



1720 Walton Road, Blue Bell, PA 19422 610-828-3078 Fax 610-828-7842

March 1, 2019

HAND DELIVER

Mr. Thomas Magge
Water Management, Program Manager
Pennsylvania Department of Environmental Protection
Southeastern Regional Office
2 East Main Street
Norristown, PA 19401

Subject: NPDES Stormwater General Permit Application
Amended Application
PAG-03 Coverage
Elcon Recycling Services, LLC
Falls Township, Pennsylvania
IES Project No. EV191065.01

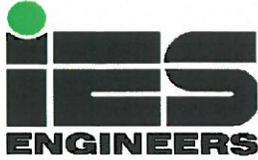
Dear Mr. Magge:

On behalf of Elcon Recycling Services, LLC (Elcon), IES Engineers (IES) is pleased to submit the enclosed original and two copies of the of the amended portions of the application for the National Pollutant Discharge Elimination System (NPDES) Stormwater General Permit for Elcon's proposed facility located at 100 Dean Sievers Place, Falls Township, Pennsylvania.

Elcon recently submitted a response to the Department's Waste Management Program to address its November 13, 2018, Technical Review Letter to support Elcon's Part B application. There were several changes to the Part B application that include site layout, a request to adjust the stormwater management system to eliminate the infiltration basin, and other related elements that would impact industrial stormwater management. The purpose of this application is to amend the affected portions of the original NPDES permit application submitted to the Department on October 16, 2018, to align the NPDES permit application with the site features presented in the most recent Part B permit submission.

As we discussed recently via e-mail with Mr. Pravin Patel, we are only enclosing the pages that have changed as a result of revisions to the Part B application. The changes include:

1. Site layout
2. Contingency plan, revisions per Waste Management Program
3. Impervious surface coverage
4. Change in stormwater management basin



Mr. Thomas Magge
March 1, 2019
Page 2

Elcon requests the Department to incorporate these amended elements into the application package that was originally submitted on October 16, 2018.

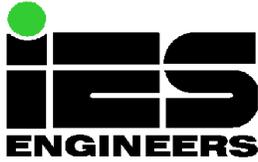
We look forward to receipt of the NPDES Stormwater General Permit. If you have any questions or require additional information during the review and approval of this application, please do not hesitate to contact me or Dr. Rengarajan Ramesh of Elcon, at (267) 243-3144.

Sincerely,

A handwritten signature in blue ink that reads "Marjorie J. Fitzpatrick".

Marjorie J. Fitzpatrick, QEP
Principal Project Manager

cc: P. Patel, PADEP
S. Shankar, PADEP (w/o attachment)
S. McAleer, DRBC
Z. Elgat, Elcon
R. Ramesh, Elcon
M. Tucci, IES
A. Soni, IES



1720 Walton Road, Blue Bell, PA 19422 610-828-3078 Fax 610-828-7842

AMENDED PORTIONS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL
PERMIT (PAG-03) APPLICATION

ELCON RECYCLING SERVICES, LLC
FALLS TOWNSHIP, PENNSYLVANIA

SUBMITTED TO:

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE
2 EAST MAIN STREET
NORRISTOWN, PA 19401

SUBMITTED BY:

IES ENGINEERS
BLUE BELL, PENNSYLVANIA

IES PROJECT NO. EV191065.01

ORIGINAL SUBMISSION OCTOBER 2018
AMENDED MARCH 2019

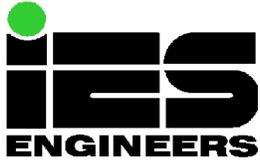


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Revision Narrative

Notice of Intent (NOI) Form - Revised 02/12/2019

Attachment A — Application Addendum, including revised pages of original application to remove reference to the term “*infiltration basin*”

Attachment B — Process Description – No Changes Proposed

Attachment C — Figures – Revised Site Plan

Attachment D — Preliminary Contingency Plan Revised February 8, 2019



REVISION NARRATIVE

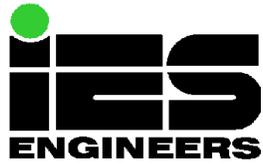
Elcon Recycling Services, LLC (Elcon) is proposing to construct a commercial facility for treatment of hazardous and residual liquid waste streams to be located at 100 Dean Sievers Place within the Keystone Industrial Port Complex (KIPC) in Falls Township, Bucks County, Pennsylvania.

Elcon recently submitted a response to the Department's Waste Management Program to address its November 13, 2018, Technical Review Letter to support Elcon's Part B application. There were several changes to the Part B application that include site layout and other related elements that would impact industrial stormwater management. The purpose of this application is to amend the affected portions of the original NPDES permit application submitted to the Department on October 16, 2018, to align the NPDES permit application with the site features presented in the most recent Part B permit submission.

As discussed in a recent e-mail with Mr. Pravin Patel, only pages are enclosed that have changed as a result of revisions to the Part B application are being provided. The changes include:

1. Site layout
2. Contingency plan
3. Impervious surface coverage
4. Change in stormwater management basin

Elcon requests the Department to incorporate these amended elements into the application package that was originally submitted on October 16, 2018.



NOTICE OF INTENT (NOI) FORM
REVISED FEBRUARY 12, 2019 – PAGES 2 AND 4

County Name	Municipality Name	City	Boro	Twp	State
Bucks County	Falls Township	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
County Name	Municipality Name	City	Boro	Twp	State
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Site Location Address Line 1	Site Location Address Line 2	
100 Dean Sievers Place		
Site Location City	State	ZIP+4
Morrisville	PA	19067

Detailed Written Directions to Site
Rt. 1 to S. PA Ave. to River Road to S. PA Ave to Old Bordentown Rd, to S. Port Rd to Dean Sievers Pl.

Site Contact Last Name	First Name	MI	Suffix
Ramesh	Rengarajan		

Site Contact Title	Site Contact Firm
U.S. Representative	

Mailing Address Line 1	Mailing Address Line 2
11 LeParc Drive	

Address Last Line – City	State	ZIP+4
Princeton	NJ	08550

Phone	Ext	FAX	Email Address
(267) 243-3144			Ramesh.rengarajan@gmail.com

Site-to-Client Relationship
OWNOP

Attach a site plan and topographic map with facilities and discharge locations identified (see instructions).
See Attachment C for site plan and topographic map.

FACILITY AND DISCHARGE INFORMATION

1. Total area of site (sf):	1,406,866	% Pervious:	72.24	% Impervious:	27.76
2. Report the latitude and longitude of the facility below (see instructions).					
Latitude			Longitude		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
40	10	6.6	-74	45	38.9
Horizontal Reference Datum: <input type="checkbox"/> NAD of 1927 <input checked="" type="checkbox"/> NAD of 1983 <input type="checkbox"/> WGS of 1984 <input type="checkbox"/> Unknown					
3. Attach a Preparedness, Prevention and Contingency (PPC) Plan to the NOI.					
<input checked="" type="checkbox"/> PPC Plan Attached Date of Latest Update: New Plan					
Note for existing facilities: if there have been leaks or spills on-site within the past five years, report in the PPC Plan the cause of leaks or spills, the substance(s) released, measures taken to remediate the incident(s) and preventative measure(s) taken to reduce the possibility of future incidents.					
4. Identify and describe all non-stormwater discharges that are expected to occur during the 5 years following permit coverage or No Exposure Certification approval. Describe the frequency and volume of all such anticipated discharges.					
Elcon's treatment process results in zero industrial wastewater discharge: therefore, the only anticipated discharges from the facility are stormwater discharges.					
<input checked="" type="checkbox"/> No non-stormwater discharges are anticipated during the 5 years following coverage or approval					
5. Describe how often stormwater outfalls are inspected and routine maintenance performed.					
The stormwater management basin and outfall will be inspected at least twice per year. See the site PPC Plan in Attachment D for further preventative maintenance details.					



ATTACHMENT A
APPLICATION ADDENDUM



ATTACHMENT A

APPLICATION ADDENDUM

1.0 PROJECT BACKGROUND

Elcon Recycling Services, LLC (Elcon) is proposing to construct a commercial facility for treatment of hazardous and residual liquid waste streams to be located at 100 Dean Sievers Place within the Keystone Industrial Port Complex (KIPC) in Falls Township, Bucks County, Pennsylvania.

Elcon is an Israeli-based company that has developed a patented technology for recycling industrial waste streams with energy recovery. The technology extracts organic materials in the form of organic vapors from liquid wastes. The organic air emissions from the process are controlled using a thermal oxidizer air pollution control device operated at high temperatures so that the organic emissions are converted into heat energy. The facility is proposing to use various chemical and physical treatment technologies to remove hazardous constituents from liquid waste streams. There will be no process wastewater discharge from the process. See Attachment 2 for the detailed process description.

The Elcon property occupies approximately 32 acres and its surface is covered with concrete paved areas, gravel areas, diked tank storage areas, vegetated areas, building roof areas, and wetlands on the eastern side. The facility is located in an industrial park. Facility chemical storage will include aboveground storage tanks and material storage in drums and totes. Stormwater flow at the facility, which will consist of drainage from paved areas, gravel areas, grassy areas, and some overland sheet flow, will drain into a stormwater management basin. Any possible overflow from the stormwater management basin is directed to the wetlands, which then drain into Biles Creek and ultimately the Delaware River.

Due to the facility storage and exposure of the stored material to stormwater, the site is regulated under 40 CFR 122.26(b)(14). The federal NPDES program has been fully delegated to the Pennsylvania Department of Environmental Protection (Department).

The Department reissued the NPDES General Permit for Stormwater Associated with Industrial Activity (PAG-03) on September 24, 2016. This permit regulates the facility under Appendix A, Hazardous Waste Treatment, Storage, or Disposal Facilities, due to Elcon's SIC Code of 4953. Under this permit, Elcon will be required to monitor the following on a semi-annual basis: pH, Total Suspended Solids (TSS), Chemical Oxygen Demand (COD), Ammonia-Nitrogen, and Total Arsenic, Cadmium, Cyanide, Lead, Mercury, Selenium, and Silver. The values for the concentrations of TSS and COD will be compared to the benchmark values of 100 mg/l and 120 mg/l, respectively. Elcon must submit an Annual Report by May 1st of each year for the preceding year, and an annual fee in the amount of \$500.

1.1 STORMWATER DISCHARGE INFORMATION

All treatment processing units are either within covered buildings or secondary containment. Therefore, any stormwater runoff will only include facility roofs, parking lots, asphalt pavement, or grass areas. Stormwater from the Elcon facility flows into the stormwater management basin shown in Figure 2. The stormwater management basin will be designed to provide peak rate attenuation, volume reduction through slow release, and water quality enhancement. In addition to the basin, stormwater collected in the secondary containment systems will be captured and treated by Elcon's treatment process, further reducing stormwater runoff from the facility.

1.2 BEST MANAGEMENT PRACTICES

Elcon has a Preliminary Contingency Plan, a copy is of which included in Attachment 4. Elcon will utilize various Best Management Practices (BMPs) to control stormwater runoff and prevent stormwater impacts. All of the BMPs are explained in detail in the Preliminary Contingency Plan, including inspections described in Section C.3 Inspections and Monitoring Program and countermeasures described in Section D.1 Countermeasures to be Undertaken by Facility.

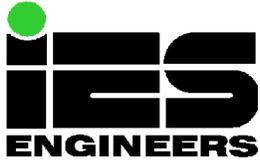
BMPs that Elcon proposes to implement include:

Facility Design

- (1) Minimize impervious surfaces included in facility design
- (2) Storm drain inlets, designed to prevent discharge of large trash and debris
- (3) Accumulated stormwater automatically pumped into secondary containment drainage sump into storage tank(s) for treatment
- (4) Using temporary covers, or temporary berms to prevent or minimize exposure of material to stormwater for material handling or spill response activities performed in the vicinity of inlets draining to the stormwater management basin
- (5) Stormwater management basin shut-off gate available for use to prevent spill or contaminated stormwater from reaching stormwater management basin
- (6) Each storage tank equipped with level high switch or redundant continuous level indicators and interlock on the unloading pump to assure that a tank will not be overfilled
- (7) Overflow line to protect the tank from over pressure in case both level switches fail, except for tanks with high organic materials
- (8) Retention perimeter wall that acts as litter fence
- (9) Security fence around active site for prevention and detection illegal dumping

Facility Housekeeping

- (10) Preventing, containing, and properly cleaning up leaks and spills



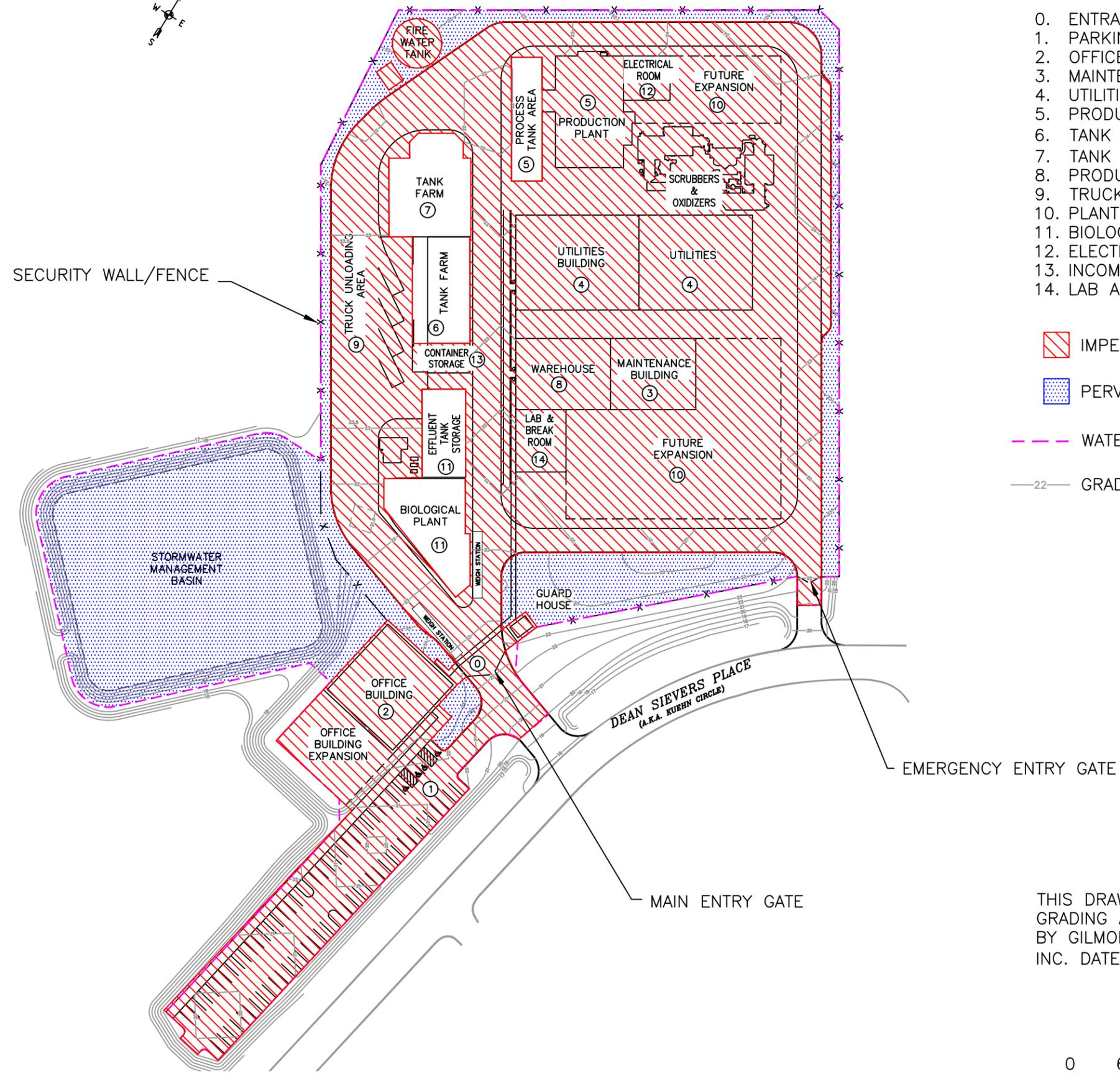
1.3 ANALYTICAL DATA

In accordance with the PAG-03 NPDES General Permit NOI instructions, stormwater quality information is not required for facilities applying for a new PAG-03 General Permit coverage. Elcon will begin monitoring the outfall upon issuance of the General Permit and initiation of operations.

Outfall 001, at the inlet to the stormwater management basin, will be used to collect samples for the monitoring required under PAG-03 General Permit. (See Figure 2.)

ATTACHMENT B
PROCESS DESCRIPTION
[NO CHANGES PROPOSED]

ATTACHMENT C
FIGURES
REVISED SITE PLAN



LEGEND

- 0. ENTRANCE WITH WEIGHING SYSTEM
- 1. PARKING LOT
- 2. OFFICE BUILDING
- 3. MAINTENANCE BUILDING INC. SPARE PARTS WAREHOUSING
- 4. UTILITIES—STEAM, COOLING TOWERS, COMP. AIR, ETC.
- 5. PRODUCTION PLANT, INCLUDING PROCESS TANK AREA
- 6. TANK FARM (ACID, BASE, FLAMMABLE)
- 7. TANK FARM (GENERAL)
- 8. PRODUCTION WAREHOUSE: RAW MATERIALS, FINISHED PRODUCTS
- 9. TRUCK UNLOADING AREA
- 10. PLANT FUTURE GROWTH
- 11. BIOLOGICAL PLANT
- 12. ELECTRICAL ROOM
- 13. INCOMING CONTAINER STORAGE
- 14. LAB AND BREAK ROOM

- IMPERVIOUS SURFACE DRAINING TO BASIN
- PERVIOUS SURFACE DRAINING TO BASIN
- WATERSHED BASIN LIMIT
- GRADING CONTOURS

EMERGENCY ENTRY GATE

MAIN ENTRY GATE

THIS DRAWING BASED ON GRADING AND DRAINING PLAN BY GILMORE & ASSOCIATES, INC. DATED 12/10/18.



ENGINEERS
ENGINEERING FOR INDUSTRY

1720 WALTON ROAD, PA 19422 BLUE BELL, PA 19422
PHONE: (610) 828-3078 FAX: (610) 828-7842

FIGURE 2

ELCON RECYCLING FACILITY
FALLS TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

Date: 02-20-19	File: EV191065.01	Dwg. No. FIGURE 2	Revision: B
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ATTACHMENT D

PRELIMINARY CONTINGENCY PLAN

REVISED FEBRUARY 8, 2019

- NOTE:**
- 1) This plan was originally submitted to the Department as part of Elcon's hazardous waste application. The original plan has been revised to include the required stormwater elements.**
 - 2) This plan was revised in February 2019 to incorporate the Department's Waste Management Program.**
 - 3) At Start-up, this Plan will be revised to incorporate actual site-specific information, such as names and contact information for the Emergency Coordinators.**

**PRELIMINARY
CONTINGENCY PLAN**

**ELCON RECYCLING SERVICES
FALLS TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA**

OPERATOR OF FACILITY:



**ELCON RECYCLING SERVICES, LLC
100 DEAN SIEVERS PLACE
FALLS TOWNSHIP, PA 19067**

**PREPARED BY:
IES ENGINEERS, INC.
1720 WALTON ROAD
BLUE BELL, PA 19422**

IES PROJECT NO. EV171065.01

**JANUARY 2017
REVISED FEBRUARY 2019**

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- Attachment 5 – Pollution Incident History
- Attachment 6 – Training Needs Matrix
- Attachment 7 – Release Notification Matrix
- Attachment 8 – Inspection Requirements & Preventive Maintenance
- Attachment 9 – Hospital Route Map
- Attachment 10 – Release Notification Requirements for Various Programs

INTRODUCTION

This document was created to fulfill the Pennsylvania Department of Environmental Protection's (PADEP) requirement for the developing and implementing a comprehensive spill prevention plan. The Code of Federal Regulations (CFR) section 40 CFR 264.51 requires this contingency plan to be designed to minimize potential hazards to human health or the environment from the occurrence of fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water. This plan has been prepared according to PADEP guidelines and fulfills the requirements for Contingency Planning: Required under State and Federal hazardous waste regulations, in accordance with 40 CFR 264 Subpart D – Contingency Plan and Emergency Procedures. Under 40 CFR Part 270.14(b)(7), a copy of this plan will be submitted to the Regional Administrator and PADEP with the Part B permit application.

The plan was developed, and shall be maintained, and implemented in accordance with the "Guidelines for the Development and Implementation of Environmental Emergency Response Plans," Document No. 400-2200-001, which is more stringent than the requirements in 40 CFR 264, Subpart D — Contingency Plan and Emergency Procedures. The Contingency Plan must be periodically reviewed and updated, if necessary, in accordance with Section I.F of the Department's Guidelines.

This plan covers the storage and handling of materials necessary to Elcon's operations, including the storage of hazardous and residual waste materials before use, during application, and the residue stored before disposal. The storage items of concern include tanks and totes and other containers of raw materials, in-process containers, and totes or other containers of waste produced.

Copies of this plan will be located on site in the EHS Manager's office.

Elcon would like to point out that this Contingency Plan (also referred to herein as the Prepared Prevention and Contingency Plan (PPC Plan)) was developed for RCRA Part B permitting purposes and it acknowledges that certain operational or administrative details have not been fully defined. Prior to commencement of operations, as allowable under 40 CFR 264.52(d) for new facilities, Elcon will address the operational and administrative details not presently in the plan.

Elcon added language to this Plan to clarify the use of the term "immediate," when referring to the timeframe that it is required to provide notification. In accordance with EPA guidance, which is referenced in numerous EPA documents, but actually was a comment in CERCLA's Legislative History (1). EPA interprets "immediate" to mean that the notification must be made within 15 minutes after discovery of the release. In some cases, follow-up written reports and public notification of a release are also required. It is important not confuse the 24-hour period for measuring whether a reportable quantity (RQ) has been triggered as the amount of time a company has to report a release. The 24- hour period simply relates to the duration of time during which the amount of a release is measured. However, as soon as the RQ is met (whether it takes fifteen minutes or the full 24- hour period), a company must immediately notify the NRC, SERC, and LEPC(s).

A. DESCRIPTION OF FACILITY

1. Description of the Industrial Activity

a. History

Elcon Recycling Services, LLC (Elcon) is proposing to construct a commercial facility for treatment of hazardous and residual liquid waste to be located at the Keystone Industrial Port Complex (KIPC) in Falls Township, Pennsylvania.

Elcon is an Israeli-based company that has developed a patented technology for recycling industrial wastewater with energy recovery. The technology extracts organic materials in the form of organic vapors from liquid wastes.

Elcon has successfully used this technology in Israel, and it has been in use for over a decade.

b. Description of the Industrial Activity

Elcon is proposing to construct an Industrial RCRA Listed and Characteristic Wastewater and Residual Waste Treatment Plant to be located in Falls Township, Bucks County, Pennsylvania. The facility will have a nominal treatment capacity of 150,000 metric tons per year (165,400 tons per year) of liquid waste throughput. The maximum theoretical capacity of the plant at 100% uptime is 176,470 metric tons per year (194,560 tons per year)

The proposed facility models a successful treatment process being utilized in Israel for over a decade in which industrial wastewaters are treated. This is a commercial facility, and residual types of wastes are received from many different customers (hazardous or residual waste generators) by the facility which are then blended according to the needs of the appropriately selected treatment process.

c. Location Map and Facility Site Plan

Figure 1 contains a location map depicted on a USGS Quadrangle Map (East and West Trenton Quadrangle). Figure 2 contains a site plan of the facility layout.

d. Location Information

The Elcon facility is to be situated on an approximate 33-acre parcel of land in Bucks County. The recycling plant is estimated to occupy approximately 8.8 acres, and the site's footprint is located on a Brownfield site that was formerly used by U.S. Steel. It is located at 100 Dean Sievers Place in Falls Township. Nearby major surface streams include the Delaware River and its tributaries (Biles Creek).

The facility is not located within a 100-yr floodplain.

e. Typical Operations

The proposed facility will use various chemical and physical treatment technologies to remove hazardous or residual waste constituents from liquid waste streams. The waste streams will be generated by a variety of different off-site operations, such as pharmaceutical manufacturing operations, petroleum refineries, semi-conductors, and petrochemicals. Major operational steps in the proposed operation will consist of acid/base neutralization; coagulation; dissolved metals precipitation and separation; suspended solids separation; sludge filtration, dewatering, drying, and thermal treatment; distillation; crystallization; and salt drying. A thermal oxidizer and scrubber will be used to control air emissions from the process operations. Baghouses or scrubbers will be used to control handling of dry materials.

f. Environmental Controls

All processes handling organic materials are vented to the thermal oxidizer and scrubber, which will be permitted through a PADEP air permit. Most of the VOC emissions will be from the Flash Evaporative Distillation Unit (FED) and the distillation column. When the FED and thermal oxidizer are shut down due to process upsets or other reasons (e.g., planned maintenance), the storage tanks that emit negligible VOCs during storage will be vented to a carbon filter.

In the thermal oxidizer, the VOCs in the air are oxidized to CO₂ and H₂O at a minimum temperature of approximately 1,800 °F. Hot flue gases shall be used to produce steam to be used in the process. The flue gases will be treated with urea to treat NO_x emissions (if needed) and in a Sodium Hydroxide (NaOH) solution scrubber to treat any halogens compounds at the outlet. The clean flue gases will be vented to the atmosphere through a stack.

g. Storage Tanks

The facility will store the incoming waste materials in various aboveground storage tanks or in a container storage area.

h. Waste Tanks

Solid residuals generated at Elcon will be derived from treatment of listed and characteristic hazardous wastes or from residual waste. The listed hazardous waste residuals will retain the listings from the treated wastes. The solid residuals from wastewater treatment will be land-disposed at a Subtitle C landfill. Elcon will follow profiling, notification, and certification procedures as required by the regulations and the disposal facility.

Wastes resulting from the Elcon processes will be stored in containers within secondary containment.

Wastes that have been delisted will be shipped to a Subtitle D landfill or available for reuse.

i. Emergency Controls

A list of emergency controls that are part of the plant design is included in Attachment 1.

j. Copies of Contingency Plan [40 CFR Part 264.53]

Copies of this plan will be located on site in the EHS Manager's office. In addition, copies of the Contingency Plan will be submitted to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services.

k. Amendment of the Contingency Plan [40 CFR Part 264.54]

The Contingency Plan will be reviewed, and immediately amended, if necessary, whenever:

- (a) The facility permit is revised;
- (b) The plan fails in an emergency;
- (c) The facility changes-in its design, construction, operation, maintenance, or other circumstances-in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
- (d) The list of emergency coordinators changes; or
- (e) The list of emergency equipment changes.

2. Description of Existing Emergency Response Plans

The Elcon facility will be new and currently, no existing emergency response plans exist. However, prior to the start of operations, Elcon anticipates preparing SPCC, SWPPC, and OSHA emergency plans.

3. Material and Waste Inventory [40 CFR Part 264.56(b)]

In accordance with 40 CFR Part 264.56(b), whenever there is a release, fire, or explosion, the Emergency Coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. He or she may do this by observation or review of facility records or manifests, and, if necessary, by chemical analysis. The following paragraphs provide additional detail to demonstrate compliance with this requirement.

a. General Description

Process wastewater may be generated from, but is not limited to, pharmaceutical companies, hi-tech companies (mainly acids), and metal treating units as is exemplified by the current operating plant in Israel which acts as a model for the new facility. There will be truck deliveries of wastewater on a daily basis. The wastewater that is received will be stored at the facility and then treated according to the needs of the appropriately selected processes.

Due to the nature of the facility in which source waste is blended to achieve a wastewater consistent for the influent of the selected treatment process, waste is categorized into organic-bearing waste (low and high), salts, and acidic waste streams.

b. Waste Materials

Elcon plans to accept typical waste streams that are generated by industrial facilities. A listing of the hazardous and residual waste streams that Elcon is planning to receive at the proposed Falls Township facility has been included in Attachment 2 (Table 1 and Table 2).

c. Effluent Composition

The facility will not generate any process effluent.

d. Aboveground Storage Tanks

Elcon will store and treat liquid hazardous or residual waste from off-site sources in tank systems or reactors. The tanks will be aboveground and located within diked tank farms (containment areas) or inside the production plant. Attachment 3 includes a list of containers, tanks, tank system components and other units for processes, such as distillation. The list includes basic information about each tank or component, such as volume, dimensions, materials of construction, etc. The diked areas will be constructed to structurally support the tank systems and to provide appropriate containment. The interior of each containment area will be coated with a material that is compatible with the type of waste to be stored or treated in that area. Within the production plant building, floors will be coated and sloped to provide containment for the tank and process equipment systems. Attachment 4 includes containment volume calculations.

e. Storage, Treatment, and Disposal of Released Material [40 CFR Part 264.56(g)]

Immediately after an emergency in accordance with 40 CFR Part 264.56(g), the Emergency Coordinator will provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

4. Pollution Incident History

The Elcon facility is not yet operational, and therefore, there are no pollution incidents to reference in this section.

Upon commencement of plant activities, a formal investigation program will be developed to document any pollution incidents or near misses. This program will be used to collect data accurately and systemically concerning incidents. In addition, Process Hazard Analyses will be performed at the plant. One area of concern during each of these analyses is to provide safeguards to eliminate or minimize any significant potential incident identified. The above procedures along with plant personnel training, safety interlocks, and well-designed secondary

containment will minimize the impact of all incidents at this facility. The facility is not yet operational; however, a repository of incidents will be kept in Attachment 5 and will be part of this plan.

5. Implementation Schedule for Elements Not Currently in Place

The facility has not yet been constructed. Upon commencement of operations, all required elements will be in place.

B. DESCRIPTION OF HOW PLAN IS IMPLEMENTED BY ORGANIZATION [40 CFR PART 264.56]

In accordance with the requirements of 40 CFR Part 264.56, this section provides detailed information on how the facility will implement the Contingency Plan.

1. Organizational Structure of Facility for Implementation

Elcon's Plant Manager has overall responsibility for the Falls Township facility. The Plant Manager will fully delegate (upon plant startup) the EHS Manager as the primary Emergency Coordinator who will assume all responsibility for implementing this Contingency Plan. The Plant Manager will provide the necessary support to allow the EHS Manager to successfully implement the plan.

Elcon's EHS Manager will be responsible for implementing this Contingency Plan. His or her responsibilities include:

- developing and upgrading the PPC Plan
- training necessary personnel
- identification of materials and wastes
- identification of potential spill sources
- establishing spill reporting procedures
- visual inspection programs
- review of past incidents and spills
- coordination of spill cleanup activities
- notification of authorities
- review of new construction and processes relative to the plan

Environmental releases that escape the plant's collection and/or treatment system will result in the implementation of the PPC Plan. The EHS Manager has overall responsibility for activities required to implement the goals of the PPC Plan. His or her will utilize the appropriate staff to assist in the various responsibilities for the plan. The EHS Manager may designate some of his or her duties to other qualified staff. The EHS Manager reports to the Plant Manager, who will provide the necessary support to implement the Contingency Plan.

This plan will be implemented immediately upon initiation of the operations at the Elcon Facility.

2. List of Emergency Coordinators [40 CFR Part 264.52(d)]

In accordance with 40 CFR Part 264.52(d), the following section lists names, addresses, and phone numbers (office and home) of all persons qualified to act as the Emergency Coordinator. This list will be kept up to date. Where more than one person is listed, one must be named as primary Emergency Coordinator and others must be listed in the order in which they will assume responsibility as alternates. For new facilities, this information must be supplied to the Regional Administrator at the time of certification, rather than at the time of permit application.

Emergency Coordinators will be supported by facility personnel and Elcon corporate environmental personnel as appropriate. The Elcon facility will operate 24 hours per day, 7 days per week. Therefore, there will be at least one Emergency Coordinator present at the site at all times or will be available to respond to an emergency by reaching the facility within a short time period.

Table 1 in the tables at the end of this plan will contain the Emergency Coordinator contact list upon startup of the facility per 40 CFR Section 264.52(d).

3. Duties and Responsibilities of the Emergency Coordinators [40 CFR Part 264.55]

In accordance with 40 CFR Part 264.55, there will be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. The Emergency Coordinator is thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, the Emergency Coordinator has the authority to commit the resources needed to carry out the Contingency Plan.

Pursuant to the PADEP's "*Guidelines for the Development and Implementation of Environmental Emergency Response Plans*" (Document No. 400-2200-001), the Emergency Coordinator (or designee if the Emergency Coordinator is on call) has primary responsibility for the following aspects of emergency response (either actual or imminent):

1. Activate facility alarms or communications systems, where applicable, to notify facility personnel; and
2. Notify local emergency response agencies, including PADEP.

Whenever there is an emission or discharge, fire, or explosion, the Emergency Coordinator must immediately identify the exact source, amount, and extent of emitted or discharged materials. He or she may do this by observation or review of records and, if necessary, by chemical analysis.

Concurrently, the Emergency Coordinator must assess possible hazards to human health or the environment that may result from the emission or discharge, fire, or explosion. This assessment must consider both direct and indirect effects of the emission, discharge, fire, or explosion.

The designated Emergency Coordinator will be responsible to immediately stop the flow of hazardous waste into the tank system or secondary containment system during the response to leaks or spills and disposition of leaking or unfit-for-use tank systems. The system will then be inspected to determine the cause of the release.

If the Emergency Coordinator determines that the facility has had a release, fire, or explosion which would threaten human health or the environment, he or she will immediately notify the required local authorities including the county emergency management agency. The Emergency Coordinator will be available to help appropriate officials determine whether local areas should be evacuated and immediately notify the PADEP Southeast Region; the National Response Center; and the Pennsylvania Emergency Management Agency; contact numbers found in Table 2 at the end of this plan in the tables section and report the following:

- a. Name of the person reporting the incident
- b. Name and location of the installation
- c. Phone number where the person reporting the spill can be reached
- d. Date, time, and location of the incident
- e. A brief description of the incident, nature of the materials or wastes involved, extent of any injuries, and possible hazards to human health or the environment
- f. The estimated quantity of the materials spilled, and
- g. The possible hazards to human health or the environment outside the facility.

When there is a release from an aboveground storage tank that threatens the water supply of downstream users, these downstream users must be notified within 2 hours of the release. Priority for notification is to downstream users in closest proximity to the release site.

During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fire, explosion, or release do not occur, reoccur, or spread to other materials or wastes at the facility. These measures shall include where applicable, stopping manufacturing processes and operations, collecting and containing released materials or wastes, and removing or isolating containers. Additionally, during an emergency condition, Elcon will cease adding waste according to 40 CFR Part 264.196(a).

If the facility stops operations in response to a fire, explosion, emission, or discharge, the Emergency Coordinator will ensure that adequate monitoring is conducted for leaks,

pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

Immediately after an emergency, the Emergency Coordinator, with PADEP approval, must provide for treating, storing, or disposing of residues, contaminated soil, etc., from an emission, discharge, fire, or explosion at the facility. Manifests, as required by 40 CFR Part 264.71, will be prepared and used when legally required.

The Emergency Coordinator must ensure that in the affected areas of the installation, no material or waste incompatible with the emitted or discharged residues is processed, stored, treated, or disposed of until cleanup procedures are completed; and, all emergency equipment listed in the Plan is cleaned and fit for its intended use before operations are resumed.

Within 15 days after the incident, the installation must submit a written report on the incident to PADEP. The report must include the following:

- a. Name, address, and telephone number of the individual filing the report
- b. Name, address, and telephone number of the installation
- c. Date, time, and location of the incident
- d. A brief description of the circumstances causing the incident
- e. Description and estimated quantity by weight or volume of materials or wastes involved
- f. An assessment of any contamination of land, water, or air that has occurred due to the incident
- g. Estimated quantity and disposition of recovered materials or wastes that resulted from the incident, and
- h. A description of what actions the installation intends to take to prevent a similar occurrence in the future.

Additionally, Elcon will note in the operating record, the time, date and, details of the incident.

4. Chain of Command

The basic sequence of an event is as follows:

- Initial discovery of event: Anyone
- Discoverer contacts Security: Dial Security or Activate Pull Box
- Security contacts Emergency Coordinator: Portable Radio/Mobile Device
- Emergency Coordinator activates Emergency Response

Team Members:

Internal Communications System
Phone/Portable
Radio/Mobile/Other

- Support personnel requested by Emergency Coordinator:

Phone/Portable Radio/Mobile

The overall organizational structure and duties of the individuals involved in an emergency response are listed in Figure 3 below. Telephone and mobile numbers of Emergency Coordinators are shown on Table 1 in the tables section at the end of this Plan.

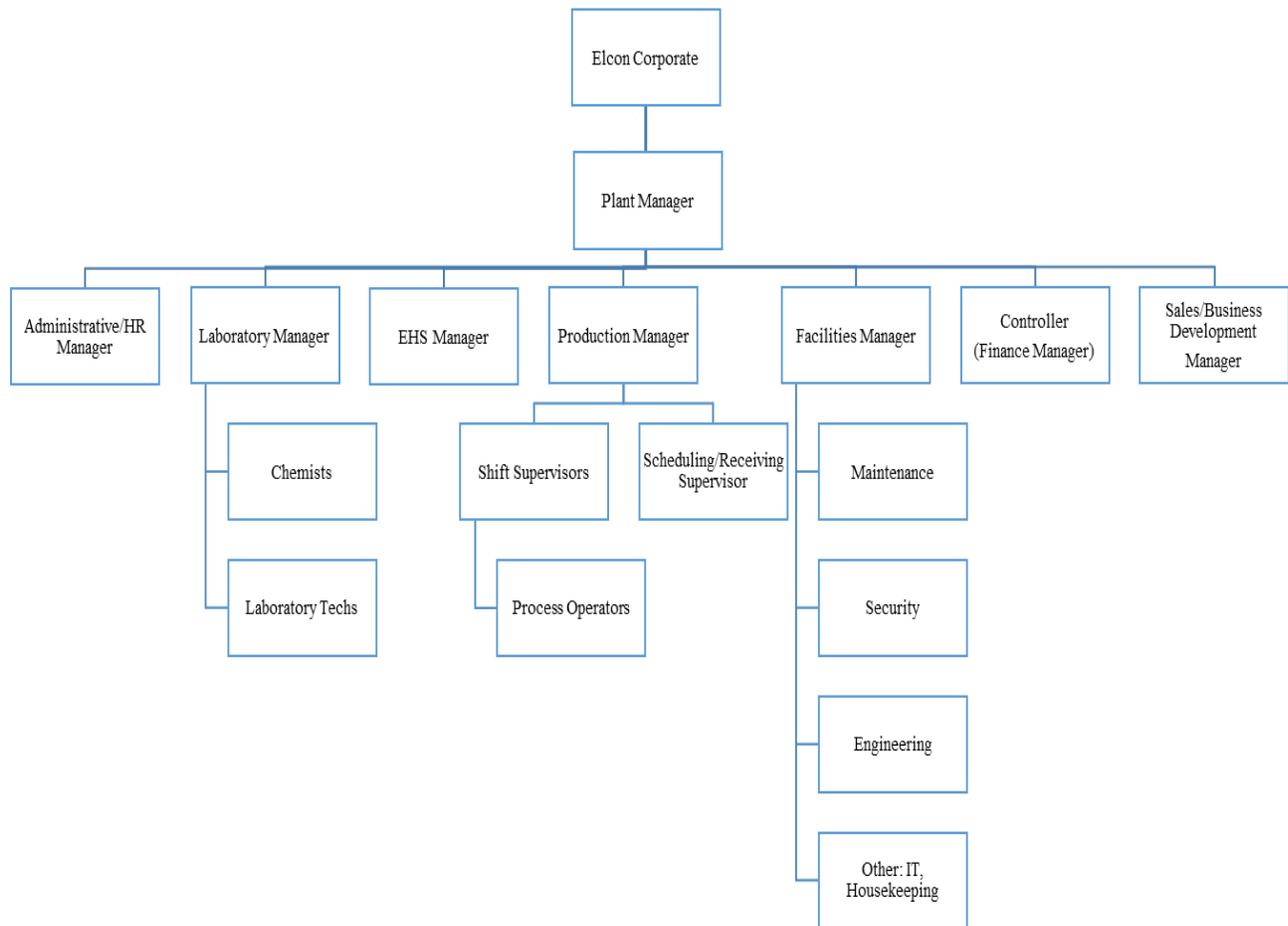


Figure 3: Elcon Preliminary Organizational Chart for the Falls Township Facility

The following individuals may be involved in emergency response and their duties are described below:

EHS Manager

- Coordinator for emergency response
- Responsible for overall emergency coordination
- Responsible for performing the required regulatory notifications

Laboratory Manager

- Responsible for daily management of laboratory chemicals.
- Responsible for handling minor chemical spills and reporting same to EHS Manager.

Facilities Manager

- Provide engineering support for development of the Plan.
- Participate in post event action items.

Production Manager

- Responsible for daily management of materials in warehouse/production areas.
- Responsible for handling minor material spills and reporting same to EHS Manager.

Shift Supervisors

- Responsible for all shift activities
- Responsible for handling minor material spills and reporting same to EHS Manager.

Other Personnel

- Responsible for reporting any spills to EHS Manager.

Figure 3 is a preliminary organizational chart for the Elcon facility and provides proposed job positions at the facility.

Preliminary job titles and basic job descriptions are presented below. Full documentation of the information presented in the first paragraph of this sub-section will be maintained at the facility at startup.

Plant Manager: Responsible for overall operation of the facility. All managers at the facility will report to the Plant Manager.

Administrative/Human Resources Manager: Responsible for the hiring of employees, employee benefits, and salaries. As needed, Administrative Staff will support the Administrative/Human Resources Manager.

Laboratory Manager: Responsible for the laboratory operations, including incoming and outgoing waste quality control as specified in the Waste Analysis Plan (WAP) and the Radiation Action Plan. (Both of these plans are provided in Section C of this application.) As needed, the Laboratory Manager will be supported by:

Chemists: Responsible for overseeing and performing laboratory analysis, including radiation analysis.

Lab Technicians: Responsible for performing analyses under the direction of the chemists or the Laboratory Manager.

Environmental Health & Safety Manager (EHS) Manager: Responsible for the environmental, health, and safety programs required to support the Elcon Recycling Facility's operations, including training programs. The EHS Manager is also responsible for implementing and maintaining the Contingency and Radiation Plans and the roles assigned to him/her in those plans.

Production Manager: Responsible for the operations of storing and treating the various wastes handled by Elcon. The Production Manager is involved with the planning, coordination and control of the manufacturing processes. The Production Manager ensures that goods and services are produced efficiently and that the correct amount of materials are processed at the right quality and cost. The Production Manager is responsible for the training programs required to support process operations. The Production Manager will be supported by:

Supervisors: Responsible for the operations of the treatment processes on their shift and assisting the Production Manager. Follow the normal function of the facility operationally and procedurally. Take care of any failures that cause damage to equipment, process, safety, and the environment. Inform the Production Manager of any problems and malfunctions in the plant.

Operators: Responsible for operating the storage and process equipment working an eight-hour rotating shift schedule to ensure maximum production quality and quantity, while supporting the policies, goals, and objectives of the company.

Scheduling/Receiving Manager: Responsible for the incoming and outgoing shipments and planning. Supervises and coordinates the activities related to verifying and keeping records on incoming and outgoing shipments and preparing items for shipment. Prepares shipping notices, bills of lading, invoices, orders, and other records to determine shipping priorities, work assignments, and shipping methods required to meet shipping and receiving schedules utilizing his/her knowledge of shipping procedures, routes, and rates.

C. SPILL LEAK PREVENTION AND RESPONSE [40 CFR PART 264.56(e)]

In accordance with 40 CFR Part 264.56(e), during an emergency, the Emergency Coordinator will take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures include, where applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers. In addition to tanks and containment systems, this section will also cover process vessels (reactors, etc.).

1. Pre-Release Planning

This section describes the sources and areas where potential spills and leaks may occur, the direction of flow of spilled materials, and the Pollution Incident Prevention Practices (PIPP) specific to the source or area.

a. Containment System and Spill Control [40 CFR Part 264.196(c)]

In accordance with 40 CFR Part 264.196(c), a tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, will be removed from service immediately. In addition, the operator will immediately conduct a visual inspection of the release and, based upon that inspection:

- (1) Prevent further migration of the leak or spill to soils or surface water; and
- (2) Remove, and properly dispose of, any visible contamination of the soil or surface water.

The results of the visual inspection will allow the facility to satisfy the requirement to contain visible releases to the environment.

Secondary containment throughout the facility, which includes all parts of the treatment plant, biological plant, unloading areas, tank farms, and container storage areas (incoming and outgoing wastes), will be set up such that an unexpected release of any kind can be collected and recovered to be reintroduced into the treatment process. In the case of a spill, secondary containment will prevent the contaminants from flowing off-site.

b. Specific Spill Types [40 CFR Part 264.52; 264.71]

In accordance with 40 CFR Part 264.52 and 40 CFR Part 264.71, the facility has provided detailed information regarding the procedures to be used with responding to container spills (including tanks) and leakage. The facility will use the manifest system in accordance with 40 CFR Part 264.71 when applicable.

The Spill Containment System for the Elcon plant site is designed to contain spills for three levels of occurrence. The stormwater system is also addressed in this section because segments of the systems are common.

Level 1: High probability occurrences, such as floor washes within the Process Building, leakage at the tank truck delivery points, and spills from chemical containers in the operating area

Level 2: Infrequent occurrences, such as high volume flows due to operation of fire sprinkler systems or tank rupture failure

Level 3: Highly unlikely occurrences, such as tank truck ruptures due to accidents on plant roads

c. Container Information

Wastes shipped to the Elcon facility will be contained in appropriate U.S. DOT-approved containers. Once inside the plant site, the contents of the containers will be transferred to the appropriate tank systems for treatment or stored in a container storage area, segregated by waste type (acid or base) and within secondary containment. Outgoing wastes will be stored in appropriate containers within a secondary containment system.

d. Environmental Control Safety Systems

Detailed instrumentation is provided to monitor operational conditions of the environmental control systems. This ensures that process response, control, operational flexibility, and safety interlocking requirements are maintained. The safety interlock and shutdown features comprise a major portion of the control system and are required to assure operation of the treatment systems within the design specifications.

Safety shutdown equipment is monitored by plant personnel and interlocks automatically shut affected processes components down during times of malfunction. For example, tanks are equipped with level indicators and interlocks that shut the process down if tank levels deviate from the specified operating parameter. Attachment 1 contains a summary of the Plant Design Emergency Controls.

e. High Probability Spill Area Clean-up/Response Procedures

In high probability spill areas, the correct procedures for clean-up are as follows:

- 1) Tank Trucks Loading/Unloading Waste, Leaking Fittings, Hoses, Pumps, or Valves: All pumping connections are inspected before the transfer begins, but if a leak should occur, pumping will be terminated immediately and the appropriate spill cleanup materials will be applied to clean up the spilled material. Maintenance will be called to correct mechanical failures/flaws. If Maintenance cannot solve the problem, pumping will only continue if the spilled material is contained. If small drips and leaks persist, absorbent materials will be applied. Afterwards, the material will be appropriately drummed for off-site disposal or treated by Elcon and the area hosed down to drain basins and treated at the facility.

- 2) Tanker Loading/Unloading Material that Spills in a Significant Quantity: A spill kit is available for immediate use to prevent spills from reaching drainage grates.
- 3) Significant Spill Not at a Designated Tanker Loading/Unloading Area: Spills in these areas will be mitigated and contained with spill kits. If necessary, an emergency contractor will be called in to assist.
- 4) Tank Farm: Each individual containment area is equipped with a collection sump. Each area is also diked and graded so that any leaking material from pumps, lines, or tanks will run towards the sump for that area.
- 5) Process Area: The majority of the processing equipment is located in the building, which will serve the containment area. There are some processing vessels outdoors, but these are also located within secondary containment
- 6) Ruptured or Leaking Totes or Other Containers: For the remaining containers, the contents will be pumped as quickly as possible to another compatible tote or container. Spilled material will be absorbed with oil dry and appropriately drummed for off-site disposal. Outgoing material, which is not liquid, will be swept or removed as quickly as possible and added to another tote or container.
- 7) Spills Occurring in the Container Storage Area: Spills in these incoming waste areas can normally be mitigated/controlled with acids or bases. Spills of dry materials in the outgoing waste container area will be removed and placed in another container. The spill material will then be appropriately drummed for off-site disposal.

f. Stopping Waste Addition [40 CFR Part 264.196(a)]

In accordance with 40 CFR Part 264.196(a), a tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the operator must:

(a) Cessation of use; prevent flow or addition of wastes. The operator must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

g. Removing Waste [40 CFR Part 264.196(b)]

In accordance with 40 CFR Part 196(b),

(b) Removal of waste from tank system or secondary containment system:

(1) If the release was from the tank system, the operator must, within 24 hours after detection of the leak or, if the operator demonstrates that it is not possible, at the earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

(2) If the material released was to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.

h. Notification Reports [40 CFR Part 264.196(d)]

In accordance with 40 CFR Part 264.196(d), *Notifications, reports:*

(1) Any release to the environment, except as provided in paragraph (d)(2) of this section, must be reported to the Regional Administrator within 24 hours of its detection. If the release has been reported pursuant to 40 CFR part 302, that report will satisfy this requirement.

(2) A leak or spill of hazardous waste is exempted from the requirements of this paragraph if it is:

- (i) Less than or equal to a quantity of one (1) pound, and
- (ii) Immediately contained and cleaned up.

(3) Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the Regional Administrator:

- (i) Likely route of migration of the release;
- (ii) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);
- (iii) Results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the Regional Administrator as soon as they become available.
- (iv) Proximity to downgradient drinking water, surface water, and populated areas; and
- (v) Description of response actions taken or planned.

i. Provisions of Secondary Containment, Repair or Closure [40 CFR Part 264.196(e)]

In accordance with 40 CFR Part 264.196(e), Elcon will comply with the following, if applicable:

(1) Unless the operator satisfies the requirements of paragraphs (e)(2) through (4) of this section, the tank system must be closed in accordance with § 264.197.

(2) If the cause of the release was a spill that has not damaged the integrity of the system, the operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

(3) If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.

(4) If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the operator must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of § 264.193 before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system that can be inspected visually. If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of paragraph (f) of this section are satisfied. If a component is replaced to comply with the requirements of this subparagraph, that component must satisfy the requirements for new tank systems or components in §§ 264.192 and 264.193. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component must be provided with secondary containment in accordance with § 264.193 prior to being returned to use.

2. Material Compatibility [40 CFR Part 264.56(h)(1)]

In accordance with 40 CFR Part 264.56(h)(1), the Emergency Coordinator will ensure that, in the affected area(s) of the facility, in an emergency: (1) No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and (2) All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

Source waste is categorized and stored in separate tanks that are designed to be compatible with their respective waste. These wastes are carefully mixed in neutralizing tanks to prepare a waste suitable for influent to a particular treatment process.

a. Description of Precautions Taken to Prevent Accidental Ignition or Reaction of Wastes

Many hazardous wastes when mixed improperly with other waste or materials can produce effects that are harmful to human health and the environment, such as:

- 1) Heat or pressure
- 2) Fire or explosion
- 3) Violent reaction
- 4) Toxic dusts, mists, fumes, or gases
- 5) Flammable fumes or gases

Due to the ignitable, reactive, or incompatible nature of some of these wastes, specific procedures for their proper management have been developed and are delineated in the sections that follow.

b. Provisions to Protect Waste from Sources of Ignition or Reaction

Good engineering practices and codes are followed for all construction and project work. This includes an appraisal of the compatibility of construction materials for tanks, pipes, pumps, and vessels with their contents, and the reaction of materials or wastes when intentionally or inadvertently mixed or combined.

Each waste stream will be profiled by the generator prior to acceptance by Elcon. Elcon will make a determination from the profile whether or not the waste stream is compatible with the facility and can be managed safely. Prior to receipt, a specific waste treatment plan is prepared for each accepted waste load such that it can be safely managed. Upon receipt at the facility, each load of wastewater will be tested to ensure that it meets the profile description and to determine its proper management.

Incompatible wastes (acidic or alkaline) will be stored separately (dedicated tanks within segregated dikes or segregated containers) and treated through specific units of the treatment system designed for that type of waste. All tank systems and containment systems will be constructed of materials compatible with the waste they will be managing.

c. Special Handling Procedures for Storing Ignitable Wastes

Tanks receiving incoming wastes that are flammable will be located within a dedicated containment area. Vessels will be designed to store the flammable wastes.

d. Special Handling Procedures for Containers

All containers will be handled according to the applicable standards in order to minimize the possibility of rupture or damage. Incoming acid and alkaline waste containers will be segregated.

e. Prevention of Reaction of Ignitable, and Incompatible Wastes

In order to avoid reactions of ignitable or incompatible wastes, Elcon's Waste Analysis Plan will be maintained in the EHS Manager's office. The Waste Analysis Plan ensures that the waste is laboratory-tested before being accepted. If incoming wastes have the possibility of having a reaction, the waste is turned away or is managed at the facility in an appropriate manner a Waste Analysis Plan provides procedures to be used at the Elcon facility prior to unloading waste into the storage tanks.

3. Inspection and Monitoring Program [40 CFR Part 264.56(c)]

In accordance with 40 CFR Part 264.56(c), whenever there is an imminent or actual emergency situation, concurrently, the Emergency Coordinator will assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).

a. Introduction

An ongoing inspection program is maintained at the Elcon plant to detect equipment malfunctions and deterioration, operator errors, and discharges or leaks of raw materials and/or wastes generated by the facility. Inspections are performed at least once per operating day by plant supervisors and operators as an ongoing effort to prevent accidents. Unusual items are noted and evaluated for needed action. All departments perform their inspections periodically to ensure that the standards for a safe work environment, quality product, and environmentally sound waste management system are maintained. Both general and specific inspection requirements for hazardous waste management operations at the Elcon plant are presented below. Copies of individual inspection log sheets for the various waste management operations are kept on file in the EHS Manager's office, or other designated area.

Remedial Actions Procedures: If a malfunction, deterioration, or operator error is noted during the inspection, a variety of remedial actions can be employed to address that problem. Selection of the proper remedial action will be based on the severity of the problem, as that problem may affect hazardous waste management operations, human health, or the environment. These procedures are noted on the

respective inspection log sheet and reported to the Maintenance Office upon detection of the problem.

A Compliance Audit Checklist will record the inspector's name and the date of inspection; the nature of the inspection; the subject area of inspection; and whether the results of the inspection are satisfactory; or whether additional actions and/or recommendations should be implemented. Copies of completed Compliance Audit Checklists will be maintained at the facility.

The Elcon EHS Manager, or designee, will be responsible for conducting frequent visual inspections of materials storage, in plant transfer pipelines, process areas, temporary process waste storage and truck loading and unloading. Copies of individual inspection log sheets for the various waste management operations are kept on file in the EHS Manager's office or other designated location. Visual inspections will focus on housekeeping issues related to site health and safety, and spill prevention, with a particular focus on the following:

- Evidence of, or the potential for, pollutants entering the drainage system.
- Pipes, pumps, valves, and fittings for leaks.
- Tanks for corrosion and tank supports and foundations for deterioration.
- Evidence of spilled materials along drainage ditches.
- Effectiveness of secondary containment and housekeeping practices.
- A leak, seeps, overflows at waste treatment, storage or disposal sites.

Upon commencement of plant operations, Elcon will develop detailed inspection procedures for each one of the plant elements listed below:

1. Tank Storage Areas
2. Treatment Processes
3. Container Storage Areas
4. Loading/Unloading Areas
5. Stormwater System
6. Firefighting System
7. Safety and Emergency Response Equipment
8. Safety/Housekeeping
9. Perimeter Fence and retaining wall

The Inspection Requirements and Preventive Maintenance are included in Attachment 8.

4. Preventive Maintenance [40 CFR Part 264.56(c)]

The Falls Township facility will implement a preventive maintenance program for equipment and systems relating to conditions that could cause environmental degradation or endangerment of public health and safety.

In accordance with 40 CFR Part 264.56(f), if the facility stops operations in response to a fire, explosion, or release, the Emergency Coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

a. General

A list of equipment that has been identified as requiring preventive maintenance will be maintained at the facility by utilizing a work order system. The equipment on this list will be inspected regularly by Elcon's EHS Manager (or designee) along with the inspection and monitoring program to ensure that the Emergency Coordinator can monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment when operations stop.

In addition, this equipment will be tested on a frequent basis to ensure integrity. Proper recordkeeping of equipment that undergoes testing will be kept at the facility. Records will include the results of the test and in the case of a failed test, whether or not the piece of equipment was repaired or replaced. Monitoring equipment will be calibrated according to the manufacturer for accurate and measurements. Calibration information for equipment used on-site will be recorded and all records will be kept on site.

A list of the Inspection Requirements and Preventive Maintenance Requirements are included in Attachment 8.

5. Housekeeping Program

The following housekeeping practices will be followed:

- All material stored on site will be stored in a neat, orderly manner in appropriate containers and under a roof or other enclosure (e.g, tank).
- Housekeeping products will be kept in their original containers with the original manufacturer's label, unless the containers are not re-sealable.
- Original labels and Safety Data Sheets will be retained for the period of time that the product is being utilized on site in accordance with all applicable Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1926.33).
- Manufacturer's recommendations for proper use and disposal will be followed.
- An Elcon representative will conduct routine inspections to confirm the continued proper use, storage and disposal of onsite materials.
- Whenever possible, all of a product in a container will be used before proper disposal of the container.
- Facility maintenance will be carried out on a regular basis to keep floors clean and clear of debris and to maintain minimal refuse in working areas.
- Mechanical maintenance (mowing, hand cutting, etc.) will be scheduled as needed within the facility so as to facilitate visual inspections and enable the access for maintenance and emergency equipment.

- All employees and/or other handlers of hazardous materials will be properly trained and instructed on the proper reporting and handling requirements.
- All equipment will be maintained in good operating condition and inspected on a regular basis for leaks.

6. Security

a. Security Procedures and Equipment

The hazardous waste management activities at the Elcon plant are conducted in a secure environment. The likelihood of unknowing or unauthorized personnel coming in contact with the hazardous wastes generated at the facility is low. The security procedures employed at the facility, as outlined below, are adequate to minimize the possibility of unknowing or unauthorized entry to the plant site, while the positioning of critical valves and control mechanisms is such that the potential for tampering with these devices is minimized.

In accordance with 40 CFR Part 264.14, the Elcon facility security system and procedures will prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of this facility.

As indicated on the site map (Figure 3, Elcon Facility - Site Plan), the entire facility property will be secured with a chain link perimeter fence 8 feet in height.. This fence has limited controlled access points. All visitors must pass through a security gate and gain approval from facility management prior to entering the facility. Access to the site is controlled at all times, through the gates or other barriers to the active portion of the facility. Plant road access is also controlled by gate. The facility is also equipped with security cameras which will provide 24-hour surveillance.

b. Warning Signs

Warning signs are posted at the entrances to the hazardous waste management areas and at other strategic locations. These signs bear the legends of “Danger-Unauthorized Personnel Keep Out” and “No Smoking” in English, since it is the predominant language in the area surrounding the facility. The signs will be legible from a distance of at least 25 feet.

c. Plant Entry

Entry into the plant site is controlled by the gates and a security guard. All employees must present a pass to the guard or use the passcard. All visitors must sign a log, wear a visitor’s badge, and be accompanied by an employee to any point on the site. Exterior lighting in the active portion of the facility is adequate so that any movement in the active portion of the facility can be easily observed.

At all times, all entry to the plant is strictly controlled by the main gate security guard. During the evening and night shifts, the guard makes rounds to inspect the facility for intruders, abnormal situations, etc., and checks into time clock stations.

d. **Hazardous Waste Container Security**

Specific procedures are followed when wastes are added or removed from the facility. Initial truck inspection is performed by Elcon plant personnel after passing through security.

Incoming Wastes are screened by security and verified by laboratory personnel before entering the plant area.

Outgoing Wastes are verified by plant personnel and security. All outgoing wastes are transported under manifest.

In summary, adequate security procedures are in effect at all times at the Elcon plant to prevent the unknowing or unauthorized entry of personnel into the active portion of the facility. The nature of the hazardous waste management operations in effect at the plant, in conjunction with the perimeter fence and security procedures described herein, minimize the potential for release of hazardous wastes to the environment.

7. External Factor Planning

In the event of weather related events, strikes, power outages, or other disruptive events the Elcon facility will be shut down if it cannot safely be operated. During a power outage the whole system within the Elcon Recycling Facility will shut down. However, breathing losses from tanks containing waste materials will be vented to a backup carbon adsorption air pollution control system. A backup electric generator will provide power for emergency lighting and other components.

8. Employee Training Program

a. **Introduction**

In accordance with 40 CFR Part 264.16, all Elcon personnel who handle hazardous waste will successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements.

The program will include, at a minimum, the following aspects to ensure that facility personnel are able to respond effectively to emergencies by familiarizing

them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:

- (i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
- (ii) Key parameters for automatic waste feed cut-off systems;
- (iii) Communications or alarm systems;
- (iv) Response to fires or explosions;
- (v) Response to ground-water contamination incidents; and
- (vi) Shutdown of operations

All Elcon employees handling hazardous materials will be required to have a current OSHA 40 hour HAZWOPER certification. An information file will detail the important parts of the facility and process. The tables included in this Contingency Plan will be given to employees as a hand-out and posted around the facility for emergency spill response. The EHS Manager will provide briefings on a regular basis that will address the proper actions to take in the unlikely event of a spill or release, fire hazard, explosion or if evacuation of the facility is required. Site evacuation procedures, fire alarms and emergency shut-off switches will be placed in plain sight around the facility so as to facilitate a quick response in high stress situations.

Aspects of the preventive maintenance program and that of inspection and monitoring will be made clear so that employees can assist in identifying problems which will be reported to the EHS Manager.

Hazardous Waste Training at the Elcon plant is subject to PADEP's hazardous waste regulations [25 Pa. Code Section 264a], the Department of Labor's OSHA regulation [29 CFR 1910.120], and the other federal regulations. Training type is divided into three categories: (a) RCRA Regulations Training; (b) TSD Operations Training, regulated by 25 Pa. Code Section 264a and OSHA 29 CFR 1910.120; and c) Hazardous Waste Operations and Emergency Response Training, regulated by OSHA 29 CFR 1910.120. A Training Needs Matrix is included in Attachment 8 and provides an overview of the training requirements for all regulatory programs and lists the affected employee job roles.

Additional details describing specific job titles and program implementation appear below:

Job Titles and Duties

Job titles and a listing of associated duties and responsibilities for all positions at the Elcon facility are on file and available for inspection at the Administrative/HR Office.

Implementation of Training Program

The EHS Manager or designee periodically conducts, reviews, and evaluates the employee training program related to hazardous materials. The purpose of the evaluation is to identify any weaknesses within the program and provide for necessary revisions in an effort to keep a current, effective, and updated employee training program. Continued employee training is conducted annually, or as necessary, at a frequency as determined by the EHS Manager. Records of all training programs provided for new and existing employees are maintained by the Administrative/HR Manager.

b. RCRA Regulation Training

All personnel involved in the treatment and storage of hazardous wastes receive RCRA Regulation training.

The training program consists of classroom sessions and on-the-job hazardous waste management instructions for employees handling hazardous wastes.

c. Training Frequency and Techniques

RCRA Regulation training is conducted annually for employees whose positions involve hazardous waste management activities. For new or transferred employees, this training is conducted within six months of employment or job assignment. The classroom sessions consist of training videos, interactive presentations, and handouts that explain proper procedures for packaging, labeling, transferring, and transporting hazardous wastes. Procedures for emergency responses to spills are also discussed.

On-the-job training reinforces the concepts described above during specific situations that arise on a day-to-day basis.

d. Relevance of Training to Job Description

The Elcon plant conducts on-the-job training to emphasize the relevance of hazardous waste regulations to specific job positions. The purpose of this training is to provide the employee with “hands-on” experience with that particular job. For example, the EHS Manager may describe a new/revised manifest to shift

supervisors. The shift supervisors will explain to the process operators the appropriate container and labels to place on a container of hazardous waste.

e. TSD Operations Training

The training program outlined below covers both on-the-job and classroom training for facility personnel. This program exceeds the requirements set by PADEP and the annual requirements set by OSHA and this allows the efficient and safe operation of environmental control systems. Besides the on-the-job training that occurs day-to-day, the following specific programs provide additional information to process operators to assist them in completing their assignments safely.

The training program is directed by a person who is trained in hazardous waste management procedures and the operation of the plant processes. Additionally, the designated trainers background includes experience with the hazardous waste treatment, a detailed knowledge of regulatory training program requirements, and presentation and training skills.

f. Environmental, Health, and Safety (EHS) Training

The EHS Manager conducts routine exercises involving use and care of personal protective equipment, including air packs, respirators, etc.

Right-to-Know training involves communicating to employees information that describes the dangers of the chemicals that employees routinely handle.

g. Environmental Control Systems Training

Training for Environmental Control Systems occurs on the job (OTJ). New employees are trained by the EHS Manager or Shift Supervisor, or other designee.

The OTJ training involves a description of the process, start-up procedures, air pollution control systems, and monitoring systems.

The OTJ training also describes the limit and alarm switches that are used as “key parameters” for operation.

Additionally, Elcon will provide the training programs outlined in Attachment 7 to its employees:

D. COUNTERMEASURES [40 CFR PART 264.52(a)]

In accordance with 40 CFR Part 264.52(a), this section of the Contingency Plan describes the actions facility personnel will take to in order to comply with §§264.51 and 264.56 in response to

fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility. In addition to tanks and containment systems, this section will also cover process vessels (reactors, etc.).

1. Countermeasures to be Undertaken by Facility

Should an employee or other person on site observe a release, he or she shall immediately notify the EHS Manager or designee of the following:

- Nature of the spill or leak
- Location of the spill or leak
- Size and extent of the spill or leak
- Approximate amount spilled
- Direction the liquid flow is moving, if appropriate
- Materials involved
- Injury to personnel

Elcon will mobilize the appropriate on site or off site response personnel. If the individual identifying the release has been trained in the use of spill containment equipment, and the spill can be controlled at the time of the release by the individual without endangering himself/herself or any other person in any way, then the individual shall take action to mitigate the release.

For a spill or leak which is small enough to be absorbed, neutralized, or otherwise controlled at the time of release by individuals in the immediate release area, and which does not pose an adverse exposure hazard to the individuals, then the spill will be handled in the following manner:

- Make sure all unnecessary people are removed from the hazard area. Workers involved in the clean up shall put on protective clothing and equipment.
- If flammable material is involved, remove all ignition sources, and use spark and explosion proof equipment and clothing during containment and clean up.
- If possible, try to stop the leak.
- Use absorbent pads, booms, earth, sandbags, sand, and other inert materials to contain, divert, neutralize and clean up the spill. If spilled material reaches a storm sewer, try to stop the flow from the source by using sand, earth, sandbags, etc.
- Place all recovered liquid wastes, containment and clean-up materials in drums for proper offsite disposal at an approved disposal facility.
- The EHS Manager shall notify the proper plant personnel to coordinate cleanup actions, waste storage and disposal. The EHS Manager or designee will perform all agency notifications, if required.

Following cleanup, all emergency equipment and spill containment equipment shall be returned to ready status (restocked).

In the event that there is acid or caustic spillage from a container, the liquid will be neutralized and placed into a tote or a 55-gallon plastic drum. The tote will be managed as a hazardous waste and treated on site. After removing the spill, the area will be vacuumed or washed down and any resulting wash water will be collected and treated on site.

In the unlikely event that a large number of containers are leaking at once, causing an emergency situation, the EHS Manager, or designee will be alerted. At the instruction of the EHS Manager, the leaking container(s) would be taken out of service until the system is repaired and replaced. Any spilled hazardous waste will be treated on site. The affected areas will then be vacuumed or washed down with water. Wash down water will be treated on site.

In the event of a hazardous waste spill, the flow will be immediately stopped within the affected process units to prevent addition to the waste. Within 24 hours after a leak is detected, the waste would be removed to allow inspection and repair of the system to be performed. A visual inspection of a release will be conducted, further mitigation of leak will be prevented, and visible contamination will be removed and treated on site or disposed of properly. Any release to the environment will be reported to PADEP immediately according to PA Title 25 Chapter 101.2 if the quantity released is in excess of the applicable reportable quantity.

Elcon does not propose to manage hazardous waste at the facility in any units other than tank systems or containers (drums, totes, IBCs, etc.), so responses to spills and releases from surface impoundments, containment buildings, or drip pads are not applicable.

Secondary containment will be provided for all hazardous or residual waste tank systems containers and process equipment prior to start-up of the facility. Leak detection within the containment area will be designed to meet RCRA standards under 40 CFR Part 264.193. The secondary containment shall be inspected regularly and repaired appropriately when defects are encountered upon inspection. If a release were to occur, the affected tank system will be taken out of service, if necessary and the secondary containment would be repaired appropriately.

A Release Notification Matrix is presented in Attachment 9 and provides a summary of the reporting requirements if releases to the environment occur. If the release is determined to be reportable, Elcon's EHS Manager or designee will complete agency notifications in accordance with the regulations.

If the release was from the tank system, Elcon will remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and allow inspection and repair of the tank system to be performed within 24 hours after detection of the leak. If waste removal within 24 hrs is not possible, Elcon will demonstrate the reasons and will begin removal at the earliest practicable time.

If the material released was to a secondary containment system, all released materials will be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.

2. Countermeasures to be Undertaken by Contractors

Elcon has several engaged an emergency response contractor that can be contacted in the event of a spill/release. Upon assessment of the spill incident, Elcon's EHS Manager will call the contractor to contain and/or remove the contaminated materials if the EHS Manager determines that the response cannot be handled in-house.

A list of the contractor contact information, including their telephone number are included below:

Lewis Environmental
455 Railroad Plaza
Royersford, PA 19468
1-800-258-5585

Table 3 contains a list the of the emergency equipment capabilities of the contractors who will be listed above prior to plant startup.

3. Internal and External Communications and Alarm Systems

Internal communications at the facility will be provided by landline telephones, two-way radios, cell phones, and an alarm system. The internal communications system will be capable of providing immediate emergency instructions to facility personnel.

Landline telephones and cell phones will also provide a means of external communication for summoning emergency personnel.

In the event of an emergency situation, the facility will activate the manual alarm system. The alarm system will be installed at the facility so that all employees, no matter where they work within the facility, can hear the alarm system. A system of short and long alarm signals will be used to inform employees what action to take in the event of an emergency. A short alarm signal will signal employees that an emergency situation has occurred, and for the emergency response team to respond to the situation. If the emergency cannot be controlled, a second long alarm will sound to initiate the facility's evacuation procedures and outside assistance will be requested.

Employees that handle hazardous waste will have immediate access to a landline telephone or two-way radio to summon internal or external assistance. At each location where a landline telephone will be located, the facility will post information, adjacent to the telephone, that include the names of the Emergency Coordinator and alternates, the names and telephone numbers of the local police, fire department, hospital, local and state emergency response agencies, spill response contractor, and National Response Center (NRC). In addition, the facility will post the emergency contact information throughout the facility to ensure that any employee has immediate access to this information in case he needs to contact outside assistance for an emergency situation via a cell phone. Copies of the Hospital Route Map will also be posted throughout the facility; a copy of the map is included in Attachment 9.

To ensure that employees are knowledgeable of alarm system signals, all employees will be required to attend Contingency Plan training prior to employment and annually thereafter.

4. Evacuation Plan for Facility Personnel [40 CFR Part 264.52(f)]

In accordance with 40 CFR Part 264.52(f), this section provides detailed information that includes the evacuation plan for facility personnel. The section describes signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires).

Elcon operates 24-hours per day, 7-days per week year around. Additionally, security staff are on site 24-hours per day, 7-days per week, 365 days per year. The facility has been designed to meet DOT requirements for quick escape in the event of a facility-wide emergency.

The determination of a need for evacuation will be made based on the type and location of the emergency. The EHS Manager or designee will determine which areas need to be evacuated in an emergency and will inform supervisors in each production area by direct verbal communication or by two-way, hand-held radios or similar devices. If employees are unsure whether to leave and gather at the pre-designated assembly area, they should evacuate anyway until the EHS Manager makes a determination. Employees must evacuate if directed to do so. A representation of the facility-wide evacuation routes and pre-designated assembly areas is included on Figure 4. Upon completion of the final design of the facility, individual evacuation diagrams for each building will be generated and posted within the individual buildings, as specified by OSHA. This Plan will also be amended to contain current versions of each diagram.

Once everyone has exited, all personnel will meet at a pre-designated assembly area to account for everyone from their individual departments. Any injuries will be identified and first aid will be administered as soon as possible. Entrance into the affected area will be restricted to those persons equipped with proper protective gear. Only those persons responding to the emergency will be allowed in the area. Personnel will remain at the pre-designated assembly areas until the situation is under control and the “all clear” signal is given.

Employees will be trained to exit their work areas and gather at the pre-designated assembly areas as directed by the Shift Supervisor, EHS Manager, or designated Emergency Coordinator. Specific shut-down procedures and specific personnel roles will be established. Evacuation routes for the facility will be posted in all work areas. Each employee will be trained to know the appropriate evacuation route(s) and pre-designated assembly area for their area.

5. Emergency Equipment Available for Response [40 CFR Part 264.52(e)]

In accordance with 40 CFR Part 264.52(e), this section of the plan includes a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment).

This list will be kept up to date. In addition, the section includes the location and a physical description of each item on the list, and a brief outline of its capabilities.

Equipment that is available to allow personnel to respond safely and quickly to emergency situations includes the primary items for spill cleanup, monitoring explosion potential, fighting fires, treating minor injuries, communications, emergency breathing aids, and contaminant disposal. Equipment will be properly maintained and ready for use. After use, equipment will be properly cleaned and returned to storage. Residue and rinsate from cleaning will be properly disposed or treated on site. Figure 4 contains the locations of the proposed emergency equipment. Table 3 contains a list of the emergency equipment capabilities of the contractors who will be listed above prior to plant startup.

The facility will maintain the following equipment for responding to emergency situations:

1. First aid kits will be located throughout the plant. These kits will be used for minor injury situations;
2. Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment will be maintained to respond to fire and spill emergencies. Emergency safety showers/eyewash stations will be located throughout the facility. Supplies will also be available for spill containment and acid or caustic neutralization. Other miscellaneous equipment available for emergency response will include small hand tools for spill containment/cleanup; and
3. Water for fire control at the Elcon facility will be provided to the plant using 500,000-gallon tank. This holding tank will provide adequate volume and pressure to supply fire hoses and automatic sprinkler systems with water to respond to a fire at the facility. Automatic sprinkler systems will be provided for the production plant, where appropriate. Fire hoses will be provided for the tank farms, where appropriate. Water will also be supplied to a number of emergency safety showers/eye wash stations.

In areas where water is unsuitable for fire suppression due to chemical incompatibility, the fire suppression system will use foam as the extinguishing media.

All facility communication and alarm systems, fire protection equipment, and spill control equipment will be tested and maintained as necessary to ensure its proper operation in time of emergency. These inspections will be performed monthly by the facility personnel or an independent contractor.

All emergency equipment and systems listed below will be inspected according to the schedule below. All employees will be trained in the proper use of the emergency equipment and systems, as well as the locations of communication devices, fire extinguishers, fire hose reels, first aid kits, spill kits, and emergency showers and eyewash stations.

E. EMERGENCY SPILL CONTROL NETWORK

In accordance with 40 CFR Part 264.52(c), this section of the plan describes arrangements agreed to by local police departments, fire departments, hospitals, contractors, and State and local emergency response teams to coordinate emergency services, pursuant to §264.37.

1. Arrangements with Local Emergency Response Agencies [40 CFR Part 264.52(c)]

As appropriate the following arrangements will be made with the local authorities:

1. Arrangements to familiarize the Falls Township Police Department, Falls Township Fire Company, emergency response teams, and the local office of emergency services with the layout of the facility, properties of hazardous material and waste handled at the facility and other associated hazards, places where facility personnel would normally be working, entrances to and traffic patterns inside the facility, and possible evacuation routes;
2. Agreements designating primary emergency authority to the Falls Township Police Department and a specific fire department, and agreements with any others to provide support to the primary emergency authority;
3. Agreements with state emergency response teams, emergency response contractors, and equipment suppliers;
4. Arrangements to familiarize local hospitals (Aria-Jefferson Health Buck County Campus and Lower Bucks Hospital) with the properties of hazardous material, waste, raw materials and other materials handled at the facility and the types of injuries or illnesses that could result from fires, explosions, or releases at the facility; and
5. Arrangements agreed to by the Falls Township Police Department, Falls Township Fire Company, Aria-Jefferson Health Buck County Campus and Lower Bucks hospitals, contractors, and state and local emergency response teams to coordinate emergency services.

Letters will be sent by certified mail and a response from the entity acknowledging receipt will be requested. Records or acknowledgments will be kept as part of this Plan. If any state or local authority refuses to enter into such arrangement, this will be documented in the Operating Record.

The Emergency Notification List is included in Table 2 in the Tables Section at the end of this plan.

2. Notification List [40 CFR Part 264.56(a)]

In accordance with 40 CFR Part 264.56(a), whenever there is an imminent or actual emergency situation, the Emergency Coordinator (or his designee when the Emergency Coordinator is on call) will immediately (1) Activate internal facility alarms or communication systems, where

applicable, to notify all facility personnel; and (2) Notify appropriate State or local agencies with designated response roles if their help is needed. This section provides detailed notification information.

All spills and releases will immediately be reported to Elcon's EHS Manager, who will determine if it is reportable, and will complete the required notifications and reports based on information provided by the EHS Manager. If the EHS Manager cannot be reached in a timely manner, then the EHS Manager's designee is responsible for the notification to the regulatory agencies, as necessary. The Emergency Notification List is included in Table 2 in the Tables Section at the end of this plan.

Whenever there is an emergency situation, the EHS Manager (or a responsible employee chosen by the EHS Manager) will immediately:

1. Activate internal facility alarms or communications systems, where applicable, to notify all facility personnel;
2. Notify appropriate state or local agencies with designated response roles if their help is needed; and
3. Stop process operations, if justified.

In accordance with 40 CFR Part 264.56(d), if the Emergency Coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:

- (1) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and
- (2) He must immediately notify either the government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their 24-hour toll free number (800-424-8802)). The report must include:
 - (i) Name and telephone number of reporter;
 - (ii) Name and address of facility;
 - (iii) Time and type of incident (e.g., release, fire);
 - (iv) Name and quantity of material(s) involved, to the extent known;
 - (v) The extent of injuries, if any; and
 - (vi) The possible hazards to human health, or the environment, outside the facility.

3. Notification of Federal, State and Local Authorities Before Resuming Operations [40 CFR Part 264.56(i)]

In accordance with 40 CFR Part 264.56(i), the operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the Regional Administrator. The report must include:

- (1) Name, address, and telephone number of the operator;
- (2) Name, address, and telephone number of the facility;
- (3) Date, time, and type of incident (e.g., fire, explosion);
- (4) Name and quantity of material(s) involved;
- (5) The extent of injuries, if any;
- (6) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
- (7) Estimated quantity and disposition of recovered material that resulted from the incident.

4. Post-Emergency Equipment Management [40 CFR Part 264.56(h)(2)]

In accordance with 40 CFR Part 264.56(h)(2), All emergency equipment listed in the contingency plan will be cleaned and fit for its intended use before operations are resumed.

5. Required Report Procedures for Recordkeeping and Reporting to Federal Authority [40 CFR Part 264.56(i)]

In accordance with 40 CFR Part 264.56(i), the operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the Regional Administrator. The report must include:

- (1) Name, address, and telephone number of the operator;
- (2) Name, address, and telephone number of the facility;
- (3) Date, time, and type of incident (e.g., fire, explosion);
- (4) Name and quantity of material(s) involved;
- (5) The extent of injuries, if any;
- (6) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

(7) Estimated quantity and disposition of recovered material that resulted from the incident.

F. NPDES Permit Requirements

The facility will be regulated as an industrial discharger of stormwater and will require a National Pollution Discharge Elimination System (NPDES) permit. Prior to issuance of the NPDES permit by PADEP, Elcon will revise the PPC Plan to reflect the General Permit requirements. The plan elements will include:

- 1) Identify potential sources of pollution from industrial activity that could affect stormwater quality.
- 2) Describe BMPs that could be used to reduce pollutants in stormwater discharges (operating procedures/practices to control runoff, spillage/leaks, sludge or waste disposal, drainage from raw material storage).
- 3) Evaluate the following for potentially contributing to runoff (Factors to consider: Quantity of chemicals used, produced, and discharged; likelihood of stormwater contact; history of leaks/spills of hazardous pollutants):
- 4) Stormwater management practices
- 5) Sediment and erosion prevention
- 4) This plan will be reviewed and certified on the following page by a Professional Engineer since Elcon is subject to the SARA 313 requirements for water priority chemicals.

PROFESSIONAL ENGINEER'S CERTIFICATION [112.3(d)]

I hereby certify that I have reviewed the portions of this plan that fulfill Preparedness, Prevention, and Contingency (PPC) Plan requirements, and attest that:

I am familiar with the requirements of SARA Title III, Section 313 and;

- (i) My agent(s) and/or I have visited and examined the facility;
- (ii) The Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements found in SARA Title III, Section 313;
- (iii) Procedures for required inspections and testing have been established; and
- (iv) The Plan is adequate for the facility.

Michael J. Tucci
Printed Name of Registered Professional Engineer


Signature of Registered Professional Engineer



Date: 2/8/2019

Registration No: PE077087

Expiration Date: September 30, 2019

State: Pennsylvania

TABLES

TABLE 1
LIST OF EMERGENCY COORDINATORS

Name	Description	Role	Phone Numbers (Office & Home)
TBD	Plant Manager	Primary Plant Responsibility	TBD
TBD	EHS Manager	Primary Emergency Response Coordinator	TBD
TBD	Production Manager	Secondary Emergency Coordinator	TBD
TBD	Shift 1 Supervisors	Alternate Emergency Coordinator	TBD
TBD	Shift 1 Supervisors*	Alternate Emergency Coordinator	TBD
TBD	Shift 2 Supervisors*	Alternate Emergency Coordinator	TBD
TBD	Shift 3 Supervisors*	Alternate Emergency Coordinator	TBD

(Note: This table will be updated prior to plant operation)

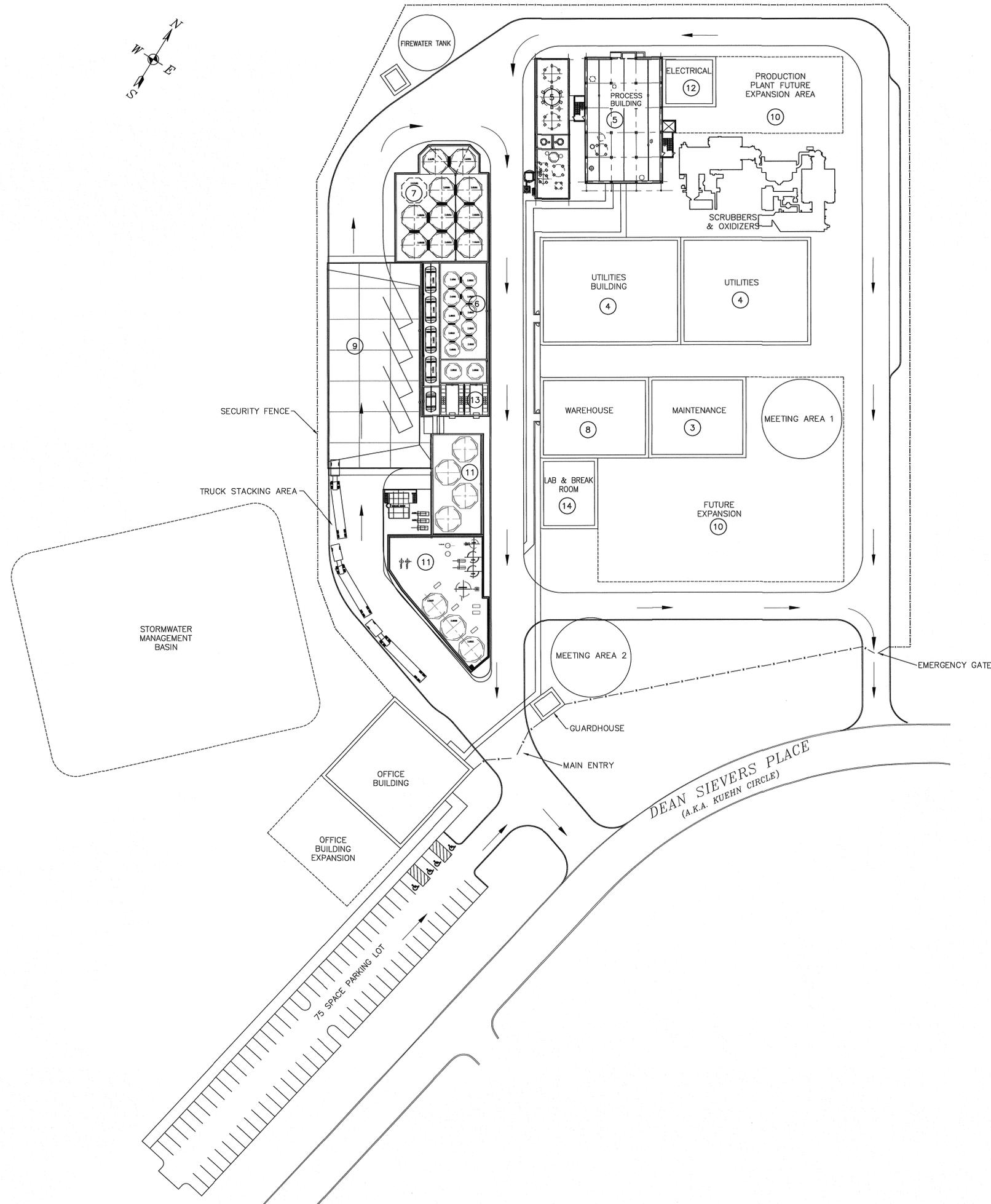
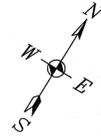
* This Contingency Plan assumes that the plant will operate three (3) shifts per day. However, the actual number of shifts will be determined prior to plant startup; this table will be revised to reflect the staff who possess Emergency Response responsibility.

Table 3 – Available Emergency Equipment

Lewis Environmental or an equivalent contractor will be employed for emergency response at the Elcon facility. Their equipment will include fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment.

This list will be refined prior to facility startup.

FIGURES



LEGEND

← DIRECTION OF EVACUATION TRAFFIC

NOTES:

1. EGRESS PATHS WILL BE DEVELOPED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, BASED ON THE OCCUPANCY GROUP(S).
2. EYEWASHES AND SAFETY SHOWERS WILL BE PROVIDED EVERY 55' OR WITHIN 10 SECONDS AND AT THE SAME LEVEL AS THE HAZARD.
3. FIRE EXTINGUISHERS WILL BE PROVIDED WITHIN 30' OR 50' DEPENDING ON THE RATING OF THE EXTINGUISHER.
4. FIRE ALARM PULL STATIONS WILL BE PROVIDED WITHIN 5' OF EVERY DISCHARGE POINT, WITHIN 5' OF THE TOP OF A STAIRWELL AND ANYWHERE THERE IS >200' TO TRAVERSE TO A DISCHARGE POINT.

REV.	DATE	DESCRIPTION	BY	APP.
A	09-20-2016	CLIENT REVIEW		
B	02-01-19	PERMIT ISSUE		

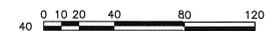
NOTE:
THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO PROCEEDING WITH ANY WORK. WHERE DISCREPANCIES OCCUR BETWEEN THESE DOCUMENTS AND EXISTING CONDITIONS, THE DISCREPANCY SHALL BE REPORTED TO THE OWNER AND/OR ENGINEER FOR EXPEDITING AND RESOLUTION.

CLIENT
ELCON RECYCLING FACILITY
FALLS TOWNSHIP, BUCKS COUNTY, PA

PROJECT TITLE
UNLOADING STATION & TANK CONTAINMENT

DRAWING TITLE
OVERALL PLAN

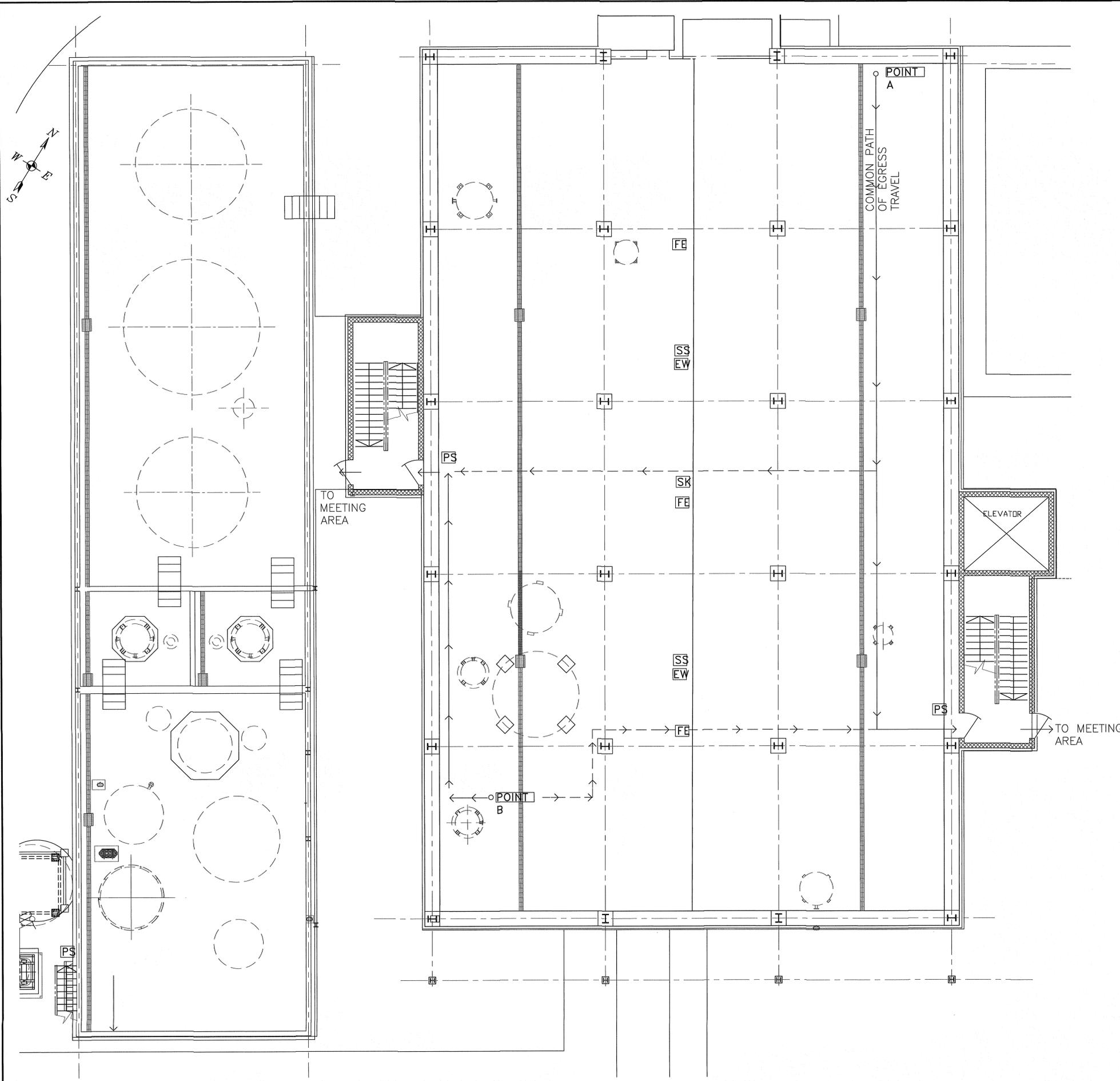
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DATE 08-10-16	DESIGNER BKA	CADD FILE No. EV19106505HS
SCALE 1"=40'-0"	DRAWN BKA	XREF FILE(S) -



**PRELIMINARY
NOT FOR CONSTRUCTION**

DRAWING NUMBER
FIGURE 2

REVISION LEVEL
B



NOTES:

- EGRESS PATHS WILL BE DEVELOPED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, BASED ON THE OCCUPANCY GROUP(S).
- EYEWASHES AND SAFETY SHOWERS WILL BE PROVIDED EVERY 55' OR WITHIN 10 SECONDS AND AT THE SAME LEVEL AS THE HAZARD.
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KEY:

- PS** - FIRE ALARM PULL STATION
- FE** - PORTABLE FIRE EXTINGUISHER
- SS** - SAFETY (DRENCH) SHOWER
- EW** - EYEWASH
- SK** - SPILL KIT
- PRIMARY EXIT ROUTE
- - - SECONDARY EXIT ROUTE

REV.	DATE	DESCRIPTION	BY	APP.
A	09-20-2016	CLIENT REVIEW		

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CLIENT
ELCON RECYCLING FACILITY
FALLS TOWNSHIP, BUCKS COUNTY, PA

PROJECT TITLE
EVACUATION & SAFETY EQUIPMENT PLAN

DRAWING TITLE
PLAN - AREA 5 & PROCESS BUILDING
ELEVATION 0'-0"

LAST UPDATE 09-20-16	ENGINEER AP	IES CONTRACT No. EC151065.01
DATE 09-09-16	DESIGNER BKA	CADD FILE No. EV15106505HS
SCALE 3/16"=1'-0"	DRAWN BKA	XREF FILE(S) -

DRAWING NUMBER
HS102A

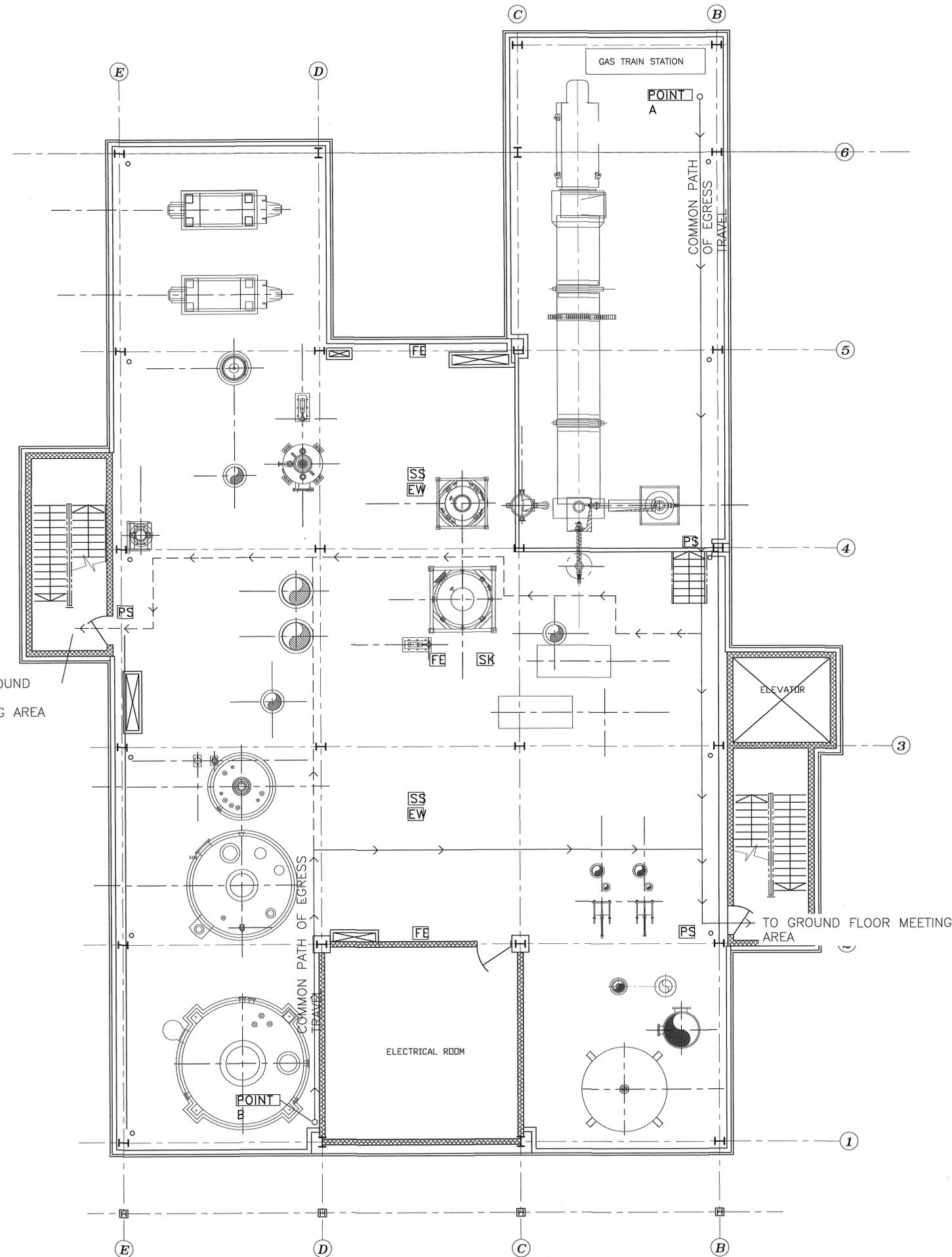
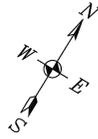
REVISION LEVEL
A

2 PLAN - AREA 5 & BUILDING
SCALE: 3/16"=1'-0"



PRELIMINARY
NOT FOR CONSTRUCTION





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REV.	DATE	DESCRIPTION	BY	APP
A	09-20-2016	CLIENT REVIEW		

TO GROUND FLOOR MEETING AREA

ELEVATOR

TO GROUND FLOOR MEETING AREA

ELECTRICAL ROOM

1 PROCESS BUILDING PLAN +16'-5" ELEV.(UN)
 HS102B SCALE: 3/16"=1'-0"

NOTE: THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO PROCEEDING WITH ANY WORK. WHERE DISCREPANCIES OCCUR BETWEEN THESE DOCUMENTS AND EXISTING CONDITIONS, THE DISCREPANCY SHALL BE REPORTED TO THE OWNER AND/OR ENGINEER FOR EXPEDITING AND RESOLUTION.

CLIENT
ELCON RECYCLING FACILITY
 FALLS TOWNSHIP, BUCKS COUNTY, PA

PROJECT TITLE
EVACUATION & SAFETY EQUIPMENT PLAN

DRAWING TITLE
PROCESS BUILDING PLAN +16'-5"

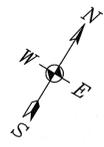
LAST UPDATE 09-20-16	ENGINEER AP	IES CONTRACT No. EC151065.01
DATE 09-09-16	DESIGNER BKA	CADD FILE No. EV15106505HS
SCALE 3/16"=1'-0"	DRAWN BKA	XREF FILE(S) -



PRELIMINARY NOT FOR CONSTRUCTION

DRAWING NUMBER
HS102B

REVISION LEVEL
A



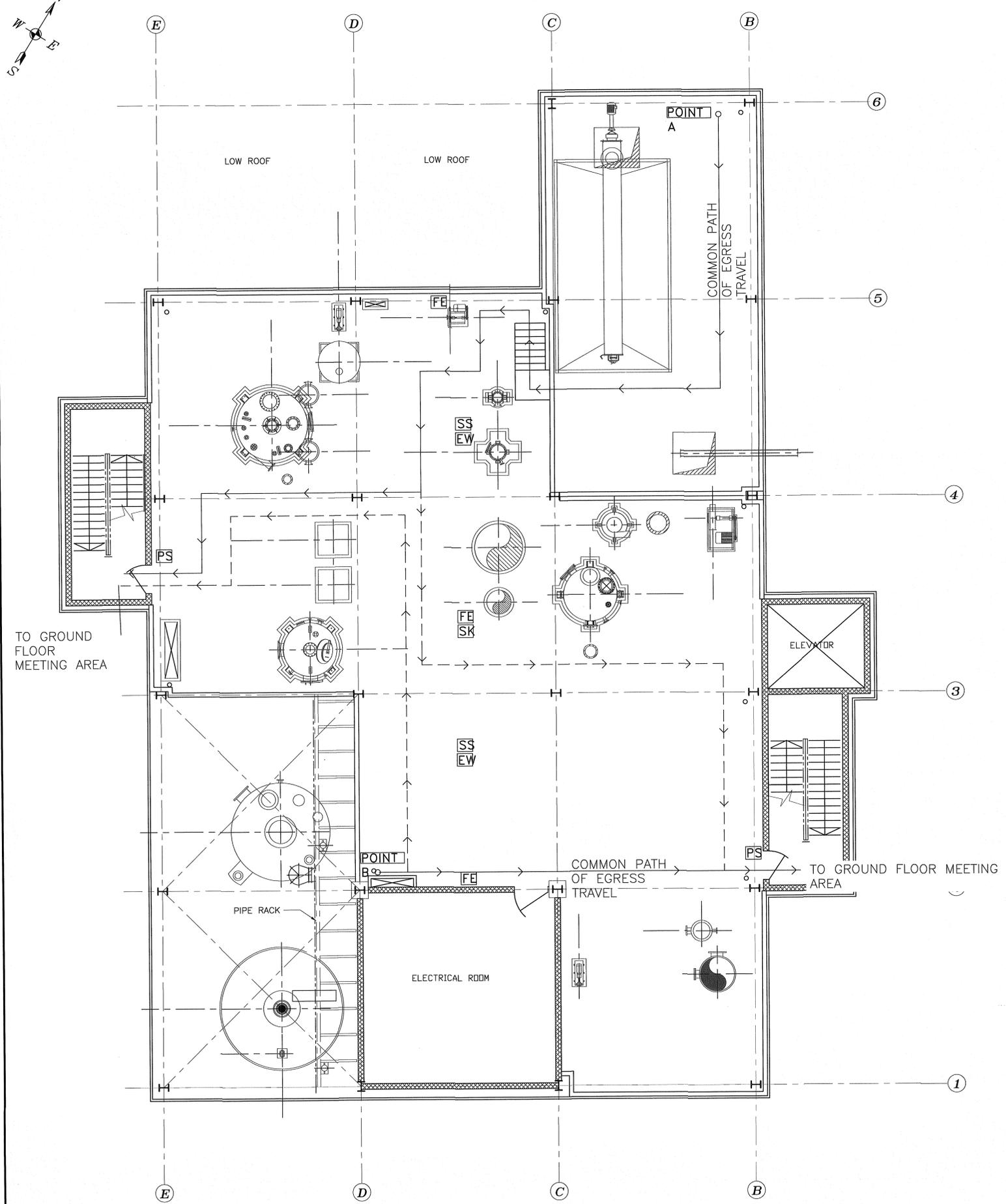
NOTES:

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REV.	DATE	DESCRIPTION	BY	APP.
A	09-20-2016	CLIENT REVIEW		



TO GROUND FLOOR MEETING AREA

TO GROUND FLOOR MEETING AREA

1 PROCESS BUILDING PLAN +31'-2" ELEV.(UN)
 S102C SCALE: 3/16"=1'-0"



PRELIMINARY NOT FOR CONSTRUCTION

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CLIENT
ELCON RECYCLING FACILITY
 FALLS TOWNSHIP, BUCKS COUNTY, PA

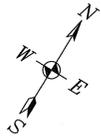
PROJECT TITLE
EVACUATION & SAFETY EQUIPMENT PLAN

DRAWING TITLE
PROCESS BUILDING PLAN 31'-2"

LAST UPDATE 09-20-16	ENGINEER AP	IES CONTRACT No. EC151065.01
DATE 09-09-16	DESIGNER BKA	CADD FILE No. EV15106505HS
SCALE 3/16"=1'-0"	DRAWN BKA	XREF FILE(S) -

DRAWING NUMBER
HS102C

REVISION LEVEL
A



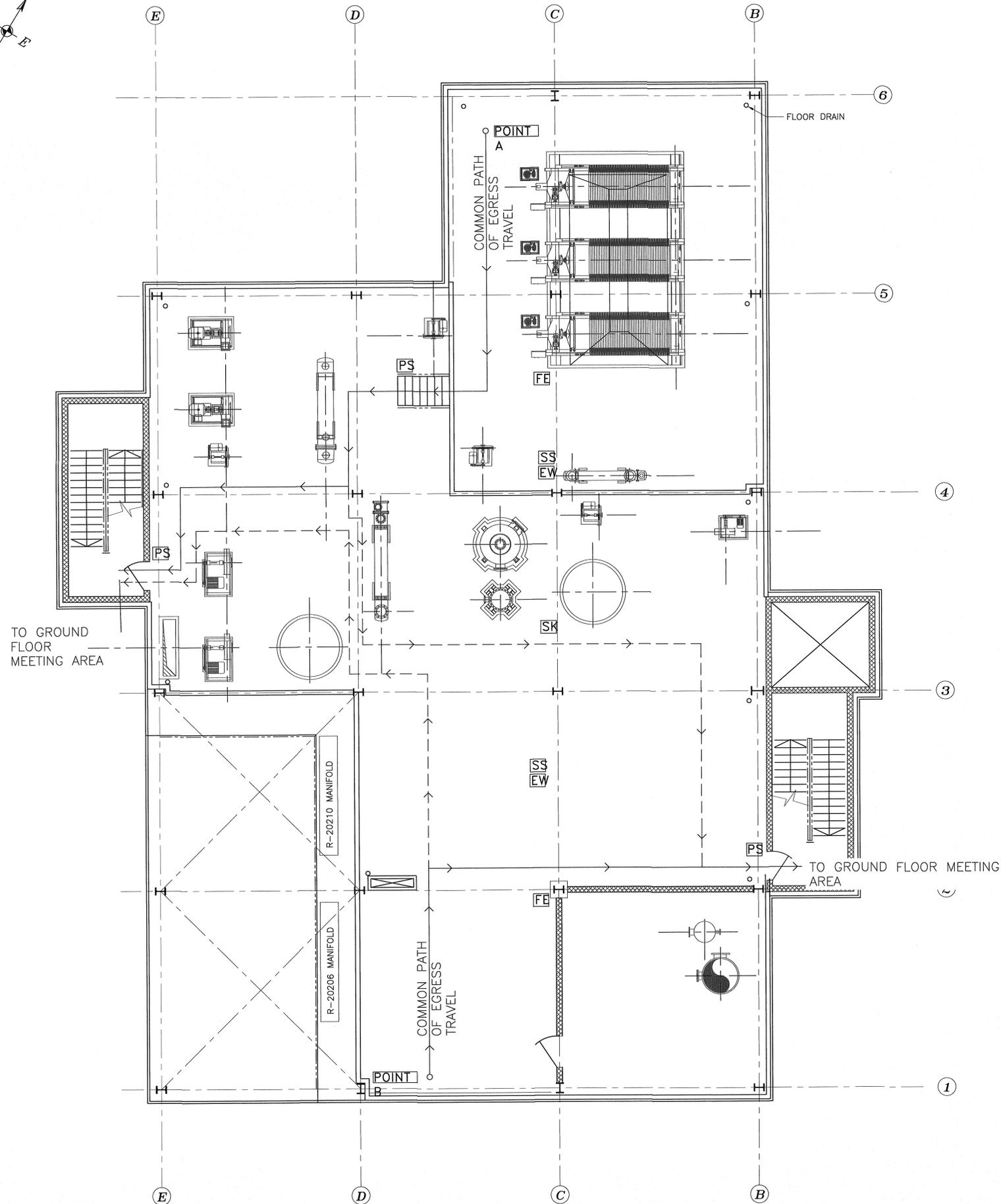
REV.	DATE	DESCRIPTION	BY	APP
A	09-20-2016	CLIENT REVIEW		

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CLIENT
ELCON RECYCLING FACILITY
FALLS TOWNSHIP, BUCKS COUNTY, PA

PROJECT TITLE
EVACUATION & SAFETY EQUIPMENT PLAN

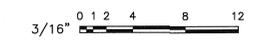
DRAWING TITLE
PROCESS BUILDING PLAN 45'-11"

LAST UPDATE 09-20-16	ENGINEER AP	IES CONTRACT No. EG151065.01
DATE 09-09-16	DESIGNER BKA	CADD FILE No. EV15106505HS
SCALE 3/16"=1'-0"	DRAWN BKA	XREF FILE(S) -

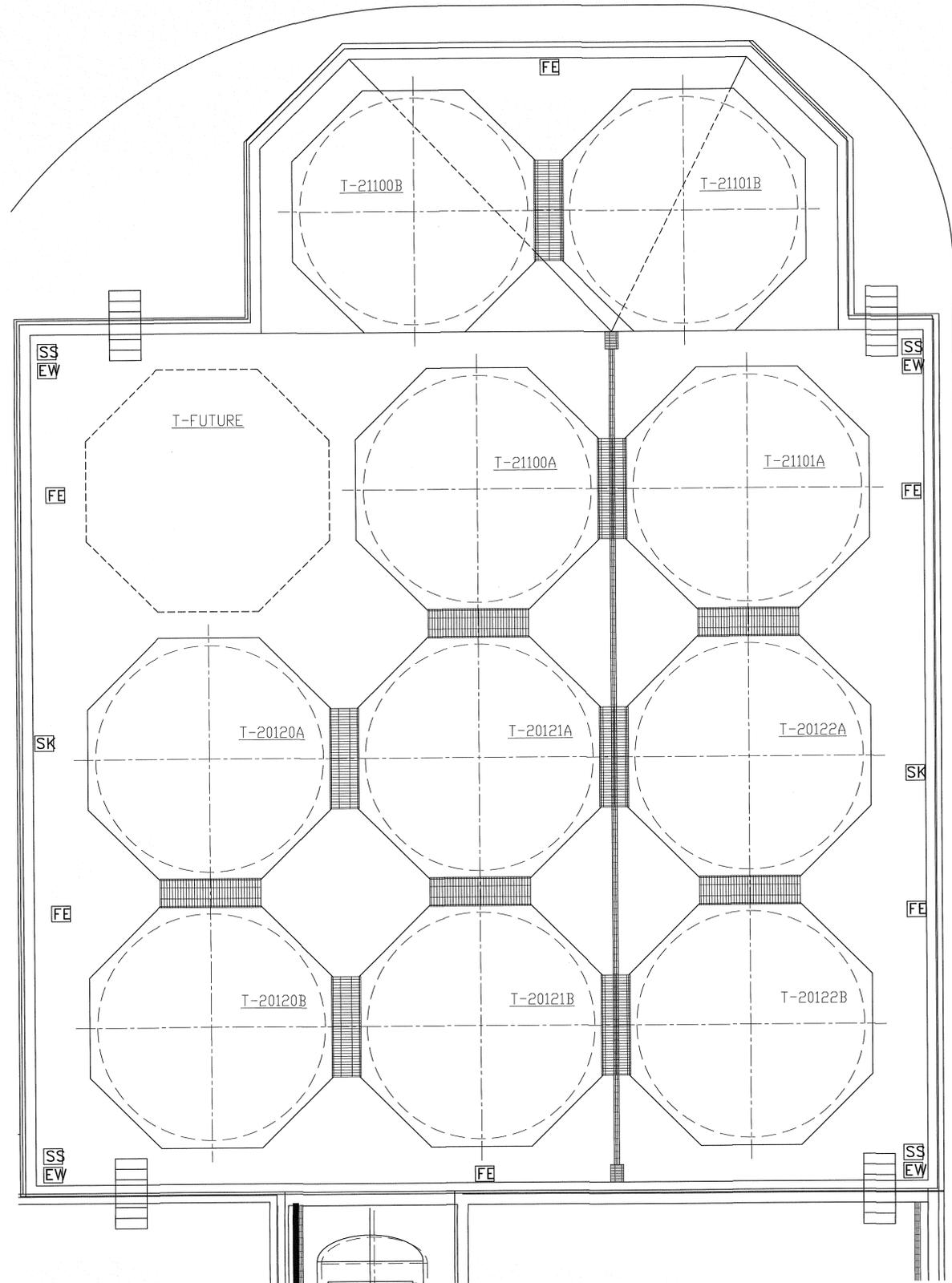
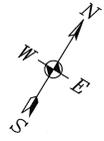
DRAWING NUMBER
HS102D

REVISION LEVEL
A

1 PROCESS BUILDING PLAN +45'-11" ELEV. (UN)
HS102D SCALE: 3/16"=1'-0"



**PRELIMINARY
NOT FOR CONSTRUCTION**



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- FIRE ALARM PULL STATION
- PORTABLE FIRE EXTINGUISHER
- SAFETY (DRENCH) SHOWER
- EYEWASH
- SPILL KIT
- PRIMARY EXIT ROUTE
- SECONDARY EXIT ROUTE
- CURB STAIRWAY

REV.	DATE	DESCRIPTION	BY	APP.
A	09-20-2016	CLIENT REVIEW		

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CLIENT
ELCON RECYCLING FACILITY
 FALLS TOWNSHIP, BUCKS COUNTY, PA

PROJECT TITLE
EVACUATION & SAFETY EQUIPMENT PLAN

DRAWING TITLE
AREA 7 PLAN

LAST UPDATE 09-20-16	ENGINEER AP	IES CONTRACT No. EV151065.01
DATE 02-09-16	DESIGNER MWM	CADD FILE No. EV15106505HS
SCALE AS NOTED	DRAWN BKA	XREF FILE(S) -

DRAWING NUMBER
HS103

REVISION LEVEL
A

1 PLAN - AREA 7
 S103 SCALE: 3/16"=1'-0"

CONTINUED ON
 HS104



**PRELIMINARY
 NOT FOR CONSTRUCTION**

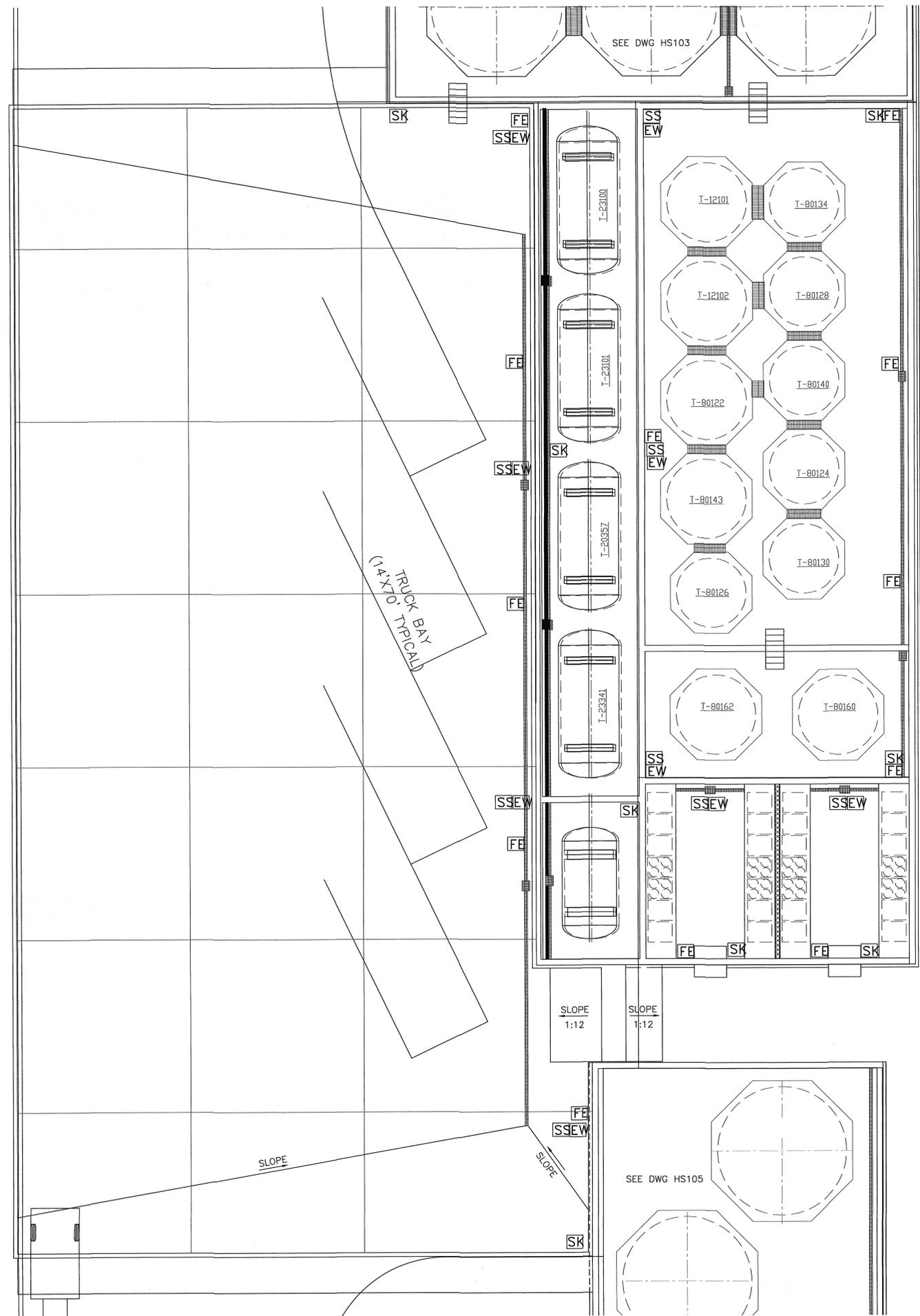
REV.	DATE	DESCRIPTION	BY	APP
A	09-20-2016	CLIENT REVIEW		

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CLIENT
ELCON RECYCLING FACILITY
FALLS TOWNSHIP, BUCKS COUNTY, PA

PROJECT TITLE
EVACUATION & SAFETY EQUIPMENT PLAN

DRAWING TITLE
AREAS 6, 9 & 13 PLAN

LAST UPDATE 09-20-16	ENGINEER AP	IES CONTRACT No. EV151065.01
DATE 09-09-16	DESIGNER BKA	CADD FILE No. EV15106505HS
SCALE 3/16"=1'-0"	DRAWN BKA	XREF FILE(S) -

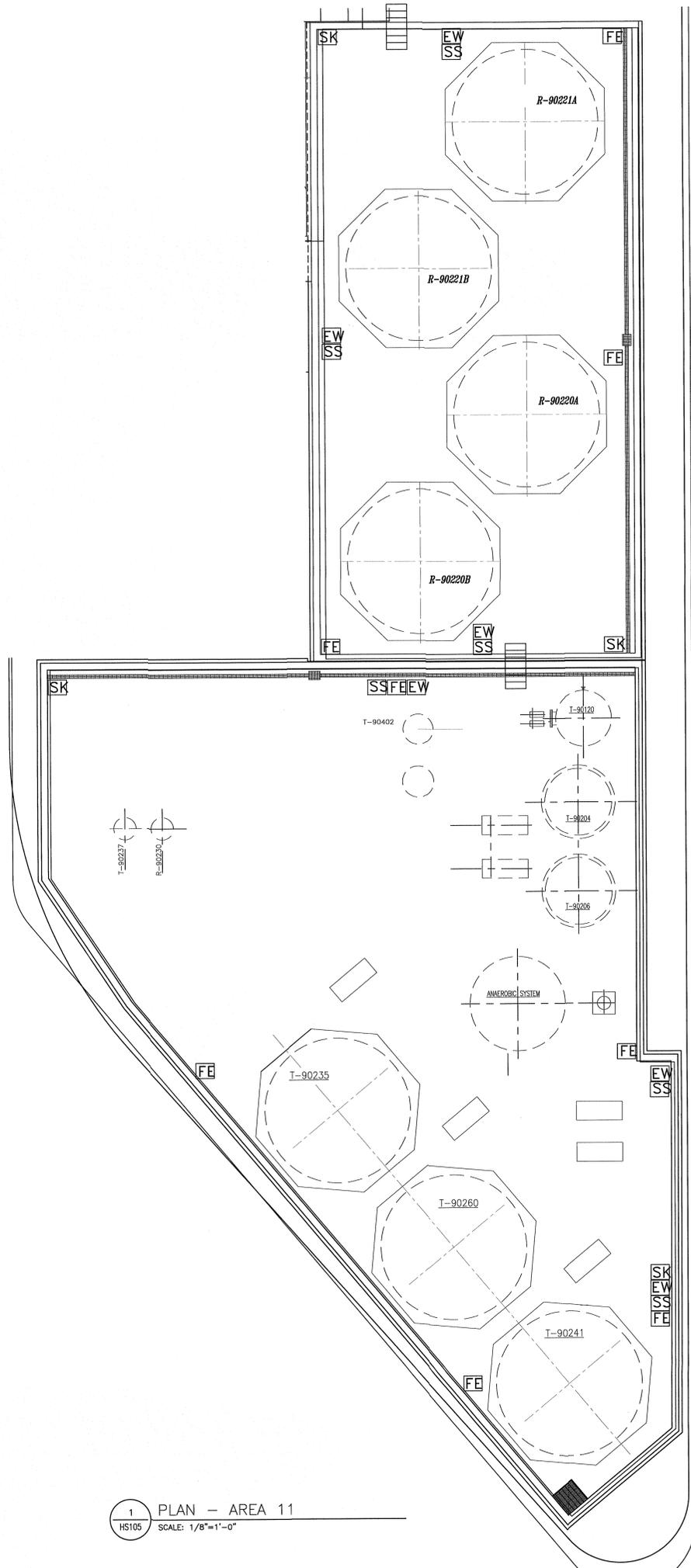
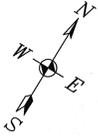
DRAWING NUMBER
HS104

REVISION LEVEL
A

1 PLAN - AREAS 6, 9 & 13
HS104 SCALE: 1/8"=1'-0"

012 4 8
1/8"

**PRELIMINARY
NOT FOR CONSTRUCTION**



1 PLAN - AREA 11
HS105 SCALE: 1/8"=1'-0"

NOTES:

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REV.	DATE	DESCRIPTION	BY	APP.
A	09-20-2016	CLIENT REVIEW		

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CLIENT
ELCON RECYCLING FACILITY
FALLS TOWNSHIP, BUCKS COUNTY, PA

PROJECT TITLE
EVACUATION & SAFETY EQUIPMENT PLAN

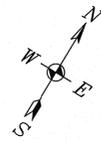
DRAWING TITLE
AREA 11 PLAN

LAST UPDATE 09-20-16	ENGINEER AP	IES CONTRACT No. EV151065.01
DATE 04-19-16	DESIGNER BKA	CADD FILE No. EV15106500HS
SCALE AS NOTED	DRAWN BKA	XREF FILE(S) -

DRAWING NUMBER
HS105

REVISION LEVEL
A

1/8" 0 1 2 4 8
PRELIMINARY
NOT FOR CONSTRUCTION



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REV.	DATE	DESCRIPTION	BY	APP
A	09-20-2016	CLIENT REVIEW		

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FALLS TOWNSHIP, BUCKS COUNTY, PA

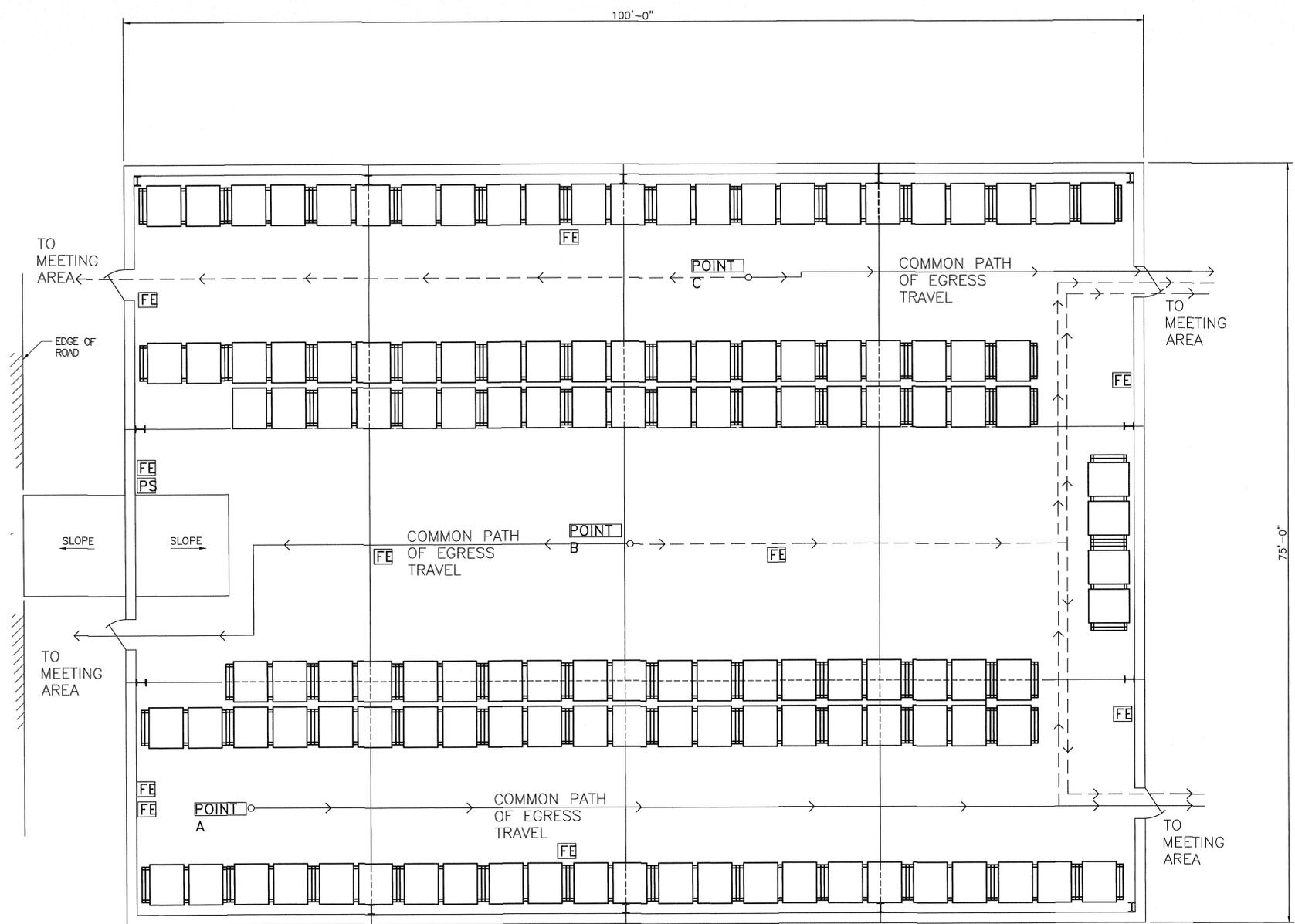
PROJECT TITLE
EVACUATION & SAFETY EQUIPMENT PLAN

DRAWING TITLE
WAREHOUSE PLAN

LAST UPDATE 09-20-16	ENGINEER AP	IES CONTRACT No. EG151065.01
DATE 04-19-16	DESIGNER BKA	CADD FILE No. EV15106505HS
SCALE AS NOTED	DRAWN BKA	XREF FILE(S) -

DRAWING NUMBER
HS106

REVISION LEVEL
A



1 PLAN - WAREHOUSE
HS106 SCALE: 3/16"=1'-0"

3/16" 0 1 2 4 8 12

**PRELIMINARY
NOT FOR CONSTRUCTION**

ATTACHMENTS

ATTACHMENT 1
PLANT DESIGN EMERGENCY CONTROLS

ATTACHMENT 1
Plant Design Emergency Controls

Storage Tanks

Description of Feed Systems, Safety Cutoff, Bypass Systems, and Pressure Controls

Feed to the tanks will be through closed pipe systems. During the unloading operation, Elcon will use check valves or dry disconnect couplings.

Each storage tank will be equipped with the following safety elements:

- On-off operated valve (to be operated from control room only) to assure the waste stream is unloading to the correct storage tank.
- On-off operated valve at the bottom of the tank (to be operated from control room only), connected to a closed piping system.
- Continuous level indicator for fill monitoring
- Level switch high to assure that the tank will not be overfilled, or redundant continuous level indicators
- Overflow line to protect the tank from over pressure in case both level switches fail, except for tanks with high organic materials. These tanks vent to the thermal oxidizer (or backup carbon adsorption unit) to equalize pressure.
- For tanks capable of storing materials containing volatile organic compounds, closed vent suction to maintain a slight vacuum in the tanks so the organic vapors will not vent to the atmosphere. The suction vents are connected to the thermal oxidizer (or backup carbon adsorption unit) for air pollution control.

Overfill protection consists of an interlock on the unloading pump, which stops the pump and closes the valve in case of a high level in the tank (according to continuous level indicator or level switch high).

No bypass systems are designed for the storage tanks.

There are no uncovered tanks in the storage tank area.

Pressure control – Except for three waste storage tanks, two acid (T-12101 and T-12102) and one caustic (T-80162), the storage tanks operate under slight negative pressure and are open to the atmosphere to bring air through the tank system to the thermal oxidizer. Pressure controls are not needed on the tanks because pressure is relieved to the thermal oxidizer under most conditions and can also be relieved to the activated carbon filter when the thermal oxidizer is shut down. Under no circumstances can the vent be relieved directly to the atmosphere. The three tanks that do not vent to the air pollution control system, operate at atmospheric pressure, although there is an option to connect these tanks to the air pollution control system.

ATTACHMENT 1
Plant Design Emergency Controls

Process Equipment

Description of Feed Systems, Safety Cutoff, Bypass Systems, and Pressure Controls –

In broad terms, the types of miscellaneous equipment will be equipped with the following safety elements:

- Tanks, such as day tanks or intermediate holding tanks – 1) Level switch high to assure that the tank will not be overfilled, or redundant continuous level indicators, 2) Continuous level indicator for fill monitoring, and 3) Overflow line to protect the tank from over pressure in case both level switches fail.
- Simple reactors, such as agitators – 1) Level switch high to assure that the vessel will not be overfilled, or redundant continuous level indicators, 2) Continuous level indicator for fill monitoring, and 3) Overflow line to protect the vessel from over pressure in case both level switches fail.
- Complex reactors – 1) Level switch high to assure that the vessel will not be overfilled, or redundant continuous level indicators, 2) Continuous level indicator for fill monitoring, 3) Overflow line to protect the vessel from over pressure in case both level switches fail, other monitoring, as appropriate to each reactor, such as pH or temperature.
- Filter presses – 1) Pressure indicators to control flow of material, 2) automatic shut-off for high pressure
- Heat exchangers, including condensers – Temperature and pressure indicators
- Distillation units – 1) Level switch high to assure that the unit will not be overfilled, or redundant continuous level indicators, 2) Continuous level indicator for fill monitoring, 3) Overflow line to protect the unit from over pressure in case both level switches fail, temperature, and pressure.
- Oven – Multiple temperature indicators, fire eye on burner, lower explosive limit (LEL) monitor, and multiple pressure indicators.
- Dryer – Multiple temperature and pressure indicators

The vessels, such as tanks and reactors, have on-off valves at the bottom of the vessel (to be operated from control room only), connected to a closed piping system.

ATTACHMENT 1
Plant Design Emergency Controls

For vessels capable of handling materials containing volatile organic compounds, closed vent suction is in place to maintain a slight vacuum in the vessels so the organic vapors will not vent to the atmosphere. The suction vents are connected to the thermal oxidizer (or backup carbon adsorption unit) for air pollution control.

Overfill protection consists of an interlock on the pump, which stops the pump and closes the valve in case of a high level in the vessel (according to continuous level indicator or level switch high).

ATTACHMENT 2

HAZARDOUS AND RESIDUAL WASTE CODES TO BE PROCESSED
(TABLES 1 AND 2)

APPENDIX 1
PART A SITE INFORMATION FORM ITEM 11.A.
HAZARDOUS WASTE CODES TO BE PROCESSED
ELCON, FALLS TOWNSHIP, PENNSYLVANIA

Code	Description
D001	Ignitable Waste
D002	Corrosive Waste
D004	Arsenic
D005	Barium
D006	Cadmium
D007	Chromium
D008	Lead
D009	Mercury
D010	Selenium
D011	Silver
D012	Endrin(1,2,3,4,10,10-hexachloro-1,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo, endo-5,8-dimeth-ano-naphthalene)
D013	Lindane (1,2,3,4,5,6-hexachlorocyclohexane,gamma isomer)
D014	Methoxychlor (1,1,1-trichloro-2,2-bis [p-methoxyphenyl]ethane)
D015	Toxaphene (C10 H10 Cl8, Technicalchlorinated camphene, 67-69 percentchlorine)
D017	2,4,5-TP Silvex (2,4,5-Trichlorophenoxypropionic acid)
D018	Benzene
D019	Carbon tetrachloride
D020	Chlordane
D021	Chlorobenzene
D022	Chloroform
D023	o-Cresol
D024	m-Cresol
D025	p-Cresol
D026	Cresol
D027	1,4-Dichlorobenzene
D028	1,2-Dichloroethane
D029	1,1-Dichloroethylene
D030	2,4-Dinitrotoluene
D031	Heptachlor (and its epoxide)
D032	Hexachlorobenzene
D033	Hexachlorobutadiene
D034	Hexachloroethane
D035	Methyl ethyl ketone
D036	Nitrobenzene
D037	Pentachlorophenol
D038	Pyridine
D039	Tetrachloroethylene
D040	Trichloroethylene
D041	2,4,5-Trichlorophenol

Code	Description
D042	2,4,6-Trichlorophenol
D043	Vinyl chloride
F001	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures
F004	The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures
F005	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc, and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process. Wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process will not be subject to this listing at the point of generation if the wastes are not placed outside on the land prior to shipment to a landfill for disposal and are either:

Code	Description
	disposed in a Subtitle D municipal or industrial landfill unit that is equipped with a single clay liner and is permitted, licensed or otherwise authorized by the state; or disposed in a landfill unit subject to, or otherwise meeting, the landfill requirements in §258.40, §264.301 or §265.301. For the purposes of this listing, motor vehicle manufacturing is defined in paragraph (b)(4)(i) of this section, and (b)(4)(ii) of this section describes the recordkeeping requirements for motor vehicle manufacturing facilities
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in §261.31 or §261.32.)
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with §261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol
F037	Petroleum refinery primary oil/water/solids separation sludge—Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges generated in one or

Code	Description
	more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under §261.4(a)(12)(i), if those residuals are to be disposed of
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge—Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.)
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments
K003	Wastewater treatment sludge from the production of molybdate orange pigments
K004	Wastewater treatment sludge from the production of zinc yellow pigments
K005	Wastewater treatment sludge from the production of chrome green pigments
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated)
K007	Wastewater treatment sludge from the production of iron blue pigments
K008	Oven residue from the production of chrome oxide green pigments
K009	Distillation bottoms from the production of acetaldehyde from ethylene
K010	Distillation side cuts from the production of acetaldehyde from ethylene
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile
K015	Still bottoms from the distillation of benzyl chloride
K016	Heavy ends or distillation residues from the production of carbon tetrachloride
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin
K018	Heavy ends from the fractionation column in ethyl chloride production
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production

Code	Description
K021	Aqueous spent antimony catalyst waste from fluoromethanes production
K022	Distillation bottom tars from the production of phenol/acetone from cumene
K023	Distillation light ends from the production of phthalic anhydride from naphthalene
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene
K026	Stripping still tails from the production of methy ethyl pyridines
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene
K031	By-product salts generated in the production of MSMA and cacodylic acid
K032	Wastewater treatment sludge from the production of chlordane
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane
K035	Wastewater treatment sludges generated in the production of creosote
K037	Wastewater treatment sludges from the production of disulfoton
K038	Wastewater from the washing and stripping of phorate production
K040	Wastewater treatment sludge from the production of phorate
K041	Wastewater treatment sludge from the production of toxaphene
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds
K048	Dissolved air flotation (DAF) float from the petroleum refining industry
K049	Slop oil emulsion solids from the petroleum refining industry
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry
K051	API separator sludge from the petroleum refining industry
K052	Tank bottoms (leaded) from the petroleum refining industry
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332)
K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used
K083	Distillation bottoms from aniline production
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene
K095	Distillation bottoms from the production of 1,1,1-trichloroethane
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane

Code	Description
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane, Chlordane, heptachlor.
K098	Untreated process wastewater from the production of toxaphene, Toxaphene.
K099	Untreated wastewater from the production of 2,4-D, 2,4-dichlorophenol, 2,4,6-trichlorophenol.
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds
K103	Process residues from aniline extraction from the production of aniline
K104	Combined wastewater streams generated from nitrobenzene/aniline production
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes
K106	Wastewater treatment sludge from the mercury cell process in chlorine production
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt, Ethylene thiourea.
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts, Ethylene thiourea.
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide, Dimethyl sulfate, methyl bromide.
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal
K148	Residues from coal tar distillation, including but not limited to, still bottoms

Code	Description
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)
K159	Organics from the treatment of thiocarbamate wastes
K169	Crude oil storage tank sediment from petroleum refining operations
K170	Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations
K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process
K178	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process
K181	Nonwastewaters from the production of dyes and/or pigments (including nonwastewaters commingled at the point of generation with nonwastewaters from other processes) that, at the point of generation, contain mass loadings of any of the constituents identified in paragraph (c) of this section that are equal to or greater than the corresponding paragraph (c) levels, as determined on a calendar year basis. These wastes will not be hazardous if the nonwastewaters are: (i) disposed in a Subtitle D landfill unit subject to the design criteria in §258.40, (ii) disposed in a Subtitle C landfill unit subject to either §264.301 or §265.301, (iii) disposed in other Subtitle D landfill units that meet the design criteria in §258.40, §264.301, or §265.301, or (iv) treated in a combustion unit that is permitted under Subtitle C, or an onsite combustion unit that is permitted under the Clean Air Act. For the purposes of this listing, dyes and/or pigments production is defined in paragraph (b)(1) of this section. Paragraph (d) of this section describes the process for demonstrating that a facility's nonwastewaters are not K181. This listing does not apply to wastes that are otherwise identified as hazardous under §§261.21-261.24 and 261.31-261.33 at the point of generation. Also, the listing does not apply to wastes generated before any annual mass loading limit is met
U001	Acetaldehyde (I), Ethanal (I)
U002	Acetone (I), 2-Propanone (I)
U003	Acetonitrile (I,T)
U004	Acetophenone, Ethanone, 1-phenyl-
U007	Acrylamide, 2-Propenamide
U008	Acrylic acid (I), 2-Propenoic acid (I)
U012	Aniline (I,T), Benzenamine (I,T)
U025	Dichloroethyl ether, Ethane, 1,1'-oxybis[2-chloro-
U031	1-Butanol (I), n-Butyl alcohol (I)
U032	Calcium chromate, Chromic acid H ₂ CrO ₄ , calcium salt
U037	Benzene, chloro-, Chlorobenzene

Code	Description
U038	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester, Chlorobenzilate
U043	Ethene, chloro-, Vinyl chloride
U044	Chloroform, Methane, trichloro-
U045	Methane, chloro- (I, T), Methyl chloride (I,T)
U048	o-Chlorophenol, Phenol, 2-chloro-
U052	Cresol (Cresylic acid), Phenol, methyl-
U066	1,2-Dibromo-3-chloropropane, Propane, 1,2-dibromo-3-chloro-
U067	Ethane, 1,2-dibromo-
U067	Ethylene dibromide
U068	Methane, dibromo-
U068	Methylene bromide
U070	Benzene, 1,2-dichloro
U070	o-Dichlorobenzene
U071	Benzene, 1,3-dichloro-
U071	m-Dichlorobenzene
U072	Benzene, 1,4-dichloro-
U072	p-Dichlorobenzene
U077	Ethane, 1,2-dichloro-, Ethylene dichloride
U080	Methane, dichloro-, Methylene chloride
U082	2,6-Dichlorophenol
U082	Phenol, 2,6-dichloro-
U083	Propylene dichloride
U083	Propane, 1,2-dichloro-
U092	Dimethylamine (I), Methanamine, N-methyl- (I)
U098	1,1-Dimethylhydrazine, Hydrazine, 1,1-dimethyl-
U099	1,2-Dimethylhydrazine, Hydrazine, 1,2-dimethyl-
U101	2,4-Dimethylphenol, Phenol, 2,4-dimethyl-
U103	Dimethyl sulfate, Sulfuric acid, dimethyl ester
U108	1,4-Diethyleneoxide, 1,4-Dioxane
U111	Di-n-propylnitrosamine, 1-Propanamine, N-nitroso-N-propyl-
U112	Acetic acid ethyl ester (I), Ethyl acetate (I)
U113	Ethyl acrylate (I), 2-Propenoic acid, ethyl ester (I)
U116	Ethylenethiourea
U116	2-Imidazolidinethione
U117	Ethane, 1,1'-oxybis-(I), Ethyl ether (I)
U118	2-Propenoic acid, 2-methyl-, ethyl ester
U118	Ethyl methacrylate
U122	Formaldehyde
U123	Formic acid (C,T)
U134	Hydrofluoric acid (C,T), Hydrogen fluoride (C,T)
U135	Hydrogen sulfide, Hydrogen sulfide H ₂ S
U140	Isobutyl alcohol (I,T), 1-Propanol, 2-methyl- (I,T)

Code	Description
U144	Acetic acid, lead(2+) salt, Lead acetate
U145	Lead phosphate, Phosphoric acid, lead(2+) salt (2:3)
U152	Methacrylonitrile, 2-Propenenitrile, 2-methyl- (I,T)
U153	Methanethiol (I, T), Thiomethanol (I,T)
U154	Methanol (I), Methyl alcohol (I)
U155	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-, Methapyrilene
U159	2-Butanone (I,T), Methyl ethyl ketone (MEK) (I,T)
U161	Methyl isobutyl ketone (I), 4-Methyl-2-pentanone (I), Pentanol, 4-methyl-
U162	Methyl methacrylate (I,T), 2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U173	Ethanol, 2,2'-(nitrosoimino)bis-, N-Nitrosodiethanolamine
U174	Ethanamine, N-ethyl-N-nitroso-, N-Nitrosodiethylamine
U176	N-Nitroso-N-ethylurea, Urea, N-ethyl-N-nitroso-
U182	Paraldehyde, 1,3,5-Trioxane, 2,4,6-trimethyl-
U183	Benzene, pentachloro-, Pentachlorobenzene
U184	Ethane, pentachloro-, Pentachloroethane
U185	Benzene, pentachloronitro-, Pentachloronitrobenzene (PCNB)
U188	Phenol
U191	2-Picoline, Pyridine, 2-methyl-
U194	1-Propanamine (I,T), n-Propylamine (I,T)
U196	Pyridine
U204	Selenious acid, Selenium dioxide
U209	Ethane, 1,1,2,2-tetrachloro-
U210	Ethene, tetrachloro-
U210	Tetrachloroethylene
U211	Carbon tetrachloride
U211	Methane, tetrachloro-
U214	Acetic acid, thallium(1+) salt, Thallium(I) acetate
U216	Thallium(I) chloride
U216	Thallium chloride TlCl
U217	Nitric acid, thallium (1+) salt
U217	Thallium(I) nitrate
U220	Toluene
U226	Ethane, 1,1,1-trichloro-, Methyl chloroform, 1,1,1-Trichloroethane
U227	Ethane, 1,1,2-trichloro-, 1,1,2-Trichloroethane
U228	Ethene, trichloro-, Trichloroethylene
U235	1-Propanol, 2,3-dibromo-, phosphate (3:1), Tris(2,3-dibromopropyl) phosphate
U238	Carbamic acid, ethyl ester, Ethyl carbamate (urethane)
U239	Benzene, dimethyl- (I), Xylene (I)
U240	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters, 2,4-D, salts & esters
U249	Zinc phosphide Zn ₃ P ₂ , when present at concentrations of 10% or less
U359	Ethanol, 2-ethoxy-, Ethylene glycol monoethyl ether

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Code	Description
U395	Diethylene glycol, dicarbamate, Ethanol, 2,2'-oxybis-, dicarbamate.
U404	Ethanamine, N,N-diethyl-, Triethylamine.

NOTE:

Elcon will not accept the following waste streams: radioactive materials, polychlorinated biphenyl compounds (PCBs), reactive waste, medical waste, wastes containing chlorinated dioxins/furans, and cyanide.

APPENDIX 2
PART A SITE INFORMATION FORM ITEM 11.B.
WASTE CODES FOR STATE-REGULATED RESIDUAL WASTES
ELCON, FALLS TOWNSHIP, PENNSYLVANIA

Code¹	Description
111	Lubricating Soaps
201	Water Treatment Plant Sludge/Sediment
203	Industrial Wastewater Treatment Sludge/Sediment Including Acid Mine Drainage Sludge
204	Metallurgical Sludge
206	Paint, Coating Sludge and Scale
207	Tank Bottoms
208	Still Bottoms
209	Oily Sludge, Petroleum Derived
213	Lime-Stabilized Spent Pickle Liquor
214	Cooling Tower Sediment/Sludge
301	Acidic Chemicals (pH<6)
302	Basic Chemicals (pH>8)
303	Combustible Chemicals, Non-Haz
304	Chemical Salts
308	Spent Dyes
310	Detergents, Cleaning Agents
311	Off-Spec Products, Intermediates
312	Pharmaceutical, Biological (Mfg and Lab Wastes)
314	Alcohols (Non-Haz)
315	Solvents (Non-Aqueous, Non-Haz)
316	Solvents (Aqueous, Non-Haz)
317	Glycols/Antifreeze, Machine Coolants
318	Photographic Chemicals (Non-Haz)
320	Spent Plating Baths (Non-Haz)
399	Other Chemical Wastes
401	Leather Wastes
411	Agricultural Wastes (Fertilizers, Pesticides, Feed, Feed Supplements)
420	Process Wastewaters (Non-Haz)
421	Contaminated Non-Contact Cooling Waters
422	Oil/Water Emulsions, Oily Wastewaters
423	Landfill Leachate
504	Paints (Liquid)
509	Waste Oil That is Not Hazardous Waste Oil (automotive, machining, cutting, etc.)
801	Non-oil and Gas Well Drilling Waste - includes drilling fluids, residuals, and drill cuttings from monitoring well and drinking water well construction

Code¹	Description
802 ²	Produced Fluid – includes flow-back ² , brine and any other formation fluids recovered from the wellbore. Flow-back is defined as fracturing/stimulation fluids, including fracturing sand recovered from the wellbore after injection into the wellbore.
803	Drilling Fluid Waste – oil and gas drilling mud, other drilling fluids other than fracturing fluid and spent lubricant.
804	Wastewater Treatment Sludge – sludge generated during the processing of any oil and gas-related wastewater including any sediment generated during storage of oil and gas-related wastewater. Mixed loads of wastewater treatment sludge with other waste for disposal purposes, such as filter socks (RWC 812), will be coded as RWC 804.
808	Servicing Fluid – oil and gas production well maintenance/work over fluids, oil/water-based mud and foam and well cellar cleanout waste after drilling operations have been completed. Does not include well cellar cleanout waste covered under existing RWCs, well cellar fluids that are recycled/reused, or rainwater that is collected in a well cellar that has not been mixed with a residual waste.
899	Other Oil and Gas Wastes – all remaining oil and gas wastes other than those already covered under existing RWCs. Includes containment water. Does not include rainwater that is collected in a containment area that has not been mixed with residual waste.
902	Non-Hazardous Residue from Treatment of Hazardous Waste (other than 203)
999	Other

¹ Residual Waste Codes are from 2540-PM-BWM0404, revised May 2016. The Department appears to be updating this list again but final is not yet available. Elcon is proposing to accept non-fracking drilling fluids. Elcon will accept liquid (flowing) materials.

² Elcon will not accept flow-back wastes as this is related to fracking. Elcon will accept brine and other formation liquids generated by non-fracking drilling methods.

Note

Elcon will not accept liquid waste related to fracking. Pennsylvania Residual Waste Code 805, Unused Fracturing Fluid Waste (oil and gas fracturing/stimulation fluid waste and fracturing sand waste that has not been injected into a wellbore), has not been included in the list above.

ATTACHMENT 3
LIST OF TANKS & PROCESS EQUIPMENT

**TABLE D-1
LIST OF STORAGE TANKS IN AREAS 6 AND 7**

	Tag No.	Service	Contents	Nominal Volume (gal)	Nominal Dimensions	Thickness	Materials of Construction	Containment Area	Area
T-	12102	Storage tank unit 12	Waste water	26,500	I.D. 13.2', height 25.9'	1/8" - 1/4"	PE/PP/HDPE	Acid containment	6
T-	80122	Acids storage tank	Acids	26,500	I.D. 13.2', height 25.9'	first 1/3 of tank will be approx 2 1/4" thick	PE/PP/HDPE	Acid containment	6
T-	80124	Acids storage tank	Acids	13,100	I.D. 12', height 15.5'	first 1/3 of tank will be approx 1 1/2" thick	PE/PP/HDPE	Acid containment	6
T-	80126	Acids storage tank	Acids	13,100	I.D. 12', height 15.5'	first 1/3 of tank will be approx 1 1/2" thick	PE/PP/HDPE	Acid containment	6
T-	80128	Acids storage tank	Acids	13,100	I.D. 12', height 15.5'	first 1/3 of tank will be approx 1 1/2" thick	PE/PP/HDPE	Acid containment	6
T-	80130	Acids storage tank	Acids	13,100	I.D. 12', height 15.5'	first 1/3 of tank will be approx 1 1/2" thick	PE/PP/HDPE	Acid containment	6
T-	80134	Acids storage tank	Acids	13,100	I.D. 12', height 15.5'	first 1/3 of tank will be approx 1 1/2" thick	PE/PP/HDPE	Acid containment	6
T-	80140	Acids storage tank	Acids	13,100	I.D. 12', height 15.5'	first 1/3 of tank will be approx 1 1/2" thick	PE/PP/HDPE	Acid containment	6
T-	80143	Acids storage tank	Acids	26,500	I.D. 13.2', height 25.9'	first 1/3 of tank will be approx 2 1/4" thick	PE/PP/HDPE	Acid containment	6
T-	12101	Storage tank unit 12	Waste water	26,500	I.D. 13.2', height 25.9'	1/8" - 1/4"	PE	Acid containment	6
T-	80160	Caustic soda storage tank (fresh caustic, not waste)	Caustic soda	11,200	I.D. 11.48', height 14.44'	1/8" - 1/4"	CS	Caustic containment	6

**TABLE D-1
LIST OF STORAGE TANKS IN AREAS 6 AND 7**

	Tag No.	Service	Contents	Nominal Volume (gal)	Nominal Dimensions	Thickness	Materials of Construction	Containment Area	Area
T-	80162	Caustic soda storage tank (waste)	Caustic soda	11,200	I.D. 11.48', height 14.44'	1/8" - 1/4"	CS	Caustic containment	6
T-	20357	Rich distillate tank	Organic waste to 80% VOC	13,200	I.D. 10', length 22.5'	3/16"	CS/SS	Flammable containment	6
T-	23100	Unit 23 feed tank	Organic waste water to 30% VOC	13,200	I.D. 10', length 22.5'	3/16"	CS/SS	Flammable containment	6
T-	23101	Unit 23 feed tank	Organic waste water to 30% VOC	13,200	I.D. 10', length 22.5'	3/16"	CS/SS	Flammable containment	6
T-	23341	C-23344 feed tank	Organic waste water to 30% VOC	13,200	I.D. 10', length 22.5'	3/16"	SS	Flammable containment	6
T-	20120A	Storage tank unit 20	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7
T-	20120B	Storage tank unit 20	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7
T-	20121A	Storage tank unit 20	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7
T-	20121B	Storage tank unit 20	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7
T-	20122A	Storage tank unit 20	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7

**TABLE D-1
LIST OF STORAGE TANKS IN AREAS 6 AND 7**

	Tag No.	Service	Contents	Nominal Volume (gal)	Nominal Dimensions	Thickness	Materials of Construction	Containment Area	Area
T-	20122B	Storage tank unit 20	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7
T-	21100A	Storage tanks	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7
T-	21100B	Storage tanks	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7
T-	21101A	Storage tanks	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7
T-	21101B	Storage tanks	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7
T-	Future	Storage tanks	Waste water	136,000	I.D. 21.5', height 50'	1/8" - 1/4"	CS - epoxy coating	Waste containment	7

Notes:

- 1 All tanks are vertical except for Tanks T-20357, T23100, T-23101, and T-23341. These tanks are horizontal.
- 2 All tanks are designed to operate at ambient temperature.
- 3 All tanks are designed to operate at atmospheric pressure or at a slight negative pressure.
- 4 Materials of construction abbreviations: PE - polyethylene; PP - polypropylene; HDPE; - high density polyethylene; CS - carbon steel; SS - stainless steel; FRP - fiberglass reinforced plastic

**TABLE D - 6
LIST OF MAJOR PIECES OF EQUIPMENT
MISCELLANEOUS UNITS**

Tag No.	Service	Agitated tank	Jacket	Contents	Nominal Volume (gal)	Nominal Dimensions	Nominal Thickness	Temperature, C (operating/design)	Materials of Construction	Containment	Area
R-12201	Unit 12 Reactor	yes	option	Acidic Waste Water	13,000	11' 2 1/2" D X 17' 11" H	0.5"	amb / 60	FRP 470	Process containment	5
R-12213	Lime reactor	yes		Lime Reactor	3,000	I.D. 8', length 8'	0.5"	amb / 60	CS	Process containment	5
T-12215	Lime reactor	yes		Lime Reactor	3,000	I.D. 8', length 8'	0.5"	amb / 60	SS	Process containment	5
T-12231	Water Tank			Effluent water	3,000	I.D. 8', length 8', cone - 3'	0.5"	amb / 60	PE/PP/SS	Process containment	5
R-12267	Reactor	yes		Effluent water	500	I.D. -3'3", length 16'	3/16"	amb/60	FRP 470	Process containment	5
T-12263	Settler			Effluent water	5,000	I.D. 7' 3", length 13' - 16'	3/16"	amb/60	PE/PP/FRP 470	Process containment	5
R-20206	Non-continuous Reactor	yes		Wastewater	13,000	I.D.11' 6", length 17'	0.5"	amb / 60	FRP 470	Production plant	5
R-20210	Non-continuous Reactor	yes		Wastewater	13,000	I.D.11' 6", length 17'	0.5"	amb / 60	FRP 470	Production plant	5
R-20214	Non-continuous Reactor	yes		Wastewater	13,000	I.D.11' 6", length 17'	0.5"	amb / 60	FRP 470	Production plant	5
D-20220	Settler unit 20			Wastewater	30,000	I.D. 20', length 15', cone - 6.5'	1/8" - 1/4"	amb / 60	CS with epoxy or PE lining	Production Plant	5
T-20224	Overflow Tank from Settler Unit 20			Wastewater	500	I.D. 4'6", length - 4'	3/16"	amb / 60	SS	Process containment	5
T-20401	FED Feed			Wastewater	25,000	I.D. 13'-15', length 20-30'	1/8" - 1/4"	amb / 100	CS	Process containment	5
T-20411	FED Flash Tank			Wastewater	5,000	I.D. 7' 3", length 13' - 16'	3/16"	110 / 180	SS	Production plant	5

TABLE D - 6
LIST OF MAJOR PIECES OF EQUIPMENT
MISCELLANEOUS UNITS

Tag No.	Service	Agitated tank	Jacket	Contents	Nominal Volume (gal)	Nominal Dimensions	Nominal Thickness	Temperature, C (operating/design)	Materials of Construction	Containment	Area	
T	20402	Crystallizer Feed Tank	yes		Brine	13,000	I.D. 13', length 15', cone - 6.5'	1/8" - 1/4"	amb / 100	CS with epoxy or PE lining	Process containment	5
T-	20501	Crystallizer	yes		Brine	5,000	I.D. 7' 3", length 13' - 16'	3/16"	110 / 180	SS	Production plant	5
T	20528	Crystallizer Condensate Tank			Effluent water	1,500	I.D. 6', length 7'	5/16"	amb / 100	SS	Production plant	5
T-	20525	Centrifuge Effluent			Concentrated Brine	500	I.D. 2.5' - 3' 3", length 13' - 16'	3/16"	110 / 180	SS	Production plant	5
H-	20540	Thin Film Evaporator			Brine	1,500	I.D. 6', length 7'	5/16"	60 / 180	SS	Production plant	5
T-	20613	Scrubber tank			Sludge and water	2,000	I.D. - 5.9', length 9.5'	5/16"	60 / 180	SS	Production plant	5
T-	20623	Sludge silo - product			Dry sludge	20,000	I.D. 9'-12', length - 25'-30'	1/8" - 1/4"	amb/60	CS	Production plant	5
T-	20650	Sludge tank			Sludge	1,320	4.5' I.D., 12' H		amb/60	CS	Production plant	5
R-	23201	Unit 23 reactor	yes	yes	Organic waste water 10% VOC	3,000	I.D. 8', length 8'	0.5"	amb / 100	SS	Production plant	5
C-	23344	Distillation column			Wastewater	1,750	I.D. 2' 6", length - 30'	1/4"	111 / 180	SS	Production plant	5
T-	90120	treating water collection tank	yes		Effluent water	5,000	I.D. 8', length 13' - 16'	first 1/3 of tank will be approx 1 1/2" thick	amb/60	PE	Biological treatment	11
T	90204	Biologic treatment feed tank			Effluent water	26,500	13' 2 1/2" dia. X 25' 10 3/4" tall	first 1/3 of tank will be approx 2 1/4" thick	amb / 60	PE / HDPE/CS/SS	Biological treatment	11

**TABLE D - 6
LIST OF MAJOR PIECES OF EQUIPMENT
MISCELLANEOUS UNITS**

Tag No.	Service	Agitated tank	Jacket	Contents	Nominal Volume (gal)	Nominal Dimensions	Nominal Thickness	Temperature, C (operating/design)	Materials of Construction	Containment	Area
T- 90206	Biologic treatment feed tank			Effluent water	26,500	13' 2 1/2" dia. X 25' 10 3/4" tall	first 1/3 of tank will be approx 2 1/4" thick	amb / 60	PE / HDPE/CS/SS	Biological treatment	11
R- 90208	Aerobic reactor			Effluent water	1,500	I.D. 2', length 49'6"	5/16"	amb / 60	PE / HDPE/PP	Biological treatment	11
R- 90209	Aerobic reactor			Effluent water	66,000	I.D. 13'6", length 55'6"	5/16"	amb / 60	SS	Biological treatment	11
R- 90220A	Biologic treatment			Effluent water	110,000	I.D. 21' 4", length 39' 5"	1/8"	amb/60	CS, with epoxy	Biological treatment	11
R- 90220B	Biologic treatment			Effluent water	110,000	I.D. 21' 4", length 39' 5"	1/8"	amb/60	CS, with epoxy	Biological treatment	11
R- 90221A	Biologic treatment			Effluent water	110,000	I.D. 21' 4", length 39' 5"	1/8"	amb/60	CS, with epoxy	Biological treatment	11
R- 90221B	Biologic treatment			Effluent water	110,000	I.D. 21' 4", length 39' 5"	1/8"	amb/60	CS, with epoxy	Biological treatment	11
T- 90226	Overflow			Effluent water	500	I.D. 4'6" , length - 4'	3/16"	amb/60	SS	Biological treatment	11
D- 90225	Settler			Effluent water	25,000	I.D. 20', length 15' , cone - 6.5'	1/8" - 1/4"	amb/60	CS with epoxy or PE lining	Biological treatment	11
T- 90235	Clean water tank			Effluent water	110,000	I.D. 21' 4", length 39' 5"	1/8"	amb/60	CS	Biological treatment	11
T- 90241	Clean water tank			Effluent water	110,000	I.D. 21' 4", length 39' 5"	1/8"	amb/60	CS	Biological treatment	11
T- 90260	Clean water tank			Effluent water	55,000	I.D. 21' 4", length 20' 5"	1/8"	amb/60	CS	Biological treatment	11
R- 90401	Ammonia treatment reactor			Effluent water	800	I.D. 4'5", 7'H	NA	amb/60	CS/SS/PE	Biological treatment	11
T- 90402	Overflow			Effluent water	800	I.D. 4'5", 7'H		amb/60	CS/SS	Biological treatment	11

**TABLE D - 6
LIST OF MAJOR PIECES OF EQUIPMENT
MISCELLANEOUS UNITS**

Tag No.	Service	Agitated tank	Jacket	Contents	Nominal Volume (gal)	Nominal Dimensions	Nominal Thickness	Temperature, C (operating/design)	Materials of Construction	Containment	Area
T- 90405	MVR feed tank			Effluent water	26,500	I.D. 13', H 27'		amb/60	CS	Biological treatment	11
T- 90411	MVR flash tank			Effluent water	5,000	I.D. 7' 3", length 13' - 16'	3/16"	110 / 180	SS	Biological treatment	11
F- 12240	Centrifuge – gypsum			Gypsum	25 gpm	16' L X 5' W X 5' H	NA	amb/60	SS	Production plant	5
F- 12243	Centrifuge -- gypsum			Gypsum	25 gpm	16' L X 5' W X 5' H	NA	amb/60	SS	Production plant	5
T- 12270	Process Water Tank			Process water	13,200	11' 2 ½" D 17' 11" H		amb/60	FRP	Production plant	5
FP- 20218A	Filter Press			Wastewater	1 m ² /43 plates/1 m ³	16' L X 5' W X 5' H	NA	amb/60	PP	Production plant	5
FP- 20218B	Filter Press			Wastewater	1 m ² /43 plates/1 m ³	16' L X 5' W X 5' H	NA	amb/60	PP	Production plant	5
FP- 20218C	Filter Press			Wastewater	1 m ² /43 plates/1 m ³	16' L X 5' W X 5' H	NA	amb/60	PP	Production plant	5
H- 20410C	FED Evaporator			Waste liquid solvent	9E6 kcal/hr	4' L X 4' W	NA	Shell:170/200 Tube: 110/180	SS	Production plant	5
H- 20410D	FED Evaporator			Waste liquid solvent	9E6 kcal/hr	4' L X 4' W	NA	Shell:170/200 Tube: 110/180	SS	Production plant	5
H- 20513A	Crystallizer re-boiler			Brine	3E6 kcal/hr	4' L X 4' W	NA	Shell:170/200 Tube: 110/180	SS	Production plant	5
F- 20522	Salts centrifuge			Brine	25 gpm	13' L X 5' W	NA	112/140	SS316	Production plant	5
F- 20524	Salts centrifuge			Brine	25 gpm	13' L X 5' W	NA	112/140	SS316	Production plant	5
O- 20608	Rotary oven			Sludge	1,500 kg/hr	46 L X 1.3' I.D.	NA	150/800	CS	Production plant	5

**TABLE D - 6
LIST OF MAJOR PIECES OF EQUIPMENT
MISCELLANEOUS UNITS**

	Tag No.	Service	Agitated tank	Jacket	Contents	Nominal Volume (gal)	Nominal Dimensions	Nominal Thickness	Temperature, C (operating/design)	Materials of Construction	Containment	Area
O-	20621	Drying heater			Sludge	1,100 kg/hr	23' L, 3.2'I,D.	NA	550/700	SS	Production plant	5
T-	90240	Ultra-filtration system			Treated wastewater	Per vendor	Varies	Varies	amb/60	Varies	Biological treatment	11
F-	90250	RO & NF Treatment			Treated wastewater	Per vendor	Varies	Varies	amb/60	Varies	Biological treatment	11
T-	20509	Thin Film Evaporator Feed Tank			Brine	1,320	4.5' I.D., 12' H		amb/60	SS	Production plant	5

Notes:

- 1 Smaller tanks and service vessels may not be listed. However, all equipment will comply with RCRA requirements, such as containment, inspections, etc.
- 2 All tanks are designed to operate at atmospheric pressure or at a slight negative pressure, except as follows: 1) FP-12240, F-12243, FP-20218 A/B/C are at 8 barg; 2)Shell of H-2041 OC/D and H-25513A is at 7/12 barg, where the first number operating and second is design; and 3) F-20522 and F-20524 is at atm/8 barg.
- 3 Materials of construction abbreviations: PE - polyethylene; PP - polypropylene; HDPE; - high density polyethylene; CS - carbon steel; SS - stainless steel; FRP - fiberglass reinforced plastic

ATTACHMENT 4
CONTAINMENT VOLUME CALCULATIONS

INCOMING CONTAINER STORAGE (AREA 13)			
CONTAINMENT CALCULATIONS		Prepared By:	SA
		Checked:	APP 1/3/2017
<i>Step 1 -- Determine Required Containment Volume:</i>			
			Reference Drawing: S-106
	Acid	Caustic	NOTES:
No. of Totes	42.0	39.0	
Volume of each tote, gal	275.0	275.0	
Total volume, gal	11,550.0	10,725.0	
10% of total volume, gal	1,155.0	1,072.5	
10% of total volume, cf	154.4	143.4	
Required containment volume, ft ³	154	143	
<i>Step 2 -- Determine Available Containment Capacity:</i>			
	Acid	Caustic	
Overall length, ft	29.0	29.0	
Overall width, ft	21.2	21.2	
Container shelf width (two), ft	10.0	10.0	
Overall width, excluding shelves, ft	11.2	11.2	
Ramp length, ft	2.1	2.1	
Ramp width, ft	5.5	5.5	
Gross area, ft ²	313.6	313.6	Gross area = (overall length x overall width, excluding shelves) - (ramp width x ramp length)
Curb height, ft	0.5	0.5	
Curbed area height, ft	0.3	0.3	
Sloped area height, ft	0.5	0.5	
Average slope height, ft	0.25	0.25	
Volume of 4" curbed area, ft ³	105	105	Volume of 4" curbed area = (curbed area height) x (gross area)
Volume of sloped curbed area, ft ³	78	78	Volume of slope curbed area = (average slope height) x (gross area)
Containment volume available (minimum), ft ³	183	183	
<i>Step 3 -- Determine if Containment Volume is Adequate:</i>			
	Acid	Caustic	
Required containment volume, ft ³	154	143	
Containment volume available (minimum), ft ³	183	183	
Containment volume adequate?	Yes	Yes	

GENERAL WASTE (AREA 7)			
CONTAINMENT CALCULATIONS	Prepared By:	SA	
	Checked:	APP	1/3/2017
<u>Step 1 -- Determine Required Containment Volume:</u>			Reference Drawing: S-103
Tanks:		Number*	NOTES:
Nominal size, gal	135,784	11	*Calculations include the future tank, for a total of 11 tanks
Nominal size, ft ³	18,153		
Overall length of Section 1, ft	80.84		
Overall width of Section 1, ft	84.330		
Total area of Section 1, ft ²	6,817		
Overall length of Section 2, ft	54.5		
Overall width of Section 2, ft	26.0		
Area of two deducted corners, ft ²	72.3		Area of two deducted corners = 8.5 ²
Total area of Section 2, ft ²	1,345		
Gross area of containment, ft ²	8,162		
Gross area of containment + total surrounding wall areas, ft ²	8,538		<i>Surrounding wall areas are considered for the calculation of the required rainfall event volume. This assumes that precipitation that falls on the containment walls flows into the containment area. For adjacent containment areas that share walls, it is assumed that half of the precipitation flows into each adjacent containment area.</i>
25-year rainfall depth, in	6.25		
25-year rainfall event volume, ft ³	4,447		25-year rainfall event volume = (Gross area of containment + total surrounding wall areas) * (rainfall depth/12)
Required containment volume, ft ³	22,600		Required containment = Largest tank volume + 25-year rainfall
<u>Step 2 -- Determine Available Containment Capacity:</u>			<i>Storage volumes for sloped area are calculated for Section 1 and Section 2 of Area 7 separately, because the layouts are different. There are 9 tanks in the Section 1 including the future tank, and two tanks in Section 2.</i>
Storage volumes			
Pad diameter, ft	23.00		
Tank pad areas (Section 1), ft ²	3,942		Tank pad area = number of tanks x (octagonal pad diameter) ² x 0.828 <i>(0.828 constant derived from formula for area of an octagon)</i>

Gross area minus pad areas (Section 1), ft ²	2,875	
Tank pad areas (Section 2), ft ²	876	
Gross area minus pad areas (Section 2), ft ²	469	
Total gross area minus pad areas, ft²	3,344	Total gross area minus pad areas = 2,875 + 469 = 3,344
Storage volume -- sloped area (Section 1):		
Average depth, in	4.5	
Volume, ft³	1,078	Sloped area volume (Section 1) = (average depth/12) x gross area minus pad areas
Storage volume -- sloped area (Section 2):		
Overall depth, in	9.0	
Volume, ft³	117	Sloped area volume (Section 2) = (overall depth/12) x gross area minus pad areas / 3 (formula derived from volume of a pyramid)
Storage volume -- below pads:		
Height of pads, in	10.0	
Volume, ft³	2,786.55	Volume below tank pads = (height of pads/12) x Total gross area minus pad areas
Storage volume -- above pads:		
Tank diameter, ft	21	
Total tank areas, not including pad area, ft ²	3,808	Total tank area = (number of tanks x diameter ² x 3.14)/4
Gross area minus tank areas, ft ²	4,354	Gross area minus tank areas = 8,162 - 3,808 = 4,354
Containment area height above pads, ft	6.2	
Volume, ft³	26,820	Volume above tank pads = gross area minus tank areas x containment area height above pads
Containment volume available, ft³	30,802	
<i>Step 3 -- Determine if Containment Volume is Adequate:</i>		
Required containment volume, ft ³	22,600	
Containment volume available (minumum), ft ³	30,802	
Containment volume adequate?	Yes	

INCOMING ACID TANK STORAGE (PORTION OF AREA 6)			
CONTAINMENT CALCULATIONS		Prepared By:	SA
		Checked:	APP 1/3/2017
<i>Step 1 -- Determine Required Containment Volume:</i>			
		Reference Drawing: S-104	
Tanks:	Nominal Size (gal)	Number	NOTES:
	26,539	4	
	13,112	6	
Total volume (nominal), gal	184,828		
Largest tank (nominal), gal	26,539		
Largest tank (nominal), ft ³	3,548		
Overall length of containment area, ft	89.00		
Overall width of containment area, ft	43.50		
Gross area of containment, ft ²	3,872		
Gross area of containment + total surrounding wall areas, ft ²	4,073		<i>Surrounding wall areas are considered for the calculation of the required rainfall event volume. This assumes that precipitation that falls on the containment walls flows into the containment area. For adjacent containment areas that share walls, it is assumed that half of the precipitation flows into each adjacent containment area.</i>
25-year rainfall depth, in	6.25		
25-year rainfall event volume, ft ³	2,121		25-year rainfall event volume = (Gross area of containment + total surrounding wall areas) * (rainfall depth/12)
Required containment volume, ft ³	5,669		Required containment volume = Largest tank volume + 25-year rainfall
<i>Step 2 -- Determine Available Containment Capacity:</i>			
Tank pads	Diameter (ft)	Number	
	15.12	4	
	13.50	6	
Total tank pad areas, ft ²	1,663		Total tank pad area = number of tanks x (octagonal pad diameter) ² x 0.828 (0.828 constant derived from formula for area of an octagon)
Net area minus pad areas, ft ²	2,209		

Storage volume -- sloped area:			
Average depth, in	4.5		
Volume, ft³	828		Sloped area volume = (average depth/12) x gross area minus pad areas
Storage volume -- below pads:			
Height of pads, in	6.0		
Volume, ft³	1,104		Volume below tank pads = (height of pads/12) x gross area minus pad areas
Storage volume -- above pads:			
Tank diameter, ft	13.1		
Tank diameter, ft	11.5		
Total tank areas, not including pad area, ft ²	1,162		Total tank area = (number of tanks x diameter ² x 3.14)/4
Net area, minus tank areas, ft ²	2,710		Gross area minus tank areas = 3,860 - 1,162 = 2,699
Containment area height above pads, ft	4.5		
Volume, ft³	12,194		Volume above tank pads = gross area minus tank areas x containment area height above pads
Containment volume available, ft³	14,127		
<i>Step 3 -- Determine if Containment Volume is Adequate:</i>			
	Acid		
Required containment volume, ft ³	5,669		
Containment volume available (minumum), ft ³	14,127		
Containment volume adequate?	Yes		

CAUSTIC WASTE TANK STORAGE (AREA 6)			
CONTAINMENT CALCULATIONS			
	Prepared By:	SA	
	Checked:	APP	1/3/2017
<i>Step 1 -- Determine Required Containment Volume:</i>			Reference Drawing: S-104
Tanks:		Number	NOTES:
Nominal size (gal)	11,183	2	
Total volume (nominal), gal	22,366		
Largest tank (nominal), gal	11,183		
Largest tank (nominal), ft ³	1,495		
Overall length of containment area, ft	21.00		
Overall width of containment area, ft	43.50		
Gross area of containment, ft ²	914		Gross area = (overall length x overall width)
Gross area of containment + total surrounding wall areas, ft ²	990		<i>Surrounding wall areas are considered for the calculation of the required rainfall event volume. This assumes that precipitation that falls on the containment walls flows into the containment area. For adjacent containment areas that share walls, it is assumed that half of the precipitation flows into each adjacent containment area.</i>
25-year rainfall depth, in	6.25		
25-year rainfall event volume, ft ³	515		25-year rainfall event volume = (Gross area of containment + total surrounding wall areas) * (rainfall depth/12)
Required containment volume, ft ³	2,010		Required containment = Largest tank volume + 25-year rainfall
<i>Step 2 -- Determine Available Containment Capacity:</i>			
Tank pads	Diameter (ft)	Number	
	15.12	2	
Total tank pad areas, ft ²	379		Total tank pad area = number of tanks x (octagonal pad diameter) ² x 0.828 <i>(0.828 constant derived from formula for area of an octagon)</i>

Gross area minus pad areas, ft ²	535		
Storage volume -- sloped area:			
Average depth, in	4.5		
Volume, ft³	201		Sloped area volume = (average depth/12) x gross area minus pad areas
Storage volume -- below pads:			
Height of pads, in	6.0		
Volume, ft³	267		Volume below tank pads = (height of pads/12) x gross area minus pad areas
Storage volume -- above pads:			
Tank diameter, ft	13		
Total tank areas, not including pad area, ft ²	269		Total tank area = (number of tanks x diameter ² x 3.14)/4
Gross area, minus tank areas, ft ²	644		
Containment area height above pads, ft	4.5		
Volume, ft³	2,898		Volume above tank pads = gross area minus tank areas x containment area height above pads
Containment volume available, ft³	3,366		
<i>Step 3 -- Determine if Containment Volume is Adequate:</i>			
	Caustic		
Required containment volume, ft ³	2,010		
Containment volume available (minumum), ft ³	3,366		
Containment volume adequate?	Yes		

FLAMMABLE WASTE TANK STORAGE (AREA 6)			
CONTAINMENT CALCULATIONS	Prepared By:	SA	
	Checked:	APP	1/3/2017
<i>Step 1 -- Determine Required Containment Volume:</i>			Reference Drawing: S-104
Tanks:		Number	NOTES:
Nominal size, gal	13,217	4	
Total volume (nominal), gal	52,868		
Largest tank (nominal), gal	13,217		
Largest tank (nominal), ft ³	1,767		
Overall length of containment area, ft	114.00		
Overall width of containment area, ft	16.000		
Gross area of containment, ft ²	1,824		Gross area = (overall length x overall width)
Gross area of containment + total surrounding wall areas, ft ²	2,021		<i>Surrounding wall areas are considered for the calculation of the required rainfall event volume. This assumes that precipitation that falls on the containment walls flows into the containment area. For adjacent containment areas that share walls, it is assumed that half of the precipitation flows into each adjacent containment area.</i>
25-year rainfall depth, in	6.25		
25-year rainfall event volume, ft ³	1,053		25-year rainfall event volume = (Gross area of containment + total surrounding wall areas) * (rainfall depth/12)
Required containment volume, ft ³	2,820		Required containment = Largest tank volume + 25-year rainfall
<i>Step 2 -- Determine Available Containment Capacity:</i>			
Number of tank piers	8		
Tank pier length, ft	8.00		
Tank pier width, ft	1.50		
Total tank pier areas, ft ²	96		Total tank pier areas = length x width x number of piers
Net area minus pier areas, ft ²	1,728		
Storage volume -- sloped area:			

Average depth, in	3.0		
Volume, ft³	432		Sloped area volume = (average depth/12) x gross area minus pier areas
Storage volume -- below piers:			
Height of piers, in	6.0		
Volume, ft³	864		Volume below tank piers = (height of piers/12) x gross area minus pier areas
Storage volume -- above piers:			
Total tank volume, ft ³	7,068		
Containment area height above piers, ft	8.5		
Gross volume above piers, ft ³	15,504		Gross volume above tank piers = gross area of containment x containment area height above piers
Volume, ft³	8,436		Actual volume above tank piers = gross volume above tank piers - total tank volume
Containment volume available, ft³	9,732		
<u>Step 3 -- Determine if Containment Volume is Adequate:</u>			
	Flammable		
Required containment volume, ft ³	2,820		
Containment volume available (minumum), ft ³	9,732		
Containment volume adequate?	Yes		

FUEL OIL STORAGE (AREA 9)			
CONTAINMENT CALCULATIONS			
	Prepared By:	SA	
	Checked:	APP	1/3/2017
<i>Step 1 -- Determine Required Containment Volume:</i>			
			Reference Drawing: S-106
Tanks:		Number	
Nominal size, gal	8,000	1	
Largest tank (nominal), gal	8,000		
Largest tank (nominal), ft ³	1,070		
Overall length of containment area, ft	26		
Overall width of containment area, ft	16		
Gross area of containment, ft ²	416		
Gross area of containment + total surrounding wall areas, ft ²	481		<i>Surrounding wall areas are considered for the calculation of the required rainfall event volume. This assumes that precipitation that falls on the containment walls flows into the containment area. For adjacent containment areas that share walls, it is assumed that half of the precipitation flows into each adjacent containment area.</i>
25-year rainfall depth, in	6.25		
25-year rainfall event volume, ft ³	251		25-year rainfall event volume = (Gross area of containment + total surrounding wall areas) * (rainfall depth/12)
Required containment volume, ft ³	1,320		Required containment volume = Largest tank volume + 25-year rainfall
<i>Step 2 -- Determine Available Containment Capacity:</i>			
Tank piers		Number	
Tank pier length, ft	8	2	
Tank pier width, ft	1.50		
Total tank pier areas, ft ²	24		Total tank pier areas = length x width x number of piers
Gross area minus pier areas, ft ²	392		
Storage volume -- sloped area:			
Average depth, in	3.0		

Volume, ft³	98.00		Sloped area volume = (average depth/12) x gross area minus pier areas
Storage volume -- below piers:			
Height of piers, in	6.0		
Volume, ft³	196.00		Volume below tank piers = (height of piers/12) x gross area minus pier areas
Storage volume -- above piers:			
Total tank volume, ft ³	1,070		
Containment area height above piers, ft	8.5		
Gross volume above piers, ft ³	3,536		Gross volume above tank piers = gross area of containment x containment area height above piers
Volume, ft³	2,466		Actual volume above tank piers = gross volume above tank piers - total tank volume
Containment volume available, ft³	2,760		
<i>Step 3 -- Determine if Containment Volume is Adequate:</i>			
Required containment volume, ft ³	1,320		
Containment volume available, ft ³	2,760		
Containment volume adequate?	Yes		

AREA 5 (A)			
CONTAINMENT CALCULATIONS		Prepared By:	SA
		Checked:	APP 1/3/2017
<i>Step 1 -- Determine Required Containment Volume:</i>		Reference Drawing: S-102A	
Tanks:	Nominal Size (gal)	NOTES:	
T-20402	32,000		
T-20401	25,000		
T-90405	26,412		
T-20224	501		
Total volume (nominal), gal	83,913		
Largest tank (nominal), gal	32,000		
Largest tank (nominal), ft ³	4,278		
Overall length of containment area, ft	69.33		
Overall width of containment area, ft	29.830		
Gross area of containment, ft ²	2,068	Gross area = (overall length x overall width)	
Gross area of containment + total surrounding wall areas, ft ²	2,190	<i>Surrounding wall areas are considered for the calculation of the required rainfall event volume. This assumes that precipitation that falls on the containment walls flows into the containment area. For adjacent containment areas that share walls, it is assumed that half of the precipitation flows into each adjacent containment area.</i>	
25-year rainfall depth, in	6.25		
25-year rainfall event volume, ft ³	1,141	25-year rainfall event volume = (Gross area of containment + total surrounding wall areas) * (rainfall depth/12)	
Required containment volume, ft ³	5,419	Required containment = Largest tank volume + 25-year rainfall	
<i>Step 2 -- Determine Available Containment Capacity:</i>			
		Number	
Tank pier length, ft	2.00	10	

Tank pier width, ft	1.50		
Tank pier length, ft	2.50	6	
Tank pier width, ft	2.00		
Total tank pier areas, ft ²	60		Tank pier areas = (length x width x number of piers)
Pump pad areas, ft ²	48		<i>Pump pad areas estimated</i>
Gross area, minus pier + pad areas, ft ²	1,960		
Storage volume -- sloped area:			
Average depth, in	4.0		
Volume, ft³	653		Sloped area volume = (average depth/12) x gross area minus pier and pad areas
Storage volume -- below pads & piers:			
Height of pads, in	24.0		
Volume, ft³	3,920		Volume below tank pads = (height of pads/12) x gross area minus pier and pad areas
Storage volume -- above pads & piers:			
Total tank areas, not including pad area, ft ²	554		Total tank areas = sum of all 4 tank areas
Gross area, minus tank areas, ft ²	1,514		
Containment area height above pads, ft	2.0		
Volume, ft³	3,027		Volume above tank piers = gross area minus tank areas x containment area height above pads
Containment volume available, ft³	7,601		
<i>Step 3 -- Determine if Containment Volume is Adequate:</i>			
Required containment volume, ft ³	5,419		
Containment volume available (minumum), ft ³	7,601		
Containment volume adequate?	Yes		

AREA 5 (B): T-80191			
CONTAINMENT CALCULATIONS		Prepared By:	SA
		Checked:	APP 1/3/2017
<i>Step 1 -- Determine Required Containment Volume:</i>			Reference Drawing: S-102A
Tanks:	Nominal Size (gal)	Number	NOTES:
T-80191	501	1	
Total volume (nominal), gal	501		
Largest tank (nominal), gal	501		
Largest tank (nominal), ft ³	67		
Overall length of containment area, ft	14.5		
Overall width of containment area, ft	12.6		
Gross area of containment, ft ²	183		Gross area = (overall length x overall width)
Gross area of containment + total surrounding wall areas, ft ²	208		<i>Surrounding wall areas are considered for the calculation of the required rainfall event volume. This assumes that precipitation that falls on the containment walls flows into the containment area. For adjacent containment areas that share walls, it is assumed that half of the precipitation flows into each adjacent containment area.</i>
25-year rainfall depth, in	6.25		
25-year rainfall event volume, ft ³	108		
Required containment volume, ft ³	175		25-year rainfall event volume = (Gross area of containment + total surrounding wall areas) * (rainfall depth/12)
			Required containment = Largest tank volume + 25-year rainfall
<i>Step 2 -- Determine Available Containment Capacity:</i>			
Tank pads	Diameter (ft)	Number	
	6.00	1	
Total tank pad areas, ft ²	30		Total tank pad area = number of tanks x (octagonal pad diameter) ² x 0.828 (0.828 constant derived from formula for area of an octagon)
Gross area, minus pad areas, ft ²	153		
Storage volume -- sloped area:			

Average depth, in	2.0		<i>The slope across the width of Area 5 is constant from 24 feet to 23.25 feet over the overall width of 29.84 feet. Therefore the slop across the containment area for T-80191 goes from elevation 24 feet to an elevation of 23.64 feet, over the containment area width of 14.5 feet.</i>
Volume, ft³	26		Sloped area volume = (average depth/12) x gross area minus pad areas
Storage volume -- below pads:			
Height of pads, in	8.0		
Volume, ft³	102		Volume below tank pads = (height of pads/12) x gross area minus pad areas
Storage volume -- above pads:			
Tank diameter, ft	3.25		
Total tank areas, not including pad area, ft ²	8		Total tank area = (number of tanks x diameter ² x 3.14)/4
Gross area, minus tank areas, ft ²	175		
Containment area height above pads, ft	3.3		
Volume, ft³	582		Volume above tank pads = gross area minus tank areas x containment area height above pads
Containment volume available, ft³	710		
<u>Step 3 -- Determine if Containment Volume is Adequate:</u>			
Required containment volume, ft ³	175		
Containment volume available (mininum), ft ³	710		
Containment volume adequate?	Yes		

AREA 5 (C): T-80190			
CONTAINMENT CALCULATIONS		Prepared By:	SA
		Checked:	APP 1/3/2017
<i>Step 1 -- Determine Required Containment Volume:</i>		Reference Drawing: S-102A	
Tanks:	Nominal Size (gal)	Number	NOTES:
T-80190	501	1	
Total volume (nominal), gal	501		
Largest tank (nominal), gal	501		
Largest tank (nominal), ft ³	67		
Overall length of containment area, ft	14.50		
Overall width of containment area, ft	12.630		
Gross area of containment, ft ²	183		Gross area = (overall length x overall width)
Gross area of containment + total surrounding wall areas, ft ²	208		<i>Surrounding wall areas are considered for the calculation of the required rainfall event volume. This assumes that precipitation that falls on the containment walls flows into the containment area. For adjacent containment areas that share walls, it is assumed that half of the precipitation flows into each adjacent containment area.</i>
25-year rainfall depth, in	6.25		
25-year rainfall event volume, ft ³	108		25-year rainfall event volume = (Gross area of containment + total surrounding wall areas) * (rainfall depth/12)
Required containment volume, ft ³	175		Required containment = Largest tank volume + 25-year rainfall
<i>Step 2 -- Determine Available Containment Capacity:</i>			
Tank pads	Diameter (ft)	Number	
	6.00	1	
Total tank pad areas, ft ²	30		Total tank pad area = number of tanks x (octagonal pad diameter) ² x 0.828 (0.828 constant derived from formula for area of an octagon)
Gross area, minus pad areas, ft ²	153		
Storage volume -- sloped area:			

			<i>The slope across the width of Area 5 is constant from 24 feet to 23.25 feet over the overall width of 29.84 feet (see calculations for Area 5 (A)). Therefore the slope across the containment area for T-80190 goes from elevation 23.61 feet to an elevation of 23.25 feet, over the containment area width of 14.5 feet.</i>
Average depth, in	2.0		
Volume, ft³	26		Sloped area volume = (average depth/12) x gross area minus pad areas
Storage volume -- below pads:			
Height of pads, in	12.0		
Volume, ft³	153		Volume below tank pads = (height of pads/12) x gross area minus pad areas
Storage volume -- above pads:			
Tank diameter, ft	3.25		
Total tank areas, not including pad area, ft ²	8		Total tank area = (number of tanks x diameter ² x 3.14)/4
Gross area, minus tank areas, ft ²	175		
Containment area height above pads, ft	3.3		
Volume, ft³	582		Volume above tank pads = gross area minus tank areas x containment area height above pads
Containment volume available, ft³	761		
<u>Step 3 -- Determine if Containment Volume is Adequate:</u>			
Required containment volume, ft ³	175		
Containment volume available (mininum), ft ³	761		
Containment volume adequate?	Yes		

AREA 5 (D)			
CONTAINMENT CALCULATIONS		Prepared By:	SA
		Checked:	APP 1/3/2017
<u>Step 1 -- Determine Required Containment Volume:</u>			Reference Drawing: S-102A
Tanks:	Nominal Size (gal)	Diameter (ft)	NOTES:
T-12263	4750	7.25	
T12264	501	3.25	
T-12215	2999	8	
R-12201	13,000	11.5	
R-12213	3,000	8	
T-12231	3,000	8	
R-12267	500	3.25	
Total volume (nominal), gal	27,750		
Largest tank (nominal), gal	13,000		
Largest tank (nominal), ft ³	1,738		
Overall length of containment area, ft	45.00		
Overall width of containment area, ft	29.830		
Gross area of containment, ft ²	1,342		Gross area = (overall length x overall width)
Gross area of containment + total surrounding wall areas, ft ²	1,437		<i>Surrounding wall areas are considered for the calculation of the required rainfall event volume. This assumes that precipitation that falls on the containment walls flows into the containment area. For adjacent containment areas that share walls, it is assumed that half of the precipitation flows into each adjacent containment area.</i>
25-year rainfall depth, in	6.25		
25-year rainfall event voume, ft ³	749		25-year rainfall event volume = (Gross area of containment + total surrounding wall areas) * (rainfall depth/12)
Required containment volume, ft ³	2,487		Required containment = Largest tank volume + 25-year rainfall
<u>Step 2 -- Determine Available Containment Capacity:</u>			
		Number	
Tank pier length, ft	2.00	16	Tank pier areas = (length x width x number of pads)
Tank pier width, ft	1.50		

Tank pad diameter, ft	9.00	1	Total tank pad area = number of tanks x (octagonal pad diameter) ² x 0.828 (0.828 constant derived from formula for area of an octagon)
Total tank pier and pad areas, ft ²	115		Sum of tank pier and pad areas
Tanks without pads or piers areas, ft ²	67		T-12264, R-12213, and R-12267 do not have piers or pads, and the areas must be deducted from the gross containment area.
Pump pad areas, ft ²	50		Pump pad areas estimated
Gross area, minus pad areas, ft ²	1,110		
Storage volume -- sloped area:			
Average depth, in	4.0		
Volume, ft³	370		Sloped area volume = (average depth/12) x gross area minus pad areas
Storage volume -- below piers & pads:			
Height of pads, in	24.0		Conservative because T-12263 pad is actually only 8 inches high, and pump pads should be only 6 inches high, but to keep calculations as simple as possible, kept all pier/pad areas together.
Volume, ft³	2,221		Volume below tank pads = (height of pads/12) x gross area minus pad areas
Storage volume -- above pads:			
Total tank areas, not including pad area, ft ²	312		Total tank areas = sum of all 7 tank areas
Gross area, minus tank areas, ft ²	1,030		
Containment area height above pads, ft	2.0		
Volume, ft³	2,060		Volume above tank pads = gross area minus tank areas x containment area height above pads
Containment volume available, ft³	4,651		
<u>Step 3 -- Determine if Containment Volume is Adequate:</u>			
Required containment volume, ft ³	2,487		
Containment volume available (minimum), ft ³	4,651		
Containment volume adequate?	Yes		

PROCESS BUILDING	Prepared By:	SA							
CONTAINMENT CALCULATIONS	Checked:	APP	1/3/2017						
<u>Step 1 -- Determine Required Containment Volume:</u>			Reference Drawing: S-102A						
Tanks:	Nominal Size (gal)	NOTES:							
Largest tank (nominal), gal	13,120								
Largest tank (nominal), ft ³	1,754								
Overall length of process building area, ft	113								
Overall width of process building area, ft	67								
Control/Electrical Room & forklift areas, ft ²	1683	<i>The Control Room and Electrical Rooms are each 24 ft x 25 ft, for a total area of 24 x 25 x 2 = 1200 ft² that needs to be deducted from the overall process building are, plus a 21x23 = 483 sf deduct for the forklift area in the northwest corner. Total deduct 1683 sf.</i>							
Net area of containment, ft ²	5,888								
Sprinkler allowance									
Required containment volume, ft ³	1,754	Required containment volume = Largest tank volume + sprinkler allowance							
<u>Step 2 -- Determine Available Containment Capacity:</u>									
<u>Area Deductions:</u>									
Building & Tank piers:		Number							
Building pier length, ft	2.00	4							
Building pier width, ft	2.00								
Tank pier length, ft	2.00	16							
Tank pier width, ft	2.00								
Total tank pier areas, ft ²	80	Total tank pier areas = length x width x number of piers							
Gross area, minus pier areas, ft ²	5,808								
<u>Storage Volumes:</u>									
Storage volume -- sloped area:									
Average depth, in	1.5								
Volume, ft³	726	Sloped area volume = (average depth/12) x gross area minus pier areas							
Storage volume -- below piers:									
Height of piers, in	6.0	<i>Assuming all other tanks are above this 6 inches, did not deduct any other tank areas.</i>							
Volume, ft³	2,904	Volume below tank piers = (height of piers/12) x gross area minus pier areas							
Containment volume available, ft³	3,630								
<u>Step 3 -- Determine if Containment Volume is Adequate:</u>									
Required containment volume, ft ³	1,754								

Containment volume available (minumum), ft ³	3,630							
Containment volume adequate?	Yes							

TRUCK UNLOADING AREA 9				
CONTAINMENT CALCULATIONS				
	Prepared By:	SA		
	Checked:	APP	1/3/2017	
<i>Step 1 -- Determine Required Containment Volume:</i>				
			Reference Drawing: S-105	
Spill volume, gal	8,000		NOTES: Required Containment: Truck unloading area does not contain any tanks, but is designed for an 8,000 gallon spill and 25-year 24-hour rainfall event. The containment area itself is encompassed by sections 1 and 2. However, runoff from the ground between the containment area and the security wall, section 3, is sloped towards the containment area. So sections 1 and 2 will serve as containment for rainfall volume over all three sections.	
Spill volume, ft ³	1,070			
Overall length of section 1, ft	191.33			
Overall width of section 1, ft	86.59			
Area of section 1, ft ²	16,567			
Overall length of section 2, ft	48.25			
Overall width of section 2, ft	9.83			
Area of section 2, ft ²	474			
Overall length of section 3, ft	191.33			
Overall width of section 3, ft	12.00			
Area of section 3, ft ²	2,296			
Gross area of for rainfall volume, ft ²	19,338			Gross area for rainfall volume = area of section 1 + area of section 2 + area of section 3
25-year rainfall event, in	6.25			
25-year rainfall event voume, ft ³	10,072			
Required containment volume, ft ³	11,141		Required containment = 8,000 gal spill + 25-year rainfall	
<i>Step 2 -- Determine Available Containment Capacity:</i>				
			Available containment area volume will neglect section 2 to simplify calculations. Consequently calculations are conservative.	
<i>Storage volumes</i>				
Width of curb, ft	0.67			
Length of containment area, ft	190.00		Length of containment = overall length of section 1 - width of curb x 2	
Width of containment area, ft	85.17			
Gross containment area, ft ²	16,182			
Storage volume -- curbed area:				
Height of curbed area, in	6.0			
Volume, ft³	8,091		Volume of 4" curbed area = (curbed area height) x (gross containment area)	
Storage volume -- sloped area:				
Average depth, in	6.0			
Volume, ft³	8,091		Sloped area volume = (average depth/12) x gross containment area	

Gross containment volume, ft³	16,182		
<i>Volume deductions:</i>			The containment area is not uniformly sloped, and so deductions of certain sections are necessary. There is an end ramp at each end of the containment area, these are Section 4. As shown in Figure XXXX, the ramp slopes from an elevation of 23.5 feet to an elevation of 23 feet.
Section 4, end ramps volume:			There is also a triangular valley area at each end after the end ramps that is sloped in two directions towards the sump. These areas are labeled as Section 5. These volumes will be deducted from the gross volume to calculate the actual available containment volume.
Section 4 length, ft	6.0		
Section 4 width, ft	85.17		
Section 4 area, ft ²	511		
Average depth of slope, in	3.0		
Volume, ft³	255.51		Section 4 volume = (Section 4 area) x (Average depth of slope/12) x 2 (Multiplied by 2 to duplicate the volume for each end)
Section 4, sloped area below end ramps:			<i>This calculation accounts for the sloped area from 23 feet to 22 feet towards the sumps along the width of Section 4</i>
Average depth of slope, in	6.0		
Volume, ft³	511		Section 4 sloped area volume = (Section 4 area) x average depth of slope/12 x 2
Section 5, pyramid volume:			<i>Section 5 is sloped in two directions and forms the shape of a rectangular pyramid as shown in Figure XXXX. The volume of a rectangular pyramid is (length x width x height) / 3</i>
Section 5 length, ft	85.17		
Section 5 width, ft	1.0		
Section 5 height, ft	15.0		
Volume, ft³	852		Volume =((length x width x height) / 3) * 2 (Multiplied by 2 to duplicate the volume for each end)
Containment volume available, ft³	14,564		Containment volume available = gross containment volume - Section 4 end ramps volume - Section 4 sloped area below end ramps - Section 5 pyramid volume
<u>Step 3 -- Determine if Containment Volume is Adequate:</u>			
Required containment volume, ft ³	11,141		
Containment volume available (minumum), ft ³	14,564		
Containment volume adequate?	Yes		

**BIOLOGICAL TREATMENT (AREA 11)
CONTAINMENT CALCULATIONS**

Prepared By: SA
Checked: APP 1/3/2017

Step 1 -- Determine Required Containment Volume:

Reference Drawing: S-107

Largest tank (nominal), gal	110,000
Largest tank (nominal), ft ³	14,706
Overall length of North section, ft	88.00
Overall width of North section, ft	59.00
Overall area of North section, ft ²	5,192
Overall length of triangle 1, ft	17.00
Overall width of triangle 1, ft	26.50
Area of triangle 1, ft ²	225
Overall length of triangle 2, ft	11.00
Overall width of triangle 2, ft	3.00
Area of triangle 2, ft ²	17
Net area of North section, ft ²	4,950
Overall length of South section, ft	98
Overall width of South section, ft	74
Overall area of South section, ft ²	3,626
Overall length of triangle 3, ft	26
Overall width of triangle 3, ft	22
Area of triangle 3, ft ²	280
Net area of South section, ft ²	3,347
Gross area for rainfall volume, ft ²	8,297
25-year rainfall event, in	6.25
25-year rainfall event volume, ft ³	4,321
Required containment volume, ft ³	19,027

NOTES:

To simplify area calculations, Area 11 is divided into the North section and the South section. Triangles 1 and 2 are deducted from the overall area of the North section, and Triangle 3 is deducted from the overall area of the South section to calculate these geometrically irregular areas.

Area of a triangle = (length x width) / 2

Net area of North section = Overall area of North section - area of triangle 1 - area of triangle 2

South section is a triangle, use formula for area of a triangle

Net area of South section = Overall area of South section - area of triangle 3

Gross area for rainfall volume = Net area of North section + Net area of South section

Required containment = Largest tank volume + 25-year rainfall

Step 2 -- Determine Available Containment Capacity:

North Section

Area Deductions:	
Walls, ft ²	212
Misc pads/equipment, ft ²	307
T-90231 pad diameter, ft	20.0
T-90231 pad area, ft ²	331
T-90235 pad diameter, ft	23.0
Area of triangle 4	85.5
Area of triangle 5	25
T-90235 pad area in North section, ft ²	61
Containment area of North section, ft ²	4,040
Storage Volumes below tank pads:	
Storage volume -- sloped area:	
Average depth, in	4.5
Volume, ft³	1,515
Storage volume -- below pads:	
Height of pads, in	6.0
Volume, ft³	2,020

South Section

Area Deductions:	
-------------------------	--

The walls around Area 11 have a width of 1 foot, and the containment area does not include the area of the walls.

The area covered by miscellaneous pump pads and equipment is scaled and is not shown.

T-90231 area = (octagonal pad diameter)² x 0.828 (0.828 constant derived from formula for area of an octagon)

The T-90235 pad is split between the North section and the South section. The area included in the North section is calculated by taking the area of scaled triangle 4, and subtracting the area of scaled triangle 5.

Containment area of North section = Net area of North section - walls - misc pads and equipment - T-90231 pad area - T-90235 pad area in North section

Sloped area volume = (average depth/12) x Containment area of North section

Volume below tank pads = (height of pads/12) x Containment area of North section

Walls, ft ²	169	
Pump pads, ft ²	84	
Misc pads/equipment, ft ²	39	
Tank pads diameter, ft	23.0	Number of Tanks
Tank pad areas, ft ²	876	2
Overall T-90235 pad area, ft ²	438	
T-90235 pad area in South section, ft ²	378	
Containment area of South section	1,801	
Storage Volumes below tank pads:		
Storage volume -- sloped area:		
Average depth, in	6.0	
Volume, ft³	900	
Storage volume -- below pads:		
Height of pads, in	6.0	
Volume, ft³	900	
Storage Volumes above tank pads:		
Total gross containment area, ft ²	8,297	
<i>Deductions</i>		
Total walls, ft ²	380	Number of tanks
Tank diameter, ft	20	3
Tank diameter, ft	17	1
Tank diameter, ft	12	1
Tank diameter, ft	10	2

The walls around Area 11 have a width of 1 foot, and the containment area does not include the area of the walls.

The area covered by miscellaneous pump pads and equipment is scaled and is not shown.

Tank pad areas = number of tanks x (octagonal pad diameter)² x 0.828
(0.828 constant derived from formula for area of an octagon)

T-90235 pad area in South section = Overall T-90235 pad area - T-90235 pad area in North section

Containment area of South section = Net area of South section - walls - misc pads and equipment - Tank pad areas - T-90235 pad area in South section

Sloped area volume = (average depth/12) x Containment area of South section

Volume below tank pads = (height of pads/12) x Containment area of South section

Same as gross area for rainfall volume

Total tank areas, ft ²	1,439
Misc pads/equipment, ft ²	641
Total deductions, ft ²	2,460
TOTAL containment area, ft ²	5,837
Containment area height above pads, ft	3.50
Volume, ft³	20,429
Containment volume available, ft³	25,765

Step 3 -- Determine if Containment Volume is Adequate:

Required containment volume, ft ³	19,027
Containment volume available (minumum), ft ³	25,765
Containment volume adequate?	Yes

Total deductions = total walls + total tank areas + misc pads and equipment

TOTAL containment area = total gross containment area - total deductions

Volume above tank pads = TOTAL containment area x containment area height above pads

**EFFLUENT WATER TANKS (AREA 11)
CONTAINMENT CALCULATIONS**

Prepared By: SA
Checked: APP 1/3/2017

Step 1 -- Determine Required Containment Volume:

Reference Drawing: S-108

Tanks:		Number
Nominal size (gal)	110,000	4
Total volume (nominal), gal	440,000	
Largest tank (nominal), gal	110,000	
Largest tank (nominal), ft ³	14,706	
Overall length of containment area, ft	92.0	
Overall width of containment area, ft	46.0	
Gross area of containment, ft ²	4,232	
Gross area of containment + total surrounding wall areas, ft ²	4,508	
25-year rainfall depth, in	6.25	
25-year rainfall event volume, ft ³	2,348	
Required containment volume, ft ³	17,054	

NOTES:

Gross area = (overall length x overall width)
Surrounding wall areas are considered for the calculation of the required rainfall event volume. This assumes that precipitation that falls on the containment walls flows into the containment area. For adjacent containment areas that share walls, it is assumed that half of the precipitation flows into each adjacent containment area.

25-year rainfall event volume = (Gross area of containment + total surrounding wall areas) * (rainfall depth/12)

Required containment = Largest tank volume + 25-year rainfall

Step 2 -- Determine Available Containment Capacity:

Tank pads	Diameter (ft)	Number
	23.00	4
Total tank pad areas, ft ²	1,752	

Total tank pad area = number of tanks x (octagonal pad diameter)² x 0.828 (0.828 constant derived from formula for area of an octagon)

Gross area minus pad areas, ft ²	2,480
Storage volume -- sloped area:	
Average depth, in	4.5
Volume, ft³	930
Storage volume -- below pads:	
Height of pads, in	9.0
Volume, ft³	1,860
Storage volume -- above pads:	
Tank diameter, ft	20
Total tank areas, not including pad area, ft ²	1256
Gross area, minus tank areas, ft ²	2976
Containment area height above pads, ft	6.25
Volume, ft³	18,600
Containment volume available, ft³	21,390

Step 3 -- Determine if Containment Volume is Adequate:

	Caustic
Required containment volume, ft ³	17,054
Containment volume available (minumum), ft ³	21,390
Containment volume adequate?	Yes

Sloped area volume = (average depth/12) x gross area minus pad areas

Volume below tank pads = (height of pads/12) x gross area minus pad areas

Total tank area = (number of tanks x diameter² x 3.14)/4

Volume above tank pads = gross area minus tank areas x containment area height above pads

ATTACHMENT 5
POLLUTION INCIDENT HISTORY

ATTACHMENT 6
TRAINING NEEDS MATRIX

TRAINING NEEDS MATRIX

Training Needs Identification	Plant Mgr	EHS Manager	Admin/HR Manager/IT/Finance Manager	Lab Manager	Lab Staff	Production Manager/Supervisors/Scheduling-Receiving Supervisor	Process Operators	Facilities Manager and Supervisors	Maint./House-keeping Staff	Security	Engineering	Sales
Hazardous Waste (RCRA) General Awareness Training	X	X	X	X	X	X	X	X	X	X	X	X
Emergency Response Plan	X	X	X	X	X	X	X	X	X	X	X	X
Contingency Plan including Stormwater Pollution Prevention Plan and Spill Prevention Control and Countermeasure Plan	X	X		X	X	X	X	X	X	X	X	
Health and Safety Training	X	X	X	X	X	X	X	X	X	X	X	X
HAZWOPER, including ERT organization and duties, and decontamination	X	X				X						
Process Operations Training	X					X					X	
Radiation Safety Training		X		X	X	X	X			X		
Department of Transportation (DOT) Hazardous Materials Training		X				X	X					
Waste Sampling Procedures				X	X							

Notes: 1) Each "X" represents an in-house course on which the employee must be trained.

2) Where:

RCRA is Resource Conservation and Recovery Act

HAZWOPER is Hazardous Waste Operations and Emergency Response per 29 CFR Part 1910.120

ERT is Emergency Response Team

3) Members of the ERT will receive HAZWOPER Training regardless of their position within the company. This training will include emergency coordinators as well as members of the ERT team.

Created on: 8/17/16

Updated on:

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ATTACHMENT 7
RELEASE NOTIFICATION MATRIX

Attachment 7 Release Notification Matrix

HAZARDOUS WASTE SPILL SCENARIO

<p>Liquid hazardous waste or liquids that become hazardous waste when spilled or discharged shall be reported to the Department when the quantity spilled or discharged equals or exceeds the reportable quantity for the waste contained in 40 CFR 302.4 (relating to designation of hazardous substances) or 10 gallons, whichever is more stringent.</p>	<ul style="list-style-type: none"> • Immediately call Regional DEP Office @ 484-250-5900
<ul style="list-style-type: none"> • Release to storm sewer, surface water, groundwater or soil¹. 	<ul style="list-style-type: none"> • Immediately call Regional DEP Office @ 484-250-5900; • If CERCLA reportable quantity (40 cfr 302), immediately call: <ul style="list-style-type: none"> - the National Response Center @ 800-424-8802 - Bucks County Emergency Management Agency @ 215-340-8700,& - Pennsylvania Emergency Management Agency @ 717-783-2001 or 1-800-424-7362 • Within 2 hours, notify downstream water companies, municipalities, and industrial users within 20 miles as warranted.
<p><i>When fire, explosion or safety hazards exist...</i></p>	<ul style="list-style-type: none"> • Immediately call the Fairless Hills Fire Department Station 31 @ 215-949-0443, or 911 • Immediately call the Falls Township Police Department @ 215-945-3100, or 911

¹ Reporting requirement under PA Title 25 Chapter 101.2 (Clean Streams Law) is fulfilled by this notification.

FUEL OIL SPILL SCENARIO

<ul style="list-style-type: none"> • Any quantity to storm sewer surface water, or groundwater.¹ 	<ul style="list-style-type: none"> • Immediately call Regional DEP Office @ 484-250-5900¹ • Immediately call Bucks County Emergency Management Agency @ 215-340-8700 • Immediately call Pennsylvania Emergency Management Agency @ 717-783-2001 or 1-800-424-7362 • Immediately call the National Response Center @ 800-424-8802 • Within 2 hours, notify downstream water companies, municipalities, and industrial users within 20 miles as warranted.
<p><i>When fire, explosion or safety hazards exist</i></p>	<ul style="list-style-type: none"> • Immediately call the Fairless Hills Fire Department Station 31 @ 215-949-0443, or 911 • Immediately call the Falls Township Police Department @ 215-945-3100, or 911

¹ Reporting requirement under PA Title 25 Chapter 101.2 (Clean Streams Law) is fulfilled by this notification.

¹ Reporting requirement if spill is 1,000 gallons, or two reportable spills of more than 42 gallons in each of two discharges have occurred in past 12-months. The report must be submitted within 60 days per 40 CFR 112.4

ATTACHMENT 8

INSPECTION REQUIREMENTS & PREVENTIVE MAINTENANCE

PROPOSED INSPECTION SCHEDULE

Item/Area	Citation (40 CFR Unless Specified¹)	Frequency²	Inspect or Test for³
Safety and Emergency Equipment			
Communication Devices	§264.33	Monthly	Access, operation
Fire Extinguishers	§264.33, OSHA	Monthly	Operation, location, access, chemical level
Fire Extinguishers	§264.33, OSHA	Annually	By authorized agency
Alarm System	§264.33, OSHA	Monthly	Operation
Fire Alarm System	§264.33, OSHA	Annually	By authorized agency
Fire Control Tank	§264.33 NFPA 25	Weekly, Monthly, Quarterly, Annually, 5 Year	Valve position, no blockage, water level and condition, structure
Fire Pumps	§264.33, NFPA 25	Weekly	Operation
Fire Pumps	§264.33, NFPA 25	Annually	Flow, gauges accurate, no blockage or fuel overflow
Sprinkler System	§264.33, NFPA 25	Monthly	No leaks, damage, obstructions
Sprinkler System	§264.33, NFPA 25	Annually	By authorized agency
Foam Fire Suppression	§264.33	Annually	By authorized agency
Foam Fire Suppression	§264.33	Monthly	No leaks, damage, obstructions
Fire Hoses/ Reels	§264.33	Monthly	Location, wear
First Aid Kits	§264.33	Monthly	Location, access, inventory, instructions
Spill Kits	§264.33	Monthly	Location, access, inventory
Decontamination Equipment	§264.33	Monthly	Location, access, inventory
Back-up generator	§60, Subpart III	Monthly	Operational test, fuel supply, operating hours
Back-up generator	§60, Subpart III	As per manufacturer	Maintain & operate per manufacturer (filter changes, etc.)
Emergency Showers and Eyewash Stations	§264.33 OSHA	Monthly	Access, operation
Security Devices/Systems			
Signage	Best management practice	Quarterly	Location, visibility, structural support
Lighting	Best management practice	Quarterly	Operation, controls, maintenance, inventory, power source
Fence/Gates	Best management practice	Quarterly	Deterioration, damage, test locks
Barrier wall	Best management practice	Quarterly	Operation, integrity

PROPOSED INSPECTION SCHEDULE

Item/Area	Citation (40 CFR Unless Specified¹)	Frequency²	Inspect or Test for³
Security Camera	Best management practice	Quarterly	Operation, integrity, location
Structures			
Floors, Walls, Roofs	Best management practice	Annually	Structural integrity, fractures, leaks
Drains (non-hazardous service)	Best management practice	Monthly	Structural integrity, blockage
Stormwater basins, ditches, drains, & other conveyances, treatment (non-hazardous service)	Best management practice	Annually	Structural integrity, blockage, erosion
Structural Supports	Best management practice	Annually	Structural integrity, corrosion
Areas Subject to Spills			
Loading/ Unloading Areas	§264.15	Daily	Spills, housekeeping, integrity
Process and Storage Tanks	§264.15	Daily	Spills, housekeeping, integrity
Other Misc. Process Units	§264.15	Daily	Spills, housekeeping, integrity
Process Areas, General	§264.15	Daily	Spills, housekeeping, integrity
Container Storage Area (Outgoing Generated Solids)			
Floor and Curbing	§264.174	Weekly	Integrity, cracks, wear, markings, joints, aisle space, run-on
Generated solid waste containers	§264.174	Weekly	Condition of containers
Containment Areas (Dikes, Process Building)			
Floor System	§264.195	Daily	Integrity, wear, spillage
Process Equipment	§264.601, .602	Daily	Integrity, wear, spillage
Process Tanks	§264.195	Daily	Integrity, wear, spillage
Storage Tanks	§264.195	Daily	Integrity, wear, spillage
Truck Unloading	§264.195	Daily	Operations, leakage, integrity
RCRA and PADEP Tanks, Other Hazardous Substance Process and Storage			
Incoming RCRA Containers	§264.174	Weekly	Leakage, integrity
PADEP Regulated Tanks	25 PA§245.613(b)	Monthly	Maintenance, operation, leakage, integrity
RCRA Process & Storage Tank Systems (incl. ancillary equipment)	§264.195(c)	Once/Operating Day	Aboveground portions, for corrosion and releases Construction materials, surrounding area, and containment, for erosion and releases.
RCRA Process & Storage Tanks	§264.195(a)	Annually or as specified by manufacturer	Overfill controls, verify function

PROPOSED INSPECTION SCHEDULE

Item/Area	Citation (40 CFR Unless Specified¹)	Frequency²	Inspect or Test for³
RCRA Process & Storage Tanks, Steel, Storing Flammables /Combustibles	STI SP-001 ⁴	Monthly	Monthly inspection, tank record
RCRA Process & Storage Tanks, Steel, Storing Flammables /Combustibles	STI SP-001 ⁴	Annually	Annual inspection
RCRA Process & Storage Tanks, Steel, Storing Flammables /Combustibles, 5,001 - 50,000 gallons	STI SP-001	20 Years	In Service Inspection
RCRA Process & Storage Tanks storing non Flammables / Combustibles, 21,000 gal or more	25 Pa §245.552, 553 ⁴ , API 653	5/15 Years	External/ Ultrasonic inspections
RCRA Process & Storage Tanks, FRP	FTPI 2007-1	5 Years	External visual inspection
RCRA Process & Storage Tanks, Plastic, 5,000 gal or more	Established Practice	5 Years	External visual inspection
RCRA Ancillary Equipment (i.e. Piping), w/o containment	§264.193(f)	Daily	Leakage
Reactors	§264.601, §264.602	Daily	Daily inspection (leaks, gaps, etc.), appropriate components of RCRA Process & Storage Tanks schedule
Other RCRA Miscellaneous Units (filter presses, evaporators, etc.)	§264.601, §264.602	Daily	Visually, for defects, cracks, holes, gaps, cracked or damaged seals or gaskets; broken or missing closure devices
RCRA Ancillary Equipment (i.e., Piping), w/o containment	§264.193(i)(3), API	Annually check	Leak test or other integrity assessment
Vent Stream Flow from each Process subject to 40 CFR Subpart 264, Subpart AA	§264.1033(f)(1)	Hourly	Monitor and record hourly. Also, maintain per manufacturer's specifications
Thermal Oxidizer	§264.1033(f)(1)	Per manufacturer	Calibrate and maintain
Thermal Oxidizer	§264.1033(f)(2)(i), §264.1033(f)(3) §264.1087 (c)(7)	Continuously Monitor, Inspect Daily	Temperature, inspect daily for proper operation
Thermal Oxidizer and Closed Vent System	§264.1033(l)(2)(ii), §264.1084 (g)(3), §264.1087 (c)(7)	Initially, then annually, or per manufacturer's recommendations	Visually, for defects, cracks, holes, gaps, cracked or damaged seals or gaskets; broken or missing closure devices
Pumps	§264.1052(a)(1)	Monthly ⁵	Monitor for leaks

PROPOSED INSPECTION SCHEDULE

Item/Area	Citation (40 CFR Unless Specified ¹)	Frequency ²	Inspect or Test for ³
Pumps, dual mechanical seals subject to 40 CFR Subpart 264, Subpart BB	§264.1052(a)(2)	Weekly	Visually inspect for drips at seal
Pressure relief devices subject to 40 CFR Subpart 264, Subpart BB	§264.1054	Monthly ⁵	Monitor to confirm no emissions
Pressure relief devices subject to 40 CFR Subpart 264, Subpart BB	§264.1054	w/in 5 Days After Pressure Release	Monitor to confirm no emissions
Valves subject to 40 CFR Subpart 264, Subpart BB	§264.1057(a)-(c)	Monthly ⁵	Monitor to detect leaks
Pressure relief devices, flanges, and connectors subject to 40 CFR Subpart 264, Subpart BB	§264.1058 (a)	Once per operating day (best practice)	Informal monitoring for leaks (i.e. visual, audible, olfactory)
Pressure relief devices, flanges, and connectors subject to 40 CFR Subpart 264, Subpart BB	§264.1058(a)	w/in 5 Days After detecting potential leak	Monitor to detect leaks
Containers (incoming)	Best management practice	Upon arrival	Visually, for cracks, holes, gaps, or other open spaces

¹ Other citations provided on the table include:

- Occupational Health & Safety Administration (OSHA)
- National Fire Protection Association (NFPA) 25: Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems
- Steel Tank Institute (STI) SP-001:
- American Petroleum Institute 653: Tank Inspection, Repair, Alteration, and Reconstruction
- Fiberglass Tank & Pipe Institute FTPI 2007-1: Recommended Practice For the In-service Inspections of Aboveground Atmospheric Fiberglass Reinforced Plastic (FRP) Tanks and Vessels

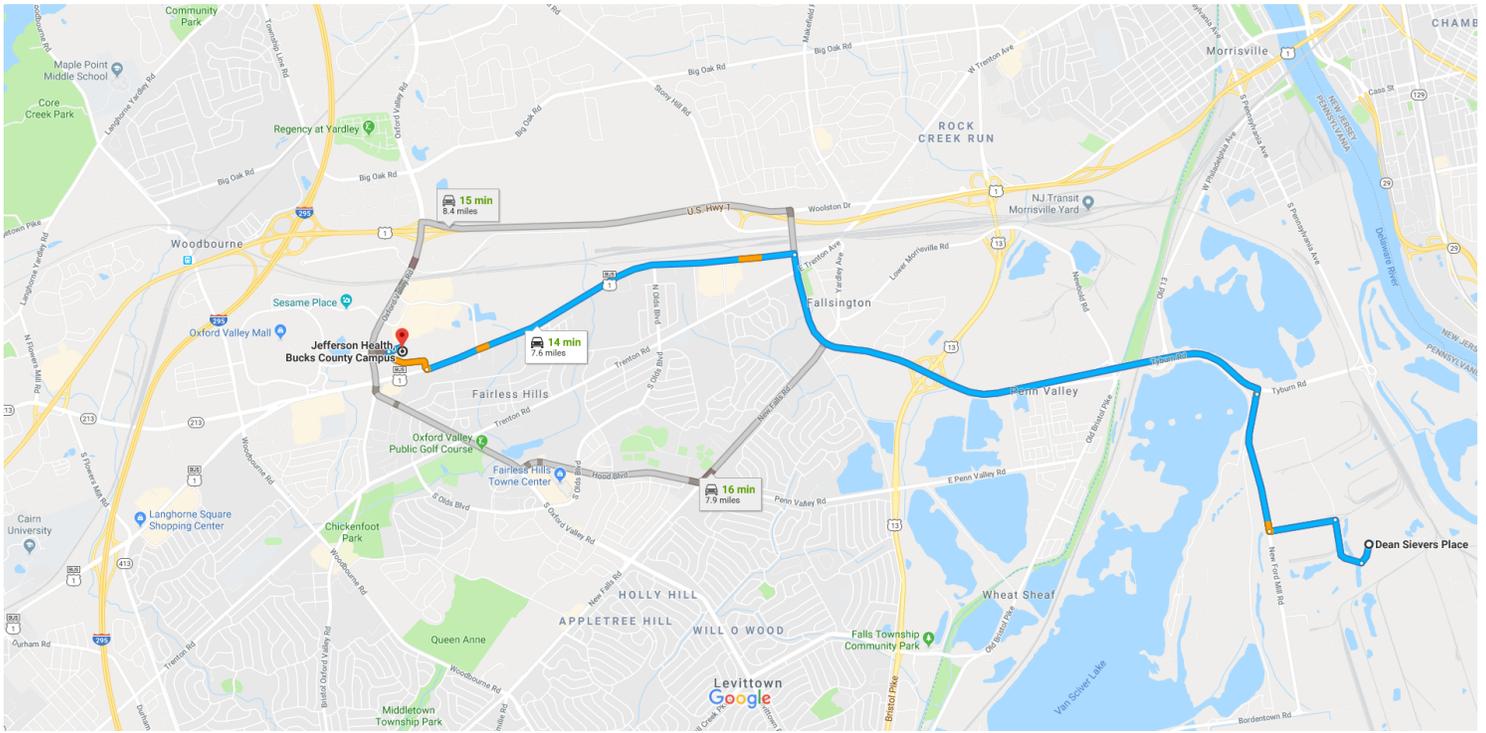
² Minimum inspection frequencies are shown. For many of these items, Elcon anticipates conducting more frequent inspections.

³ The items to inspect shown on this table are general. When the design specifications for these items are finalized, these inspection methods will be reassessed to ensure conformance with the current standard. Also, more detail will be provided on the individual inspection checklists.

⁴ This item is not required per the cited regulation or standard. Elcon will use this information for guidance.

⁵ Less frequent monitoring periods following RCRA requirements, as permitted.

ATTACHMENT 9 – HOSPITAL ROUTE MAP



Dean Sievers Pl

Falls Township, PA 19067

Take Steel Rd S to New Ford Mill Rd

- ↑ 1. Head south on Dean Sievers Pl toward Steel Rd S
⚠ Restricted usage road
2 min (0.8 mi)
- ↘ 2. Turn right onto Steel Rd S
⚠ Restricted usage road
0.1 mi
- ↙ 3. Turn left onto Enterprise Ave/Steel Rd
0.3 mi

Drive along Tyburn Rd and US-1 BUS S

- ↘ 4. Turn right at the 1st cross street onto New Ford Mill Rd
11 min (6.4 mi)
- ↙ 5. Turn left onto Tyburn Rd
0.8 mi
- ↙ 6. Turn left onto US-1 BUS S
3.3 mi

Drive to your destination

- ↘ 7. Turn right
2 min (0.4 mi)
- ↘ 8. Turn right at S Bucks Town Dr
ⓘ Destination will be on the right
0.3 mi

Jefferson Health, Bucks County Campus

380 Oxford Valley Rd, Langhorne, PA 19047

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

ATTACHMENT 10 – RELEASE NOTIFICATION REQUIREMENTS FOR VARIOUS
PROGRAMS

Notification Requirement Matrix

CITATION & DESCRIPTION	RELEASE REPORTING CRITERIA	NOTIFICATION
<p>CERCLA Section 103 40 CFR 302 Hazardous substances</p>	<p>Release into the environment of a CERCLA hazardous substance (40 CFR 302, Table 302.4) or hazardous constituent in a mixture or solution (including hazardous waste streams) from a vessel or facility (any building, structure, etc., including motor vehicles, rolling stock, aircraft, pipe, pipeline, well, pond, lagoon, impoundment, ditch, landfill, or site where a hazardous substance has come to be located) in a quantity equal to or greater than its corresponding reportable quantity in any 24-hour period.</p> <p>Excludes petroleum, including oil, or any fraction thereof.</p> <p>See 40 CFR 302.6 for notification requirements for radionuclide releases.</p> <p>Includes continuous releases: occurs without interruption or abatement or that is routine, anticipated, and intermittent and incidental to normal operations or treatment processes.</p> <p>Excludes release that is federally permitted or that results in exposure to persons solely within a workplace. See 71 FR 58525 (10/4/06) re Exemptions for NOx releases to the air of <1,000 pounds (lb) from combustion or combustion-related activities.</p>	<p>Initial: NRC at 800-424-8802 or online at www.nrc.uscg.mil/nrchp.htm&topic=435</p> <p>Immediate (within 15 minutes after discovery): to NRC by person in charge of vessel or facility</p> <p>Continuous releases must be identified as such and reported initially when there is a significant change in the release.</p>

Notification Requirement Matrix

<p>EPCRA (SARA TITLE III) Section 304 40 CFR 355.40 Hazardous substances and extremely hazardous substances (EHS)</p>	<p>Release of a CERCLA Hazardous Substance (40 CFR 302, Table 302.4) or EHS (40 CFR 355, Appendix A) from a facility (all buildings, equipment, etc., located on a single site or adjacent sites owned or operated by the same person) at which a hazardous chemical (defined under 29 CFR 1910.1200(c)) is used, produced, or stored (including motor vehicles, rolling stock, and aircraft) in a quantity equal to or greater than its corresponding reportable quantity in any 24-hour period that migrates beyond the facility boundaries.</p> <p>Includes continuous releases which must be identified as such and are reported initially and when there is a significant change in the release.</p> <p>Only CAFOs are required to report continuous releases to the air from animal waste.</p> <p>Excludes release that is federally permitted or that results in exposure to persons solely within the boundaries of the facility.</p> <p>Does not apply to the application, handling, and storage by an agricultural producer of a pesticide product registered under FIFRA.</p> <p>Excludes releases <1,000 lb of NO_x released to the air from combustion or combustion-related activities.</p>	<p>Initial: Immediate (within 15 minutes after discovery): to LEPCs of any areas potentially affected, and SERC by owner/operator Call 911 if LEPC is not active.</p> <p>Follow Up: As soon as practicable (within 30 days) after release: to LEPCs and SERC.</p> <p>Not required for releases that occur during transportation or from storage incident to transportation.</p> <p>For continuous releases: within 30 days after initial telephone notification to LEPCs and SERC</p>
<p>EPCRA (SARA TITLE III) Section 313 40 CFR 372 Toxic chemical release reporting</p>	<p>Release of a CERCLA Hazardous Substance (40 CFR 302, Table 302.4) or EHS (40 CFR 355, Appendix A) from a facility (all buildings, equipment, etc., located on a single site or adjacent sites owned or operated by the same person) at which a hazardous chemical (defined under 29 CFR 1910.1200(c)) is used, produced, or stored (including motor vehicles, rolling stock, and aircraft) in a quantity equal to or greater than its corresponding reportable quantity in any 24-hour period that migrates beyond the facility boundaries.</p> <p>Includes continuous releases which must be identified as such and are reported initially and when there is a significant change in the release.</p> <p>Only CAFOs are required to report continuous releases to the air from animal waste.</p> <p>Excludes release that is federally permitted or that results in exposure to persons solely within the boundaries of the facility.</p> <p>Does not apply to the application, handling, and storage by an agricultural producer of a pesticide product registered under FIFRA.</p> <p>Excludes releases <1,000 lb of NO_x released to the air from combustion or combustion-related activities.</p>	<p>Initial: Immediate (within 15 minutes after discovery): to LEPCs of any areas potentially affected, and SERC by owner/operator Call 911 if LEPC is not active.</p> <p>Follow-up: As soon as practicable (within 30 days) after release: to LEPCs and SERC. Not required for releases that occur during transportation or from storage incident to transportation. For continuous releases: within 30 days after initial telephone notification to LEPCs and SERC</p>

Notification Requirement Matrix

<p>RCRA 40 CFR 264.56 and 40 CFR 265.56 See CERCLA Hazardous waste</p>	<p>RCRA hazardous wastes are regulated as CERCLA hazardous substances. The RQ for each RCRA hazardous wastestream is listed in 40 CFR 302.4. Unlisted wastes exhibiting the characteristic of ignitability, corrosivity, and/or reactivity have an RQ of 100 lb.</p>	<p>Initial: The designated OSC for the geographical area or the NRC must be notified immediately within 24 hours of detection. See CERCLA.</p>
<p>RCRA 40 CFR 264.196 and 40 CFR 265.196 See CERCLA TSDF leaking tanks</p>	<p>Any release to the environment from a leaking or unfit tank at a hazardous waste TSDF must be reported to the EPA regional office. CERCLA notifications under 40 CFR 302 satisfy the initial reporting requirement. A written follow-up report must include:</p> <ul style="list-style-type: none"> • The likely route of migration of the release. • Characteristics of the surrounding soil. • The results of any monitoring or sampling conducted in connection with the release. If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the EPA as soon as they become available. • The proximity to downgradient drinking water, surface water, and populated areas. • A description of response actions taken or planned. <p>Exemptions. A leak or spill of hazardous waste is exempted from notification requirements if it is:</p> <ul style="list-style-type: none"> • Less than or equal to a quantity of 1 lb, and • Immediately contained and cleaned up. 	<p>Initial: Within 24 hours of detection to EPA regional office. See CERCLA</p> <p>Follow-up: To the EPA within 30 days.</p>
<p>RCRA 40 CFR 264.1065 TSDF equipment leaks</p>	<p>TSDFs must submit a semiannual report to the EPA for equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight. The report must include the following information:</p> <ul style="list-style-type: none"> • The EPA identification number, name, and address of the facility • For each month during the semiannual reporting period, the equipment identification number of each valve, pump, and compressor for which a leak was not repaired as required • Dates of hazardous waste management unit shutdowns that occurred within the semiannual reporting period • For each month during the semiannual reporting period: <ul style="list-style-type: none"> —The dates when the required control devices exceeded or operated outside design specifications and were not corrected within 24 hours —The duration and cause of each exceedance —Any corrective measures taken <p>If leaks from valves, pumps, and compressors are repaired as required and the control device does not exceed or operate outside the design specifications for more than 24 hours, a report to the EPA is not required.</p>	<p>Semiannual report to the EPA</p>

Notification Requirement Matrix

<p>CLEAN WATER ACT (CWA) Section 311 33 CFR 153 (Navigable waters - Coast Guard/DOT) Control of Pollution by Oil and Hazardous Substances, Discharge Removal</p>	<p>Discharge of harmful quantity of oil or hazardous substance from a vessel or onshore or offshore facility into or upon navigable waters of the United States or adjoining shorelines.</p> <p>Harmful quantity = oil discharge that violates applicable water quality standards, or causes a film or sheen on or discoloration of the surface of the water or adjoining shorelines, or causes a sludge or emulsion to be deposited beneath the surface of the water or on adjoining shorelines; or a CERCLA hazardous substance (40 CFR 302, Table 302.4) in a quantity equal to or greater than its corresponding reportable quantity.</p> <p>Oil = oil of any kind or in any form, including petroleum, crude oil, petroleum refined products, sludge, oil refuse, oil mixed with wastes, as well as vegetable and animal oils.</p>	<p>Initial: Immediate: to NRC by person in charge of vessel or facility. If direct reporting to NRC not practicable, may report to district Coast Guard or the EPA predesignated on-scene coordinator (OSC).</p> <p>Follow-up: Not required.</p>
<p>CWA Section 311 40 CFR 110.6 Oil spills</p>	<p>Discharges of oil that violate applicable water quality standards, or cause a film or sheen on or discoloration of the surface of the water or adjoining shorelines, or cause a sludge or emulsion to be deposited beneath the surface of the water or on adjoining shorelines.</p> <p>Oil = oil of any kind or in any form, including petroleum, crude oil, petroleum refined products, sludge, oil refuse, oil mixed with wastes, as well as vegetable and animal oils.</p>	<p>Initial: Immediate: to NRC by person in charge of vessel or facility. If direct reporting to NRC not practicable, may report to district Coast Guard or the EPA predesignated OSC.</p> <p>Follow-up: Not required</p>

Notification Requirement Matrix

<p>CWA 40 CFR 116.4, 40 CFR 117.11, 40 CFR 117.21, and 33 CFR 153.203 Hazardous substances</p>	<p>Release of a designated hazardous substance in a reportable quantity during a 24-hour period where the spill is in or alongside navigable waters or the adjoining shoreline. Notification is not required if it can be shown that the release is:</p> <ul style="list-style-type: none"> • In compliance with a permit issued under the Marine Protection, Research, and Sanctuaries Act of 1972 • In compliance with approved water treatment plant operations as specified by local or state safe drinking water regulations • According to the label directions for application of a pesticide product registered under the Federal Insecticide, Fungicide, and Rodenticide Act • In compliance with regulations or permit conditions issued under RCRA • In compliance with instructions of the OSC pursuant to the National Oil and Hazardous Substances Pollution Plan or Pollution by Oil and Hazardous Substances • From a properly functioning inert gas system when used to provide inert gas to the cargo tanks of a vessel • In compliance with a NPDES permit • To a publicly owned treatment works (POTW) and does not originate from a mobile source • In compliance with a permit issued for dredged or fill material <p>All CWA hazardous substances are also CERCLA hazardous substances. Therefore, all CWA hazardous substances located at 40 CFR 116.4 are also included in the CERCLA hazardous substances table located at 40 CFR 302.4.</p> <p>A list of designated substances and their RQs is located at 40 CFR 117.3.</p>	<p>Initial: 33 CFR 153.203 Immediate notice to NRC.</p> <p>If direct reporting to NRC not practicable, may report to district Coast Guard or the EPA predesignated OSC.</p> <p>Follow-up: For continuous releases only: within 30 days after initial telephone notification and follow-up within 30 days of first anniversary of initial written notification to the EPA regional office.</p>
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Notification Requirement Matrix

<p>CWA 40 CFR 122.41 NPDES permits</p>	<p>Any pollutant-containing wastewater that is discharged into waters of the United States is most likely subject to the federal NPDES program. The NPDES program requires that dischargers obtain permits from the EPA or from their state if their state is authorized by the EPA to administer the program.</p> <p>Notice is required within 24 hours of becoming aware of any noncompliance with permit conditions that may endanger health or the environment. Such noncompliance events include any unanticipated bypass that causes an exceedance of permitted effluent limits, any upset that causes temporary noncompliance with permitted effluent limitations, and any violation of the maximum daily discharge limits for any pollutants listed in the permit. An oral report is required within 24 hours of becoming aware of the incidents, and a follow-up written report must be submitted within 5 days. The report must contain the following information:</p> <ul style="list-style-type: none"> • A description of the noncompliance event and its cause • The period of noncompliance, including exact dates and times • The anticipated time the noncompliance event is expected to continue if it has not been corrected • The steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance event 	<p>Initial: Oral report within 24 hours of detection to regulatory agency or the EPA regional office.</p> <p>Follow-up: Written report within 5 days of detection to regulatory agency or the EPA regional office.</p>
<p>35 Pa. Stat. 6022.206</p>	<p>In addition to complying with the federal release notification requirements under 40 CFR 302 and 40 CFR 355.40, facility owners, operators, and transporters must comply with the more stringent state requirements for reporting hazardous substance and extremely hazardous substance releases.</p>	

Notification Requirement Matrix

<p>35 Pa. Stat. 6022.206(a)</p>	<p>Owners, operators, and transporters must immediately report the release of any substance that exceeds the federal reportable quantity, that extends beyond the property boundaries of the facility, or that results from a transportation accident or incident to PEMA and the appropriate county emergency response office as follows:</p> <p>The facility owner or operator must call the county emergency management office 24-hour response number and the PEMA 24-hour response number.</p> <p>Notification must be made by the owner or operator of a vehicle by dialing 911 or by calling the operator in order to notify the appropriate county emergency management office 24-hour response number within the jurisdiction where the incident occurred. The county emergency management office must then report the notification to the PEMA 24-hour response number within one hour of its receipt. The county emergency management agency must then immediately provide information to the fire chief in the appropriate jurisdiction relating the details of the release, including the substance involved.</p> <p>Notice Content</p>	<p>Initial: Immediately</p>
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