



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101

ENFORCEMENT &
COMPLIANCE ASSURANCE
DIVISION

**Clean Air Act - Section 112(r)
Risk Management Program
and EPCRA 312 – Tier II
Facility Inspection Report**

FACILITY INFORMATION:

Name: Solenis - Portland Plant
Physical Address: 3366 NW Yeon Avenue
Phone Number: 503-224-1200
Latitude/Longitude: (45.5473, -122.7091)
RMP Facility ID#: 1000 0015 4888
FRS ID#: 110069500463
EJ Concerns: Yes (Above 80%)

CONTACT INFORMATION (RMP Implementation):

Name: Lauren M Wilcox
Phone Number: (971) 271-1803
E-mail: lmwilcox@solenis.com

EMERGENCY CONTACT INFORMATION:

Name: Lauren M Wilcox
Phone (24-hr): (971) 271-1803
E-mail: lmwilcox@solenis.com
Website: www.solenis.com

TRIP DETAILS:

Inspection Date: March 16, 2023
Inspection Time: 0945 hours through 1100 hours
EPA Inspection Team:
Mhara Coffman, US EPA Region 10, Lead RMP Inspector
Edward Johannes, US EPA Region 10 SEE Grantee, RMP Inspector EPCRA Inspector
Terry Garcia, US EPA Region 10 SEE Grantee, RMP Inspector
Peter Phillips, US EPA Region 10 SEE Grantee, RMP Inspector
Taylor Law, Weston Solutions, Inc., EPA START Contractor

DATE AND PROGRAM LEVELS OF SUBMITTED RMP:

Initial Submission Date: July 19, 1999
Date of Latest Update: April 8, 2022

Process (Program 1, 2, 3) as reported in RMP:

Process ID	Description	Process Chemical ID	NAICS Code	Program Level	Chemical Name CAS Number	Quantity (lbs)
1000124609	Kymene production use	1000155730	1000125981	3	106-89-8, Epichlorohydrin	686,000
1000124610	Process Chemicals	1000155784	1000126018	3	108-91-8, Cyclohexylamine	22,000

PURPOSE:

The purpose of this inspection was to determine if this facility is in compliance with Section 112(r) of the Clean Air Act and Title 40 Code of Federal Regulations (CFR) Part 68, Chemical Accident Prevention Provisions.

The facility has been previously inspected in the past 5 years: No ☐ Yes ☒

If Yes, Date of Last Inspection: December 7, 2021

The facility is High Risk: No ☐ Yes ☒

Joint EPCRA inspection: No ☐ Yes ☒

CAA Title V Air Permit:

Does the facility have a CAA Title V Permit? No ☒ Yes ☐

If Yes, Permit Number:

RELEASE/ACCIDENT HISTORY:

Did the facility have a reportable release in the past 5 years? No ☒ Yes ☐

If Yes, Date and Description of the Release:

EPCRA TIER II REPORTING:

Did the facility submit the [Enter Year] Tier II report to the SERC? No ☐ Yes ☒

If Yes, Date the Tier II was submitted: 2-28-23

If No, calendar year of the most recent Tier II:

Did the facility submit a Tier II to the LEPC and local fire department? No ☐ Yes ☒

If Yes, Date the Tier II was submitted: 2-28-23

INSPECTION ENTRY:

Mhara Coffman led the inspection entry. The EPA Inspection Team (EPA) met with facility representatives Blane Peterson, Aaron Turner, Travis Russell, Sydney Stauffer, Chris Hendry, and Jennifer Labreque at the Solenis - Portland Plant facility in Portland, Oregon. EPA arrived at the facility at 0845 hours and was joined by the following facility personnel:

Name	Title
Blane Peterson	Plant Manager – Solenis
Aaron Turner	Process Engineer - Solenis
Travis Russell	EH&S Supervisor
Chris Hendry	Plant Engineer
Sydney Stauffer	ARC Safety consultant
Jennifer Labreque	Quality Manager

Was a state/county/or local emergency representative present? No ☐ Yes ☒

If Yes, Name and Title of Representative: Bryan Profit

The facility is a first responder:

No ☒

Yes ☐

If No, Responding Agency: Portland Fire Department

Facility representatives escorted EPA to a conference room located in the facility's conference room/main office. Lead Inspector Mhara Coffman, introduced all parties present, provided a summary of the Risk Management Program (RMP), and explained the purpose of the visit. Each EPA Inspector presented his/her credentials.

EPA then requested an explanation of the facility's operations and any additional safety measures that should be taken during the site tour. Blane Peterson – Plant Manager gave a brief description of the facility, operations, and personal protective equipment required for the tour.

Prior to the inspection, EPA sent a certified notice of inspection letter to the facility informing them of the CAA Section 112(r)(6)(L) requirement that facility employees and employee representatives (such as a union representative) have the right to participate in the RMP inspection, and that a copy of the letter must be provided to the employee representative(s) and the letter posted in a manner accessible to employees in the facility.

The facility is unionized:

No ☐

Yes ☒

If Yes, Name of Union: Union #701

An employee representative present during the facility visit:

No ☐

Yes ☒

If Yes, Name/Title: Hal Carlston, Union Representative, International Brotherhood of Operational Engineers

GENERAL INFORMATION:

The facility is regulated under RMP regulations as a Program Level 3 facility and is owned and operated by Solenis LCC. Solenis LLC began ownership and Kymene production at the facility in 2014. The facility main function is Kymene (a wet strength resin) production for paper material structural integrity. Epichlorohydrin is received at the facility by one railcar or four trucks a month. Then the epichlorohydrin undergoes a reaction with other process chemicals to form the Kymene. The Kymene is then transported off location by five tanker trucks per week to Solenis clients. There are 30 full-time employees on site. The facility operates a 24/5 schedule with three operators.

ON-SITE OBSERVATIONS:

EPA toured the facility from approximately 0930 hours to 1030 hours, escorted by facility representatives Blane Peterson – Plant Manager. During the tour, EPA observed the Kymene production chemical process at several areas of the facility including the Epichlorohydrin Loading Area (photos 1-5), the epichlorohydrin tank (Tank 67) at the Tank Farm (photos 6-20), the Process Chemical Building housing chemical transfer lines and the Kymene reactor (photos 21-37), the Cyclohexylamine Storage Area (photo 38), and the Kymene Truck Loading Areas (photos 39-40).

The facility maintains 686,000 pounds of Kymene and 22,000 pounds of cyclohexylamine on site in support of chemical manufacturing processes. EPA inspected RMP covered processes at several areas of the facility including the Epichlorohydrin Loading Area, Tank Farm, Process Chemical Building, an exterior chemical staging area where the facility stores drums of cyclohexylamine, and the Kymene Loading Areas 1 and 2.

The facility maintains lower explosive limit (LEL) and four gas detection systems at the Tank Farm, Epichlorohydrin Loading Area, in the Process Chemical Building, and at the facility Entrance Gate. The LEL detectors alarm at 3.5% LEL, and the system performs automatic shutdown at 5.5 % LEL.

EPA observed the Epichlorohydrin Loading Area where epichlorohydrin arrives by rail. The facility pumps epichlorohydrin via transfer lines to Tank 67 for use in Kymene production (photos 1-5).

The facility stores epichlorohydrin in Tank 67, located in the Tank Farm. EPA observed Tank 67 components and safety features including chemical transfer lines, an eye wash station, secondary containment, hazardous communication (hazcom) signage, LEL detection system with alarms (photos 6-20).

EPA observed manufacturing processes in the Process Chemical Building, where transfer lines transport epichlorohydrin and other chemicals for the Kymene manufacturing process. Manufacturing system components and safety features include chemical transfer lines and valves, the Process Chemical Reactor, LEL and four gas detection systems with alarms, eye wash stations, and hazcom signage (photos 21-37).

EPA observed an exterior chemical staging area where the facility stores 22,000 pounds of drums of cyclohexylamine. The cyclohexylamine is stored in 55-gallon steel drums staged atop secondary containment (photo 38).

Product transfer lines carry the finished Kymene to the Kymene Loading Areas 1 and 2, where tanker trucks accept the finished product for shipment (photos 39-40).

Photographs taken during the inspection are included as Attachment A- Photo Layout.

After touring the RMP-covered process areas at the facility, EPA returned to the conference room to review the RMP documentation. Upon completion of the document review, EPA provided a debriefing to Plant Manager Blane Peterson, Travis Russell, and Sydney Stauffer.

INFORMATION COLLECTED FROM FACILITY:

1. Kymene Manufacturing Process document
2. Solenis Plant rules documentation
3. Solenis Plant Map
4. Solenis Plant Management Organization Chart

AREAS OF CONCERNS ADDRESSED IN CLOSING CONFERENCE:

1. Owner/operator has not promptly determined and documented an appropriate response to each of the findings of the audit and documented correction of deficiencies. [68.79(d)]. Compliance audit completed on April 29, 2022 identified two 2019 Action Items (AIs) not addressed promptly, AI #052019-031 due 12/31/2019 was not closed until 1/20/2020; AI #2019054-008 was due 7/13/2019 and not closed until 8/8/2019.
2. The owner/operator did not submit correct emergency contact information within 30 days of contact information change. [68.195(b)]. Facility did not update emergency contact and registration information to reflect responsibility delegated from Lauren Wilcox and assumed by Travis Russel on October 24, 2022 within 30 days of the change.

DOCUMENTS REQUESTED NOT INCLUDED IN REPORT:

The following documents were requested during the inspection but are not included in this report. These documents will still be reviewed to determine compliance with Section 112(r) of the Clean Air Act.

1. Tier II reports

INSPECTION REPORT CERTIFICATION:

This is to certify that I, Mhara Coffman, was the lead inspector at this facility and that I have verified the accuracy of the observations in this inspection report:

MAIGHDEAN-MHARA
COFFMAN

Digitally signed by MAIGHDEAN-MHARA
COFFMAN
Date: 2023.07.13 11:35:59 -07'00'

Inspector Signature

JAVIER MORALES

Digitally signed by JAVIER
MORALES
Date: 2023.07.13 13:14:16 -07'00'

RMP Coordinator/Approval

ERIN WILLIAMS

Digitally signed by ERIN
WILLIAMS
Date: 2023.07.13 12:49:44 -07'00'

EPCRA Coordinator/Approval

MATTHEW
QUARTERMAN

Digitally signed by MATTHEW
QUARTERMAN
Date: 2023.07.25 15:57:38 -07'00'

Land Enforcement Section Chief/Approval

Attachment A – Photo Log

Site Name: Solenis - Portland Plant
City, State: Portland, Oregon
Photographer: Taylor Law

File	Photo Layout ID (IMG_ "number" format)	Date	Time	Description
1	7214	3/16/2023	09:38am	Epichlorohydrin Loading Area, hot work permit clearance and confirmation prior to taking pictures of facility
2	7215	3/16/2023	09:39am	Epichlorohydrin Loading Area, overview
3	7216	3/16/2023	09:39am	Epichlorohydrin Loading Area, overview, view of chemical transfer lines and pump
4	7217	3/16/2023	09:39am	Epichlorohydrin Loading Area, overview
5	7218	3/16/2023	09:40am	Epichlorohydrin Loading Area, process chemical building exterior
6	7220	3/16/2023	09:43am	Tank Farm, eyewash station
7	7221	3/16/2023	09:47am	Tank Farm, overview
8	7222	3/16/2023	09:47am	Tank Farm, Tank 67 containing epichlorohydrin
9	7223	3/16/2023	09:48am	Tank Farm, piping and secondary containment for Tank 67
10	7224	3/16/2023	09:48am	Tank Farm, Tank 67 hazard communication (hazcom) signage
11	7225	3/16/2023	09:48am	Tank Farm, overview of Tank 67 safety ladder and chemical transfer lines
12	7226	3/16/2023	09:48am	Tank Farm, closeup of chemical transfer lines on Tank 67
13	7227	3/16/2023	09:49am	Tank Farm, storm drain outside Tank 67 secondary containment
14	7228	3/16/2023	09:49am	Tank Farm, pump and LEL at Tank 67 secondary containment
15	7229	3/16/2023	09:50am	Tank Farm, view of Tank 67 base
16	7230	3/16/2023	09:51am	Tank Farm, Tank 67 hazcom signage
17	7231	3/16/2023	09:52am	Tank Farm, overview of Tank 67
18	7232	3/16/2023	09:52am	Tank Farm, safety signage on Tank 67 secondary containment
19	7233	3/16/2023	09:52am	Tank Farm, Tank 67 nitrogen blanket alarm signage
20	7234	3/16/2023	09:52am	Tank Farm, LEL detection system at Tank 67 secondary containment
21	7235	3/16/2023	09:56am	Process Chemical Building, chemical transfer lines and system components
22	7236	3/16/2023	10:00am	Process Chemical Building, chemical transfer lines and system components
23	7237	3/16/2023	10:00am	Process Chemical Building, chemical transfer lines and system components
24	7238	3/16/2023	10:01am	Process Chemical Building, chemical transfer lines and system components
25	7239	3/16/2023	10:01am	Process Chemical Building, air intake
26	7240	3/16/2023	10:02am	Process Chemical Building, chemical transfer lines and system components
27	7241	3/16/2023	10:02am	Process Chemical Building, eyewash stations
28	7242	3/16/2023	10:03am	Process Chemical Building, Process Chemical Reactor
29	7243	3/16/2023	10:05am	Process Chemical Building, Process Chemical Reactor
30	7244	3/16/2023	10:08am	Process Chemical Building, chemical process lines with tags
31	7245	3/16/2023	10:08am	Process Chemical Building, 4 gas detector on ground floor
32	7246	3/16/2023	10:10am	Process Chemical Building, 4 gas detector on ground floor
33	7247	3/16/2023	10:10am	Process Chemical Building, 4 gas detector readout display
34	7248	3/16/2023	10:10am	Process Chemical Building, 4 gas detector readout display
35	7249	3/16/2023	10:11am	Process Chemical Building, chemical transfer lines and system components, eye wash station
36	7250	3/16/2023	10:11am	Process Chemical Building, chemical transfer lines and system components
37	7251	3/16/2023	10:12am	Process Chemical Building, chemical transfer lines and system components
38	7252	3/16/2023	10:12am	Exterior Chemical Staging Area, cyclohexylamine drums with secondary containment
39	7253	3/16/2023	10:15am	Kymene Truck loading area.
40	7254	3/16/2023	10:17am	Second Kymene truck loading area.