DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B596630469

FACILITY: Sun Chemical Corp		**SRN / ID:** B5966
LOCATION: 4925 EVANSTON AVE, MUSKEGON		**DISTRICT:** Grand Rapids
CITY: MUSKEGON		**COUNTY:** MUSKEGON
CONTACT: R. Sidney Shaw , EHS Manager		**ACTIVITY DATE:** 07/23/2015
STAFF: Kaitlyn DeVries	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: The purpose of the inspection was to determine compliance with PTI NO's 1058-84D, 153-13, 154-13, 155-13, 156-13, Consent Order No. 42-2014 and all other applicable Air Pollution Rules and Regulations.		
RESOLVED COMPLAINTS:		

AQD staff, April Lazzaro (AL), Heidi Hollenbach (HH), and Kaitlyn DeVries (KD) arrived at the facility for an unannounced, scheduled inspection and met with security staff to watch the Sun Chemical (Sun) safety video. Following completion of the safety video, staff met with Sidney Shaw, Safety and Environmental Manager, and Bernard Nsengimana, Operations Manager to discuss the DEQ Environmental Inspections: Rights and Responsibilities brochure. Mr. Shaw and Mr. Nsengimana were informed that this was to be a Full Compliance Evaluation (FCE), and records were requested.

FACILITY DESCTIPTION

Sun Chemical is the largest pigment manufacturing facility in the world, and employs approximately 170 employees at its Muskegon facility. Sun creates and/or process red, yellow, and blue pigments for use in numerous industries. These processes include taking raw materials to create pigments, and then manipulating those pigments until they are become the final product. Mr. Shaw, however, stated that the blue pigment operations were not currently running, and there were no plans to continue these operations. Only the red and yellow pigments were being processed at the time of the inspection. The plant consists of four areas, the main plant, High Volume Flush (HVF), Intermediate Building Tetrazo (IBTZ), and the boiler area. No Visible emissions were observed from any of the stacks during the walkabout the plant.

Sun Chemical currently has five (5) active permits, after the consolidation of permits occurred in 2014. These permits are: 1058-84D, 153-13, 154-13, 155-13 and 156-13. As of this date, Sun also has Consent Order No. 42-2014, which is enforceable.

The permits require labeling of all equipment as it relates to the PTI's; such labeling was done adequately. The Malfunction Abatement Plan (MAP) on hand was from September 2014. Mr. Shaw indicated this was no longer accurate and supplied AQD staff with an updated version.

The updated MAP shows the operating parameters for all of the scrubbers, baghouses, condensers, and filters throughout all of the buildings. Per Francis Lauryssens (PI Systems Specialist at Sun Chemical) each piece of equipment is out-fitted with an audible alarm, as well as an e-mail notification system that notifies the various unit supervisors of alarm to ensure proper actions are taken to alleviate the problem. Sun is currently implementing a tracking system to allow for easier access for tracking resolutions to the alarms. The computer system contains a link to the alarm notification and has a field where the resolution needs to be entered. Since they are still implementing this tracking system, this will be looked at in further detail on the next inspection.

COMPLIANCE EVALUATION

AQD staff continued with Mr. Shaw to a conference room where he accessed the updated MAP and other records. Since the official records are done by Sun's consultant, they were e-mailed to AL and KD on a later date, but still timely.

After some discussion surrounding specific portions of the records (see below) Mr. Shaw lead staff through each of the buildings and to the roof of the Main Plant. Red and Yellow coloring was noticeably visible on the rooftop and rock coverings of the main plant. Per AQD records, this was observed at the previous inspection as well. Since that inspection, Sun has placed additional filters on the stacks to capture more of the pigments. While not officially required, it is advised that Sun Chemical clean the

roof and rock coverings of the main plant. This will allow for Sun to clearly see if there are any fugitive pigments escaping from the stacks as well as estimate the amount escaping.

Staff used the updated MAP to assist in the compliance evaluation. Staff noted that control equipment 01BH802 was not originally included on the MAP, but has since been updated. It is now included on the current version supplied to AQD staff. A complete evaluation of each of the permits is addressed below.

Opt-out PTI No. 1058-82D

This PTI contains conditions related to fuel usage and emissions for NO_x, PM, and SO_2. The NO_x, PM, and SO_2 emission limits are 89.9 tpy 12 month rolling. For June 2015, NO_x was reported at 12.67 tons, PM reported at 0.80 tons, and SO_2 reported at 0.05 tons. Please see the attached records for complete details. In addition to keeping records for the previously mentioned pollutants, records are required for landfill gas usage. The company operates three (3) boilers, two (2) of which are natural gas (NG) fired only, and one (1) that burns both NG and landfill gas. The permitted throughput limit for the Landfill gas is 492.0 MMcf per 12 month rolling. The max recorded for the period of 7/1/2014 -6/1/2015 is 81.74 MMcf, which is acceptable. AQD staff observed the gas usage meter located on the side of the unit. These emission records are consistent with the records reported in MAERS for 2014. Additionally, the permit requires Sun to utilize sulfur content of the gas from "the most recent sampling data". This sampling was most recently done in 2014, which is acceptable.

PTI No. 153-13

This PTI covers flexible groups FG-IB and FG-TZ. FG-IB includes all equipment involved in unpacking and blending of 3,3-dichlorobenzidine (DCB) into solution. FG-TZ includes all equipment involved in the formation of the tetrazo component. On the day of the inspection, the DCB operations were not currently running, but were planned to re-start operations the following day.

FG-IB:

I. Emission Limits: Emissions include HCl, DCB, PM and Opacity. The limits are based on test protocol and DCB testing is conducted.

II. Material Limits - NA

III. Process/Operational Restrictions – A MAP was supplied to AQD staff for review, and the equipment appeared to be properly functioning.

IV. Design/Equipment Parameters - Staff was able to observe labeling and was assured of audible alarms for the control equipment.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping - Sun is monitoring and recording DCB emissions but is not recording them as correlated to the Emission unit the data is coming from. This was explained to Mr. Shaw and Dave Legard, Technical Manager, who is responsible for the DCB testing. Mr. Legard indicated they will add this to the reporting. All samples came back as < 5ppm, which corresponds to 0.0005 %, which is below their requirement of <1%. Additionally, at the time of observation absolute filter 7010 was running at a pressure drop of 1.4" water, which is the acceptable range of 1 - 5 inches. Mr. Shaw indicated that the filters are changed every 10 - 14 days. Scrubber 7120 was running at pH 11.9 and 2.80" and Scrubber 7020 was running at pH 11.3 and 1.94" all of which are acceptable per the MAP.

VII. Reporting - NA

VIII. Stack/Vent Restrictions - All stacks appeared to be of proper size, with no indicated changes.

IX. Other Requirements- NA

FG-TZ

I. Emission Limits- Emissions include HCl and DCB. The limits are based on test protocol and the DCB testing is being conducted.

II. Material Limits - NA

III. Process/Operational Restrictions - A MAP was supplied to AQD staff for review, and the equipment appeared to be properly functioning.

IV. Design/Equipment Parameters – Staff observed the labeling, and was assured of audible alarms. The pressure drop of the filter was observed to be 1.39" water, which is within the acceptable range. The pressure drop if the caustic scrubber was 2.78" water, which was in the acceptable range.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping - Sun is monitoring and recording DCB emissions but is not recording them as correlated to the Emission unit the data is coming from. This was explained to Mr. Shaw and Mr. Legard. Mr. Legard indicated they will add this to the reporting. All samples came back as < 5ppm, which corresponds to 0.0005 %, which is below their requirement of <1%.

VII. Reporting - NA

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements - NA

PTI No. 154-13

This PTI covers FG-Dry (all equipment used in the dry blue pigment process), FG-WetBlue (all equipment used in the wet blue pigment process), and FG-Flush (all equipment used in the flushing process of Azo Red and Azo Yellow). All of these processes are located in the HVF building. At the time of the inspection, the blue pigment operations were not in operation. Per the available records, the blue pigment line operations ceased in September 2014. The evaluation of those portions will be based on the information available at the time of the inspection.

FG-DryBlue – Not currently operating

I. Emission Limits – Emissions include PM. The limits are based on test protocol.

II. Material Limits - Dry blue raw material is limited to 17,640,000 lbs based on a 12-month rolling time period, however, no data was available at the time of the inspection due to no production. The last recorded production was from July 2014

III. Process/Operational Restrictions - Since this area was not in operations, this area of the facility was not observed.

IV. Design/Equipment Parameters – Since this area was not in operations, this area of the facility was not observed.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping – NA

VII. Reporting - NA

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements - NA

FG-WetBlue – Not currently operating.

I. Emission Limits - Include VOC. The limits are based on test protocol and VOC recordkeeping. VOC limited to 2.16 tons per 12-month rolling time period. Since this was not currently in operations, the last recorded data was from July 2014.

II. Material Limits - Wet blue flush pigment limited to 1,113 batches per 12-month rolling time period, however, no data was available at the time of the inspection due to no production.

III. Process/Operational Restrictions - Since this area was not in operations, this area of the facility was not observed.

IV. Design/Equipment Parameters - Since this area was not in operations, this area of the facility was not observed.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping – This was not in operation, thus the records reported zero (0) emissions. The last reported emissions were from July 2014.

VII. Reporting - NA

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements- NA

FG-Flush

I. Emission Limits - NA

II. Material Limits – The Azo Flush processed through the letdown tanks are limited to 88,200,000 lbs. Reported raw material through June 2015 is 20,418,562 lbs., and is acceptable.

III. Process/Operational Restrictions – An updated MAP was provided, and all parameters appear to be acceptable.

IV. Design/Equipment Parameters - Staff was able to observe labeling and was assured of audible alarms. The condenser from the red A line was observed, and appeared to be properly operating. A distinct solvent odor was present in this area.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping – The records appear acceptable.

VII. Reporting - NA

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements - NA

Opt-out PTI No. 155-13

This PTI covers FG-Azo, FG-Main and FG-Facility Opt-out for HAP's. These are located in the Main Plant building.

FG-Azo

I. Emission Limits - Include PM, BNA, HCl and VE's. The limits are based on test protocol.

II. Material Limits – The red pigment material is limited to 12,500,000 lbs based on a 12-month rolling time period. Reported raw material through June 2015 is 5,124,664 lbs. The yellow pigment material is limited to 18,500,000 lbs. Reported raw material through June 2015 is 7,221,362 lbs. The BNA content of the Tobias Acid is limited to 0.1% by weight. Mr. Legard provided the staff with information from a data sheet on the BNA content of Tobias acid. Per review of the C of A, the past six (6) shipments were acceptable (see attached).

III. Process/Operational Restrictions – All process and control equipment appeared to be properly operating. IB Scrubber 02S7010 data was collected and was running at a flow rate of 292.90 gpm at a pH of12.68 and temperature of 22.4 degrees Celsius. All of these parameters are in the acceptable ranges per the MAP. Per Mr. Shaw, the pH meters are calibrated monthly. Please see attached for complete details.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping - Records appear acceptable

VII. Reporting - Sun is monitoring and recording DCB emissions but is not recording them as correlated to the Emission unit the data is coming from. This was explained to Mr. Shaw and Mr. Legard. Mr. Legard indicated they will add this to the reporting. All samples came back as < 5ppm, which corresponds to 0.0005 %, which is below their requirement of <1%.

IV. Design/Equipment Parameters - Staff was able to observe labeling and was assured of audible alarms and required monitoring.

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements- NA

FG-MAIN

I. Emission Limits – Emissions include PM, 3-aminonapthalene-2,7 disulfonic acid, 1-aminonapthalene-2-sulfonic acid, 2-napthylamine-6-sulfonic acid, sodium salt, BNA, benzene sulfonic acid, DCB, dichlorobiphenyl, DMB, HCl, sulfamic acid and VE's. The limits are based on test protocol.

II. Material Limits – The red pigment limited to 5,000,000 lbs pigment process through the strike tanks per 12-month rolling time period. The reported red pigment use through June 2015 is 1,752,949 lbs. The BNA content of the Tobias Acid is limited to 0.1% by weight. Mr. Legard provided the staff with information from a data sheet on the BNA content of Tobias acid. Per review of the C of A, the past six (6) shipments were acceptable (see attached).

III. Process/Operational Restrictions – An updated MAP was supplied to AQD staff and all equipment appeared to be properly operating.

IV. Design/Equipment Parameters - Staff was able to observe labeling and was assured of audible alarms and required monitoring. The pH for Caustic Scrubber 02S7110 was observed at 12.24, which is within the acceptable range of 7-14. Per Mr. Shaw, the pH meters are calibrated monthly. Please see attached for complete details.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping - Sun is monitoring and recording DCB emissions but is not recording them as correlated to the Emission unit the data is coming from. This was explained to Mr. Shaw and Mr. Legard. Mr. Legard indicated they will add this to the reporting. All samples came back as < 5ppm, which corresponds to 0.0005 %, which is below their requirement of <1%.

VII. Reporting - The permittee is aware of the DCB reporting requirement, please see note above.

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements- NA

FG-FACILITY

I. Emission Limits – The aggregate HAPs are limited to 25 tons per 12-month rolling time period. The reported aggregate HAPs through June 2015 are 0.554 tons. Individual HAP's are limited to less than 10 tons per 12-month rolling time period. The reported largest single use HAP through June 2015 is HCl, at 0.532 tons.

II. Material Limits - NA

III. Process/Operational Restrictions - NA

IV. Design/Equipment Parameters - NA

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping – The records appear acceptable.

VII. Reporting - NA

VIII. Stack/Vent Restrictions - NA

IX. Other Requirements - NA

PTI No. 156-13

This PTI covers EU-EirichDryer, EU-BeltDryer, EU-SprayDryer, FG-TrayDry, FG-SpinDry and FG-Blend. These are located in the Main Plant building.

EU-EirichDryer

I. Emission Limits –Emissions include PM and VE's. The limits are based on test protocol.

II. Material Limits - NA

III. Process/Operational Restrictions - An updated MAP has been received and reviewed.

IV. Design/Equipment Parameters - Staff was able to observe labeling and was assured of audible alarms and required monitoring. It was noted that Baghouse 802 was not included on the MAP provided to Staff at the time of the inspection. Mr. Shaw had this corrected and has since provided AQD staff with the updated version of the MAP.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping - Records appear acceptable.

VII. Reporting - NA

VIII. Stack/Vent Restrictions – No changes have been identified.

IX. Other Requirements - NA

EU-BeltDryer

I. Emission Limits- Emissions include DCB and DMB. The limits are based on test protocol.

II. Material Limits - NA

III. Process/Operational Restrictions – An updated MAP has been received and reviewed.

IV. Design/Equipment Parameters - Staff was able to observe labeling and was assured of audible alarms and required monitoring.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping - Sun is monitoring and recording DCB emissions but is not recording them as correlated to the Emission unit the data is coming from. This was explained to Mr. Shaw and Mr. Legard. Mr. Legard indicated they will add this to the reporting. All samples came back as < 5ppm, which corresponds to 0.0005 %, which is below their requirement of <1%.

VII. Reporting - NA

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements - NA

EU-SprayDryer

I. Emission Limits - NA

II. Material Limits - NA

III. Process/Operational Restrictions – An updated MAP has been received and reviewed.

IV. Design/Equipment Parameters - Staff was able to observe labeling and was assured of audible alarms and required monitoring.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping – Staff was able to observe the baghouses, and they appeared to be properly operating in accordance with the MAP.

VII. Reporting - NA

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements - NA

FG-TrayDry

I. Emission Limits – Emissions include DCB, DMB, dichlorobiphenyl, PM and VE's. The limits are based on test protocol.

II. Material Limits - NA

III. Process/Operational Restrictions – An updated MAP has been received and reviewed.

IV. Design/Equipment Parameters - Staff was able to observe labeling and was assured of audible alarms and required monitoring.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping - Sun is monitoring and recording DCB emissions but is not recording them as correlated to the Emission unit the data is coming from. This was explained to Mr. Shaw and Mr. Legard. Mr. Legard indicated they will add this to the reporting. All samples came back as < 5ppm, which corresponds to 0.0005 %, which is below their requirement of <1%.

VII. Reporting - NA

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements- NA

FG-SpinDry

I. Emission Limits - Emissions include PM and PM10. The limits are based on test protocol.

II. Material Limits - NA

III. Process/Operational Restrictions – An updated MAP has been received and reviewed.

IV. Design/Equipment Parameters - Staff was able to observe labeling and was assured of audible alarms and required monitoring.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping - Records appear acceptable.

VII. Reporting - NA

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements - NA

FG-Blend

I. Emission Limits – Emissions include PM. The limits are based on test protocol.

II. Material Limits - NA

III. Process/Operational Restrictions – An updated MAP was received and all process equipment appeared to be properly operating.

IV. Design/Equipment Parameters - Staff was able to observe labeling and was assured of audible alarms and required monitoring.

V. Testing/Sampling - NA

VI. Monitoring/Recordkeeping - Records appear acceptable.

VII. Reporting - NA

VIII. Stack/Vent Restrictions - No changes have been identified.

IX. Other Requirements - NA

SUMMARY

A request was made to specify the locations of the DCB sampling at the time of inspection. Verification of this request, as well as verification of the roof-top maintenance and alarm tracking system, will be done during the next inspection.

Sun Chemical appears to be in compliance with PTI No's: 1058-84D, 153-13, 154-13, 155-13, 156-13 and Consent Order No. 42-2014.

NAME Kaitlyn Hedin DATE 8/13/15 SUPERVISOR PMB