



Compliance Monitoring Report

1. General Information

Date of Inspection: August 30, 2018
Date of Report Completed: September 27, 2018
Compliance Monitoring Category: Unannounced Inspection
Inspector Name: Msengi Mgonella
Reviewing Manager: Farhana Yasmin

2. Facility Information

Facility Name: Stepan Company
Facility AIRS No.: 013-00001
Facility Location: 951 Bankhead Highway
Winder, Georgia 30680 (Barrow County)
Facility Mailing Address: Same as above
Facility Contact: Laurence Coyle
Site Manager
(770) 867-7471
LCoyle@Stepan.com
CMS Designation: Synthetic Minor Source

Air Quality Permit No. 2843--013-0001-S-02-0 *Effective Date: September 8, 2017*
The permit was issued for the operation of a specialty chemical production facility.

Permit Amendment No.2843-013-0001-S-02-1 *Effective Date: June 1, 2018*
The amendment was issued for changing Scrubber source code from SCR-3500 to SCR R01.

Permits can be accessed at <http://epd.georgia.gov/air>

3. Inspection Summary / Recommended Actions:

The inspection was conducted to verify compliance with the requirements of Air Quality Permit No. 2843-013-0001-S-02-0, issued on September 8, 2017, as amended. The facility appeared to be operating within the limits set by the Permit and the Georgia Rules for Air Quality Control based on observations made and a review of records during the inspection.

4. Previous Enforcement Actions and Inspections:

See attached Full Compliance Evaluation (FCE) Report for details. No enforcement has been issued in the past five years. The previous inspection was conducted on June 4, 2015.

5. Complaint Investigations since last Full Compliance Evaluation:

None.

6. Applicable Requirements, Description of Regulated Emission Units, and Inspection Determinations:

Emission Units		Corresponding Permit Conditions	Air Pollution Control Device		Inspection	
ID No.	Description Product Family		ID No.	Description	Evaluated During Inspection?	Inspection Determination
R01	Alkoxylation process reactor (8,000 gallons) including catch tanks and heat exchangers.	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70 4.9, 4.10, 4.11, 4.12, 5.3, 5.4, 5.7, 7.11	SCR-R01	Scrubber	Yes	In compliance
T3300	31,780 gallon storage tank (typically holds propylene oxide), pressurized vessel Maximum true vapor pressure of contents: 10.99 psia Operates as a pressurized vessel over 29.7 psia.	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 60 Subpart A 40 CFR 60 Subpart Kb Avoidance of 40 CFR Part 70 S 2.11,4.9, 4.10, 4.11, 4.12, 5.3, 5.4, 5.7, 7.8,7.11	SCR-R01	Scrubber	Yes	In compliance
T-3400	31,780 gallon storage tank (typically holds ethylene oxide), pressurized vessel Maximum true vapor pressure of contents: 26.69 psia Operates as a pressurized vessel over 29.7 psia.	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 60 Subpart A 40 CFR 60 Subpart Kb Avoidance of 40 CFR Part 70 2.11, 4.9, 4.10, 4.11, 4.12, 5.3, 5.4, 5.7, 7.8,7.11	SCR-R01	Scrubber	Yes	In compliance
Unload	Railcar Unloading of		SCR-R01	Scrubber		

Emission Units		Corresponding Permit Conditions	Air Pollution Control Device		Inspection	
ID No.	Description Product Family		ID No.	Description	Evaluated During Inspection?	Inspection Determination
	EO/PO	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70 4.9, 4.11, 4.12, 5.3, 5.4, 5.7, 7.11			Yes	In compliance
R02	Esterification process reactor (6,000 gallons) including process tanks, heat exchangers, and condenser(s).	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70 4.13, 4.14, 4.15, 4.16, 5.3, 5.4, 7.11	SCRNAOH R02	Scrubber	Yes	In compliance
R04	Intermediate esterification process reactor (8,000 gallons) including process tanks, heat exchangers, and condenser(s).	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70 4.13, 4.14, 4.15, 4.16, 5.3, 5.4, 7.11	SCRNAOH R02	Scrubber	Yes	In compliance
R05	Esterification process reactor (6,000 gallons) including process tanks, heat exchangers, and condenser(s).	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70 4.13, 4.14, 4.15, 4.16, 5.3, 5.4, 7.11	SCRNAOH R02	Scrubber	Yes	In compliance
DMS	Railcar/Truck Dimethyl Sulfate Unloading	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70 4.7, 4.8	SCR-8126	DMS Storage Scrubber	Yes	In compliance
T-126	25,000 gallon process vessel (typically holds Dimethyl Sulfate), pressurized vessel	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70 4.7, 4.8	SCR-8126	DMS Storage Scrubber	Yes	In compliance
--	R05 Solids – Bag Dump Station	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70 4.13, 4.14, 4.15, 4.16, 5.3, 5.4, 7.11	N/A	None	Yes	In compliance

Emission Units		Corresponding Permit Conditions	Air Pollution Control Device		Inspection	
ID No.	Description Product Family		ID No.	Description	Evaluated During Inspection?	Inspection Determination
--	R05 Solids Conveying Cyclone to R05 Reactor	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70 4.13, 4.14, 4.15, 4.16, 5.3, 5.4, 7.11	N/A	None	Yes	In compliance
Continuous Process Lines						
R-1002	Sulfonation I Process Line – includes sulfur burner, sulfur dioxide and sulfur trioxide coolers, air dryers, converter, sulfonator (or reactor), separators, process scrubbers and process mist eliminators	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70 4.3, 4.5, 5.4, 7.11	SCP-DRY1 SCP-DEM11 SCP-DEM12 SCP-NAOH1 SCP-TAIL1	Dry Scrubber Dry Scrubber Demister 1 Dry Scrubber Demister 2 Caustic Scrubber Tail Gas Demister	Yes	In compliance
R420	Sulfonation II Process Line – includes sulfur burner, sulfur dioxide and sulfur trioxide coolers, air dryers, converter, sulfonator (or reactor), separators, process scrubbers and process mist eliminators	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 40 CFR 60 Subpart A 40 CFR 60 Subpart RRR Avoidance of 40 CFR Part 70 4.6, 5.4, 7.11	SCP-DRY2 SCP-DEM21 SCP-DEM22 SCP-NAOH2 SCP-TAIL2	Dry Scrubber Dry Scrubber Demister Dry Scrubber Demister Caustic Scrubber Tail Gas Demister	Yes	In compliance
Batch Neutralizers						
R-BN1	Reactor #1 (8,000 gallons)	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70	N/A	None	Yes	In compliance
R-BN2	Reactor #2 (8,000 gallons)	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70	N/A	None	Yes	In compliance

Emission Units		Corresponding Permit Conditions	Air Pollution Control Device		Inspection	
ID No.	Description Product Family		ID No.	Description	Evaluated During Inspection?	Inspection Determination
R-BN3	Reactor #3 (17,000 gallons)	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70	N/A	None	Yes	In compliance
R-BN4	Reactor #4 (17,000 gallons)	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70	N/A	None	Yes	In compliance
T-550	7,400 gallon HVP Reblend Process Tank	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70	N/A	None	Yes	In compliance
Cooling Towers						
CT1	Oxide Cooling Tower	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70	N/A	None	Yes	In compliance
CT2	Sulfonation II Process Line Cooling Tower	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70	N/A	None	Yes	In compliance
Blenders						
R-BL1	Blender #1 (10,000 gallons) equipped with a venturi scrubber that operates as process equipment. Also included is a Silverson Mixer and Supersack Loader	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) Avoidance of 40 CFR Part 70	N/A	None	Yes	In compliance
Fuel Burning Sources						
E-001	400 hp Steam Generator Boiler #1 (Source Code #4) Natural gas fired only Input Heat Capacity (MMBtu/hr) 16.7	Georgia Rule 391-3-1-.02(2)(d) Georgia Rule 391-3-1-.02(2)(g) 2.7, 2.13, 2.14, 2.18	N/A	None	Yes	In compliance
E-002	400 hp Steam Generator Boiler #2 (Source Code #8) Natural gas fired only Input Heat Capacity (MMBtu/hr) 16.7	Georgia Rule 391-3-1-.02(2)(d) Georgia Rule 391-3-1-.02(2)(g) 2.7, 2.13, 2.14, 2.18	N/A	None	Yes	In compliance

Emission Units		Corresponding Permit Conditions	Air Pollution Control Device		Inspection	
ID No.	Description Product Family		ID No.	Description	Evaluated During Inspection?	Inspection Determination
E-005	Hot Oil Heater Natural gas in-direct fired only This hot oil heater provides heat energy to the R02 Esterification Kettle and the R04 Quaternary Reactor. Input Heat Capacity (MMBtu/hr) 9.99	Georgia Rule 391-3-1-.02(2)(d) Georgia Rule 391-3-1-.02(2)(g) 2.7, 2.12, 2.14, 2.18	N/A	None	Yes	In compliance
GEN1	536.4 hp (or 400 kW) Standby emergency generator, firing diesel fuel	Georgia Rule 391-3-1-.02(2)(b) Georgia Rule 391-3-1-.02(2)(g) 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ 2.6, 2.15, 2.16, 2.18	N/A	None	Yes	In compliance
GEN2	469.35 hp (or 350 kW) Standby emergency generator, firing diesel fuel	Georgia Rule 391-3-1-.02(2)(b) Georgia Rule 391-3-1-.02(2)(g) 40 CFR 60 Subpart A 40 CFR 60 Subpart III 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ 2.6, 2.15, 2.16, 2.18	N/A	None	Yes	In compliance
FP1	215 hp Standby Fire Water Pump Engine, firing diesel fuel	Georgia Rule 391-3-1-.02(2)(b) Georgia Rule 391-3-1-.02(2)(g) 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ 2.6, 2.15, 2.16, 2.18	N/A	None	Yes	In compliance
FP2	215 hp Standby Fire Water Pump Engine, firing diesel fuel	Georgia Rule 391-3-1-.02(2)(b) Georgia Rule 391-3-1-.02(2)(g) 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ 2.6, 2.15, 2.16, 2.18	N/A	None	Yes	In compliance

7. Compliance Monitoring Activities – Details not included in table above:

- a. Describe any deviation from compliance noted during the inspection listed in Table 6:
None.
- b. Describe any compliance assistance provided during inspection:
None.
- c. Describe any action taken by the facility to come back into compliance during the inspection:
None.
- d. Deviations noted during the inspection, not previously listed. Include equipment ID or equipment description and condition number:
None.

8. Additional Permit Requirements:

- a. Periodic Reports:
See attached Full Compliance Evaluation (FCE) Report for details.
- b. Permit Fees:
See attached Full Compliance Evaluation (FCE) Report for details.
- c. Permit Renewal and Expiration:
Not Applicable.
- d. For any overall emission/production/usage limit:

Permit Condition	Emission Unit	Permit Limit	Actual
2.1	Entire facility	VOC Emissions < 100 tons during any 12 consecutive month period.	50.01 tons as of June 2018
2.15	Entire facility	Emergency generators (GEN1 & GEN2) and fire pump engines FP1 & FP2 h < 200 hours during any 12 consecutive month period	43.35 hours as of August 2018

9. Attachments:

- a. Full Compliance Evaluation (FCE) Report:
See attachment

Attachment: Inspection Observations

Emission Units Air Pollution Control Devices	Parameter	Required Limit / Range	Current Inspection 8/30/2018	Previous Inspection 6/4/2015
Sulfonation I Process Line				
SCR-DRY1 Dry Scrubber	ΔP "H ₂ O	$2 \leq \Delta P \leq 50$	6.6	---
SCP-DEM11 Dry Scrubber Demister 1	ΔP "H ₂ O	$3 \leq \Delta P \leq 80$	25.6	---
SCP-DEM12 Dry Scrubber Demister 2	ΔP "H ₂ O	$3 \leq \Delta P \leq 80$	5.4	---
SCP-TAIL1 Tail Gas Demister	ΔP "H ₂ O	$1 \leq \Delta P \leq 40$	7.8	---
SCP-NAOH1 Caustic Scrubber	ΔP "H ₂ O	$1 \leq \Delta P \leq 10$	5.3	---
	pH	pH > 5	7.1	---
	Flow Rate	gpm > 30	54	---
CYCLONE/ACID Gas separator system	ΔP (psi)	$0.01 \leq \Delta P \leq 1.0$	Down	---
Sulfonation II Process Line				
SCR-DRY2 Dry Scrubber	ΔP "H ₂ O	$2 \leq \Delta P \leq 50$	7.46	---
SCP-DEM21 Scrubber Demister	ΔP "H ₂ O	$3 \leq \Delta P \leq 80$	22.03	---
SCP-DEM22 Scrubber Demister	ΔP "H ₂ O	$3 \leq \Delta P \leq 80$	13.7	---
SCP-TAIL2 Tail Gas Demister	ΔP "H ₂ O	$1 \leq \Delta P \leq 40$	5.6	---
SCP-NAOH2 Caustic Scrubber	ΔP "H ₂ O	$1 \leq \Delta P \leq 10$	4.3	---
	pH	pH > 5	7.5	---
	Flow Rate	gpm > 80	141	---

Emission Units Air Pollution Control Devices	Parameter	Required Limit / Range	Current Inspection 8/30/2018	Previous Inspection 6/4/2015
SCR-R01 Alkoxylation process reactor	Scrubbant range	4% ≤ Acid conc. ≤ 7%	6.09	---
	Scrubbant flow rate	gpm > 35	46	---
	Gas flow rate	< 250 cfm	1cfm Not continuous	---
SCR-NAOHR02 Esterification process reactor	Caustic	Conc.> 5%	8.74	---
	ΔP "H ₂ O	0.3 ≤ ΔP ≤ 20	0.0 Not venting	---
	Flow rate	gpm > 20	22	---
Fire Pumps FP1 and FP2 Emergence Generators GEN1 and GEN2	Hours of operation	< 200	43.35	---

Permit Conditions		Inspection
Process, Control Equipment & Monitoring		
3.1	Prevent fugitive dust from becoming airborne from any operation, process, handling, and transportation or storage facility.	In compliance based on observations made during the inspection.
4.1	Routine maintenance must be performed on all air pollution equipment.	The Permittee uses a database to track all maintenance performed on air pollution equipment
5.2	Any continuous monitoring system installed by the Permittee must be in continuous operation	In compliance based on observations made during the inspection.
5.3	Maintain and operate monitoring devices for the measurement of percent weight of acid in the scrubbant for Scrubber SCR-R01 and caustic in the scrubbant for Scrubber SCR-NAOHR02	In compliance. Please refer to inspection observations for further details.
5.4	Maintain and operate a system to continuously monitor and record pressure drops across, SCP-DRY1, SCP-DEM11, SCP-DEM12, SCP-TAIL 1, and SCP-NAOH1. pH of the scrubbant in Caustic Scrubber SCP-NAOH1 and scrubbant flow rate across Caustic Scrubber SCP-NAOH1	In compliance. Please refer to inspection observations for further details.
Record Keeping		
7.3, 7.4, 7.5,7.6	Maintain a written emission calculation protocol for determining actual emissions of VOC emitted from the entire facility on a monthly basis. Determine actual monthly VOC emissions Compute the consecutive twelve month total of VOC emissions Obtain diesel fuel certification from the supplier	In compliance based on a review of records at the time of the inspection.



GEORGIA

DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

Air Protection Branch

4244 International Parkway, Suite 120
 Atlanta, Georgia 30354
 404-363-7000

Full Compliance Evaluation Report

Stepan Company, Winder

013-00001

Facility description: Custom Chemicals

951 Bankhead Hwy
 Winder, GA 30680

Barrow County
 Lat: 33.997, Long: -83.788

Operating status: Operational
 Classification: Synthetic minor
 CMS status: SM
 SIC code: 2843
 NAICS code: 325613
 Air Programs: SIP, NSPS
 Classifications: None

Full Compliance Evaluation

FCE Year: 2018

FCE tracking number: 9546

Reviewed by: Mgonella, Msengi

Date completed: 30-Aug-2018

On-site inspection conducted

Comments: N/A

Supporting compliance data for September 4, 2017 through September 4, 2018

Inspections

<u>Tracking #</u>	<u>Date</u>	<u>Inspector</u>	<u>Reason for inspection</u>	<u>Operating</u>	<u>Compliance status</u>
75306	30-Aug-2018	Mgonella, Msengi	Planned Unannounced	Yes	Compliant

Comments: The facility appeared to be in compliance with the conditions of its permit at the time of the inspection.

RMP Inspections

None

Annual Compliance Certifications

None

Reports

<u>Tracking #</u>	<u>Report period</u>	<u>Date received</u>	<u>Reviewer</u>	<u>Deviations reported</u>
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73249	Second Semiannual 1-Jul-2017 – 31-Dec-2017	2-Mar-2018	Mgonella, Msengi	Yes
<i>Comments:</i> New Permit. September 8, 2017-December 31, 2017.				
71875	Second Semiannual 1-Jul-2017 – 31-Dec-2017	2-Feb-2018	Mgonella, Msengi	No
<i>Comments:</i> Old Permit. July 1, 2017 -September 7, 2017.				

Notifications

None

Source Tests

None

Fees Data

<u>Fee year</u>	<u>Invoiced amount</u>	<u>Amount paid</u>	<u>Balance</u>	<u>Status</u>
2017	\$3,200.00	\$3,200.00	\$0	Paid in Full
2016	\$3,426.00	\$3,425.00	\$1	GECO User has reported for the Fee Year
2015	\$3,200.00	\$3,200.00	\$0	Paid in Full
2014	\$3,200.00	\$3,200.00	\$0	Paid in Full
2013	\$3,200.00	\$3,200.00	\$0	Paid in Full

Five-Year History of Enforcement Actions

None