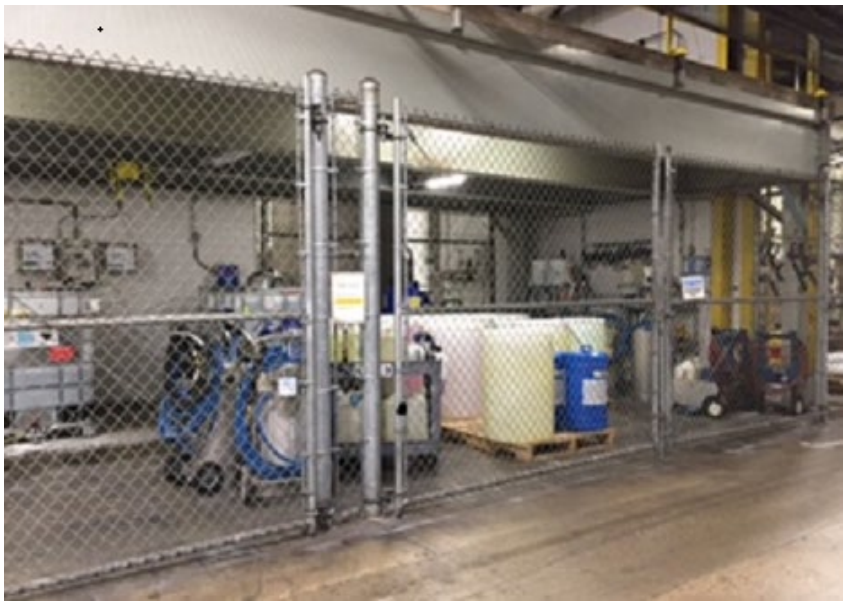
Sulfuric Acid/containment tank is the lower tank – located in the water treatment area

B**attery Storage/Charging area – located in Northeast corner of facility**



Maintenance PPE cabinet / AED – next to Parts Department

Bulk Chemical Storage Area – center of building



Shower Stations – throughout facility

Wastewater Treatment Facility -

Sodium Hydroxide tank – inside wastewater treatment facility

Sodium Hydroxide bulk tank – Water Treating

White tank on right is Carbon Dioxide; the white tank on the left is Nitrogen – Southwest corner of building

Ferric Chloride – south end of the wastewater treatment facility

Hazardous Waste Storage – Annex

Battery Storage/Charging Station – Dayton St. warehouse

HAZARDOUS MATERIALS WORKSHEET

Utilize this calculation worksheet if you are not using a computer generated vulnerability zone calculation.

County: **JEFFERSON**

Facility Name: **WIS-PAK OF WATERTOWN** Facility ID: **001292**- **4**

EHS CHEMICAL: **ANHYDROUS AMMONIA**

CAS #: **7664-41-7**

THRESHOLD PLANNING QUANTITY (TPQ): **500 LBS.**

☐SOLID ☐LIQUID ☐GAS

☒PURE ☒MIXTURE - % Mixture = **99+%**

LEVEL OF CONCERN (LOC): **0.035**
(LOC found in Appendix C – Exhibit C-1)

LIQUID FACTOR AMBIENT (if applicable): **N/A**

LIQUID FACTOR BOILING (if applicable): **N/A**

LIQUID FACTOR MOLTEN (if applicable): **N/A**
(Above factors found in Appendix C – Exhibit C-1)

MAXIMUM QUANTITY AT RISK – QUANTITY STORED (lbs) x CONCENTRATION

a. Largest individual shipment of EHS chemical or its' mixture. (Pounds) **200 lbs as of 12-10-20.**

b. Largest container size or groups of interconnected containers of EHS chemical to its' mixture. (Pounds) **3,850 LBS.**

c. If EHS chemical is in a mixture, indicate from the Material Safety Data Sheet (MSDS), percentage of EHS chemical. **99+%**

d. Maximum amount of EHS chemical stored. (Pounds) **3,850 LBS.**

Is EHS Chemical used stored in a diked area? ☐ YES ☒NO

If so, how large? _____sq. ft.

CALCULATIONS

County: **JEFFERSON**

Facility Name: **WIS-PAK OF WATERTOWN**

Facility ID #: **001292**- **4**

Extremely Hazardous Substance (EHS) name: **ANHYDROUS AMMONIA**

CAS #:**7664-41-7**

VULNERABILITY ZONE

LOW WIND SPEED - 3.4 mph **84 yards**
Rural - Exhibit 3-1
Urban - Exhibit 3-2

HIGH WIND SPEED - 11.9 **44 yards**
Rural - Exhibit 3-3
Urban - Exhibit 3-4

Select either rural or urban and circle your choice. Choice must be the same under low wind and high wind conditions. (See Technical Guidance for Hazards Analysis p. 3-9, Step 3, to determine which to choose.)

AVERAGE OF LOW AND HIGH WIND SPEED 9.8 mile wind= 49 yards vulnerability zone

HAZARDOUS MATERIALS WORKSHEET

Utilize this calculation worksheet if you are not using a computer generated vulnerability zone calculation.

County: **JEFFERSON**

Facility Name: **WIS-PAK OF WATERTOWN** Facility ID: **001292**- **4**

EHS CHEMICAL: **SULFURIC ACID (WATER TREATMENT 93%)**

CAS #: **7664-93-9**

THRESHOLD PLANNING QUANTITY (TPQ): **1,000 LBS.**

☐SOLID ☒LIQUID ☐GAS

☐PURE ☒MIXTURE - % Mixture = **93%**

LEVEL OF CONCERN (LOC): **0.008**
(LOC found in Appendix C – Exhibit C-1)

LIQUID FACTOR AMBIENT (if applicable): **0.00000000005**

LIQUID FACTOR BOILING (if applicable): **0.02**

LIQUID FACTOR MOLTEN (if applicable): **N/A**
(Above factors found in Appendix C – Exhibit C-1)

MAXIMUM QUANTITY AT RISK – QUANTITY STORED (lbs) x CONCENTRATION

a. Largest individual shipment of EHS chemical or its' mixture. (Pounds) **15,303 TO 19,894 LBS.**

b. Largest container size or groups of interconnected containers of EHS chemical to its' mixture. (Pounds) **23,567 LBS.**

c. If EHS chemical is in a mixture, indicate from the Material Safety Data Sheet (MSDS), percentage of EHS chemical. **93% SULFURIC ACID, 7% WATER**

d. Maximum amount of EHS chemical stored. (Pounds) **23,567 LBS.**

Is EHS Chemical used stored in a diked area? ☐ YES ☒NO

If so, how large? _____sq. ft. There is a containment tank which is accessed through a floor drain that is large enough to hold up to 110% of the 1540 gallon (23,567 lbs.) tank.

CALCULATIONS

County: **JEFFERSON**

Facility Name: **WIS-PAK OF WATERTOWN**

Facility ID #: **001292**- **4**

Extremely Hazardous Substance (EHS) name: **SULFURIC ACID**

CAS #:**7664-93-9**

VULNERABILITY ZONE

LOW WIND SPEED - 3.4 mph **<.1 MILES**
Rural - Exhibit 3-1
Urban - Exhibit 3-2

HIGH WIND SPEED - 11.9 **<.1 MILES**
Rural - Exhibit 3-3
Urban - Exhibit 3-4

Select either rural or urban and circle your choice. Choice must be the same under low wind and high wind conditions. (See Technical Guidance for Hazards Analysis p. 3-9, Step 3, to determine which to choose.)

AVERAGE OF LOW AND HIGH WIND SPEED 9.8 mile wind= <.1 miles vulnerability zone

HAZARDOUS MATERIALS WORKSHEET

Utilize this calculation worksheet if you are not using a computer generated vulnerability zone calculation.

County: **JEFFERSON**

Facility Name: **WIS-PAK OF WATERTOWN** Facility ID: **001292**- **4**

EHS CHEMICAL: **SULFURIC ACID (BATTERIES)**

CAS #: **7664-93-9**

THRESHOLD PLANNING QUANTITY (TPQ): **1,000 LBS.**

☐SOLID ☒LIQUID ☐GAS

☐PURE ☒MIXTURE - % Mixture = **10 TO 30% (20% USED FOR PLAN)**

LEVEL OF CONCERN (LOC): **0.008**
(LOC found in Appendix C – Exhibit C-1)

LIQUID FACTOR AMBIENT (if applicable): **0.00000000005**

LIQUID FACTOR BOILING (if applicable): **0.02**

LIQUID FACTOR MOLTEN (if applicable): **N/A**
(Above factors found in Appendix C – Exhibit C-1)

MAXIMUM QUANTITY AT RISK – QUANTITY STORED (lbs) x CONCENTRATION

a. Largest individual shipment of EHS chemical or its' mixture. (Pounds) — **642 LBS., 1 BATTERY (BATTERIES ARE ORDERED AS NEEDED**

b. Largest container size or groups of interconnected containers of EHS chemical to its' mixture. (Pounds) — **642 LBS.**

c. If EHS chemical is in a mixture, indicate from the Material Safety Data Sheet (MSDS), percentage of EHS chemical. — **10 TO 30% (20% USED FOR PLAN)**

d. Maximum amount of EHS chemical stored. (Pounds) — **44,298 LBS.**

Is EHS Chemical used stored in a diked area? ☐ YES ☒NO

If so, how large? _____sq. ft.

CALCULATIONS

County: **JEFFERSON**

Facility Name: **WIS-PAK OF WATERTOWN**

Facility ID #: **001292**- **4**

Extremely Hazardous Substance (EHS) name: **SULFURIC ACID**

CAS #:**7664-93-9**

VULNERABILITY ZONE

LOW WIND SPEED - 3.4 mph **<.1 MILES**
Rural - Exhibit 3-1
Urban - Exhibit 3-2

HIGH WIND SPEED - 11.9 **<.1 MILES**
Rural - Exhibit 3-3
Urban - Exhibit 3-4

Select either rural or urban and circle your choice. Choice must be the same under low wind and high wind conditions. (See Technical Guidance for Hazards Analysis p. 3-9, Step 3, to determine which to choose.)

AVERAGE OF LOW AND HIGH WIND SPEED 9.8 mile wind= <.1 miles vulnerability zone.

Tanner Industries, Inc.

SAFETY DATA SHEET

Section 1. Identification

Product Name:	**Ammonia, Anhydrous**
Synonyms:	Ammonia
CAS REGISTRY NO:	7664-41-7
Supplier:	Tanner Industries, Inc. 735 Davisville Road, Third Floor Southampton, PA 18966
Website:	www.tannerind.com
Telephone (General):	215-322-1238
Corporate Emergency Telephone Number:	**800-643-6226**
Emergency Telephone Number:	**Chemtrec: 800-424-9300**
Recommended Use:	Various Industrial / Agricultural

Section 2. Hazard(s) Identification

Hazard: Acute Toxicity, Corrosive, Gases Under Pressure, Flammable Gas, Acute Aquatic Toxicity

Classification: Acute Toxicity, Inhalation (Category 4) — Note: (1 - Most Severe / 4 - Least Severe)
Skin Corrosion / Irritation (Category 1B)
Serious Eye Damage / Irritation (Category 1)
Gases Under Pressure (Liquefied gas)
Flammable Gases (Category 2)
Acute Aquatic Toxicity (Category 1)

Pictogram:

Signal word: **Danger**

Hazard statements:
Harmful if inhaled.
Causes severe skin burns and serious eye damage.
Flammable gas.
Contains gas under pressure; may explode if heated.
Very toxic to aquatic life.

Precautionary statements:
Avoid breathing gas/vapors.
Use only outdoors or in well-ventilated area.
Wear protective gloves, protective clothing, eye protection, face protection.
Keep away from heat, sparks, open flames and other ignition sources. No smoking.

Precautionary statements (continued):

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor/physician and seek medical attention for severe exposure or if symptoms persist. Specific treatment, see supplemental first aid instructions in Section 4 (First Aid Measures).
IF ON SKIN: Rinse immediately with plenty of water before removing clothes. Contaminated clothing could possibly be frozen to skin. Rinse skin with water or shower (minimum of 20 minutes). Specific treatment, see supplemental first aid instructions in Section 4 (First Aid Measures).
IF IN EYES: Immediately call a doctor/physician and seek medical attention. Rinse continuously with water for several minutes (minimum of 20 minutes). Specific treatment, see supplemental first aid instructions in Section 4 (First Aid Measures).
Wash contaminated clothing before reuse.
Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Store locked up.
In case of leakage: Eliminate all ignition sources, if safe to do so.
In case of leaking gas fire: Stop flow of gas before extinguishing.
Dispose of contents/container in accordance with local, regional, national, international regulations as applicable. See section 13 (Disposal Considerations).

NFPA Rating:

NFPA Numbering System:
0 = Least Hazardous / 4 = Most Hazardous

HMIS Classification:

ANHYDROUS AMMONIA	
HEALTH	3
FLAMMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	H

HMIS Hazard Index:
0 = Minimal, 1 = Slight, 2 = Moderate, 3 = Serious, 4 = Severe

Section 3. Composition / Information on Ingredients

CHEMICAL NAME: Ammonia, Anhydrous
CAS REGISTRY NO: 7664-41-7
SYNONYMS: Ammonia
CHEMICAL FAMILY: Inorganic nitrogen compounds
COMPOSITION: 99+% Ammonia

Section 4. First Aid Measures

IF INHALED: Immediately remove person to fresh air and keep comfortable for breathing. In case of severe exposure or if irritation persists, breathing difficulties or respiratory symptoms arise, seek medical attention. If not breathing, administer artificial respiration. If trained to do so, administer supplemental oxygen, if required.
IF ON SKIN: Immediately rinse skin and contaminated clothing with plenty of water before removing clothes. Clothing that has been contacted by liquid ammonia may freeze to the skin. Thaw frozen clothing from skin before removing. Flush skin with copious amounts of tepid water for a minimum of 20 minutes. Do not rub or apply topical, occlusive compounds, such as ointments, certain creams, etc., on affected area. For liquid ammonia contact, seek immediate medical attention. For severe vapor contact or if irritation persists, seek medical attention.
IF IN EYES: Immediately rinse continuously with copious amounts of tepid water for a minimum of 20 minutes. Eyelids should be held apart and away from eyeball for thorough rinsing. Do not rub or apply topical, occlusive compounds, such as ointments, certain creams, etc., on affected area. Seek medical attention.
IF SWALLOWED: Rinse mouth. Do not induce vomiting. If conscious, give large amounts of water to drink. May drink orange juice, citrus juice or diluted vinegar (1:4) to counteract ammonia. If unconscious, do not give anything by mouth. Seek medical attention.

NOTE TO PHYSICIAN: Respiratory injury may appear as a delayed phenomenon. Pulmonary edema may follow chemical bronchitis. Supportive treatment with necessary ventilation actions, including oxygen, may warrant consideration.

Section 5. Fire Fighting Measures

EXTINGUISHING MEDIA:
Water Spray, Water Fog, Dry Chemical, Carbon Dioxide (CO2) or foam.

SPECIAL FIRE FIGHTING PROCEDURES:
Must wear protective clothing and a positive pressure SCBA.
Stop flow of gas or liquid if possible.
Approach fire upwind and evacuate area downwind if needed.
Use water spray to keep fire-exposed containers cool and control vapors.
If a portable container (such as a cylinder or trailer) can be moved from the fire area without risk to the individual, do so to prevent the pressure relief valve of the trailer or portable container from discharging or the cylinder from rupturing. If relief valves are inoperative, heat exposed storage containers may become explosion hazards due to over pressurization.
Stay upwind when containers are threatened.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Outdoors, ammonia is not generally a fire hazard. Indoors, in confined areas, ammonia may be a fire hazard, especially if oil or other combustible materials are present.
Combustion may form toxic nitrogen oxides (NO_x).

Section 6. Accidental Release Measures

GENERAL:
Only properly trained and equipped persons should respond to an ammonia release.
Wear eye, hand and respiratory protection and protective clothing; see Section 8, Exposure Controls / Personal Protection.
Stop source of leak if possible, provided it can be done in a safe manner.
Leave the area of a spill by moving laterally and upwind.
Isolate the affected area. Non-responders should evacuate the area, or shelter in place.

SPECIFIC STEPS TO BE TAKEN:
For a hazardous material release response, Level A and/or Level B ensemble including positive-pressure SCBA should be used. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm (IDLH).
Stay upwind and use water spray downwind of container to absorb the evolved gas.
Do not apply water directly to container, unless there is heat impingement, as ammonia boils at -28 °F (direct water will heat container), and more vapors will be released.
Caution: Adding water directly to liquid spills will increase volatilization of ammonia, thus increasing the possibility of exposure.
Contain spill and runoff from entering drains, sewers, streams, lakes and water systems by utilizing methods such as diking, containment, and absorption.

Section 7. Handling and Storage

SPECIAL PRECAUTIONS:
Only trained persons should handle anhydrous ammonia. Store in well-ventilated areas, with containers tightly closed. Protect from temperatures exceeding 120 °F (48.8 °C). Protect containers from physical damage. Keep away from ignition sources, especially in indoor spaces. Do not use plastic. Do not use any non-ferrous metals such as copper, brass, bronze, tin, zinc or galvanized metals. Use only stainless steel, carbon steel or black iron for anhydrous ammonia containers or piping.
OSHA 29 CFR 1910.111 prescribes handling and storage requirements for anhydrous ammonia.
Refer to Compressed Gas Association (CGA) G-2.1 for the recommendations for the storage and handling of anhydrous ammonia.

VENTILATION:
Local exhaust should be sufficient to keep ammonia vapor below applicable exposure standards.

WORKPLACE PROTECTIVE EQUIPMENT:
Protective equipment should be stored near, but outside of anhydrous ammonia area. Water for first aid, such as an eyewash station and safety shower, should be kept available in the immediate vicinity. See 29 CFR 1910.111 for workplace requirements.

DISPOSAL:
See Section 13, Disposal Considerations. Classified as Resource Conservation and Recovery Act (RCRA) Hazardous Waste due to corrosivity with designation D002, if disposed of in original form.

Section 8. Exposure Controls / Personal Protection

EXPOSURE LIMITS FOR AMMONIA: (Vapor)

OSHA	50 ppm,	35 mg / m^3 PEL	8 hour TWA
NIOSH	35 ppm,	27 mg / m^3 STEL	15 minutes
	25 ppm,	18 mg / m^3 REL	10 hour TWA
	300 ppm,	IDLH	
ACGIH	25 ppm,	18 mg / m^3 TLV	8 hour TWA
	35 ppm,	27 mg / m^3 STEL	15 minutes

PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION: Chemical splash goggles should be worn when handling anhydrous ammonia. A face shield can be worn over chemical splash goggles as additional protection. Do not wear contact lenses when handling anhydrous ammonia. Refer to 29 CFR 1910.133 for OSHA eye protection requirements.

SKIN PROTECTION: Ammonia impervious gloves and clothing (such as neoprene, butyl and Teflon) should be worn to prevent contact during normal operations, such as loading/unloading and transfers.
Chemical boots can be worn as additional protection.

RESPIRATORY PROTECTION: Respiratory protection approved by NIOSH for ammonia must be used when applicable safety and health exposure limits are exceeded. For escape in emergencies, NIOSH approved respiratory protection should be used, such as a full-face gas mask and canisters/cartridges approved for ammonia or SCBA. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm (IDLH).
Refer to 29 CFR 1910.134 and ANSI: Z88.2 for OSHA respiratory protection requirements.
Also refer to 29 CFR 1910.111 for respiratory protection requirements at bulk installations.

VENTILATION: Local exhaust should be sufficient to keep ammonia vapor below applicable exposure standards.

FOR A HAZARDOUS MATERIAL RELEASE RESPONSE: Level A and/or Level B ensemble including positive-pressure SCBA should be used. A positive pressure SCBA is required for entry into ammonia atmospheres at or above 300 ppm (IDLH).

Section 9. Physical and Chemical Properties

APPEARANCE AND ODOR:	Colorless liquid or gas with a pungent odor. Odor threshold 2 - 5 ppm.
SOLUBILITY IN WATER:	(per 100 pounds of water): 86.9 pounds at 32 °F, 51 pounds at 68 °F
SPECIFIC GRAVITY OF GAS (air = 1):	0.596 at 32 °F
SPECIFIC GRAVITY OF LIQUID (water = 1):	0.682 at -28 °F (Compared to water at 39 °F).
WEIGHT (per gallon):	5.15 pounds at 60 °F
PH:	Not applicable (Highly alkaline/base).
BOILING POINT:	-28 °F at 1 Atm.
FORMULA:	NH_3
MOLECULAR WEIGHT:	17.03 (NH_3)
FLAMMABILITY	
FLASHPOINT:	None
FLAMMABLE LIMITS OF VAPOR IN AIR:	LEL/UEL 16% to 25% (listed in the *NIOSH Pocket Guide to Chemical Hazards* 15% to 28%).
AUTO IGNITION TEMPERATURE:	1,204 °F (If catalyzed). 1,570 °F (If un-catalyzed).
CRITICAL TEMPERATURE:	271.4 °F
DECOMPOSITION TEMPERATURE:	-108.4 °F
GAS SPECIFIC VOLUME:	20.78 Ft^3/Lb at 32 °F and 1 Atm.
VAPOR DENSITY:	0.0481 Lb/Ft^3 at 32 °F
LIQUID DENSITY:	38.00 Lb/Ft^3 at 70 °F
VISCOSITY:	0.00982 cP at 68 °F
EVAPORATION RATE:	Not applicable
APPROXIMATE FREEZING POINT:	-108 °F
VAPOR PRESSURE:	114 psig at 70 °F
SURFACE TENSION:	23.4 Dynes / cm at 52 °F
CRITICAL PRESSURE:	111.5 Atm
PARTITION COEFFICIENT:	-114 at 77 °F

Section 10. Stability and Reactivity

REACTIVITY:
Anhydrous ammonia has potentially explosive reactions with strong oxidizers. Anhydrous ammonia forms explosive mixtures in air with hydrocarbons, chlorine, fluorine and silver nitrate. Anhydrous ammonia reacts to form explosive products, mixtures or compounds with mercury, gold, silver, iodine, bromine, silver oxide and silver chloride.

CHEMICAL STABILITY:
Stable under normal ambient conditions of temperature and pressure. Heating a closed container causes vapor pressure to increase. Will not polymerize.

POSSIBILITY OF HAZARDOUS REACTIONS:
Will react exothermically with acids and water.

CONDITIONS TO AVOID:
Avoid anhydrous ammonia contact with chlorine, which forms a chloramine gas, which is a primary skin irritant and sensitizer. Avoid contact with galvanized surfaces, copper, brass, bronze, mercury, gold and silver. A corrosive reaction will occur.

INCOMPATIBLE MATERIALS:
Anhydrous ammonia is incompatible with acetaldehyde, acrolein, boron, chloric acid, chlorine monoxide, chlorites, nitrogen tetroxide, perchlorate, sulfur, tin and strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS:
Anhydrous ammonia decomposes to hydrogen and nitrogen gases above 450 °C (842 °F). Decomposition temperatures may be lowered by contact with certain metals, such as iron, nickel and zinc and by catalytic surfaces such as porcelain and pumice.

Section 11. Toxicological Information

Potential health effects: Ammonia is an irritant and corrosive to the skin, eyes, respiratory tract and mucous membranes. Exposure to liquid or rapidly expanding gases may cause severe chemical burns and frostbite to the eyes, lungs and skin. Skin and respiratory related diseases could be aggravated by exposure. The extent of injury produced by exposure to ammonia depends on the duration of the exposure, the concentration of the liquid, gas or vapor and the depth of inhalation.

Exposure Routes:
Inhalation (vapors, gas), skin and/or eye contact (vapors, liquid, gas).

Symptoms of acute exposure:

Inhalation:	Exposure may result in severe irritation and/or burns of the nose, throat and respiratory tract. May cause dyspnea (breathing difficulty), wheezing, chest pain, bronchospasm, pink frothy sputum, pulmonary edema or respiratory arrest. Extreme exposure may result in death from spasm, inflammation or edema. Respiratory injury may appear as a delayed phenomenon. Pulmonary edema may follow chemical bronchitis. Brief inhalation exposure to 5,000 ppm may be fatal.
Skin:	Irritation, corrosive burns, blister formation (vesiculation) may result. Contact with liquid may produce freeze burns (frostbite) and caustic burns.
Eyes:	Vapors may cause severe irritation. Tearing, eye burns, permanent eye damage or blindness may occur. Effects of direct contact may range from irritation and lacrimation to severe injury and blindness.
Ingestion:	Ingestion is unlikely since the material is a gas under normal atmospheric conditions. If ingested, it may cause burns and corrosion, severe pain of the mouth, throat, esophagus and stomach or may be fatal

Chronic Exposure:
Repeated exposure to ammonia may cause chronic irritation of the eyes and respiratory tract.

Toxicity:
LC_{50} - 5131 mg/m^3 (7338 ppm) to 11,592 mg/m^3 (16,600 ppm), 60 minute exposure, Rat.
LD_{50} - 350 mg / kg (Oral / Rat).

Not listed in the National Toxicology Program (NTP).
Not recognized by OSHA as a carcinogen.
Not listed as a carcinogen by the International Agency for Research on Cancer (IARC monograph).
Germ cell mutagenicity information is not available. Reproductive toxicity information is not available.

Section 12. Ecological Information

Ammonia is harmful to aquatic life at very low concentrations. Notify local health and wildlife officials and operators of any nearby water intakes upon contamination of surface water.

Toxicity:
Terrestrial plants: LOEC = 3-250 ppm NH_3.
Aquatic plants: LOEC = 0.5-500 mg NH_3-N/L.
Acute toxicity to invertebrates: 48 h LC50 = 2.94 mg un-ionized NH3-N/L.
Chronic toxicity to invertebrates: NOEC = 0.163- 0.42 mg un-ionized NH3/L.
Acute toxicity to fish: 96-h: LC50 = 0.09 – 3.51 mg un-ionized NH_3/L.
Chronic toxicity to fish: NOEC = 0.025-1.2 mg un-ionized NH3/L.

Environmental Fate Information: Ammonia dissipates relatively quickly in ambient air and rapidly returns to the soil via combination with sulfate ions or washout by rainfall. Ammonia strongly adsorbs to soil, sediment particles and colloids in water under aerobic conditions. Biodegradation of ammonia to nitrate occurs in water under aerobic conditions resulting in a biological oxygen demand (BOD).

Persistence/Degradability:
Biodegradable in soil. Ozonation in the air. Soluble in water.
Bioaccumulative Potential:
Not applicable.
Mobility in Soil:
No additional information available.
Other Adverse Effects:
No additional information available.

Section 13. Disposal Considerations

Dispose of unused contents/container in accordance with local/regional/national/international regulations as applicable.
Listed as hazardous substance under the Clean Water Act (CWA) (40 CFR 116.4 and 40 CFR 117.3).
Classified as hazardous waste under the Resource Conservation and Recovery Act (RCRA) (40 CFR 261.22 Corrosive #D002).
Comply with all regulations.
Suitably diluted product may be utilized as fertilizer on agricultural land.
For hazardous waste regulations information call the RCRA Hotline (800) 424-9346, or visit the US EPA website.

Section 14. Transport Information

US Department of Transportation

HAZARD CLASS: (US Domestic): 2.2 (Non-Flammable Gas)
(International): 2.3 (Poison Gas), subsidiary 8 (Corrosive)

PROPER SHIPPING DESCRIPTION: (US Domestic): UN1005, Ammonia, Anhydrous, 2.2, RQ, Inhalation Hazard
(International): UN1005, Ammonia, Anhydrous, 2.3, (8), RQ, Poison-Inhalation Hazard Zone "D"

LABEL / PLACARD: (US Domestic): Non-Flammable Gas

(International): Poison Gas, Corrosive (Subsidiary)

IDENTIFICATION NUMBER: UN 1005
ENVIRONMENTAL HAZARDS:

IMDG, Known Marine Pollutant: No
United Nations Model Regulations, Environmentally Hazardous: No

Section 15. Regulatory Information

Subject to the reporting requirements of Section 302, Section 304, Section 312 and Section 313, Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR 372.

Under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Section 103; any environmental release of this chemical equal to or over the reportable quantity of 100 pounds must be reported promptly to the National Response Center, Washington, D.C. (1-800-424-8802).

Emergency Planning & Community Right to Know Act, (EPCRA) extremely hazardous substance, 40 CFR 355, Title III, Section 302 -- Ammonia, Threshold Planning Quantity (TPQ) 500 pounds.

Toxic Substances Control Act (TSCA): Listed in the TSCA Inventory.

EPA Hazard Categories – Immediate: Yes; Delayed: No; Fire: No; Sudden Release: Yes; Reactive: No

Clean Air Act – Section 112(r): Listed under EPA's Risk Management Program (RMP), 40 CFR Part 68, at storage/process amounts greater than the Threshold Quantity (TQ) of 10,000 pounds (ammonia, anhydrous).

Anhydrous ammonia is listed under Department of Homeland Security regulation 6 CFR Part 27, Chemical Facility Anti-Terrorism Standards at storage / process amounts greater than the threshold quantity of 10,000 pounds (ammonia, anhydrous).

Occupational Safety & Health Administration (OSHA): This material is considered to be hazardous as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200. This material is subject to Process Safety Management requirements of 29 CFR 1910.119 if maintained on-site, including storage / process, in quantities of 10,000 pounds (ammonia, anhydrous) or greater.

Section 16. Other Information

Preparation Information: Revision Date May 1, 2015 Prepared by: HJS
Replaces all previously dated versions.

Revisions to this Safety Data Sheet have been created to comply with the requirements of the OSHA Hazard Communication Final Rule issued in 2012 (HazCom 2012).

Acronyms:
ACGIH: American Conference of Governmental Industrial Hygienists
ANSI: American National Standards Institute
CAS: Chemical Abstracts Service
CFR: Code of Federal Regulations
DHS: Department of Homeland Security
DOT: Department of Transportation
EPA: Environmental Protection Agency
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
IDLH: Immediately Dangerous to Life or Health
IMDG: International Maritime Dangerous Goods
NFPA: National Fire Protection Association
NIOSH: National Institute for Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
PPM: Parts Per Million
RCRA: Resource Conservation and Recovery Act
REL: Recommended Exposure Limit
SCBA: Self Contained Breathing Apparatus

STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TWA: Time Weighted Average

Disclaimer:
The information, data, and recommendations in this safety data sheet relate only to the specific material designated herein and do not relate to use in combination with any other material or in any process. To the best of our knowledge, the information, data, and recommendations set forth herein are believed to be accurate. We make no warranties, either expressed or implied, with respect thereto and assume no liability in connection with any use of such information, data, and recommendations. Judgements as to the suitability of the information contained herein for the party's own use or purposes are solely the responsibility of that party. Any party handling, transferring, transporting, storing, applying or otherwise using this product should review thoroughly all applicable laws, rules, regulations, standards and good engineering practices. Such thorough review should occur before the party handles, transfers, transports, stores, applies or otherwise uses this product.

EnerSys
Powering Full Solutions

SAFETY DATA SHEET

Form #: SDS 853020
Revised: AA (06/16/2016)
Supersedes: 05/14/2015
ECO #: 1001735

I. PRODUCT IDENTIFICATION

Chemical Trade Name (as used on label):
Lead-Acid Battery, Wet

Synonyms:
Industrial Battery, Traction Battery, Stationary Battery, Deep Cycle Battery

Manufacturer's Name/Address:
EnerSys
P.O. Box 14145
2366 Bernville Road
Reading, PA 19612-4145

Chemical Family/Classification:
Electric Storage Battery

Telephone:
For information and emergencies, contact EnerSys' Environmental, Health & Safety Dept. at 610-208-1996

24-Hour Emergency Response Contact:
CHEMTREC DOMESTIC: 800-424-9300 CHEMTREC INTL: 703-527-3877

II GHS HAZARDS IDENTFICATION

HEALTH		ENVIRONMENTAL	PHYSICAL
Acute Toxicity (Oral/Dermal/Inhalation)	Category 4	Aquatic Chronic 1	Explosive Chemical, Division 1.3
Skin Corrosion/Irritation	Category 1A	Aquatic Acute 1	
Eye Damage	Category 1		
Reproductive	Category 1A		
Carcinogenicity (lead compounds)	Category 1B		
Carcinogenicity (arsenic)	Category 1A		
Carcinogenicity (acid mist)	Category 1A		
Specific Target Organ Toxicity (repeated exposure)	Category 2		

GHS LABEL:

HEALTH

ENVIRONMENTAL

PHYSICAL

Hazard Statements

DANGER!

Causes severe skin burns and serious eye damage.
May damage fertility or the unborn child if ingested or inhaled.
May cause cancer if ingested or inhaled.
Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure.
May form explosive air/gas mixture during charging.
Extremely flammable gas (hydrogen).
Explosive, fire, blast, or projection hazard.
May cause harm to breast-fed children
Harmful if swallowed, inhaled, or contact with skin
Causes skin irritation, serious eye damage.

Precautionary Statements

Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing, eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Contact with internal components may cause irritation or severe burns. Avoid contact with internal acid.
Irritating to eyes, respiratory system, and skin.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood
Avoid contact during pregnancy/while nursing
Keep away from heat./sparks/open flames/hot surfaces. No smoking

III. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Approximate % by Wt.
Inorganic Lead Compound:		60-70
Lead	7439-92-1	
* Antimony	7440-36-0	2
* Arsenic	7440-38-2	0.2
* Calcium	7440-70-2	0.04
* Tin	7440-31-5	0.2
Electrolyte (Sulfuric Acid (H2SO4/H2O))	7664-93-9	10-30
Case Material:		5-10
Polypropylene	9003-07-0	
Polystyrene	9003-53-6	
Styrene Acrylonitrile	9003-54-7	
Acrylonitrile Butadiene Styrene	9003-56-9	
Styrene Butadiene	9003-55-8	
Polyvinylchloride	9002-86-2	
Polycarbonate, Hard Rubber, Polyethylene	9002-88-4	
Other:		1-5
Silicon Dioxide (Gel batteries only)	7631-86-9	
Sheet Molding Compound (Glass reinforced polyester)	--	

Inorganic lead and electrolyte (sulfuric acid) are the primary components of every battery manufactured by EnerSys.
Other ingredients may be present dependent upon battery type. Contact your EnerSys representative for additional information.

IV. FIRST AID MEASURES

Inhalation:
Sulfuric Acid: Remove to fresh air immediately. If breathing is difficult, give oxygen. Consult a physician.
Lead: Remove from exposure, gargle, wash nose and lips; consult physician.

Ingestion:
Sulfuric Acid: Give large quantities of water; do not induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death; consult a physician.
Lead: Consult physician immediately.

Skin:
Sulfuric Acid: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes. If symptoms persist, seek medical attention. Wash contaminated clothing before reuse. Discard contaminated shoes.
Lead: Wash immediately with soap and water.

Eyes:
Sulfuric Acid and Lead: Flush immediately with large amounts of water for a least 15 minutes while lifting lids. Seek immediate medical attention if eyes have been exposed directly to acid.

V. FIRE FIGHTING MEASURES

Flash Point: N/A | **Flammable Limits:** LEL = 4.1% (Hydrogen Gas) UEL = 74.2%

Extinguishing Media: CO_2; foam; dry chemical. Do not use carbon dioxide directly on cells. Avoid breathing vapors. Use appropriate media for surrounding fire.

Special Fire Fighting Procedures:
If batteries are on charge, shut off power. Use positive pressure, self-contained breathing apparatus. Water applied to electrolyte generates heat and causes it to spatter. Wear acid-resistant clothing, gloves, face and eye protection.
But note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down.

Unusual Fire and Explosion Hazards:
Highly flammable hydrogen gas is generated during charging and operation of batteries. To avoid risk of fire or explosion, keep sparks or other sources of ignition away from batteries. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Follow manufacturer's instructions for installation and service.

VI. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures:
Stop flow of material, contain/absorb small spills with dry sand, earth, and vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of unneutralized acid to sewer. Acid must be managed in accordance with local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

VII. HANDLING AND STORAGE

Handling:
Unless involved in recycling operations, do not breach the casing or empty the contents of the battery. Handle carefully and avoid tipping, which may allow electrolyte leakage. There may be increasing risk of electric shock from strings of connected batteries.
Keep containers tightly closed when not in use. If battery case is broken, avoid contact with internal components.
Keep vent caps on and cover terminals to prevent short circuits. Place cardboard between layers of stacked automotive batteries to avoid damage and short circuits.
Keep away from combustible materials, organic chemicals, reducing substances, metals, strong oxidizers and water. Use banding or stretch wrap to secure items for shipping.

Storage:
Store batteries in cool, dry, well-ventilated areas with impervious surfaces and adequate containment in the event of spills. Batteries should also be stored under roof for protection against adverse weather conditions. Separate from incompatible materials. Store and handle only in areas with adequate water supply and spill control. Avoid damage to containers. Keep away from fire, sparks and heat. Keep away from metallic objects could bridge the terminals on a battery and create a dangerous short-circuit.

Charging:
There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged will generate and release flammable hydrogen gas. Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby. Wear face and eye protection when near batteries being charged.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits (mg/m3) Note: N.E.= Not Established

INGREDIENTS (Chemical/Common Names)	OSHA PEL	ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL
Lead and Lead Compounds (inorganic)	0.05	0.05	0.05	0.05	0.05	0.15 (b)
Antimony	0.5	0.5	0.5	0.5	0.5	0.5 (b,e)
Arsenic	0.01	0.01	0.002	0.2	0.01	N.E
Calcium	N.E	N.E	N.E	N.E	N.E	N.E
Tin	2	2	2	2	2	N.E
Electrolyte (Sulfuric Acid)	1	0.2	1	1	0.2	0.05 (c)
Polypropylene	N.E	N.E	N.E	N.E	N.E	N.E
Polystyrene	N.E	N.E	N.E	N.E	N.E	N.E
Styrene Acrylonitrile	N.E	N.E	N.E	N.E	N.E	N.E
Acrylonitrile Butadiene Styrene	N.E	N.E	N.E	N.E	N.E	N.E
Styrene Butadiene	N.E	N.E	N.E	N.E	N.E	N.E
Polyvinylchloride	N.E	N.E	N.E	N.E	1	N.E
Polycarbonate, Hard Rubber, Polyethylene	N.E	N.E	N.E	N.E	N.E	N.E
Silicon Dioxide (Gel Batteries Only)	N.E	N.E	N.E	N.E	N.E	N.E
Sheet Molding Compound (Glass reinforced polyester)	N.E	N.E	N.E	N.E	N.E	N.E

NOTES:
(b) As inhalable aerosol
(c) Thoracic fraction
(e) Based on OEL;s Of Austria, Belgium, Denmark, France, Netherlands, Switzerland, & U.K.

Engineering Controls (Ventilation):
Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant.
Handle batteries cautiously to avoid spills. Make certain vent caps are on securely. Avoid contact with internal components. Wear protective clothing, eye and face protection when filling, charging or handling batteries. Do not allow metallic materials to simultaneously contact both the positive and negative terminals of the batteries. Charge the batteries in areas with adequate ventilation. General dilution ventilation is acceptable.

Respiratory Protection (NIOSH/MSHA approved):
None required under normal conditions. When concentrations of sulfuric acid mist are known to exceed the PEL, use NIOSH or MSHA-approved respiratory protection.

Skin Protection:
If battery case is damaged, use rubber or plastic acid-resistant gloves with elbow-length gauntlet, acid-resistant apron, clothing and boots.

Eye Protection:
If battery case is damaged, use chemical goggles or face shield.

Other Protection:
In areas where sulfuric acid is handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply. Acid-resistant apron. Under severe exposure emergency conditions, wear acid-resistant clothing and boots. Face shield recommended when adding water or electrolyte to batteries, wash hands after handling.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Properties Listed Below are for Electrolyte:

Boiling Point:	203 - 240° F	**Specific Gravity (H2O = 1):**	1.215 to 1.350
Melting Point:	N/A	**Vapor Pressure (mm Hg):**	10
Solubility in Water:	100%	**Vapor Density (AIR = 1):**	Greater than 1
Evaporation Rate: (Butyl Acetate = 1)	Less than 1	**% Volatile by Weight:**	N/A
pH:	~1 to 2	**Flash Point:**	Below room temperature (as hydrogen gas)
LEL (Lower Explosive Limit)	4.1% (Hydrogen)	**UEL (Upper Explosive Limit)**	74.2% (Hydrogen)
Appearance and Odor:	Manufactured article; no apparent odor. Electrolyte is a clear liquid with a sharp, penetrating, pungent odor.		

X. STABILITY AND REACTIVITY

Stability: Stable X Unstable

This product is stable under normal conditions at ambient temperature.

Conditions To Avoid: Prolonged overcharge; sources of ignition

Incompatibility: (Materials to avoid)

Sulfuric Acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Lead Compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen and reducing agents.

Arsenic compounds: strong oxidizers; bromine azide. NOTE: hydrogen gas can react with inorganic arsenic to form the highly toxic gas-arsine.

Hazardous Decomposition Products:

Sulfuric Acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen sulfide.

Lead Compounds: High temperatures likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

Hazardous Polymerization:

Will not occur

XI. TOXICOLOGICAL INFORMATION

Routes of Entry:

Sulfuric Acid: Harmful by all routes of entry.

Lead Compounds: Hazardous exposure can occur only when product is heated, oxidized or otherwise processed or damaged to create dust, vapor or fume. The presence of nascent hydrogen may generate highly toxic arsine gas.

Inhalation:

Sulfuric Acid: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.

Lead Compounds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.

Ingestion:

Sulfuric Acid: May cause severe irritation of mouth, throat, esophagus and stomach.

Lead Compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.

Skin Contact:

Sulfuric Acid: Severe irritation, burns and ulceration.

Lead Compounds: Not absorbed through the skin.

Arsenic Compounds: Contact may cause dermatitis and skin hyper pigmentation.

Eye Contact:

Sulfuric Acid: Severe irritation , burns, cornea damage, and blindness.

Lead Components: May cause eye irritation.

Effects of Overexposure - Acute:

Sulfuric Acid: Severe skin irritation, damage to cornea, upper respiratory irritation.

Lead Compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

Effects of Overexposure - Chronic:

Sulfuric Acid: Possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes.

Lead Compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females. Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50mcg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

Carcinogenicity:

Sulfuric Acid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Group 1 carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist.

Lead Compounds: Lead is listed as a Group 2A carcinogen, likely in animals at extreme doses. Per the guidance found in OSHA 29 CFR 1910.1200 Appendix F, this is approximately equivalent to GHS Category 1B. Proof of carcinogenicity in humans is lacking at present.

Arsenic: Arsenic is listed by IARC as a Group 1 - carcinogenic to humans. Per the guidance found in OSHA 29 CFR 1910.1200 Appendix F, this is approximately equivalent to GHS Category 1A.

Medical Conditions Generally Aggravated by Exposure:

Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggravate diseases such as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.

Acute Toxicity:
Inhalation LD50:
Electrolyte: LC50 rat: 375 mg/m3; LC50: guinea pig: 510 mg/m3
Elemental Lead: Acute Toxicity Point Estimate = 4500 ppmV (based on lead bullion)
Elemental Arsenic: No data

Oral LD50:
Electrolyte: rat: 2140 mg/kg
Elemental Lead: Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)
Elemental Arsenic: LD50 mouse: 145 mg/kg
Elemental Antimony: LD50 rat: 100 mg/kg

Additional Health Data:
All heavy metals, including the hazardous ingredients in this product, are taken into the body primarily by inhalation and ingestion.
Most inhalation problems can be avoided by adequate precautions such as ventilation and respiratory protection covered in Section 8.
Follow good personal hygiene to avoid inhalation and ingestion: wash hands, face, neck and arms thoroughly before eating, smoking or leaving the worksite. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of food, tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated areas and never taken home or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated from children and their environment.

The 19th Amendment to EC Directive 67/548/EEC classified lead compounds, but not lead in metal form, as possibly toxic to reproduction.
Risk phrase 61: May cause harm to the unborn child, applies to lead compounds, especially soluble forms.

XII. ECOLOGICAL INFORMATION

Environmental Fate:
Lead is very persistent in soil and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments is slow. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain.
Most studies include lead compounds and not elemental lead.

Environmental Toxicity: Aquatic Toxicity:

Sulfuric acid:	24-hr LC50, freshwater fish (Brachydanio rerio): 82 mg/L
	96 hr- LOEC, freshwater fish (Cyprinus carpio): 22 mg/L
Lead:	48 hr LC50 (modeled for aquatic invertebrates): <1 mg/L, based on lead bullion
Arsenic:	24 hr LC50, freshwater fish (Carrassisus auratus) >5000 g/L.

Additional Information:
- No known effects on stratospheric ozone depletion.
- Volatile organic compounds: 0% (by Volume)
- Water Endangering Class (WGK): NA

XIII. DISPOSAL CONSIDERATIONS (UNITED STATES)

Spent batteries: Send to secondary lead smelter for recycling. Spent lead-acid batteries are not regulated as hazardous waste when the requirements of 40 CFR Section 266.80 are met. This should be managed in accordance with approved local, state and federal requirements. Consult state environmental agency and/or federal EPA.

Electrolyte:
Place neutralized slurry into sealed containers and handle as applicable with state and federal regulations. Large water-diluted spills, after neutralization and testing, should be managed in accordance with approved local, state and federal requirements. Consult state environmental agency and/or federal EPA.

Following local, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.

XIV. TRANSPORT INFORMATION

U.S. DOT:
The transportation of wet and moist charged (moist active) batteries within the continental United States is regulated by the U.S. DOT through the Code of Federal Regulations, Title 49 (49CFR). These regulations classify these types of batteries as a hazardous material. Refer to 49 CFR, 173.159 for more details pertaining to the transportation of wet and moist batteries.

The shipping information is as follows:
Proper Shipping Name: Batteries, wet, filled with acid
Hazardous Class: 8
UN Identification: UN2794
Packing Group: N/A
Label/Placard Required: Corrosive

Contact your EnerSys representative for additional information regarding the classification of batteries.

49 CFR 173.159(e) specifies that when transported by highway or rail, electric storage batteries containing electrolyte or corrosive battery fluid are not subject to any other requirements of this subchapter, if all of the following are met:
(1) No other hazardous materials may be transported in the same vehicle;
(2) The batteries must be loaded or braced so as to prevent damage and short circuits in transit;
(3) Any other material loaded in the same vehicle must be blocked, braced, or otherwise secured to prevent contact with or damage to the batteries; and
(4) The transport vehicle may not carry material shipped by any person other than the shipper of the batteries.
If any of the above-referenced requirements are not met, the batteries must be shipped as fully-regulated Class 8 Corrosive hazardous materials.

IATA Dangerous Goods Regulations DGR:

The international transportation of wet and moist charged (moist active) batteries is regulated by the International Air Transport Association (IATA). These regulations also classify these types of batteries as a hazardous material. The batteries must be packed according to IATA Packing Instruction 870.

The shipping information is as follows:

Proper Shipping Name: Batteries, wet, filled with acid
Hazardous Class: 8
UN Identification: UN2794
Packing Group: N/A
Label/Placard Required: Corrosive

Contact your EnerSys representative for additional information regarding the classification of batteries.

IMDG:

The international transportation of wet and moist charged (moist active) batteries is regulated by the International Maritime Dangerous Goods code (IMDG). These regulations also classify these types of batteries as hazardous material. The batteries must be packed according to IMDG code pages 8120 and 8121. IMDG Code Packing Instruction P801.

The shipping information is as follows:

Proper Shipping Name: Batteries, wet, filled with acid
Hazardous Class: 8
UN Identification: UN2794
Packing Group: N/A
Label/Placard Required: Corrosive

Contact your EnerSys representative for additional information regarding the classification of batteries.

XV. REGULATORY INFORMATION

UNITED STATES:

EPA SARA Title III:

Section 302 EPCRA Extremely Hazardous Substances (EHS):

Sulfuric acid is a listed "Extremely Hazardous Substance" under EPCRA, with a Threshold Planning Quantity (TPQ) of 1,000 lbs. EPCRA Section 302 notification is required if 1000 lbs or more of sulfuric acid is present at one site (40 CFR 370.10). For more information consult 40 CFR Part 355. The quantity of sulfuric acid will vary by battery type. Contact your EnerSys representative for additional information.

Section 304 CERCLA Hazardous Substances:

Reportable Quantity (RQ) for spilled 100% sulfuric acid under CERCLA (Superfund) and EPCRA (Emergency Planning and Community Right to Know Act) is 1,000 lbs. State and local reportable quantities for spilled sulfuric acid may vary.

Section 311/312 Hazard Categorization:

EPCRA Section 312 Tier Two reporting is required for non-automotive batteries if sulfuric acid is present in quantities of 500 lbs or more and/or if lead is present in quantities of 10,000 lbs or more. For more information consult 40 CFR 370.10 and 40 CFR 370.40

Section 313 EPCRA Toxic Substances:

40 CFR section 372.38 (b) states: If a toxic chemical is present in an article at a covered facility, a person is not required to consider the quantity of the toxic chemical present in such article when determining whether an applicable threshold has been met under § 372.25, § 372.27, or § 372.28 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the article from another person or the person produced the article. However, this exemption applies only to the quantity of the toxic chemical present in the article.

Supplier Notification:

This product contains toxic chemicals, which may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements. If you are a manufacturing facility under SIC codes 20 through 39, the following information is provided to enable you to complete the required reports:

Toxic Chemical	CAS Number	Approximate % by Wt.
Lead	7439-92-1	60
Electrolyte (Sulfuric Acid (H2SO4/H2O))	7664-93-9	10 - 30
* Antimony	7440-36-0	2
* Arsenic	7440-38-2	0.2
Tin	7440-31-5	0.2

See 40 CRG Part 370 for more details.

If you distribute this product to other manufacturers in SIC Codes 20 through 39, this information must be provided with the first shipment of each calendar year.

The Section 313 supplier notification requirement does not apply to batteries, which are "consumer products".

* Not present in all battery types. Contact your EnerSys representative for additional information.

TSCA:

TSCA Section 8b – Inventory Status: All chemicals comprising this product are either exempt or listed on the TSCA Inventory.

TSCA Section 12b (40 CFR Part 707.60(b)) No notice of export will be required for articles, except PCB articles, unless the Agency so requires in the context of individual section 5, 6, or 7 actions.

TSCA Section 13 (40 CFR Part 707.20): No import certification required (EPA 305-B-99-001, June 1999, Introduction to the Chemical Import Requirements of the Toxic Substances Control Act, Section IV.A).

RCRA:

Spent Lead Acid Batteries are subject to streamlined handling requirements when managed in compliance with 40 CFR section 266.80 or 40 CFR part 273. Waste sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosivity) and D008 (lead).

CAA:

EnerSys supports preventative actions concerning ozone depletion in the atmosphere due to emissions of CFC's and other ozone depleting chemicals (ODC's), defined by the USEPA as Class I substances. Pursuant to Section 611of the Clean Air Act Amendments (CAAA) of 1990, finalized on January 19, 1993, EnerSys established a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.

STATE REGULATIONS (US):

Proposition 65:

Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

INTERNATIONAL REGULATIONS:

Distribution into Quebec to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2).

Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.

XVI. OTHER INFORMATION

Revised: AA (06/16/2016)

NFPA Hazard Rating for Sulfuric Acid:

Flammability (Red) = 0
Health (Blue) = 3
Reactivity (Yellow) = 2
Sulfuric acid is water-reactive if concentrated.

DISCLAIMER

This Safety Data Sheet is created by the manufacturer to comply with the requirements of 29 CFR 1910.1200. To the extent allowed by law, the manufacturer hereby expressly disclaims any liability to any third party, including users of this product, including, but not limited to, consequential or other damages, arising out of the use of, or reliance on, this Safety Data Sheet.

Univar
3075 Highland Pkwy STE 200
Downers Grove, IL 60515
425-889-3400

SAFETY DATA SHEET

1. Identification

Product identifier: SULFURIC ACID w/more than 51%

Other means of identification

SDS number: 000100000025

Recommended use and restriction on use

Recommended use: Reserved for industrial and professional use.

Restrictions on use: Not known.

Emergency telephone number:For emergency assistance Involving chemicals

call CHEMTREC day or night at: 1-800-424-9300. CHEMTREC INTERNATIONAL Tel# 703-527-3887

2. Hazard(s) identification

Hazard classification

Health hazards

Skin corrosion/irritation	Category 1A
Serious eye damage/eye irritation	Category 1
Carcinogenicity	Category 1A
Environmental hazards Acute hazards to the aquatic environment	Category 3

Label elements

Hazard symbol

Signal word	Danger
Hazard statement	Causes severe skin burns and eye damage. May cause cancer. Harmful to aquatic life.
Precautionary statement	
Prevention	Do not breathe dust or mists. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use personal protective equipment as required.
Response	IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Specific treatment (see this label). Wash contaminated clothing before reuse.
Storage	Store locked up.
Disposal	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification	None.

3. Composition/information on ingredients

Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
Sulfuric Acid		7664-93-9	>=52 - <=100%
Water		7732-18-5	<=48%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion: Call a physician or poison control center immediately. DO NOT induce vomiting. Get medical attention immediately. Never give liquid to an unconscious person.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Perform artificial respiration if breathing has stopped.

Skin contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Eye contact: If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Do not use water as an extinguisher. Use: Carbon dioxide or dry powder.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.
Methods and material for containment and cleaning up:	Absorb spillage with non-combustible, absorbent material.
Notification Procedures:	Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk.
Environmental precautions:	Avoid release to the environment. Do not contaminate water sources or sewer.

7. Handling and storage

Precautions for safe handling:	Use personal protective equipment as required. Keep away from any possible contact with water, because of violent reaction and possible flash fire. Store away from incompatible materials. Use only with adequate ventilation. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures.
Conditions for safe storage, including any incompatibilities:	Store locked up.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
Sulfuric Acid - Thoracic fraction.	TWA	0.2 mg/m3	US. ACGIH Threshold Limit Values (03 2013)
Sulfuric Acid	REL	1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	1 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	1 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

	TWA	1 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	TWA PEL	0.1 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	STEL	3 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)

Appropriate engineering controls No data available.

Individual protection measures, such as personal protective equipment

General information: Provide easy access to water supply and eye wash facilities. Use personal protective equipment as required. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

Eye/face protection: Wear a full-face respirator, if needed. Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection: Chemical resistant gloves

Other: Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Respiratory protection: In case of inadequate ventilation use suitable respirator.

Hygiene measures: Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not get in eyes. Wash contaminated clothing before reuse. Do not get this material in contact with skin.

9. Physical and chemical properties

Physical state: Liquid

Form: No data available.

Color: No data available.

Odor: No data available.

Odor threshold: No data available.

pH: No data available.

Melting point/freezing point: -20 - 12 °F

Initial boiling point and boiling range:	380 - 529 °F
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	No data available.
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical stability:	No data available.
Possibility of hazardous reactions:	Contact with water may cause flash fire.
Conditions to avoid:	Avoid heat or contamination.
Incompatible materials:	No data available.
Hazardous decomposition products:	No data available.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion:	No data available.
Inhalation:	No data available.

Skin contact: No data available.
Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix (): 2,140 mg/kg

Dermal

Product: No data available.

Inhalation

Product: No data available.

Specified substance(s):

Sulfuric Acid LC 50 (Rat,): 375 mg/m3 (, No) 2 = reliable with restrictions

Repeated dose toxicity

Product: No data available.

Skin corrosion/irritation

Product: No data available.

Serious eye damage/eye irritation

Product: No data available.

Respiratory or skin sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Sulfuric Acid Overall evaluation: 1. Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

Sulfuric Acid Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific target organ toxicity - single exposure

Product: No data available.

Specific target organ toxicity - repeated exposure
Product: No data available.
Aspiration hazard
Product: No data available.
Other effects: No data available.

12. Ecological information

Ecotoxicity:
Acute hazards to the aquatic environment:
Fish
Product: No data available.
Specified substance(s):
Sulfuric Acid LC 50 (Western mosquitofish (Gambusia affinis), 96 h): 42 mg/l Mortality
Aquatic invertebrates
Product: No data available.
Chronic hazards to the aquatic environment:
Fish
Product: No data available.
Aquatic invertebrates
Product: No data available.
Toxicity to Aquatic Plants
Product: No data available.
Persistence and degradability
Biodegradation
Product: No data available.
BOD/COD ratio
Product: No data available.
Bioaccumulative potential
Bioconcentration factor (BCF)
Product: No data available.
Partition coefficient n-octanol / water (log Kow)
Product: No data available.
Mobility in soil: No data available.
Known or predicted distribution to environmental compartments
Sulphuric acid No data available.
Water No data available.
Known or predicted distribution to environmental compartments
Sulphuric acid No data available.
Known or predicted distribution to environmental compartments

Water	No data available.

13. Disposal considerations

Disposal instructions:	Discharge, treatment, or disposal may be subject to national, state, or local laws.
Contaminated packaging:	No data available.

14. Transport information

DOT

UN number:	UN 1830
UN proper shipping name:	Sulfuric acid
Transport hazard class(es)	
Class:	8
Label(s):	8
Packing group:	II
Marine Pollutant:	Not regulated.
Special precautions for user:	–

IMDG

UN number:	UN 1830
UN proper shipping name:	SULPHURIC ACID
Transport hazard class(es)	
Class:	8
Label(s):	8
EmS No.:	F-A, S-B
Packing group:	II
Marine Pollutant:	Not regulated.
Special precautions for user:	–

IATA

UN number:	UN 1830
Proper Shipping Name:	Sulphuric acid
Transport hazard class(es):	
Class:	8
Label(s):	8
Packing group:	II
Environmental hazards	Not regulated.
Special precautions for user:	–
Other information	

Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

15. Regulatory information

US federal regulationsUS. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Sulfuric Acid	Reportable quantity: 1000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Not listed.

SARA 302 Extremely hazardous substance

Chemical identity	RQ	Threshold Planning Quantity
Sulfuric Acid	1000 lbs.	1000 lbs.

SARA 304 Emergency release notification

Chemical identity	RQ
Sulfuric Acid	1000 lbs.

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity

Chemical identity	Threshold Planning Quantity
Sulfuric Acid	500lbs
Water	500 lbs

SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Sulfuric Acid	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Sulfuric Acid	Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

Sulfuric Acid	Threshold quantity: 10000 lbs

US state regulations

US. California Proposition 65

Sulfuric Acid	Carcinogenic.
Sulfuric Acid	Carcinogenic.

US. New Jersey Worker and Community Right-to-Know Act

Sulfuric Acid	Listed

US. Massachusetts RTK - Substance List

Sulfuric Acid	Listed

US. Pennsylvania RTK - Hazardous Substances

Sulfuric Acid	Listed

US. Rhode Island RTK

Sulfuric Acid	Listed

Inventory Status: Australia AICS:	Not in compliance with the inventory.
Canada DSL Inventory List:	Not in compliance with the inventory.
EU EINECS List:	Not in compliance with the inventory.
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	Not in compliance with the inventory.
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	Not in compliance with the inventory.
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	Not in compliance with the inventory.
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16.Other information, including date of preparation or last revision

HMIS Hazard ID

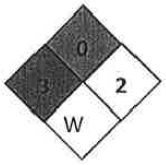
Health	*	3
Flammability		
Physical hazards		2
PERSONAL PROTECTION		K

K - Hood, Gloves, Protective Suit & Boots

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; *Chronic health effect

Further information: Classification not possible. Consult the Supplier in Section 1 of the SDS for additional data.

NFPA Hazard ID



Flammability
Health
Reactivity
Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
W: Water-reactive

Issue date:	05/18/2016
Revision date:	No data available.
Version #:	1.1

Further information: No data available.

Safety and Environment Programs

Title: Procedures for Environmental Releases and Protection	
Reference Number: WSE-WT-060	**Prepared by:** Steve West
Revision Number: 05	**Approved by:** Matt Smith
Revision Date: 12-09-2020	**Administrator:** Steve West

MANAGEMENT ENVIRONMENTAL RELEASE STATEMENT

Wis-Pak will make every effort to contain and minimize any and all releases that may be hazardous to the environment.

In cases of an environmental release, the individual in charge will contact the Safety Coordinator.
In the event of a release that is potentially harmful to the surrounding population, the individual in charge will also contact the Fire Department.

The Safety Coordinator will contact the Facility Manager.

The Facility Manager will contact Corporate and Government sources at the appropriate time.

In the event of a release that is potentially harmful to the surrounding population, the individual in charge will also contact the Fire Department.

Releases to the storm sewer will be monitored at the point of release and also at the perimeter of Wis-Pak's property.

Phone numbers of all pertinent contacts will be posted in the supervisor's office, security office and waste treatment building.

ANHYDROUS AMMONIA (life threatening)

1. Evacuate the contaminated area / contact your supervisor.
2. Assess the damage.
3. Notify Fire Department.
4. Locate MSDS / assemble proper PPE and equipment.
5. Ventilate contaminated area.
6. Stop leak.
7. Contact the Safety Coordinator your Supervisor or Manager.
8. Document the incident (times, amount released, wind direction, temperature, how and what happened).

NATURAL GAS

1. Evacuate contaminated area / contact your supervisor.
2. Notify the Fire Department.
3. Assess the damage.
4. Contact the Safety Coordinator your Supervisor or Manager.
5. Document the incident (times, amount released, wind direction, temperature, how and what happened).

will be trained and signs posted.

FRUCTOSE SPILLS (inside the plant) **100 gallons or more**

1. Technical Services will immediately reduce the raw waste feed rate in waste treatment.
2. Flush down the drain.
3. Document the incident (times, amount released, how and what happened).

FRUCTOSE SPILLS (outside the plant)

1. Contain the spill / contact your supervisor.
2. If spill is located in receiving area, immediately close valve at storm sewer connection.
3. To reduce fructose run-off from dripping hoses or poor connections, Technical Services personnel will use a container to catch any leaks.
4. Small spills can be cleaned up with a shop-vac.
5. For larger spills contact United Liquid Waste.
6. Contact the Safety Coordinator your Supervisor or Manager.
7. Document the incident (times, amount released, how and what happened).

WASTEWATER PRETREATMENT SYSTEM

SBR **High level alarm**

1. Immediately open decant valve to city.
2. Determine cause of overflow and correct.
3. Place decant valve in auto when SBR level has drained sufficiently.
   Document the incident (times, amount released, how and what happened).

HOLDING TANK FOR CAN FILLERS **High level alarm**

1. Shut down fillers on line 1, 2 and 3.
2. Contact United.
3. Determine cause of high level and correct.
4. Document the incident (times, amount released, how and what happened).

SLUDGE TANK **High level alarm**

1. Verify decant valve is open.
2. Monitor level in tank, verify tank is draining into system.
3. Determine cause for high level and correct.
4. Document the incident (times, amount released, how and what happened).

BROKEN PIPES

1. Shut down pumps and close valves.
2. Contain spill and contact your supervisor.
3. Large spills that threaten storm sewer / contact United.
4. Contact Management.
5. Document the incident (times, amount released, how and what happened).

ALL OTHER OIL AND CHEMICAL SPILLS

1. Contain the spill / contact your supervisor
   (avoid any fumes and physical contact)
2. Check the MSDS for hazards and clean up.
3. Wear appropriate PPE.
4. Vacuum or shovel material into a clean plastic barrel.
5. Label and secure barrel in a safe location.
6. Document incident (times, amount released, how and what happened).

CHEMICAL SPILLS THAT MAY THREATEN CITY SEWER OR WASTE TREATMENT

Any **OIL** or **CHEMICAL** spill of 10 gallons or more.

1. Contact the Safety Coordinator your Supervisor or Manager.
2. Document incident (times, amount released, how and what happened).
3. Forward the information to the Safety Coordinator your Supervisor or Manager.
4. Document the incident (times, amount released, what and how it happened).

NOTE:

IF ANY SPILL OF 100 GALLONS OR MORE, GOES TO THE CITY YOU MUST INFORM THE CITY WASTE TREATMENT PLANT.

STORMWATER PROTECTION

In order to minimize any adverse environmental impact, Wis-Pak-Watertown will take steps to reduce any possible hazardous run-off from items stored outside.
All plant personnel will review this policy and these procedures annually.

1. All machinery or items with the potential to contaminate storm water will be covered with a tarp.

3. All containers containing hazardous materials will be properly sealed.

4. All empty barrels that once held oil or chemicals will be stored in such a manner that they will not accumulate water from rain or snow.

5. All containment unit drain valves will be kept closed unless to drain off rainwater. Valves will be closed immediately after draining is completed.

6. Quarterly inspections of the premises will be conducted to ensure the above-mentioned practices are followed.

ADDENDUM B: WIS-PAK WATERTOWN INCIDENT COMMAND SYSTEM AMMONIA LEAK

CONTACTS TO REPORT ENVIRONMENTAL RELEASES

Steve West	920-988-9612
Tim Fredrick	920-342-9500
Matt Smith	419-350-0915

The following will be contacted after consulting with Matt Smith.

Reporting a spill or other DNR emergency	800-943-0003
Pearl Wallace Jefferson County Conservation Warden	920-728-6605
State of Wisconsin Emergency Government	800-943-0003

CONTACTS FOR LARGE CLEAN UP ACTIVITIES

NON-HAZARDOUS		HAZARDOUS	
United Liquid Waste	888-558-9611	Veolia Services	800-688-4005
Veolia Services	800-688-4005	Trans Environmental	888-266-1564
Trans Environmental	888-266-1564		

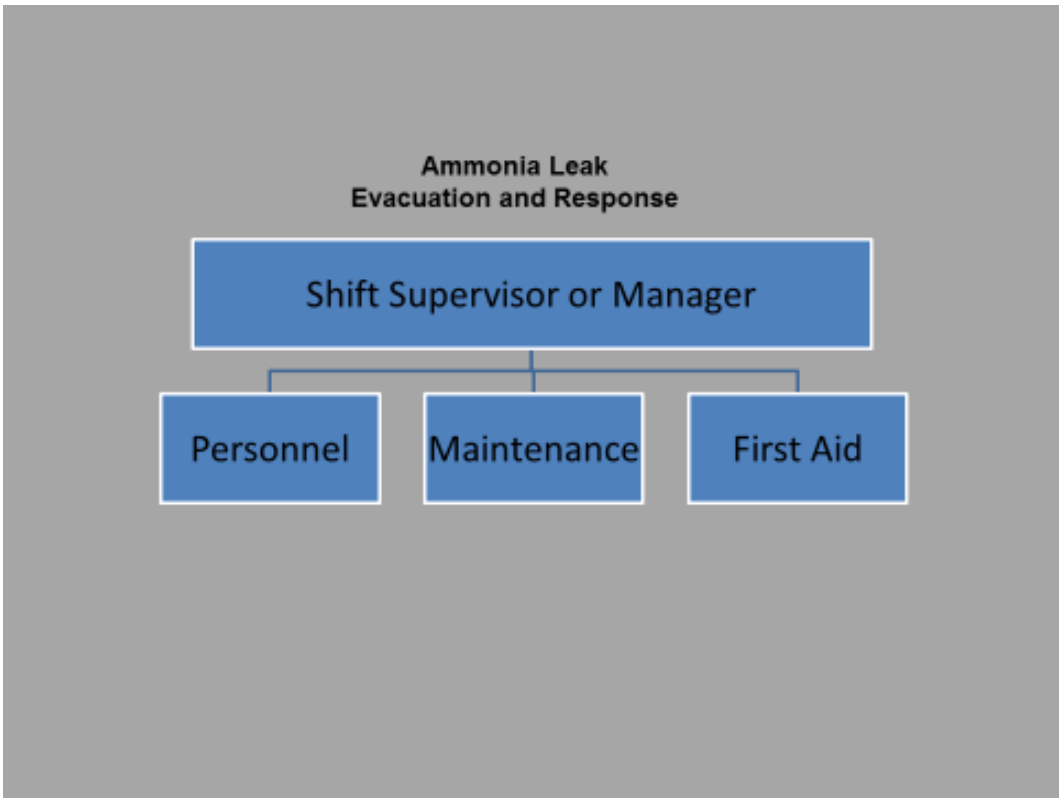
CONTAINMENT AND CLEAN UP MATERIAL

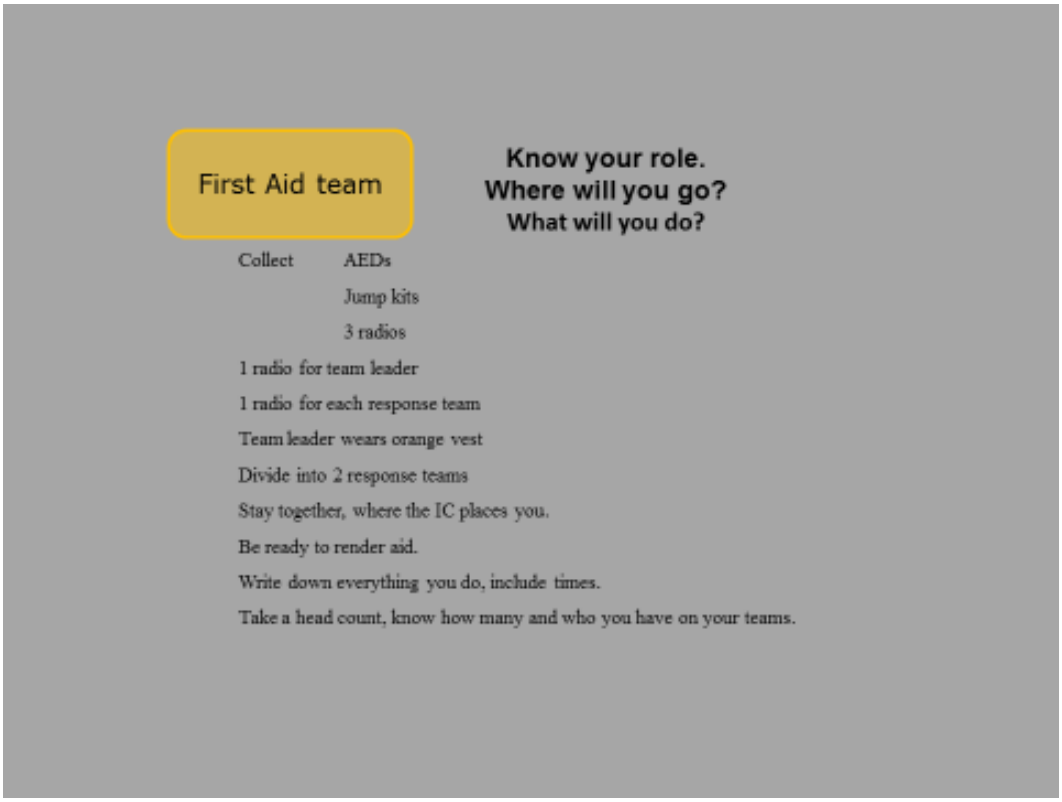
oil dry	boots
socks	gloves (rubber)
mop & bucket	rain gear
Shop-vac	goggles
lime	face shields
lined steel barrels (in annex waste area)	SCBA
plastic barrels (chemical spills)	shovels
	brooms
	squeegee

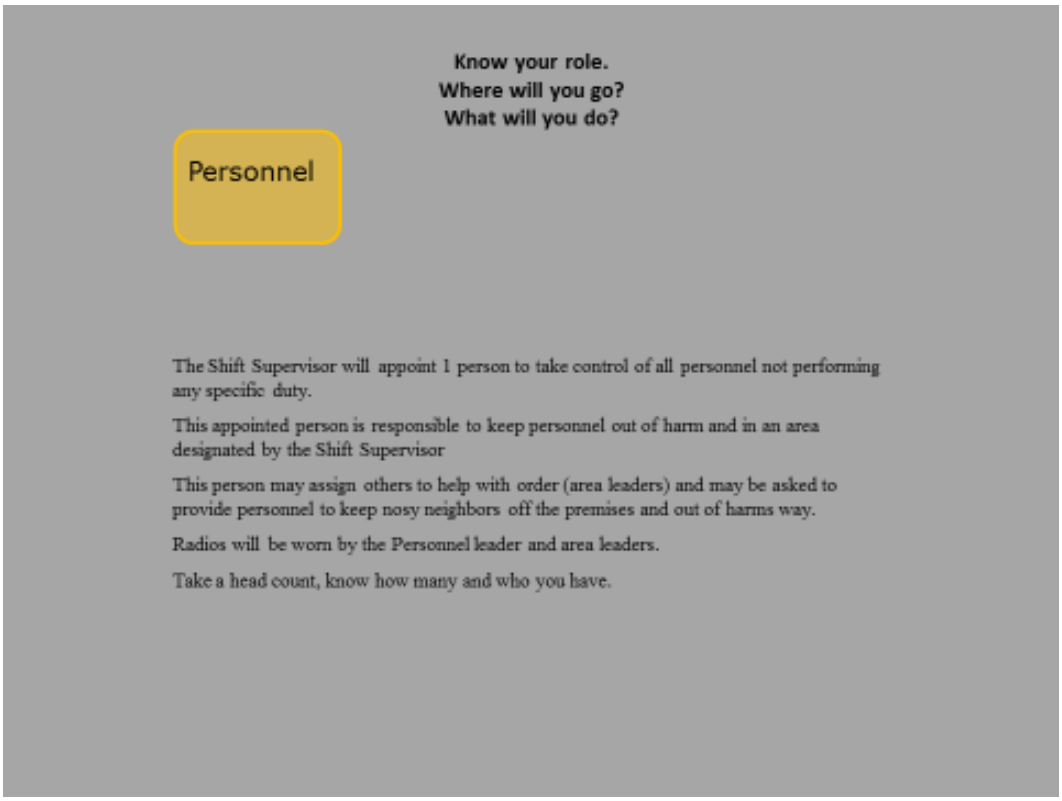
Revision History:

Version #	Date	Changes	Name
01	6-17-02		Steve West
02	1-17-03	Contact numbers	Steve West
03	10-9-15	Technical Services to Safety Coordinator DNR Warden	Steve West
04	2-19-16	Update emergency contacts and phone numbers	Steve West
05	12-9-20	Updated photos, procedures and contacts	Steve West

ADDENDUM B: WIS-PAK WATERTOWN INCIDENT COMMAND SYSTEM AMMONIA LEAK




First Aid team
Know your role.
Where will you go?
What will you do?
Collect AEDs
Jump kits
3 radios
1 radio for team leader
1 radio for each response team
Team leader wears orange vest
Divide into 2 response teams
Stay together, where the IC places you.
Be ready to render aid.
Write down everything you do, include times.
Take a head count, know how many and who you have on your teams.


Know your role.
Where will you go?
What will you do?
Personnel
The Shift Supervisor will appoint 1 person to take control of all personnel not performing any specific duty.
This appointed person is responsible to keep personnel out of harm and in an area designated by the Shift Supervisor
This person may assign others to help with order (area leaders) and may be asked to provide personnel to keep nosy neighbors off the premises and out of harms way.
Radios will be worn by the Personnel leader and area leaders.
Take a head count, know how many and who you have.

Shift Supervisor or Manager

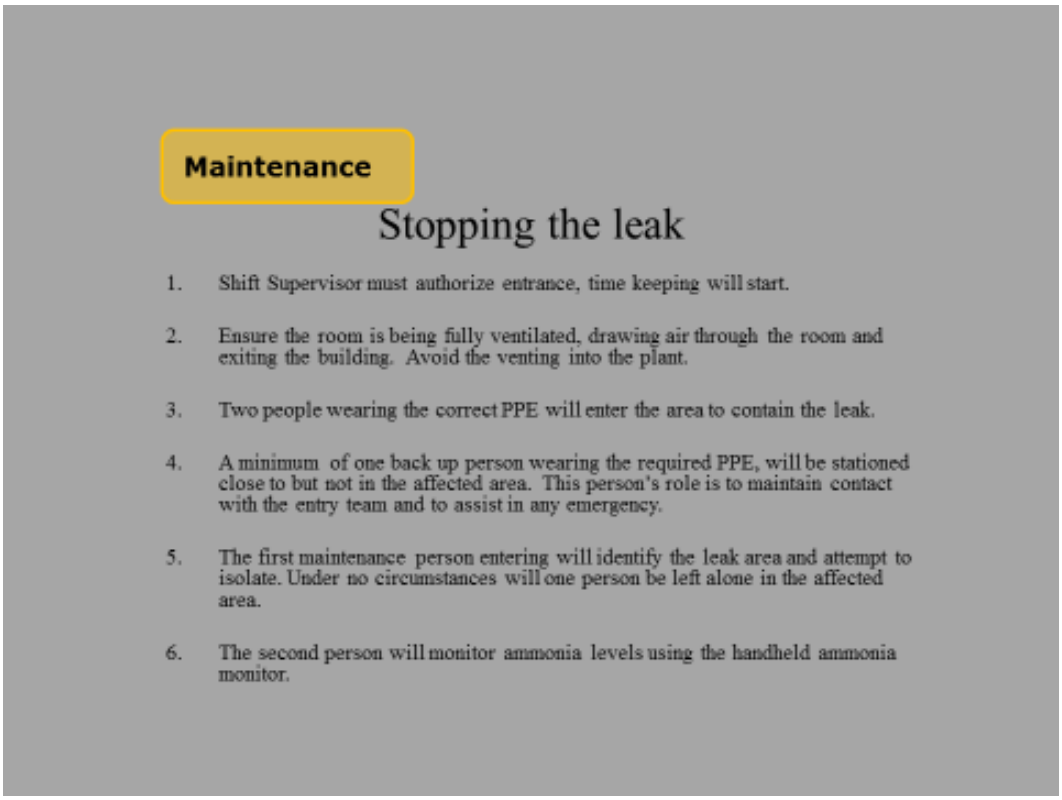
1. Make sure everyone is out of harms way.
2. Inform City of Watertown's emergency personnel. (call 911)
3. Develop plan with Maintenance. (no rushing in without a plan)
4. Delegate team leaders and determine team locations.
5. Constantly monitor situation. (don't hesitate to appoint a scribe)
   (write down who is where and what they're doing)
6. Update City of Watertown's emergency personnel when they arrive.
7. Contact upper management.
8. Work with local EMS.

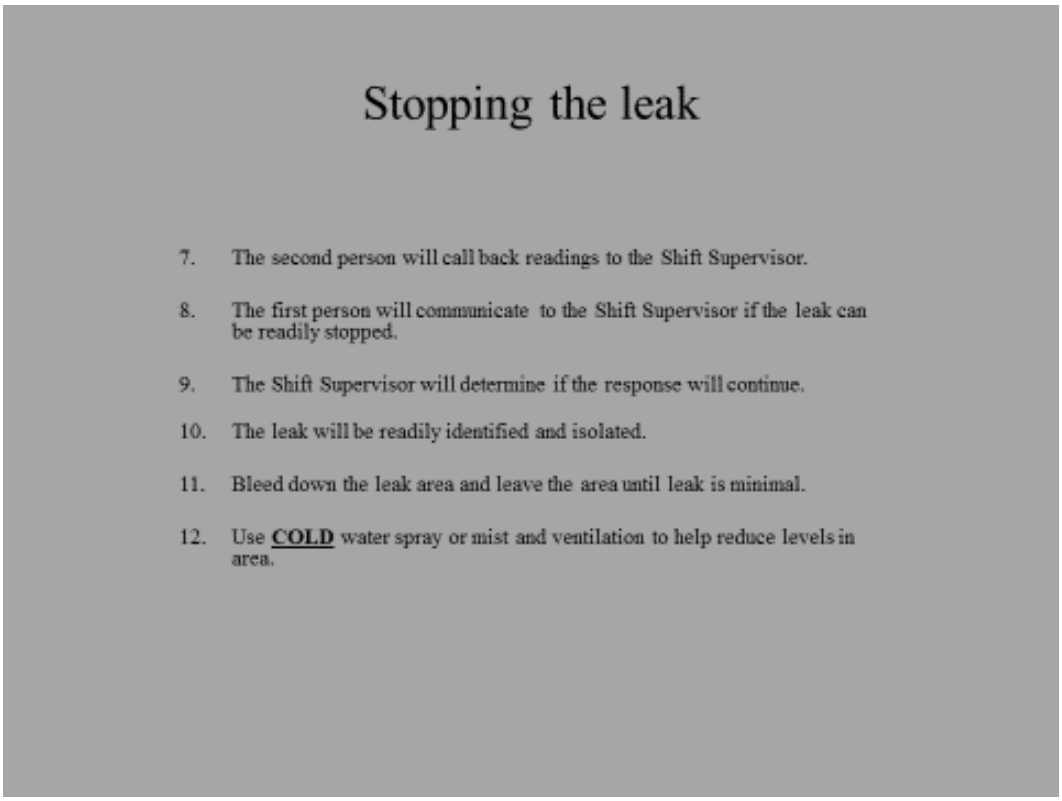
Additional issues for Shift Supervisor or Manager

Considerations must be made for how other areas of the plant may have been affected.

Considerations must also be made for Wis-Pak's neighbors.
If there is a possibility of affecting their well being, contact the Fire and Police departments before ventilating.

Properly dispose of PPE and have equipment replaced / recharged as needed.


Maintenance
Stopping the leak
1. Shift Supervisor must authorize entrance, time keeping will start.
2. Ensure the room is being fully ventilated, drawing air through the room and exiting the building. Avoid the venting into the plant.
3. Two people wearing the correct PPE will enter the area to contain the leak.
4. A minimum of one back up person wearing the required PPE, will be stationed close to but not in the affected area. This person's role is to maintain contact with the entry team and to assist in any emergency.
5. The first maintenance person entering will identify the leak area and attempt to isolate. Under no circumstances will one person be left alone in the affected area.
6. The second person will monitor ammonia levels using the handheld ammonia monitor.


Stopping the leak
7. The second person will call back readings to the Shift Supervisor.
8. The first person will communicate to the Shift Supervisor if the leak can be readily stopped.
9. The Shift Supervisor will determine if the response will continue.
10. The leak will be readily identified and isolated.
11. Bleed down the leak area and leave the area until leak is minimal.
12. Use COLD water spray or mist and ventilation to help reduce levels in area.

Response levels

Ammonia Servicing Level 1 PPE: (34 ppm or lower)

1. Chemical / Thermal resistant gloves.
2. Full-face shield.
3. Handheld ammonia monitor, hanging on wall in maintenance.

This monitor will alarm at 25 ppm but will continue to read up to 100 ppm. Personnel must watch the monitor's display for increases in ammonia levels. If the ammonia level reaches 35 ppm, personnel must leave area and Level 2 PPE must be worn .

Ammonia Servicing Level 2 PPE: (35 to 99 ppm)

1. Chemical / Thermal resistant gloves.
2. Hooded Respirator.
3. Handheld ammonia monitor.

This monitor will alarm at 25 ppm but will continue to read up to 100 ppm.

Maintenance PPE Cabinet
Located on maintenance department wall

Procedure for Ammonia Leak Response

Management and Maintenance

In the event a maintenance person is to stop an ammonia leak:

First: Evacuate the area and any other affected area of all personnel.
Initiate ventilating the area.
1. Considerations must be made for other areas of the plant. Efforts should be made not to expand the affected area.
2. Considerations must also be made for Wis-Pak's neighbors. If there is a possibility of affecting their well being, contact the Fire and Police departments before ventilating.

Second: Reassess the ammonia concentration level in the area of the leak.
1. Check the reading displayed on the monitor in the maintenance area.
2. Verify reading using handheld ammonia monitor.

Third: All maintenance personnel entering the area must wear the appropriate PPE.
1. If the concentration level is 34 ppm or lower, level 1 PPE can be worn.
2. If the concentration level is 35 to 99 ppm, level 2 PPE is required.
3. If the concentration is 100 ppm or greater, the entry will not happen or the entry will cease. **Follow remote shut down procedures.**

Fourth: When entering the area to repair a leak:
Two people wearing the correct PPE will enter the area to repair the leak. Under no circumstances will one person be left alone. A minimum of one back up person will be stationed close to, but not in the affected area. The back up person's role is to maintain contact with the entry team, also maintain contact with a Supervisor or Security and to assist in any emergency.

All PPE is stored in cabinets on the maintenance cage wall.

The hand held monitor is kept on the wall, under the monitoring system located in the maintenance area.

Ammonia **SDS limits** 25 ppm / 8 hours 35 ppm / 15 minutes 300 ppm IDLH

Warning lights mounted above the line 2 DS will activate at 10 ppm and 25 ppm.
At 10 ppm the yellow warning light will be activated
At 25 ppm the red warning light will be activated.

The alarm at the maintenance department and the alarm on the handheld will activate at 25 ppm.

1. Evacuate the affected area.
2. Initiate ventilating the area.
3. If the atmospheric reading is 34 ppm or less, level 1 PPE may be worn.
4. If the atmospheric reading is 35 to 99 ppm level 2 PPE must be worn.
5. If the concentration is 100 ppm or greater, the entry will not happen or the entry will cease.
   Follow remote shut down procedures.
6. Determine the cause and stop the leak.
7. At 10 ppm or less, employees may return to work.

No one is permitted to be exposed to a reading of 35 to 99 ppm without wearing level 2 PPE.

No one is permitted to be exposed to a reading of 100 ppm or greater.

NOTE: All PPE used for ammonia leak servicing will be inspected monthly and after each use.

PPE will be replaced or refurbished after each use.

Ammonia sensors, warning lights and ventilation

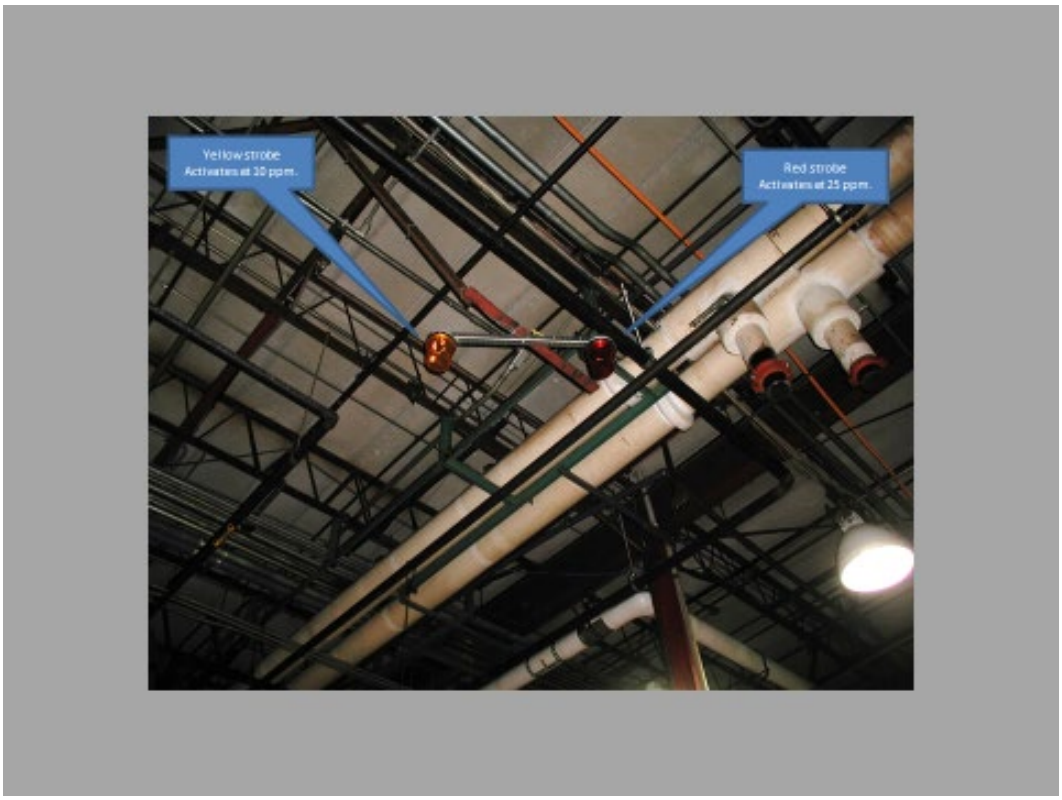
All filling rooms and the ammonia compressor room have ammonia sensors.

All filling rooms have CO2 exhaust ventilation that can be used to vent ammonia. Manual exhaust system controls are mounted on the panels outside each filling room.

The ammonia compressor room has an emergency exhaust to clear the room atmosphere.

Strobe lights are mounted to the ceiling above line 2 DS.

ADDENDUM B: WIS-PAK WATERTOWN INCIDENT COMMAND SYSTEM AMMONIA LEAK



ADDENDUM B: WIS-PAK WATERTOWN INCIDENT COMMAND SYSTEM AMMONIA LEAK

Jefferson COUNTY

EPCRA HAZARDOUS MATERIALS RESPONSE PLAN TRANSMITTAL OFF-SITE FACILITY PLAN FORM

☐ **NEW** ☒ **UPDATE**

This plan has been prepared in accordance with state and local requirements and is ready to be made a part of the Emergency Operations Plan (EOP)/ Emergency Response Plan (ERP) upon Wisconsin Emergency Management (WEM) / State Emergency Response Commission (SERC) acceptance. This plan meets off-site planning guidance as established by WEM / SERC. Acceptance of this plan is for planning purposes and does not verify facility compliance with the requirements of EPCRA.

OFF-SITE FACILITY PLAN FOR: (Facility ID #): **199449**

Facility Name: **Lakeland Cold Storage**
Location Address: **1028 Mulberry St. Lake Mills WI 53551**
Note pages and sections revised: Complete Revision

FACILITY SIGNATURES:

I have reviewed the attached plan and to the best of my knowledge, all facility information is true, accurate, and complete. The plan is consistent with off-site facility procedures**.**

_____ _____
Facility Coordinator Date

COUNTY SIGNATURES

I have reviewed the attached plan and to the best of my knowledge, all information is true, accurate, and complete.

_____ _____
County Local Emergency Planning Committee Chair Date

_____ _____
County Emergency Management Director Date

WEM / SERC ACCEPTANCE:

This plan has been reviewed and meets the off-site planning guidance as established by WEM / SERC.

_____ _____
WEM Regional Director Date

X Review guide attached

OFF-SITE PLAN REVIEW GUIDE

FOR **Jefferson** COUNTY FACILITY ID **199449**

FACILITY NAME: **Lakeland Cold Storage**

LOCATION ADDRESS: **1028 Mulberry St Lake Mills WI 53551**

Attachments

16)	Facility site plan	**8**
17)	Hazardous Materials Worksheet / Calculations or computer generated Vulnerability Zone calculations	**13-14**
18)	Vulnerability Zone map highlighting special facilities	**9**
19)	Transportation route(s) map	**10**
20)	Safety Data Sheet (SDS) for each EHS	**15-21**

EPCRA Off-Site Facility Plan

For

Lakeland Cold Storage
WEM Facility ID: 199449
1028 Mulberry St
Lake Mills, WI 53551

Date of Plan Approval:

TABLE OF CONTENTS

I. FACILITY NAME:

Name: Lakeland Cold Storage
Location Address: 1028 Mulberry St
Lake Mills WI 53551

Phone Number: 920-648-3447
Facility ID # Assigned by WEM: 199449

Knox Box Location: Main Entrance/Southeast corner of building

II. FACILITY EMERGENCY COORDINATOR/ALTERNATE COORDINATOR

FACILITY EMERGENCY COORDINATOR:
Name: Russ Roedl
Position: President
Email: lakelandcoldstorage@gmail.com
Business Phone Number: 920-648-3447
24 Hr Phone Number: 920-285-7384

ALTERNATE COORDINATOR:
Name: Nick Roedl
Position: Warehouse Supervisor
Email: N/A
Business Phone Number: 920-648-3447
24 Hr Phone Number: 920-723-4021

III. CHEMICALS ON SITE: EXTREMELY HAZARDOUS SUBSTANCES

EHS CHEMICALS FROM THE LATEST TIER II:

CAS Number	Chemical Name/Trade Name	Max. Quantity (lbs.)	Vulnerability Zone
7664-93-9	**Sulfuric Acid**	**4,215 lbs.**	**<0.1 miles**

OTHER CHEMICALS: (OPTIONAL)

CAS Number	Chemical Name	Max. Quantity (lbs.)
75-45-6	**R 22 (Freon)**	**600 lbs.**
7439-92-1	**Lead (in batteries)**	**8,430 lbs.**

IV. EMERGENCY RESPONDERS

Responders Name:	Lake Mills Fire Department
Contact Details: Address:	Emerg. Ph#: 911 120 Veterans Lane Lake Mills WI 53551

Responders Name:	Lake Mills Police Department
Contact Details: Address:	Emerg. Ph#: 911 200 Water St #A Lake Mills WI 53551

Responders Name:	Jefferson County Sheriff's Office
Contact Details: Address:	Emerg. Ph#: 911 411 S. Center Ave Jefferson WI 53549

Responders Name:	Jefferson County HAZMAT Team
Emergency PH#: Address:	911 120 Veterans Lane Lake Mills WI 53551

V. SUPPORT AVAILABLE FROM FACILITY

Employees go through forklift operation and material handling training upon hire. New hires also complete a training course offered by their battery supplier, Courtney Industrial Battery, on proper technique for changing a battery.

The facility has safety glasses and eyewash stations on-site.

CHEMICAL EMERGENCY MONITORING EQUIPMENT:

The R 22(Freon) is used in their refrigeration system. Madigan Refrigeration is contracted for the maintenance of the system which is serviced quarterly. The Freon is within a rack system; basically giving them three separate refrigeration systems. A monitor has been installed and notifies the security company of any leaks detected in the system.

OUTSIDE RESOURCES AVAILABLE:

Responders Name:	Chemtrec
Contact Details:	Ph#: 1-800-424-9300

Responders Name:	National Response Center
Contact Details:	Ph#: 1-800-424-8802

Responders Name:	Wisconsin Emergency Management 24 Hour Duty Officer
Contact Details:	Ph#: 1-800-943-0003

Responders Name:	Courtney Industrial Battery
Contact Details:	Ph#: 1-608-246-8340

VI. GENERAL INFORMATION AND ASSUMPTIONS: (Disclaimer)

The vulnerability zones set forth in this plan are based on the EPA's Technical Guidance for Hazards Analysis. The zones are based on a credible worst case scenario and identify the potential area for impact should an air-borne release of a single EHS chemical occur.

The vulnerability zones identified in this plan are NOT to be used as a guide for population protection in fire related incidents. Fire incidents were considered in the development of this plan and the plan provides basic information about the facility for first responders to employ.

However, in an actual fire situation at this facility, the incident commander is strongly recommended to reference the fire department's own individual agency pre-emergency plans and standard operating procedures as well as the County's Comprehensive Emergency Management Plan (CEMP) – Emergency Support Function 4.

Additional fire departments responding to an incident at this facility are strongly encouraged to meet with facility representatives to determine ways to minimize an event at the facility and to determine what additional information and factors should be taken into consideration.

The field incident commander shall determine the actual response to an incident. The affected area may vary from the vulnerability zone identified in this plan. Depending on wind speed and direction, the amount of material released and other pertinent factors, the ACTUAL vulnerability zone may be smaller, and in some instances larger, than the credible worst case vulnerability zone identified herein. The vulnerability zones determined in the plan are for general planning purposes.

VII. HAZARD ANALYSIS SUMMARY

Lakeland Cold Storage is located at 1028 Mulberry Street in Lake Mills. The 19,200 square foot facility stores 1.2 million pounds of cheese. Lakeland Cold Storage stores, refrigerates and ships the cheese as directed. Their entire inventory turns over every three weeks. The refrigeration system is run on R-22, Freon. Lakeland Cold Storage operates one shift; 6 a.m. to 3:30 p.m. Monday through Thursday and 6:00 a.m. to 12:00 p.m. on Fridays. They employ two part-time and 3 full time employees in the office and warehouse.

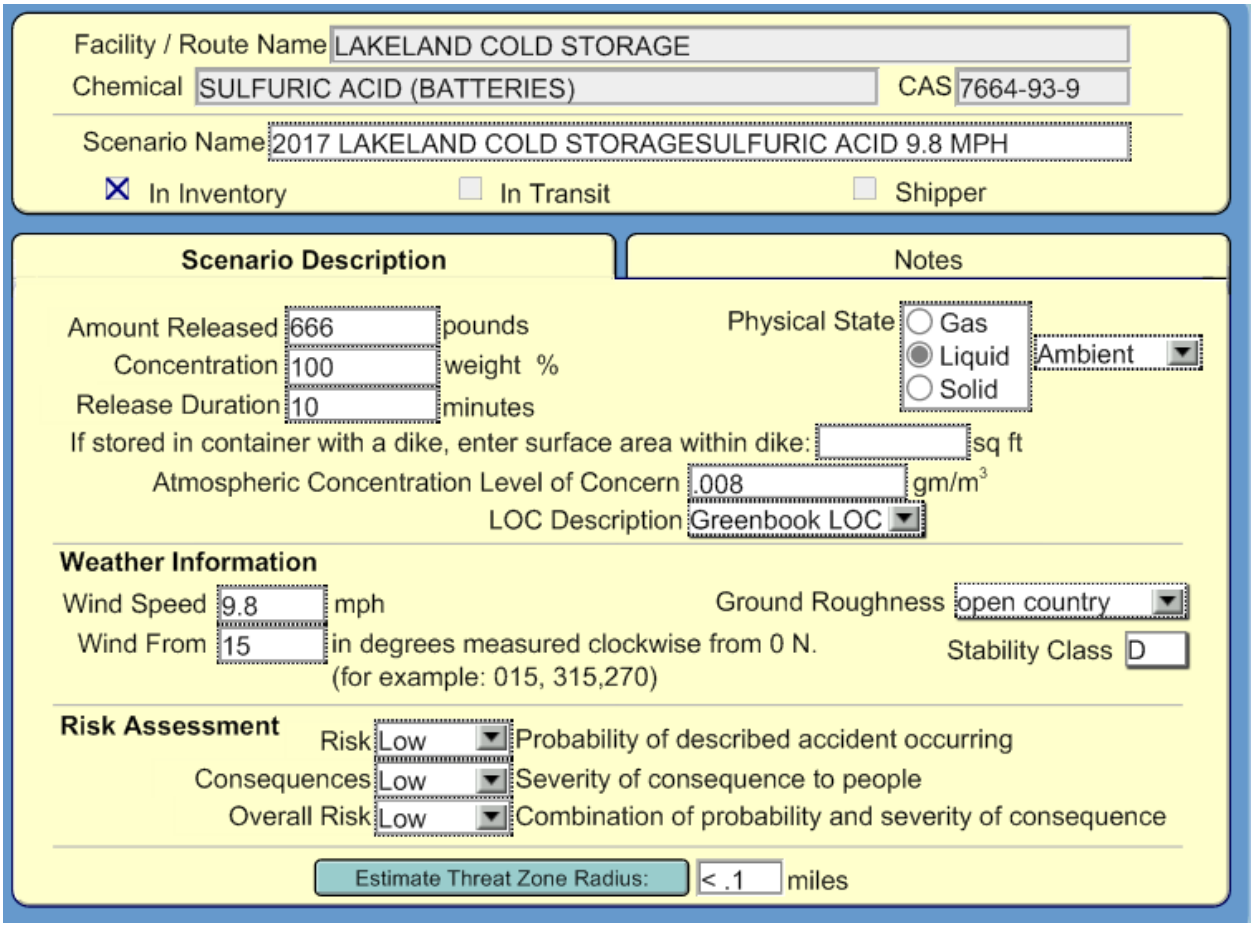
The extremely hazardous chemical on site is Sulfuic Acid. The Sulfuric Acid is found in their forklift, pallet jack and reach machine batteries. They have eight batteries in inventory. Four batteries weigh 2,220 lbs. of which 30% or 666 lbs. is pure Sulfuric Acid; three batteries weigh 1,040 lbs. of which 30% or 312 lbs. is pure Sulfuric Acid; one battery weighs 2,050 lbs. of which 30% or 615 lbs. of pure Sulfuric Acid. Total Sulfuric Acid on site is 4,215 lbs.

Batteries are replaced one at a time, approximately every five years or when a new piece of equipment is received. Courtney Industrial Batteries out of DeForest, WI is their battery supplier. The most likely transportation route utilized would be I-94 to CTH V to CTH A.

Greatest Potential for Release (Container sizes, storage types, storage facilities, seasonal information)

The most likely scenario for a release of Sulfuric Acid would be for a battery to tip over and crack, releasing up to 666 lbs. of Sulfuric Acid. The vulnerability zone would be <0.1 miles and contained within the facility. This vulnerability zone was developed using the CAMEO computer program.

Vulnerability Zone for each EHS Chemical (including parameters used to arrive at the Vulnerability Zone such as wind speed, atmospheric stability, class, level of concern, duration of release)



Possible Limitations or Problems that Could Arise

None noted

Estimate of Population Affected

There are no housing units located within the vulnerability zone. Therefore, the employees of the facility would be the individuals most likely affected during an event.

Hazards Analysis Calculation

According to calculations derived from using CAMEO for Hazard Analysis, 666 lbs. of Sulfuric Acid in a 100% concentration would pose a hazard of <0.10 miles.

VIII. SPECIAL FACILITIES AFFECTED

None

IX. POPULATION PROTECTION

The determination to shelter in place or evacuate will be made by the on-scene commander, as appropriate.

The lead time for a hazmat incident could be from 0-30 minutes. As a result, this short time may not allow for a safe evacuation, especially when extremely toxic chemical fumes are involved. An evacuation under these considerations may expose the population to dangerous toxic chemicals and the decision may be made to shelter in place. Preferred areas for protective sheltering would be interior hallways, rooms without windows or exterior doors, enclosed stairways and rooms on the side of the building away from where the hazard is approaching.

Doors, windows and other potential air leaks should be sealed up to prevent toxic fumes from entering.

Experience indicates that shelter space would need to be provided for only 30% of the population within the initial isolation and evacuation zones and the remaining 70% would seek shelter with family and friends outside of the risk zone. There are no housing units located within the vulnerability zone. Therefore, the employees of the facility would be the individuals most likely affected during an event.

SHELTERS

Lake Mills Community Center
200 Water Street
648-2344 (City Offices)
Chief Mick Selck, Lake Mills Police
920-648-2354 (Lake Mills Police Department)
128 people

Lake Mills Middle School
318 College Street
648-2358 (school)
Harv Simdon, Custodian
920-728-5575 (24 hr.)
Rod Hutchins, Custodian
920-728-2185 (24 hr.)
Jennifer Bower, Principal
608-320-2353 (24 hr.)
1218 people

X. SPECIAL CONSIDERATIONS: (NOTE: AS APPROPRIATE)

Limited Access to Facility

None noted

Address Environmental Concerns at Facility and in Vulnerability Zone

None noted

Potential for Affecting Other Jurisdictions

No Potential for affecting other jurisdictions

Other Considerations

Lakeland Cold Storage is located in the industrial section of Lake Mills. There are businesses located all around the facility:

- Watertown Regional Medical Center – Lake Mills Clinic (920-648-4518) is located directly across the street
- Daybreak Foods is next door (920-648-8302) and across the street (920-648-8341)
- Tyranena Brewing Company (920-648-8699) is directly behind the facility
- Oskri (920-648-8300) is also directly behind the facility

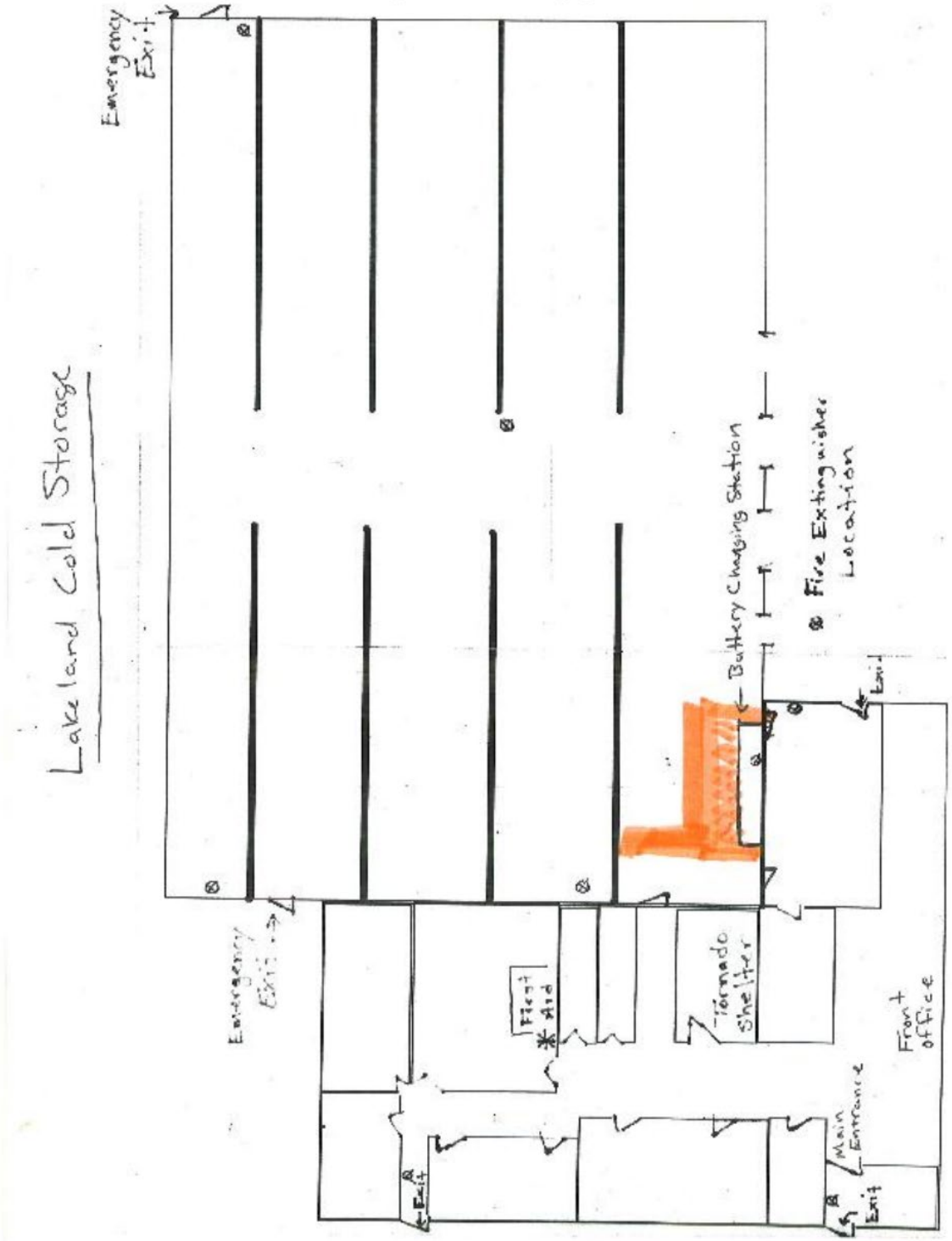
Depending on the situation at the facility, the incident commander may want to notify the adjacent businesses.

XI. DISTRIBUTION LIST

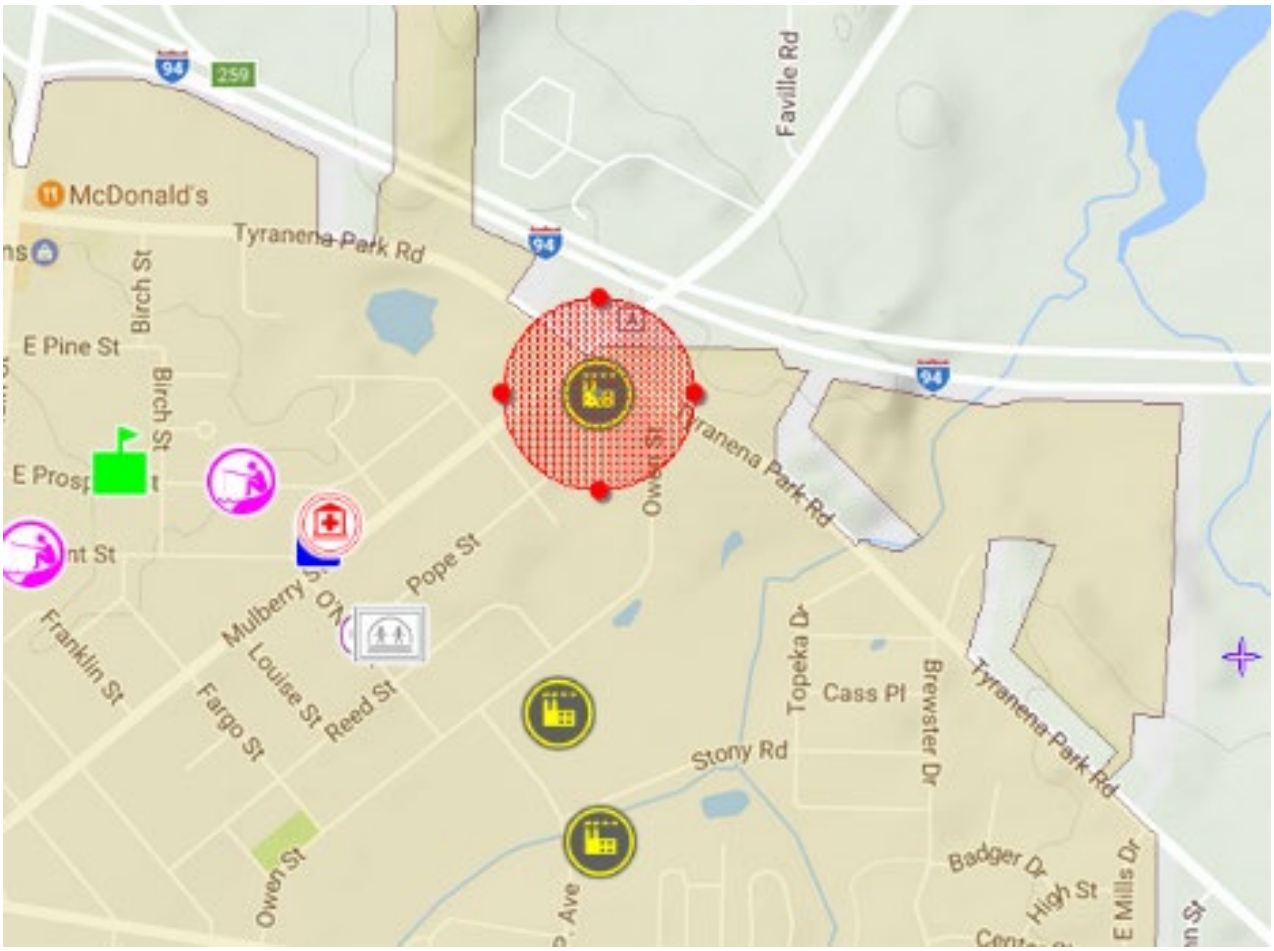
Lakeland Cold Storage
Lake Mills Fire Department
Lake Mills Police Department
Jefferson County Emergency Management
Jefferson County HAZMAT Team
Wisconsin Emergency Management – Southeast Region

LAKELAND COLD STORAGE
FACILITY LAYOUT

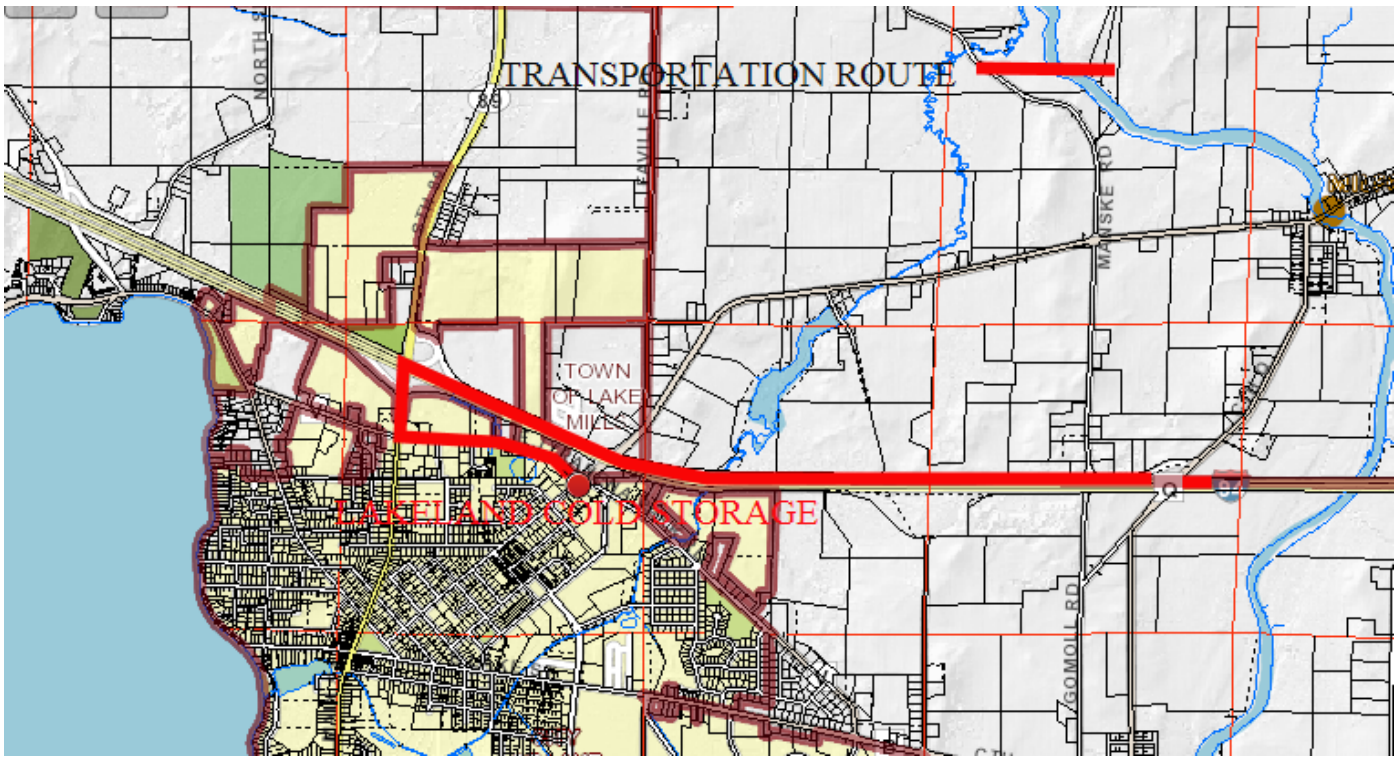
N ↑

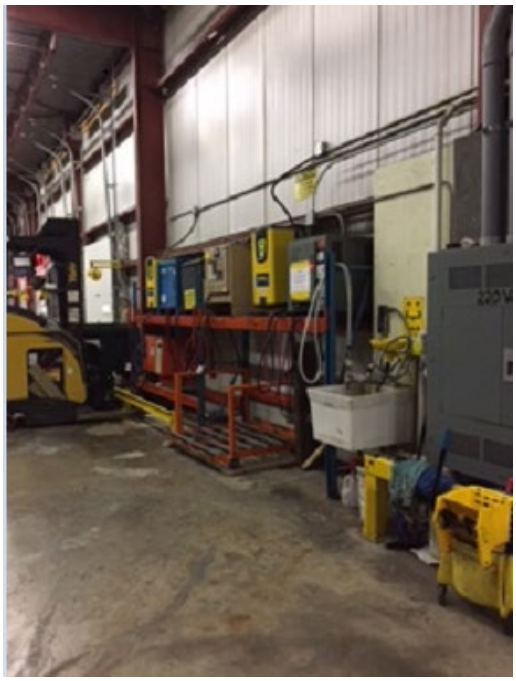


VULNERABILITY ZONE MAP



TRANSPORTATION MAP



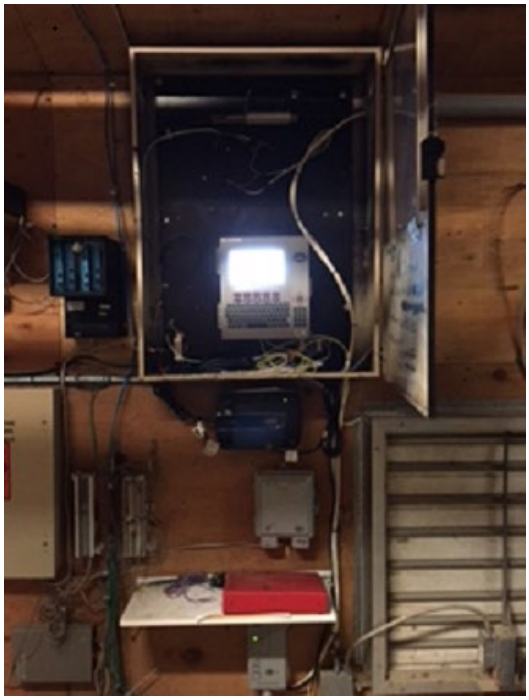


BATTERY CHARGING STATION

BATTERY IN FORKLIFT

REFRIGERATION SYSTEM – UPPER LEVEL SOUTHEAST CORNER OF WAREHOUSE FACILITY

REFRIGERATION SYSTEM MONITOR



HAZARDOUS MATERIALS WORKSHEET

Utilize this calculation worksheet if you are not using a computer generated vulnerability zone calculation.

County: **Jefferson**

Facility Name: **Lakeland Cold Storage** Facility ID: **199449**

EHS CHEMICAL: **Sulfuric Acid**

CAS #: **9664-93-9**

THRESHOLD PLANNING QUANTITY (TPQ): **1,000 lbs.**

☐SOLID ☒LIQUID ☐GAS

☐PURE ☒MIXTURE - % Mixture = **10 to 30**

LEVEL OF CONCERN (LOC): **0.008**
(LOC found in Appendix C – Exhibit C-1)

LIQUID FACTOR AMBIENT (if applicable): **.00000000005**

LIQUID FACTOR BOILING (if applicable): **.02**

LIQUID FACTOR MOLTEN (if applicable): **N/A**
(Above factors found in Appendix C – Exhibit C-1)

MAXIMUM QUANTITY AT RISK – QUANTITY STORED (lbs) x CONCENTRATION

a. Largest individual shipment of EHS chemical or its' mixture. (Pounds) — **666 lbs. Sulfuric Acid (1 battery)**

b. Largest container size or groups of interconnected containers of EHS chemical to its' mixture. (Pounds) — **666 lbs. Sulfuric Acid (1 battery)**

c. If EHS chemical is in a mixture, indicate from the Material Safety Data Sheet (MSDS), percentage of EHS chemical. — **10 to 30% (total quanity calculated using 30%)**

d. Maximum amount of EHS chemical stored (Pounds) — **4,215 lbs.**

Is EHS Chemical used stored in a diked area? ☐ YES ☒NO

If so, how large? _____sq. ft.

CALCULATIONS

County: **Jefferson**

Facility Name: **Lakeland Cold Storage**

Facility ID #: **199449**

Extremely Hazardous Substance (EHS) name: **Sulfuric Acid**

CAS #:**7664-93-9**

VULNERABILITY ZONE

LOW WIND SPEED - 3.4 mph **<0.1 miles**
Rural - Exhibit 3-1
Urban - Exhibit 3-2

HIGH WIND SPEED - 11.9 **<0.1 miles**
Rural - Exhibit 3-3
Urban - Exhibit 3-4

Select either rural or urban and circle your choice. Choice must be the same under low wind and high wind conditions. (See Technical Guidance for Hazards Analysis p. 3-9, Step 3, to determine which to choose.)

AVERAGE OF LOW AND HIGH WIND SPEED 9.8 mile wind= <0.1 mile vulnerability zone

Chemical Data Sheet Provided by Supplier

EnerSys
Power/Full Solutions

SAFETY DATA SHEET

Form #: SDS 853020
Revised: 05/14/15
Supersedes: NEW
ECO #: 1001584

I. PRODUCT IDENTIFICATION

Chemical Trade Name (as used on label):
Lead-Acid Battery, Wet

Synonyms:
Industrial Battery, Traction Battery, Stationary Battery, Deep Cycle Battery

Manufacturer's Name/Address:
EnerSys
P.O. Box 14145
2366 Bernville Road
Reading, PA 19612-4145

Chemical Family/Classification:
Electric Storage Battery

Telephone:
For information and emergencies, contact EnerSys' Environmental, Health & Safety Dept. at 610-208-1996

24-Hour Emergency Response Contact:
CHEMTREC DOMESTIC: 800-424-9300 CHEMTREC INT'L: 703-527-3877

II GHS HAZRDS IDENTFICATION

HEALTH		ENVIRONMENTAL	PHYSICAL
Acute Toxicity (Oral/Dermal/Inhalation)	Category 4	Aquatic Chronic 1	Explosive Chemical, Division 1.3
Skin Corrosion/Irritation	Category 1A	Aquatic Acute 1	
Eye Damage	Category 1		
Reproductive	Category 1A		
Carcinogenicity (lead compounds)	Category 1B		
Carcinogenicity (arsenic)	Category 1A		
Carcinogenicity (acid mist)	Category 1A		
Specific Target Organ Toxicity (repeated exposure)	Category 2		

GHS LABEL:

HEALTH	ENVIRONMENTAL	PHYSICAL
		

Hazard Statements

DANGER!

Causes severe skin burns and eye damage.
Causes serious eye damage.
May damage fertility or the unborn child if ingested or inhaled.
May cause cancer if ingested or inhaled.
Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure.
May form explosive air/gas mixture during charging.
Extremely flammable gas (hydrogen).
Explosive, fire, blast, or projection hazard.

Precautionary Statements

Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing, eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Causes skin irritation, serious eye damage.
Contact with internal components may cause irritation or severe burns. Avoid contact with internal acid.
Irritating to eyes, respiratory system, and skin.

III. HAZARDOUS INGREDIENTS/IDENTIFY INFORMATION

Components	CAS Number	Approximate % by Wt.
Inorganic Lead Compound:		
Lead	7439-92-1	60-70
* Antimony	7440-36-0	2
* Arsenic	7440-38-2	0.2
* Calcium	7440-70-2	0.04
* Tin	7440-31-5	0.2
Electrolyte (Sulfuric Acid (H2SO4/H2O))	7664-93-9	10-30
Case Material:		5-10
Polypropylene	9003-07-0	
Polystyrene	9003-53-6	
Styrene Acrylonitrile	9003-54-7	
Acrylonitrile Butadiene Styrene	9003-56-9	
Styrene Butadiene	9003-55-8	
Polyvinylchloride	9002-86-2	
Polycarbonate, Hard Rubber, Polyethylene	9002-88-4	

Page 1

Other:			
Silicon Dioxide (Gel batteries only)	7631-86-9	1-5	
Sheet Molding Compound	--		
(Glass reinforced polyester)			

Inorganic lead and electrolyte (sulfuric acid) are the primary components of every battery manufactured by EnerSys.
Other ingredients may be present dependent upon battery type. Contact your EnerSys representative for additional information.

IV. FIRST AID MEASURES

Inhalation:

Sulfuric Acid: Remove to fresh air immediately. If breathing is difficult, give oxygen. Consult a physician.
Lead: Remove from exposure, gargle, wash nose and lips; consult physician.

Ingestion:

Sulfuric Acid: Give large quantities of water; do not induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death; consult a physician.
Lead: Consult physician immediately.

Skin:

Sulfuric Acid: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes. If symptoms persist, seek medical attention. Wash contaminated clothing before reuse. Discard contaminated shoes.
Lead: Wash immediately with soap and water.

Eyes:

Sulfuric Acid and Lead: Flush immediately with large amounts of water for a least 15 minutes while lifting lids.
Seek immediate medical attention if eyes have been exposed directly to acid.

V. FIRE FIGHTING MEASURES

Flash Point: N/A **Flammable Limits:** LEL = 4.1% (Hydrogen Gas) UEL = 74.2%

Extinguishing Media: CO2; foam; dry chemical. Do not use carbon dioxide directly on cells. Avoid breathing vapors. Use appropriate media for surrounding fire.

Special Fire Fighting Procedures:

If batteries are on charge, shut off power. Use positive pressure, self-contained breathing apparatus. Water applied to electrolyte generates heat and causes it to spatter. Wear acid-resistant clothing, gloves, face and eye protection.
But note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down.

Unusual Fire and Explosion Hazards:

Highly flammable hydrogen gas is generated during charging and operation of batteries. To avoid risk of fire or explosion, keep sparks or other sources of ignition away from batteries. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Follow manufacturer's instructions for installation and service.

VI. PRECAUTIONS FOR SAFE HANDLING AND USE

Spill or Leak Procedures:

Stop flow of material, contain/absorb small spills with dry sand, earth, and vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of unneutralized acid to sewer. Acid must be managed in accordance with local, state, and federal requirements.
Consult state environmental agency and/or federal EPA.

VII. HANDLING AND STORAGE

Handling:

Unless involved in recycling operations, do not breach the casing or empty the contents of the battery. Handle carefully and avoid tipping, which may allow electrolyte leakage. There may be increasing risk of electric shock from strings of connected batteries.
Keep containers tightly closed when not in use. If battery case is broken, avoid contact with internal components.
Keep vent caps on and cover terminals to prevent short circuits. Place cardboard between layers of stacked automotive batteries to avoid damage and short circuits.
Keep away from combustible materials, organic chemicals, reducing substances, metals, strong oxidizers and water. Use banding or stretch wrap to secure items for shipping.

Storage:

Store batteries in cool, dry, well-ventilated areas with impervious surfaces and adequate containment in the event of spills. Batteries should also be stored under roof for protection against adverse weather conditions. Separate from incompatible materials. Store and handle only in areas with adequate water supply and spill control. Avoid damage to containers. Keep away from fire, sparks and heat. Keep away from metallic objects could bridge the terminals on a battery and create a dangerous short-circuit.

Charging:

There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged will generate and release flammable hydrogen gas.
Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby.
Wear face and eye protection when near batteries being charged.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits (mg/m3) Note: N.E.= Not Established

INGREDIENTS (Chemical/Common Names)	OSHA PEL	ACGIH	US NIOSH	Quebec PEV	Ontario OEL	EU OEL
Lead and Lead Compounds (inorganic)	0.05	0.05	0.05	0.05	0.05	0.15 (b)
Antimony	0.5	0.5	0.5	0.5	0.5	0.5 (b,e)
Arsenic	0.01	0.01	0.002	0.2	0.01	N.E
Calcium	N.E	N.E	N.E	N.E	N.E	N.E
Tin	2	2	2	2	2	N.E
Electrolyte (Sulfuric Acid)	1	0.2	1	1	0.2	0.05 (c)
Polypropylene	N.E	N.E	N.E	N.E	N.E	N.E
Polystyrene	N.E	N.E	N.E	N.E	N.E	N.E
Styrene Acrylonitrile	N.E	N.E	N.E	N.E	N.E	N.E
Acrylonitrile Butadiene Styrene	N.E	N.E	N.E	N.E	N.E	N.E
Styrene Butadiene	N.E	N.E	N.E	N.E	N.E	N.E
Polyvinylchloride	N.E	N.E	N.E	N.E	1	N.E
Polycarbonate, Hard Rubber, Polyethylene	N.E	N.E	N.E	N.E	N.E	N.E
Silicon Dioxide (Gel Batteries Only)	N.E	N.E	N.E	N.E	N.E	N.E
Sheet Molding Compound (Glass reinforced polyester)	N.E	N.E	N.E	N.E	N.E	N.E

NOTES:

(b) As inhalable aerosol
(c) Thoracic fraction
(e) Based on OEL;s Of Austria, Belgium, Denmark, France, Netherlands, Switzerland, & U.K.

Engineering Controls (Ventilation):

Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant. Handle batteries cautiously to avoid spills. Make certain vent caps are on securely. Avoid contact with internal components. Wear protective clothing, eye and face protection when filling, charging or handling batteries. Do not allow metallic materials to simultaneously contact both the positive and negative terminals of the batteries. Charge the batteries in areas with adequate ventilation. General dilution ventilation is acceptable.

Respiratory Protection (NIOSH/MSHA approved):

None required under normal conditions. When concentrations of sulfuric acid mist are known to exceed the PEL, use NIOSH or MSHA-approved respiratory protection.

Skin Protection:

If battery case is damaged, use rubber or plastic acid-resistant gloves with elbow-length gauntlet, acid-resistant apron, clothing and boots.

Eye Protection:

If battery case is damaged, use chemical goggles or face shield.

Other Protection:

In areas where sulfuric acid is handled in concentrations greater then 1%, emergency eyewash stations and showers should be provided, with unlimited water supply. Acid-resistant apron. Under severe exposure emergency conditions, wear acid-resistant clothing and boots. Face shield recommended when adding water or electrolyte to batteries, wash hands after handling.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Properties Listed Below are for Electrolyte:

Boiling Point:	203 - 240° F	**Specific Gravity (H2O = 1):**	1.215 to 1.350
Melting Point:	N/A	**Vapor Pressure (mm Hg):**	10
Solubility in Water:	100%	**Vapor Density (AIR = 1):**	Greater than 1
Evaporation Rate: (Butyl Acetate = 1)	Less than 1	**% Volatile by Weight:**	N/A
pH:	~1 to 2	**Flash Point:**	Below room temperature (as hydrogen gas)
LEL (Lower Explosive Limit)	4.1% (Hydrogen)	**UEL (Upper Explosive Limit)**	74.2% (Hydrogen)
Appearance and Odor:	Manufactured article; no apparent odor. Electrolyte is a clear liquid with a sharp, penetrating, pungent odor.		

X. REACTIVITY DATA

Stability: Stable X Unstable ___

This product is stable under normal conditions at ambient temperature.

Conditions To Avoid: Prolonged overcharge; sources of ignition

Incompatibility: (Materials to avoid)

Sulfuric Acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Lead Compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen and reducing agents.

Arsenic compounds: strong oxidizers; bromine azide. NOTE: hydrogen gas can react with inorganic arsenic to form the highly toxic gas-arsine.

Hazardous Decomposition Products:

Sulfuric Acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen sulfide.

Lead Compounds: High temperatures likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

Hazardous Polymerization:

Will not occur

XI. TOXICOLOGICAL INFORMATION

Routes of Entry:

Sulfuric Acid: Harmful by all routes of entry.

Lead Compounds: Hazardous exposure can occur only when product is heated, oxidized or otherwise processed or damaged to create dust, vapor or fume. The presence of nascent hydrogen may generate highly toxic arsine gas.

Inhalation:

Sulfuric Acid: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.

Lead Compounds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.

Ingestion:

Sulfuric Acid: May cause severe irritation of mouth, throat, esophagus and stomach.

Lead Compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.

Skin Contact:

Sulfuric Acid: Severe irritation, burns and ulceration.

Lead Compounds: Not absorbed through the skin.

Arsenic Compounds: Contact may cause dermatitis and skin hyper pigmentation.

Eye Contact:

Sulfuric Acid: Severe irritation , burns, cornea damage, and blindness.

Lead Components: May cause eye irritation.

Effects of Overexposure - Acute:

Sulfuric Acid: Severe skin irritation, damage to cornea, upper respiratory irritation.

Lead Compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

Effects of Overexposure - Chronic:

Sulfuric Acid: Possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes.

Lead Compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females. Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50mcg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

Carcinogenicity:

Sulfuric Acid: The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Group 1 carcinogen, a substance that is carcinogenic to humans. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist.

Lead Compounds: Lead is listed as a Group 2A carcinogen, likely in animals at extreme doses. Per the guidance found in OSHA 29 CFR 1910.1200 Appendix F, this is approximately equivalent to GHS Category 1B. Proof of carcinogenicity in humans is lacking at present.

Arsenic: Arsenic is listed by IARC as a Group 1 - carcinogenic to humans. Per the guidance found in OSHA 29 CFR 1910.1200 Appendix F, this is approximately equivalent to GHS Category 1A.

Medical Conditions Generally Aggravated by Exposure:

Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggravate diseases such as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.

Acute Toxicity:
Inhalation LD50:
Electrolyte: LC50 rat: 375 mg/m3; LC50: guinea pig: 510 mg/m3
Elemental Lead: Acute Toxicity Point Estimate = 4500 ppmV (based on lead bullion)
Elemental arsenic: No data

Oral LD50:
Electrolyte: rat: 2140 mg/kg
Elemental lead: Acute Toxicity Estimate (ATE) = 500 mg/kg body weight (based on lead bullion)
Elemental arsenic: LD50 mouse: 145 mg/kg
Elemental Antimony: LD50 rat: 100 mg/kg

Additional Health Data:

All heavy metals, including the hazardous ingredients in this product, are taken into the body primarily by inhalation and ingestion.
Most inhalation problems can be avoided by adequate precautions such as ventilation and respiratory protection covered in Section 8.
Follow good personal hygiene to avoid inhalation and ingestion: wash hands, face, neck and arms thoroughly before eating, smoking or leaving the worksite. Keep contaminated clothing out of non-contaminated areas, or wear cover clothing when in such areas. Restrict the use and presence of food, tobacco and cosmetics to non-contaminated areas. Work clothes and work equipment used in contaminated areas must remain in designated areas and never taken home or laundered with personal non-contaminated clothing. This product is intended for industrial use only and should be isolated from children and their environment.

The 19th Amendment to EC Directive 67/548/EEC classified lead compounds, but not lead in metal form, as possibly toxic to reproduction.
Risk phrase 61: May cause harm to the unborn child, applies to lead compounds, especially soluble forms.

XII. ECOLOGICAL INFORMATION

Environmental Fate:

Lead is very persistent in soil and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments is slow.
Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain.
Most studies include lead compounds and not elemental lead.

Environmental Toxicity: Aquatic Toxicity:

Sulfuric acid:	24-hr LC50, freshwater fish (Brachydanio rerio): 82 mg/L
	96 hr- LOEC, freshwater fish (Cyprinus carpio): 22 mg/L
Lead:	48 hr LC50 (modeled for aquatic invertebrates): <1 mg/L, based on lead bullion
Arsenic:	24 hr LC50, freshwater fish (Carrassisus auratus) >5000 g/L.

Additional Information:

- No known effects on stratospheric ozone depletion.
- Volatile organic compounds: 0% (by Volume)
- Water Endangering Class (WGK): NA

XIII. DISPOSAL CONSIDERATIONS (UNITED STATES)

Spent batteries: Send to secondary lead smelter for recycling. Spent lead-acid batteries are not regulated as hazardous waste when the requirements of 40 CFR Section 266.80 are met. This should be managed in accordance with approved local, state and federal requirements. Consult state environmental agency and/or federal EPA.

Electrolyte:
Place neutralized slurry into sealed containers and handle as applicable with state and federal regulations. Large water-diluted spills, after neutralization and testing, should be managed in accordance with approved local, state and federal requirements. Consult state environmental agency and/or federal EPA.

Following local, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.

XIV. TRANSPORT INFORMATION

U.S. DOT:

The transportation of wet and moist charged (moist active) batteries within the continental United States is regulated by the U.S. DOT through the Code of Federal Regulations, Title 49 (49CFR). These regulations classify these types of batteries as a hazardous material. Refer to 49 CFR, 173.159 for more details pertaining to the transportation of wet and moist batteries.

The shipping information is as follows:

Proper Shipping Name: Batteries, wet, filled with acid
Hazardous Class: 8
UN Identification: UN2794
Packing Group: III
Label/Placard Required: Corrosive

Contact your EnerSys representative for additional information regarding the classification of batteries.

49 CFR 173.159(e) specifies that when transported by highway or rail, electric storage batteries containing electrolyte or corrosive battery fluid are not subject to any other requirements of this subchapter, if all of the following are met:

(1) No other hazardous materials may be transported in the same vehicle;
(2) The batteries must be loaded or braced so as to prevent damage and short circuits in transit;
(3) Any other material loaded in the same vehicle must be blocked, braced, or otherwise secured to prevent contact with or damage to the batteries; and
(4) The transport vehicle may not carry material shipped by any person other than the shipper of the batteries.

If any of the above-referenced requirements are not met, the batteries must be shipped as fully-regulated Class 8 Corrosive hazardous materials.

IATA Dangerous Goods Regulations DGR:

The international transportation of wet and moist charged (moist active) batteries is regulated by the International Air Transport Association (IATA). These regulations also classify these types of batteries as a hazardous material. The batteries must be packed according to IATA Packing Instruction 870.

The shipping information is as follows:

Proper Shipping Name: Batteries, wet, filled with acid
Hazardous Class: 8
UN Identification: UN2794
Packing Group: N/A
Label/Placard Required: Corrosive

Contact your EnerSys representative for additional information regarding the classification of batteries.

IMDG:

The international transportation of wet and moist charged (moist active) batteries is regulated by the International Maritime Dangerous Goods code (IMDG). These regulations also classify these types of batteries as hazardous material. The batteries must be packed according to IMDG code pages 8120 and 8121. IMDG Code Packing Instruction P801.

The shipping information is as follows:

Proper Shipping Name: Batteries, wet, filled with acid
Hazardous Class: 8
UN Identification: UN2794
Packing Group: N/A
Label/Placard Required: Corrosive

Contact your EnerSys representative for additional information regarding the classification of batteries.

XV. REGULATORY INFORMATION

UNITED STATES:

EPA SARA Title III:

Section 302 EPCRA Extremely Hazardous Substances (EHS):

Sulfuric acid is a listed "Extremely Hazardous Substance" under EPCRA, with a Threshold Planning Quantity (TPQ) of 1,000 lbs. EPCRA Section 302 notification is required if 1000 lbs or more of sulfuric acid is present at one site (40 CFR 370.10). For more information consult 40 CFR Part 355. The quantity of sulfuric acid will vary by battery type. Contact your EnerSys representative for additional information.

Section 304 CERCLA Hazardous Substances:

Reportable Quantity (RQ) for spilled 100% sulfuric acid under CERCLA (Superfund) and EPCRA (Emergency Planning and Community Right to Know Act) is 1,000 lbs. State and local reportable quantities for spilled sulfuric acid may vary.

Section 311/312 Hazard Categorization:

EPCRA Section 312 Tier Two reporting is required for non-automotive batteries if sulfuric acid is present in quantities of 500 lbs or more and/or if lead is present in quantities of 10,000 lbs or more. For more information consult 40 CFR 370.10 and 40 CFR 370.40

Section 313 EPCRA Toxic Substances:

40 CFR section 372.38 (b) states: If a toxic chemical is present in an article at a covered facility, a person is not required to consider the quantity of the toxic chemical present in such article when determining whether an applicable threshold has been met under § 372.25, § 372.27, or § 372.28 or determining the amount of release to be reported under § 372.30. This exemption applies whether the person received the article from another person or the person produced the article. However, this exemption applies only to the quantity of the toxic chemical present in the article.

Supplier Notification:

This product contains toxic chemicals, which may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements. If you are a manufacturing facility under SIC codes 20 through 39, the following information is provided to enable you to complete the required reports:

Toxic Chemical	CAS Number	Approximate % by Wt.
Lead	7439-92-1	60
Electrolyte (Sulfuric Acid (H2SO4/H2O))	7664-93-9	10 - 30
* Antimony	7440-36-0	2
* Arsenic	7440-38-2	0.2
Tin	7440-31-5	0.2

See 40 CRG Part 370 for more details.

If you distribute this product to other manufacturers in SIC Codes 20 through 39, this information must be provided with the first shipment of each calendar year.

The Section 313 supplier notification requirement does not apply to batteries, which are "consumer products".

* Not present in all battery types. Contact your EnerSys representative for additional information.

TSCA:

TSCA Section 8b – Inventory Status: All chemicals comprising this product are either exempt or listed on the TSCA Inventory.

TSCA Section 12b (40 CFR Part 707.60(b)) No notice of export will be required for articles, except PCB articles, unless the Agency so requires in the context of individual section 5, 6, or 7 actions.

TSCA Section 13 (40 CFR Part 707.20): No import certification required (EPA 305-B-99-001, June 1999, Introduction to the Chemical Import Requirements of the Toxic Substances Control Act, Section IV.A).

RCRA:

Spent Lead Acid Batteries are subject to streamlined handling requirements when managed in compliance with 40 CFR section 266.80 or 40 CFR part 273. Waste sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosivity) and D008 (lead).

CAA:

EnerSys supports preventative actions concerning ozone depletion in the atmosphere due to emissions of CFC's and other ozone depleting chemicals (ODC's), defined by the USEPA as Class I substances. Pursuant to Section 611of the Clean Air Act Amendments (CAAA) of 1990, finalized on January 19, 1993, EnerSys established a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.

STATE REGULATIONS (US):

Proposition 65:

Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

INTERNATIONAL REGULATIONS:

Distribution into Quebec to follow Canadian Controlled Product Regulations (CPR) 24(1) and 24(2).

Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.

XVI. OTHER INFORMATION

Revised: 05/14/2015

NFPA Hazard Rating for Sulfuric Acid:

Flammability (Red) = 0	Reactivity (Yellow) = 2
Health (Blue) = 3	Sulfuric acid is water-reactive if concentrated.