

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B886159566

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|---|--------------------------------------|
| FACILITY: Terex | SRN / ID: B8861 |
| LOCATION: 212 S. OAK, DURAND | DISTRICT: Lansing |
| CITY: DURAND | COUNTY: SHIAWASSEE |
| CONTACT: Marissa Ousnamer , Health, Safety & Environmental Manager | ACTIVITY DATE: 08/18/2021 |
| STAFF: Julie Brunner | COMPLIANCE STATUS: Compliance |
| SUBJECT: Scheduled inspection as part of an FCE. | SOURCE CLASS: SM OPT OUT |
| RESOLVED COMPLAINTS: | |

On August 18, 2021, I conducted an on-site inspection of Terex Minerals Processing Systems (B8861) in Durand. This inspection was a Partial Compliance Evaluation (PCE), conducted as part of a Full Compliance Evaluation (FCE). The last inspection of this facility was on March 14, 2019.

Arrived: 9:10 am

Weather: 70°F, SW @ 1 mph, UV Index 1

Departed: 10:45 am

Contacts:

Ms. Marissa Ousnamer, HSE Manager, 989-492-1943, marissa.ousnamer@terex.com

Mr. David Mckeever, Manufacturing Engineer, 989-295-4771, david.mckeever@terex.com

Facility Description and Regulatory Overview:

Terex produces heavy construction equipment such as gravel screens designed for use in road building and mining. It started out in the 1940s as Simplicity Engineering, and later was known as Powerscreen. Terex has a number of facilities throughout the United States, and worldwide.

The facility is located in Durand in a mixed use area consisting of residential and commercial/industrial properties.

The facility is a minor source of any regulated air contaminants and a synthetic minor source of hazardous air pollutants (HAPs) and not subject to the Title V Renewable Operating Permit (ROP) program. Terex has one (1) active Permit to Install (PTI) No. 337-05B which was issued on June 2, 2020. PTI No. 337-05B includes the large coating booth and a small paint booth that was operated as exempt per Rule 287(2)(c). A HAPs opt-out was also assessed for PTI No. 337-05B. These permitted emission units and other exempt processes are identified below.

Emission unit / Emission unit description
Process

Permit to
Install, or

| | | exemption rule |
|---------------------------------|---|-----------------------|
| EU-1 | Cross-draft paint spray booth equipped with HVLP coating applicator(s) and dry filter overspray control for coating miscellaneous metal parts. The booth is also equipped to operate as a natural gas-fired 0.888 MMBtu/hr bake oven with a temperature of up to 160°F. Both the spray booth and oven utilize a common exhaust stack. | PTI 337-05B |
| EU-2 | Cross-draft paint spray booth equipped with HVLP coating applicator(s) and dry filter overspray control for coating miscellaneous metal parts. | PTI 337-05B |
| Metal machining processes | Various metal machining processes, exhausting to the in-plant environment | Rule 285(2)(I)(vi)(B) |
| Plasma cutting | Plasma cutting of metal, exhausting to the in-plant environment | Rule 285(2)(I)(vi)(B) |
| Welding | Welding units | Rule 285(2)(i) |
| Paint touch up | Touch up of paint using hand held spray cans in the shipping area | Rule 287(2)(b) |
| Parts washers | Five (5) cold cleaners using solvent-based cleaners | Rule 281(2)(h) |
| Natural gas-fired space heaters | Natural gas-fired full air make-up units. | Rule 282(2)(b)(i) |

The facility may be subject to 40 CFR 63, Subpart XXXXXX - National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories, but the NAICS code doesn't match the requirements. The applicability is listed in 40 CFR 63.11514:

§63.11514 Am I subject to this subpart?

(a) You are subject to this subpart if you own or operate an area source that is primarily engaged in the operations in one of the nine source categories listed in paragraphs (a)(1) through (9) of this section. Descriptions of these source categories are shown in Table 1 of this subpart. "Primarily engaged" is defined in §63.11522, "What definitions apply to this subpart?"

- (1) Electrical and Electronic Equipment Finishing Operations;**
- (2) Fabricated Metal Products;**
- (3) Fabricated Plate Work (Boiler Shops);**
- (4) Fabricated Structural Metal Manufacturing;**
- (5) Heating Equipment, except Electric;**
- (6) Industrial Machinery and Equipment Finishing Operations;**
- (7) Iron and Steel Forging;**
- (8) Primary Metal Products Manufacturing; and**
- (9) Valves and Pipe Fittings.**

(b) The provisions of this subpart apply to each new and existing affected source listed and defined in paragraphs (b)(1) through (5) of this section if you use materials that contain or have the potential to emit metal fabrication or finishing metal HAP (MFHAP), defined to be the compounds of cadmium, chromium, lead, manganese, and nickel, or any of these metals in the elemental form with the exception of lead. Materials that contain MFHAP are defined to be materials that contain greater than 0.1 percent for carcinogens, as defined by OSHA at 29 CFR 1910.1200(d)(4), and greater than 1.0 percent for noncarcinogens. For the MFHAP, this corresponds to materials that contain cadmium, chromium, lead, or nickel in amounts greater than or equal to 0.1 percent by weight (of the metal), and materials that contain manganese in amounts greater than or equal to 1.0 percent by weight (of the metal), as shown in formulation data provided by the manufacturer or supplier, such as the Material Safety Data Sheet for the material.

(1) A dry abrasive blasting affected source is the collection of all equipment and activities necessary to perform dry abrasive blasting operations which use materials that contain MFHAP or that have the potential to emit MFHAP.

(2) A machining affected source is the collection of all equipment and activities necessary to perform machining operations which use materials that contain MFHAP, as defined in §63.11522, “What definitions apply to this subpart?”, or that have the potential to emit MFHAP.

(3) A dry grinding and dry polishing with machines affected source is the collection of all equipment and activities necessary to perform dry grinding and dry polishing with machines operations which use materials that contain MFHAP, as defined in §63.11522, “What definitions apply to this subpart?”, or have the potential to emit MFHAP.

(4) A spray painting affected source is the collection of all equipment and activities necessary to perform spray-applied painting operations using paints which contain MFHAP. A spray painting affected source includes all equipment used to apply cleaning materials to a substrate to prepare it for paint application (surface preparation) or to remove dried paint; to apply a paint to a substrate (paint application) and to dry or cure the paint after application; or to clean paint operation equipment (equipment cleaning). Affected source(s) subject to the requirements of this paragraph are not subject to the miscellaneous surface coating provisions of subpart HHHHHH of this part, “National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources.”

(5) A welding affected source is the collection of all equipment and activities necessary to perform welding operations which use materials that contain MFHAP, as defined in §63.11522, “What definitions apply to this subpart?”, or have the potential to emit MFHAP.

(c) An affected source is existing if you commenced construction or reconstruction of the affected source, as defined in §63.2, “General Provisions” to part 63, before April 3, 2008.

(d) An affected source is new if you commenced construction or reconstruction of the affected source, as defined in §63.2, "General Provisions" to part 63, on or after April 3, 2008.

Michigan does not have delegation for this standard, and therefore, it is under the purview of the EPA.

Michigan Air Emissions Reporting System (MAERS):

The facility reported emission information to MAERS for the first time in 2020. The following was reported:

FGCOATING:

VOC - 17305.00 LB (8.65 tons)

ACETONE - 280.00 LB

COBALT - 9.00 LB

CUMENE - 604.00 LB

ETHYLBENZENE - 4.00 LB

METH ISOBUT - 5834.00 LB

METH METHACR - 270.00 LB

STYRENE - 579.00 LB

TERT BUT ACE - 81.00 LB

XYLENES ISO - 618.00 LB

Inspection:

I detected no odors around the facility upon arrival. There were no visible emissions from the stacks that could be viewed from the parking lot.

A pre-inspection meeting was conducted with Ms. Marissa Ousnamer who has replaced Mr. Chris Konen as the HSE Manager and Mr. David Mckeever, Manufacturing Engineer. I gave a brief overview of the inspection process which was the purpose of my visit. All visitors are required to wear a safety vest, hardhat, hearing protection, and steel-toed shoes when out in the manufacturing areas. The facility was operating during the time of the inspection.

The facility operates two (2) shifts per day, and prefers operating 5 days per week, but it is more common to operate 6 to 7 days per week. There are approximately 70 to 75 employees. Also, the facility does not have any boilers or emergency generators. Heat is provided by natural gas-fired full air make-up units (exempt per Rule 282(2)(b)).

Terex uses Sherwin-Williams water-based and solvent-based paints in the paint booths. The paint coatings do contain some HAPs such as xylene, styrene, ethylbenzene, etc. The large pieces such as decks receive a topcoat in the large booth, and are then assembled into products such as large gravel screening tables.

FGCOATING, PTI 337-05B:

FGCOATING consists of two booths: EU-1 and EU-2. The large booth identified as EU-1 is used for coating larger metal parts. It is a manual spray booth with large overhead doors that are closed when the operator is painting. From outside the plant, there are no signs of paint particulates on the stack itself. The stack height appears to be compliant with the permitted height of 46 feet (EU-1), and discharges unobstructed vertically as required by Special Condition (SC) VII.1. The pre-filters are changed weekly, and post-filters are changed monthly in compliance with SC IV.1 to install, maintained and operate the exhaust filters in a satisfactory manner. EU-1 has a pressure gauge which will shut down the booth if the filtration system is overloaded.

A small paint booth identified as EU-2 is a 3-sided walk-in manual booth equipped with a wall-sized bank of mat or panel filters. Painting of smaller parts prior to assembly is done in this booth. They change the filters in this booth on the same schedule as the large paint booth. The pre-filters are changed weekly, and post-filters are changed monthly in compliance with SC IV.1 to install, maintained and operate the exhaust filters in a satisfactory manner. There is good draw of the overspray to the back of the booth and filters. The booth has a vertical exhaust out of the roof. (This stack can not be viewed from the ground.) A contractor cleans the inside of the stacks and checks fans on a quarterly to biannual basis.

Terex is using spray guns that are Graco G40 with air assist set to less than 10 psi (target is 7 psi) in EU-1, and Graco Silver and Flex Plus Airless Spray Guns in the small booth (EU-2). Sherwin-Williams (paint supplier) adjusts the gun pressure and locks them. This is in compliance with SC IV.2 which requires that EU-1 and EU-2 be equipped with air-assisted airless or high volume low pressure (HVLP) applicators or comparable coating applicator technology with equivalent transfer efficiency. A reducer is not added to the paints prior to spraying. Clean-up in the booth, flushing of coating lines, and guns is done using Water Butyl Cell 90/20 (R06XXK3475-4318) which has up to 18% by weight 2-Butoxyethanol (CAS No. 111-76-2).

Paint is feed to the gun applicators for each booth from 55-gallon drums of paint that sit outside the booth. For the small booth (EU-2), tracking of paint usage is done by the use of a paper log that is posted right outside the booth. The operator logs the date, amount sprayed, and paint type when the booth is used. VOC tracking for both paint booths is combined into an electronic spreadsheet (Excel).

SC V.1 of PTI 337-05B states that "Upon prior written approval by the AQD District Supervisor, the permittee may determine the VOC content from manufacturer's formulation data." On June 20, 2016, Terex requested approval to use manufacturer's formulation data, and included the "Environmental Data Sheet" for the Metal Primer, KF 500 dated June 6, 2016 and High Solids Acrylic Enamel, RAL 1013 (Topcoat White) dated May 24, 2016. Approval was granted on June 22, 2016 by the Lansing District Supervisor.

Records:

The Air Quality Data Sheets for the paint coatings, and the purge and clean-up solvent (Water Butyl Cell 90/20), and the VOC/HAP tracking for PTI 337-05B with the complete 12-month rolling emissions from January 2020 to July 2021 were obtained during the inspection. VOC and HAP emission records include the usage of all paints at the facility (large and small booths, and spray paint cans). All records obtained as part of the inspection are saved in the AQD electronic filing system (Content Manager).

VOC Records for PTI 337-05B, FGCOATING:

A review of the VOC content in the paints shows that the highest VOC containing coating used was New Pegson Paint (SDS: F88KXL19570) with a VOC content of 3.39 lb/gallon (minus water). The paint coatings used by Terex appear to be in compliance with the VOC content limit of 3.5 lb/gallon (minus water) in SC II.1 of PTI 337-05B. There is a paint (Industrial Enamel Safety Red, B54R38, 617-4064) listed in the record with a VOC content of 3.62 lb/gallon, but nothing in the record indicates that this paint has been used.

Terex records show that VOC emissions for the 12-month rolling period in July 2021 were 7.85 tons per year (tpy) which is below the 15.0 tpy VOC limit in PTI 337-05B, FGCOATING, SC I.1. Acetone emissions for the 12-month rolling period in July 2021 were 0.10 tpy less than the 10.0 tpy emission limit in PTI 337-05B, FGCOATING, SC I.2. T-Butyl Acetate emissions for the 12-month rolling period in July 2021 were 0.045 tpy less than the 5.0 tpy emission limit in PTI 337-05B, FGCOATING, SC I.3.

HAP Records for PTI 337-05B, FGFACILITY:

Aggregate HAP emissions (all painting operations) for the 12-month rolling period in July 2021 were 2.9 tpy. This is in compliance with the facility-wide emission limits of less than 8.9 tpy for individual HAPs and 22.4 tpy for aggregate HAPs. Ethylbenzene emissions for the 12-month rolling period in July 2021 were 0.0098 tpy less than the 0.81 tpy emission limit in PTI 337-05B, FGFACILITY, SC I.3. Cumene emissions for the 12-month rolling period in July 2021 were 0.28 tpy less than the 1.18 tpy emission limit in PTI 337-05B, FGFACILITY, SC I.4.

Miscellaneous Processes (Machining, Assembly, and Shipping):

There are a number of metal machining processes, including a plasma cutter, CNC lathes, and milling machines which exhaust into the in-plant environment. The machining equipment dates to 1920, 1950, 2010 and 2011. The machining equipment is exempt under Rule 285(2)(I)(vi)(B) or grandfathered if the date of installation predates August 1967.

A small parts welding booth, plasma torch table, and various welding operations have air-can-fume collectors overhead. The welding operations are exempt under Rule 285(2)(i).

There are 5 parts washers located throughout the plant:

- o 150 gal agitation tank in Assembly (Crystal Clean 100)
- o 80 gal tank in Assembly/Layout (Crystal Clean 100)
- o 40 gal tank in Maintenance (Crystal Clean 100)

- o 40 gal tank in Small Paint (N-Terpinal)
- o 40 gal tank in Tech Center (Crystal Clean 100) – not used and possible future removal.

Crystal Clean maintains the parts washers for the facility. The Safety Data Sheet (SDS) for Crystal Clean 106 Mineral Spirits (the parts washing solvent) shows it contains a mixture of mainly Stoddard Solvent (CAS No. 8052-41-3), up to 6% by weight of Nonane (CAS No. 111-84-2) and up to 4% by weight of 1,2,4-Trimethylbenzene (CAS No. 95-63-6) with less than 1% each of Trimethylbenzene (CAS No. 25551-13-7), Toluene (CAS No. 108-88-3), Naphthalene (CAS No. 91-20-3) and Ethylbenzene (CAS No. 100-41-4). The VOC content of the parts washing solvent is ~ 6.59 lb/gal. Toluene (CAS No. 108-88-3), Naphthalene (CAS No. 91-20-3) and Ethylbenzene (CAS No. 100-41-4) are all HAPs. HAP content of the parts washing solvent is estimated to be 0.105 lb/gal. Records of parts washing solvent were not requested but 1,080 gallons was used in 2018. Using this information, HAP emissions due to parts washing as estimated by AQD staff could be up to 113.4 lbs/year (0.057 tpy). Records for HAP usage due to parts washing needs to be added to the calculations used to demonstrate compliance with the HAPs opt-out in FGFACILITY. The parts washers are exempt under Rule 281(2)(h). All parts washers observed during the inspection had closed lids.

There is some touch up of paint using hand held spray cans in the shipping bay/area. This is considered exempt under Rule 287(2)(b). The exemption is for a maximum size of 8 oz. cans. HAP emissions due paint application using hand held spray cans are accounted for in the calculations used to demonstrate compliance with the HAPs opt-out in FGFACILITY. —

Summary:

The facility appeared to be in compliance with PTI 337-05B, and the air quality rules and regulations. One follow-up item is to include HAP emissions due to the usage of parts washer solvent to the calculations used to demonstrate compliance with the HAPs opt-out in PTI 337-05B, FGFACILITY.



Image 1(IMG 0252) : Small booth (EU-2)



Image 2(IMG 0255) : In-side of Large Booth (EU-1)



Image 3(IMG 0263) : Parts Washer

NAME Julie L. Brunner

DATE 9/14/2021

SUPERVISOR B.M.