UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604

DATE:	See date of Section Chief signature
SUBJECT:	CLEAN AIR ACT INSPECTION REPORT Kensing Solutions, LLC, Kankakee, IL
FROM:	Daniel Heins Environmental Scientist AECAB (IL/IN)
THRU:	Nathan Frank Section Chief AECAB (IL/IN)
TO:	File

BASIC INFORMATION

Facility Name: Kensing Solutions, LLC

Facility Location: 2525 S. Kensington Ave, Kankakee, IL 60901

Date of Inspection: June 23 & 24, 2021

EPA Inspector(s):
1. Daniel Heins, Environmental Scientist
2. Jason Schenandoah, Environmental Engineer
3. Karina Kuc, Environmental Engineer

Other Attendees:
1. Bill Kohl, Superintendent Vitamin E – Kensing
2. Mark Egler, Process Safety Specialist & EHS – Kensing
3. Matthew Wuyah, Vitamin E Engineer – Kensing
4. Scott Lawrence, Vitamin E Process Engineer Vitamin E Dept – Kensing
5. Wesley Hassen (Wes), Site Director & VP of Operations – Kensing
6. Serge Rogasik, CEO – Kensing
7. Brenda Doucette, Quality Manager – Kensing
8. Mark DiPrinzio, Consultant – ERM
9. Tom Fusillo, Consultant – Ramble

10. Vasco Roma, Consultant – Ramble
11. Julie DiGiannantonio, Senior EHS Specialist – Kensing (Closing conference only)

Contact Email Address: julie.digiannantonio@basf.com

Purpose of Inspection: To determine Clean Air Act (CAA) compliance and perform a comparative Leak Detection and Repair (LDAR) survey

Facility Type: Pharmaceutical and chemical plant

Regulations Central to Inspection: 40 C.F.R. Part 63, Subpart GGG ("The Pharma MACT"); Title V Permit Requirements

Remote Conference Start: 6/23 2:00 PM CDT
Remote Conference End: 6/23 4:00 PM CDT
On-site Arrival: 6/24 9:30 AM CDT
On-site Departure: 6/24 3:00 PM CDT

Inspection Type:
☐ Unannounced Inspection
☒ Announced Inspection

OPENING CONFERENCE

☒ Presented Credentials
☒ Stated authority and purpose of inspection
☐ Provided Small Business Resource Information Sheet
☒ Small Business Resource Information Sheet not provided. Reason: Not a small business
☒ Provided CBI warning to facility

The following information was obtained verbally from Kensing Solutions ("Kensing") representatives via remote teleconference.

Company Ownership:
One Rock Capital, a private equity firm, purchased the Kankakee facility ("the Facility") from BASF to spin it off as its own company. The new company, Kensing Solutions, officially started operating on June 1, 2021. There have been no operational or continuity changes at due to this. Kensing is operated independently from other assets of One Rock Capital.

Process Description:
The Facility is a 24/7 chemical and pharmaceutical plant with over 200 employees, including contractors. It has three main operational areas: surfactants, esters, and vitamin E/sterols. These share site-wide infrastructure including steam, nitrogen, wastewater treatment, and warehousing/distribution.

The surfactants process starts by creating sulfur dioxide from molten sulfur in a furnace. This is then oxidized to SO_3 and reacted with fatty oils. These are reacted and blended to creative high and low activity surfactants. The esters process uses one reactor for esterification with glycols, alcohols, and dimers as inputs. Methanol is not used here.

The vitamin E and sterols process begins with the arrival of vegetable oil distillate. This is a byproduct of vegetable oil purification. The oils arrive and are blended on site, and then sent to extraction. The extraction process (Area 21) separates the fatty acids, sterols, and vitamin E in a proprietary process. The vitamin E (also known as tocopherol or "TOC") is outputted as crude TOC at 90% purity. The crude TOC is distilled, with non-hazardous air pollutant additives used to improve distillation. Acetone is added to thin out the vitamin E. Plant waxes are precipitated out and removed. "Mixed TOC" is the primary output, transported via pails, drums, and totes. TOC may be sent off site for methylation and esterification. These final products are sent back to Kankakee for packaging. Sterols are packaged as a final product.

Area 21 in the vitamin E process uses two hazardous air pollutant (HAPs). The HAP-containing mixtures are separated from the products and sent to recovery. In recovery, the HAPs are separated and distilled to allow for re-use in the process. One of the HAPs is occasionally replenished with fresh deliveries from off site. The other HAP is generated by the process, so excess is shipped off site along with waste-water.

All vents from Area 21, along with their associated storage tanks, are routed to a pair of parallel carbon adsorbers (Area 20). The adsorbers are steam regenerated, with a 90-minute cycle. When one is adsorbing, the other is steamed. The steam is sent to a heat exchanger which condenses out the solvents. The water and HAP solvents are routed back to the decanting tank and solvent recovery. After being steamed, the bed is dried, heated, and cooled, to then sits idle until it goes online and the other bed is steamed. Bed temperature, steam flow rate, and cooldown temperatures are monitored. There is no pressure drop monitoring. While outlet concentrations are monitored, this is not used to make adjustments to operations.

Staff Interview:
The Area 51 operations were previously subject to 40 C.F.R. Part 63 Subpart FFFF ("the MON") requirements, but this area was shut down and dismantled by 2015. Kensing representatives stated that the surfactants and esters areas have some elements subject to the MON, but only under Group 2 requirements.

In August 2020, BASF conducted a stack test of the carbon beds. This did not demonstrate the required control, and BASF began to make plans for installing a regenerative thermal oxidizer (RTO). Kensing is continuing working on these plans with EPC (a contractor), and it is expected to be operational and ready for a performance test in Fall 2022. Kensing has been in communication with Illinois EPA on this matter. The carbon beds were last changed out in 2019.

The LDAR program is contracted out to Montrose and covers Areas 20 and 21. Monitoring is done on a quarterly basis. The Facility switched to seal-less pumps about a decade ago. Areas 20 and 21 are the primary subject of Pharma MACT requirements.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:
EPA conducted comparative LDAR monitoring at the facility in Areas 20 and 21. EPA used three TVA2020 Thermal Vapor Analyzers to take Method 21 readings. 641 components were monitored. One valve was found to have a leak with a total hydrocarbon concentration above 500 parts per million (ppm). Only some of the tanks in the tank farm are readily accessible on top for monitoring.

Photos and/or Videos: were not taken during the inspection.
Field Measurements: were taken during this inspection. See Appendix A.

RECORDS REVIEW

Reviewed during inspection, no copies collected:

- Facility map
- Slideshow for facility and process overview
- Process flow diagrams for each area

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- Documentation of repair and re-monitoring of the identified leak
- Copy of the most recent stack test for the carbon bed

DIGITAL SIGNATURES

DANIEL HEINS Digitally signed by DANIEL HEINS Date: 2021.08.12 15:21:36 -05'00'

Daniel Heins, Report Author

NATHAN FRANK Digitally signed by NATHAN FRANK Date: 2021.08.18 14:42:59 -05'00'

Nathan Frank, Section Chief (IL/IN)

APPENDICES AND ATTACHMENTS

Appendix A: Field Measurement Data

Facility Name: Kensing Solutions
Facility Location: 2525 S. Kensington Ave, Kankakee, IL 60901
Date of Inspection: June 23 & 24, 2021

APPENDIX A: Field Measurement Data

EPA monitored 632 valves, 5 manways, and 4 pressure relief valves (PRVs).

One valve was found to be leaking above 500 ppm. It was identified by tag number #1045, with readings of 523 and 620 ppm from instruments SL1555 and A56584espectively.

All concentrations are ppm or percent as methane.

EPA Calibration Data

TVA calibration at 09:00 AM.

	Instrument Calibration Reading (ppmv)		
Span Gas Concentration (ppmv)	**SL1555**	**A56575**	**A56584**
500	499	499	492
1960	1970	1958	2010
10,000	10,000	10,000	9860

TVA drift check and recalibration for SL1555 at 12:35 PM.

	Instrument Calibration Reading (ppmv)		
Span Gas Concentration (ppmv)	**SL1555**	**A56575**	**A56584**
500	498	456	497
1960	1958	1865	1973
10,000	9915	9590	1.02%

TVA drift check 2:50 PM.

	Instrument Calibration Reading (ppmv)		
Span Gas Concentration (ppmv)	**SL1555**	**A56575**	**A56584**
500	535	494	490
1960	1952	1787	2010
10,000	9362	9612	1.03%