

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

F325464900

FACILITY: Selfridge Air National Guard Base		SRN / ID: F3254
LOCATION: Selfridge Air National Guard, MI 48045, MOUNT CLEMENS		DISTRICT: Warren
CITY: MOUNT CLEMENS		COUNTY: MACOMB
CONTACT: Kenneth Baker , Environmental Engineer		ACTIVITY DATE: 09/06/2022
STAFF: Kerry Kelly	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY 2022 targeted inspection. SANGB exceeded the 450,000 kW hours per 12-month time period limit for diesel generators in SC 4.1, starting with the 12-month period ending September 2021. A notice of violation was issued November 22, 2021 for the exceedance. Resolution is pending.		
RESOLVED COMPLAINTS:		

On September 6, 2022, I (Kerry Kelly, EGLE-AQD) conducted an inspection at Selfridge Air National Guard Base (SANGB) located in Harrison Township, Michigan. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division (EGLE-AQD) Administrative Rules; and the conditions of Permit-To-Install (PTI) Nos. 523-96A and No. 10-15.

Kenneth Baker represented SANGB during the inspection.

SANGB is a military installation whose major tenants include the Army, Air Force, Marines, Navy, Coast Guard, and Department of Homeland Security. The base is hosted by the Michigan Air National Guard's 127th Wing. The facility is located in eastern Macomb County, Michigan. Macomb County is designated as non-attainment for ozone. SANGB is bounded on the east by Anchor Bay/Lake St. Clair and on the south and west by residential properties. A river also runs along the southern boundary of the base.

Maintenance and operation of military equipment and buildings and some research and development work are the primary activities that take place at SANGB. Maintenance squadron and support equipment is assigned for each particular aircraft. Support equipment may consist of aerospace ground equipment (AGE), emergency engines, and paint & maintenance equipment. The facility also has a fluorescent bulb crusher and several natural gas-fired boilers & space heaters.

The facility previously had 2 heating plants with coal-fired boilers. During the inspection, Ken took me to W. Perimeter Road and Coswell, the site where the west heating plant was located. The at this location was vacant and covered with grass during the inspection. A Google Earth Pro aerial photo dated March 1999 shows a building with stacks and a large black area that appeared to be coal piles/residue next to train cars, at the location. In a Google Earth Pro aerial photo dated April 2002, there were no buildings or evidence of coal on the SE corner of W. Perimeter and Coswell. Ken didn't know where the other power plant used to be located. I did not see any buildings that looked like they contained coal-fired boilers during the inspection. This information indicates SANGB removed the heating plants with the coal-fired boilers.

AGE is aircraft support equipment on wheels (some are motorized). The engines use aviation fuel and diesel fuel. AGE consist of all motorized aircraft support equipment, such as electric power generators, compressors, hydraulic test stands, weapon loading units, towing vehicles, supplementary heating, air conditioning, and lighting. In the past, the facility requested that the AGE be considered a mobile source which would result in the emissions from the AGE not being included in the facility's potential to emit (PTE) calculations. Based on previous inspection reports for the facility, AQD Warren district determined that the AGE is not a mobile source and therefore the emissions must be included when calculating the facility's PTE. As a result, the facility's PTE for hazardous air pollutants (HAP), carbon monoxide (CO) and nitrogen oxides (NOx) was greater than major source thresholds without federally enforceable emission limits in place.

On August 6, 1999, a PTI was approved (No. 523-96) limiting SANGB's HAP and criteria pollutant emissions to below major source thresholds, making the facility a synthetic minor opt-out for HAPs and criteria pollutants. This opt-out permit was modified and PTI No. 523-96A approved March 21, 2005.

Environmental-related records are maintained through Air Program Information Management (APIM), a program developed by the military for use at military installations. PTI 523-96A and 10-15 require monthly and 12-month rolling emissions and/or throughput records be kept for each emission unit or flexible group. Ken submitted the 12-month rolling records to me via email each month between November 2021 – April 2022 for the 12-month periods ending October 2021 – February 2022. 12-month rolling records for the periods ending March 2022 – August 2022 were provided via email on September 4, 2022 and September 6, 2022. In the email with the record, Ken stated the some of the files are designating as controlled unclassified Information under operational security. Data with this designation is related to fuel throughput and emergency generators at the installation and, according to Ken, controlled

unclassified information under operational security should not be disclosed to the general public even under a FOIA request. I will request all hard copies of records received for this inspection be put in the confidential file cabinet at the Warren District office.

COMPLIANCE EVALUATION

COLD CLEANERS

Though cold cleaners with an air-vapor interface less than 10 square feet may be exempt from the requirements to obtain a PTI per Rule 281(2)(h), the cold cleaners at SANGB are included in PTI No. 523-96A in the Flexible Group FG-COLDCLEANERS. Conditions in FG-COLDCLEANERS in the permit were established pursuant to Rule 205 and Rule 707.

PTI 523-96A

Special Cond 1.1. sets a VOC limit of 10 tons per year based on a rolling 12-month period. Ken provided VOC emissions records, required in SC 1.5, for each the 12-month periods ending Oct. 2021 – July 2022 (Attachment 1). The highest 12-month rolling VOC emissions reported were 0.75 tons reported for the 12-month periods ending and Mar. 2021 and Apr. 2021.

Special Cond 1.2. sets a material usage limit of 3,000 gallons per year based on a rolling 12-month period. Ken provided solvent usage records, required in SC 1.5, for each the 12-month periods ending Oct. 2021 – July 2022 (Attachment 1), as required in SC 1.5. The highest 12-month rolling solvent usage reported was 283 gallons reported for the 12-month periods ending and Mar. 2021 and Apr. 2021.

Special Cond 1.3 limits the VOC content of solvent to less than 6.7 pounds per gallon based on a monthly average. According to records provided by Ken, the highest solvent VOC content approximately 6.6. lbs/gallon.

Special Cond 1.4. requires SANGB operate the cold cleaners in compliance with Rule 707. Rule 707 requires:

- Cold cleaners to be equipped with lids and the lids be closed whenever parts are not being handled. The cover must be mechanically assisted if the solvent is more than 0.3 psia, agitated, or heated.
- A device be available for draining cleaned parts
- Waste solvent to be stored in closed containers
- Written procedures for the operation of such provisions, and such procedures shall be posted in an accessible, conspicuous location near the cold cleaner

Ken provided a list of all cold cleaners at the facility (Attachment 1). According to this list, there are 17 cold cleaners at SANGB. The largest cold cleaner (located in Building 36) has a capacity of 355 gallons. I inspected the cold cleaner at Building 36 and noted it is a Gray Mills cold cleaner, labeled as using Isopar L, with an air/vapor interface of approximately 17.5 square feet. The lid was closed when we arrived. I asked an employee to open the lid so I could see inside. When the lid was open, I saw that the of the freeboard height to the width of the cleaner was about 1, the lid was mechanically assisted, there was a rack for draining parts that had several metal parts on it, and there was lip exhaust which is vented through a stack to the ambient air. I did not see operating instructions posted on this cold cleaner during the inspection. Immediately following the inspection, Ken sent an email stating he had placed operating instructions on the cold cleaner and included a photo of the cleaner with the instructions posted. There were two other parts washers in Building 36; one Crystal Clean parts washer with an Isopar L label and the other a Better Engineering wash cabinet with a propanol label. The Crystal Clean parts washer had an approximately 2 x 3 air/vapor interface, the lid was closed, and operating instructions were posted on the inside of the lid. I asked Ken to have operating instructions posted on the outside of the washer in a conspicuous place as required in Rule 707(4). Immediately following the inspection, Ken sent an email stating he had placed operating instructions on the cold cleaner and included a photo of the cleaner with the instructions posted in a conspicuous place on the outside of the cleaner. According to Ken, the Better Engineering parts washer is an aqueous based parts washer. Based on the information on Better Engineering's website, this appears to be accurate. Aqueous based parts washers (a tank containing liquid with a volatile organic compound content of less than 5 %, by weight, and at a temperature below its boiling point that is used to spray, brush, flush, or immerse metallic and/or plastic objects for the purpose of cleaning or degreasing) are exempt from the requirement to have a PTI per Rule 281(2)(k).

I also inspected cold cleaners in Buildings 1416, 120, and 24. The cold cleaners in these buildings matched the description in the list provided by Ken. During the inspection, each cold cleaner I observed in Buildings 1416, 120, and 24 was equipped with a lid and the lid was closed. I saw instructions posted in a conspicuous location near each cold cleaner. The waste solvent and solvent containing rags that I saw were stored in closed containers.

PAINT BOOTHS

Though paint booths with a coating use rate of not more than 200 gallons per month and supplied with a properly installed, maintained and operated dry filter control may be exempt from the requirements to obtain a PTI per Rule 287(2)(c), the paint booths at SANGB are included in PTI No. 523-96A in the Flexible Group FG-PAINTBOOTHs. Conditions in FG-PAINTBOOTHs in the permit were established pursuant to Rule 205.

According to records provided by Ken (Attachment 2), there are paint booths located in Building Nos. 1416, 1465, 120 and 35 at SANGB.

PTI 523-96A

Special Cond 1.1. limits the amount of paint and solvent used in each paint booth to 200 gallons per 12-month rolling time period. Ken provided records of paint usage, required in SC 2.4 for each the 12-month periods ending Sept. 2021 – July 2022 (Attachment 2). These records indicate the highest 12-month rolling usage for all booths combined was approximately 34 gallons reported for the period ending June 2022. The reported annual usage for all booths combined is less than the 200 gallon per year per booth limit.

SC 2.2. sets a VOC content limit of paint of 6.25 pounds per gallon based on a monthly average. Ken provided records of the monthly average VOC content of the coatings, required in SC 2.4, for each the 12-month periods ending Sept. 2021 – July 2022. These records indicate SANGB exceeded the highest monthly average coating VOC content in October and November 2021. Due to the low paint usage at the facility (October facility-wide usage was one-tenth the limit for one booth and November facility-wide usage was two-tenths the limit for one booth), I will not issue a notice of violation.

Special Cond 2.3. requires paint booth filters to be properly installed, no gaps. I inspected the three paint booths located in Building 1416 and the one paint booth in Building 120 during this inspection.

According to a worker in Building 1416, Caleb, only one of the booths in Building 1416 is used for painting. In this booth I saw several cans of spray paint and that the filters appeared to be installed properly. According to Caleb, the pressure is checked before painting and if the pressure is not within in range, the filters are changed. Caleb turned on the booth exhaust and I observed the pressure monitor was within the range specified while the booth was on.

The other booths/rooms in Building 1416 are labeled "Clean Room" and "Dirty Room". I inspected the Clean Room and Dirty Room. The Clean Room is used to fabricate composite materials and doesn't use the exhaust, according to Caleb. In the Clean Room I observed a table. I didn't see any evidence (paint guns, overspray, etc) that painting was being conducted in the Clean Room. According to Caleb, the Dirty Room is used to sand old paint, that may have hexavalent chrome, off of aircraft parts. In the Dirty Room I saw a self-contained, downdraft table. Caleb stated the downdraft table is equipped with a HEPA filter. The Dirty Room did not appear to have an exhaust system.

Caleb stated that paint guns are cleaned with isopropyl alcohol. In an area nearby I saw a CRC Smart Washer aqueous based parts washer that uses Ozzy Juice and a Uniram Cascade parts washer. The lid to the Uniram parts washer was closed and there was a tag on it indicating is not used.

According to Caleb, they don't have a paint mix room in the Building 1416. A storage cabinet in the paint area was filled with cans of spray paint and acetone.

In Building 120 I saw another self-contained downdraft table and a paint booth. The paint booth filters appeared to be properly installed during the inspection.

NATURAL GAS-FIRED HEATERS

SANGB uses natural gas fired boilers and heaters to heat buildings throughout the base. Ken provided a list of the gas fired boilers and heaters at SANGB. According to the list, there are 459 boilers and heaters; and the heat input rating of each boiler is less than 10 MMBtu/hour. Sizes noted in the records range from 0.034 MMBtu/hour to 3 MMBtu/hour. I inspected boilers located in Buildings 1424, 1429, and 120. The natural gas-fired boilers and heaters that I inspected match the description in the list provided by Ken. Though fuel burning equipment used for space heating, firing natural gas, and with a heat input rating less than 50 MMBtu/hour may be exempt from the requirements to obtain a PTI per Rule 282(2)(b), the heaters at SANGB are included in PTI No. 523-96A in the Flexible Group FG-NGHEATERS.

Conditions in FG-NGHEATERS in the permit were established pursuant to Rule 205. PTI 523-96A does not include National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers Area Sources requirements nor New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units requirements.

PTI 523-96A

Special Cond 3.1. limits natural gas usage for the heaters to 520 MM cubic ft. per 12-month rolling time period. Ken provided records of the natural gas usage, required in SC 3.2, for each 12-month period ending Oct. 2021 – July 2022 (Attachment 3). These records indicate the highest 12-month rolling natural gas usage was 132.216 MMscf reported for the period ending March 2022.

NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources (40 CFR Part 63, Subpart JJJJJJ)
It appears the natural gas fired boilers at SANGB are not subject to 40 CFR Part 63, Subpart JJJJJJ per 40 CFR 63.11195(e)

because they are gas-fired boilers.

NSPS for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR Part 60, Subpart Dc)

It appears the natural gas fired boilers at SANGB are not subject to 40 CFR Part 60, Subpart Dc because the maximum design heat input capacity of each boiler is less than 10 MMBtu/hour.

DIESEL GENERATORS

SANGB operates 57 diesel-fired emergency/fire pump engines. The diesel engines range in size from 4.7 HP to 1,111 HP, 50 of the diesel engines are less than 500 HP. Though internal combustion engines (ICE) that have a heat input capacity of less than 10 MMBtu/hour may be exempt from the requirements to obtain a PTI per Rule 285(2)(g), the diesel engines at SANGB are included in PTI No. 523-96A in the Flexible Group FG-DIESELGENS. I inspected the diesel generators located at Buildings 1700, 859, and 561. The information on the nameplates of the diesel engines I inspected match the descriptions in the list provided by Ken. In addition, the hours on the non-resettable hours meter for the engines at Building 859 and 1700 that I noted during the inspection are about an hour less than the hours recorded for May 2022 in the records provided by Ken. The hours I noted from the hours meter on the engine at Building 561 during the inspection are approximately 25 hours less than the hours noted in the records provided by Ken recorded for May 2022.

PTI 523-96A does not include NESHAP for Stationary Reciprocating Internal Combustion Engines requirements nor NSPS for Stationary Compression Ignition Internal Combustion Engines requirements.

PTI 523-96A

SC 4.1. limits annual power output to 450,000 kilowatt hours per 12-month rolling time period for FG-DIESELGENS. Following the inspection conducted on August 6, 2021, Ken began submitting the 12-month rolling records to me via email each month between November 2021 – April 2022 for the 12-month periods ending October 2021 – February 2022 (Attachment 4). On November 3, 2021, Ken notified me via email, that SANGB exceeded the 450,000 kW hours per 12-month time period limit starting with the 12-month period ending September 2021. The exceedance was due to a prolonged power outage at SANGB. The power outage was due to a catastrophic failure of an underground feeder line that was installed nearly 60 years ago. SANGB assumed that the degraded condition of the feeder was exasperated by the high demand associated with the use of air conditioners during the extremely hot days preceding the outage. Due to this outage, the 12-month rolling kW hours have exceeded 560,000 for the 12-month rolling periods ending September 2021 – June 2022.

A notice of violation was issued November 22, 2021 for the exceedance. In the response to the violation, SANGB stated that temporary field cross connects are in place to supply power to the affected facilities, a separate project is concurrently being planned to assess the primary and secondary distribution line capabilities to handle load demands, and SANGB has a contracted comprehensive Air Emissions Inventory (AEI) to be accomplished in calendar year 2022. Following completion of the contracted AEI, SANGB will collaborate with EGLE to update and revise our existing permit. SANGB will request the kW-h limit established under the permit to either be removed or raised appropriately based upon supporting data. I spoke with the Warren District Supervisor, Joyce Zhu, about the violation and resolution. Due to the age of the electrical system at the base and the potential for other unforeseen catastrophic power failures, along with the resolution stated in the violation response, Joyce and I determined the violation will be resolved when SANGB obtains a permit to install that either be removes or raises appropriately the kW hour limit.

NESHAP for Stationary Reciprocating Internal Combustion Engines (40 CFR Part 63, Subpart ZZZZ)

The emergency engines at SANGB may be subject to the 40 CFR Part 63, Subpart ZZZZ. Compliance with 40 CFR Part 63, Subpart ZZZZ was not evaluated during this inspection because EGLE-AQD has not accepted delegation to implement and enforce the 40 CFR Part 63, Subpart ZZZZ at area sources of HAPs.

NSPS for Stationary Compression Ignition ICE (40 CFR Part 60, Subpart IIII)

Emergency diesel engines at the facility that were ordered after July 11, 2005 and manufactured after April 1, 2006 may be subject to 40 CFR Part 60, Subpart IIII. According to records provided by Ken, 12 of the stationary emergency diesel engines at SANGB were manufactured after April 1, 2006. These engines range in size from 47 HP to 1,111 HP.

Per 40 CFR 60.4200(d), stationary CI ICE may be eligible for exemption from the requirements of 40 CFR Part 60, Subpart IIII as described in 40 CFR part 1068, subpart C, except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security. 40 CFR Part 1068.225(e) requires manufacturers to add a permanent label to all engines/equipment exempted for national security under 40 CFR part 1068, subpart C. The label is required to contain at least the following items: The label heading "EMISSION CONTROL INFORMATION", the manufacturers corporate name and trademark, engine displacement, family identification, and model year of the engine/equipment (as applicable), or whom to contact for further information, the statement: "THIS [engine, equipment, vehicle, etc.] HAS AN EXEMPTION FOR NATIONAL SECURITY UNDER 40 CFR 1068.225."

Records provided by Ken for the August 6, 2021 inspection indicated that each stationary diesel engine at SANGB, manufactured after April 1, 2006, is certified to meet the emission limits in 40 CFR Part 60, Subpart IIII. The engines are either listed in EPA's

certification database or have a certificate of conformity. The two stationary diesel engines manufactured after July 11, 2005 that I inspected, located at Building 561 and 1700), had a permanent label on the engine that state "EMISSION CONTROL INFORMATION: This engine is exempted from the requirements of 40 CFR parts 89 and 1039 as a "stationary emergency engine." Installing or using this engine in any other application may be a violation of federal law subject to civil penalty".

This statement is for engines specified in PART 1039 - CONTROL OF EMISSIONS FROM NEW AND IN-USE NONROAD COMPRESSION-IGNITION ENGINES (specifically 40 CFR 60.1039.1(c)) which states: The definition of nonroad engine in 40 CFR 1068.30 excludes certain engines used in stationary applications. These engines may be required by 40 CFR part 60, subpart IIII, to comply with some of the provisions of this part; otherwise, these engines are only required to comply with the requirements in § 1039.20. In addition, the prohibitions in 40 CFR 1068.101 restrict the use of stationary engines for nonstationary purposes unless they are certified to the same standards that would apply to certain nonroad engines for the same model year.

40 CFR Part 60, Subpart IIII (specifically 40 CFR 60.4205(b) and 60.4202(b)) require stationary engines that meet the criteria of the engines I inspected to meet the emission standards for new nonroad CI engines in 40 CFR part 1039, appendix I. So, though 40 CFR Part 1039 does not require stationary engines to meet the requirements in 40 CFR Part 1039, except for the requirements in 40 CFR 1039.20, 40 CFR 60.4205(b) and 60.4202(b) do require these stationary engines to meet the requirements in 40 CFR part 1039, appendix I. Ken provided copies of the EPA certifications indicating the engines located at Building 561 and 1700 are certified to meet the emission limits in 40 CFR 1039, appendix I.

Per 40 CFR 60.4211(f), to be considered an emergency engine, each engine may be operated for no more than 100 hours per calendar year (CY) for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Each engine may be operated up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year provided for maintenance and testing. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or to generate income. Ken provided records of each engine's operating hours for CY 2021 (Confidential - Attachment 5). These records were marked as unclassified Information under operational security. Data with this designation is related to fuel throughput and emergency generators at the installation and, according to Ken, controlled unclassified information under operational security should not be disclosed to the general public even under a FOIA request. Based on these records, it appears all diesel engines subject to 40 CFR 60 Subpart IIII were operated for less than 100 hours for non-emergency purposes in calendar year 2021.

FG-GASGENS

FG-GASGENS applies to all gasoline-powered generator engines at the facility. According to Ken, SANGB no longer uses gasoline-powered generator engines. In addition, SANGB reported in the Michigan Air Emissions Reporting System (MAERS) that the gasoline powered engines have not been operated each year from 2014 through 2021. I did not see any gasoline-powered generators during the inspection.

FG-AGE

AGE consists of all motorized aircraft support equipment, such as electric power generators, compressors, hydraulic test stands, weapon loading units, towing vehicles, supplementary heating, air conditioning, and lighting. Based on records provided by Ken, the facility has 184 pieces of AGE fired by either diesel fuel or Jet A fuel. All AGE engines are 180 HP or less. 135 of the AGE are 50 HP or less. I inspected 8 pieces of AGE equipment located near Building 24. Each piece of equipment, including the engine and fuel tank, were affixed to a wheeled trailer and were fueled by either diesel or Jet A. I noted that 5 of the engines I inspected had an emissions certification placard affixed to the engine. These engines appear to meet the definition of nonroad engine, as defined in 40 CFR 1068.30(1)(iii).

PTI 523-96A

Special Cond 6.1. limits diesel fuel or Jet fuel usage for all turbine engines in FG-AGE to 150,000 gallons per 12-month rolling time period. Ken provided records of the fuel usage for the turbines in FG-AGE, required in SC 6.3, for each the 12-month periods ending Sept. 2021 – June 2022 (Attachment 6). These records indicate the highest 12-month rolling diesel fuel and Jet fuel usage combined for the turbines was approximately 4804 gallons reported for the period ending February 2022.

Special Cond 6.2. limits diesel fuel or Jet fuel usage for all reciprocating engines in FG-AGE to 75,000 gallons per 12-month rolling time period. Ken provided records of the fuel usage for the reciprocating engines in FG-AGE, required in SC 6.3, for each of the 12-month periods ending Sept. 2021 – June 2022 (Attachment 6). The highest reported 12-month rolling diesel fuel and Jet fuel usage combined for the reciprocating engines was 13,438 gallons for the period ending March 2022.

NSPS for Stationary Compression Ignition ICE (40 CFR Part 60, Subpart IIII)

40 CFR Part 60, Subpart IIII applies to stationary compression ignition internal combustion engines ordered after July 11, 2005 and manufactured after April 1, 2006. A stationary engine, as defined in the rule, means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differs from mobile ICE in that

a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition.

A nonroad engine, as defined in 40 CFR 1068.30(1)(iii), is an internal combustion engine that by itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. Per 40 CFR 1068.30(2)(iii), the engine included in 40 CFR 1068.30(1)(iii) that remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source is not a non-road engine. A location is any single site at a building, structure, facility, or installation.

During the inspection I observed that the AGE was affixed to trailers with wheels making them capable of being moved from one location to another. The AGE was parked near the AGE service building at the time of my inspection. They are transported to different areas of the base when needed to do work on aircraft. The AGE equipment is also considered deployable assets.

U.S. Environmental Protection Agency Applicability Determination Index (ADI), Control Number: M090038 indicates that an engine that is moved through a facility is classified as a non-road engine and therefore not subject to 40 CFR Part 60, Subpart IIII.

FG-TESTCELLS

FG-TESTCELLS applies to 2 engine testing stands for F-16 aircraft engines. According to Ken, SANGB no longer uses the engine test cells. SANGB reported in the MAERS that the engine test cells have not been operated each year from 2014 through 2021. I did not see any engine test cells at the facility during the inspection.

FG-FUELSTORAGE

FG-FUELSTORAGE applies to tanks used to store petroleum products such as Jet fuel, diesel, and gasoline. There are 63 above ground storage tanks and one underground storage tank used to store petroleum products at SANGB according to records provided by Ken. 51 tanks are used to store diesel fuel, 7 tanks are used to store Jet A fuel, and 5 tanks are used to store gasoline. Three of these tanks have a capacity greater than 20,000 gallons (two 390,000 - gallon tanks used to store Jet A fuel and one 20,000 - gallon tank used to store gasoline).

PTI 523-96A

Special Cond 8.1 limits the jet fuel throughput for the storage tanks to 55,000,000 gallons per 12-month rolling time period. Ken provided records of the fuel usage in FG-FUELSTORAGE, required in SC 8.2, for each 12-month periods ending Sept. 2021 – June 2022 (Confidential – Attachment 7). These records were marked as unclassified Information under operational security. Data with this designation is related to fuel throughput and emergency generators at the installation and, according to Ken, controlled unclassified information under operational security should not be disclosed to the general public even under a FOIA request. These records indicate the highest 12-month rolling jet fuel throughput was approximately 3,992,240 gallons reported for the period ending September 2021.

NESHAP for Gasoline-Dispensing Facilities (40 CFR Part 63, Subpart CCCCCC)

The gasoline tanks at SANGB may be subject to the 40 CFR Part 63, Subpart CCCCCC. Compliance with the 40 CFR Part 63, Subpart CCCCCC was not evaluated during this inspection because EGLE-AQD has not accepted delegation to implement and enforce the 40 CFR Part 63, Subpart CCCCCC.

NSPS for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (40 CFR Part 60, Subpart Kb)

Except as provided in 40 CFR 60.110b(b) and (d), 40 CFR Part 60, Subpart Kb applies to tanks greater than 75 m³ (20,000 gallons) used to store organic liquids which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere. The two 390,000-gallon tanks used to store Jet A fuel are not subject to 40 CFR Part 60, Subpart Kb per 40 CFR 60.110b(b) because they are storage vessels with a capacity greater than or equal to 151 m³ (39,890 gallons) storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa). According to records submitted by Ken, the vapor pressure of Jet A fuel is 0.07 psia (0.48 kPa). The 20,000-gallon gasoline tank does not appear to be subject to 40 CFR Part 60, Subpart Kb per 40 CFR 60.110b(d)(6) because it is located at a gasoline service station.

Michigan Administrative Rule 703

The gasoline storage tanks greater than 2,000 gallons appear to be subject to R 336.1703. R 336.1703 requires the tank be vapor tight and equipped with: a permanent submerged fill pipe, a vapor balance system or equivalent control, an interlocking system or procedure to ensure vapor tight collection line is connected before any gasoline can be loaded, and a device to ensure that the the vapor tight collection line shall close upon disconnection so as to prevent release of gasoline vapor. I did not evaluate SANGB's compliance with this rule during the inspection.

FG-FACILITY

Special Cond 9.1 limits emissions from all process equipment at the facility including equipment covered by other permits, grandfathered equipment and exempt equipment to the following, based on a rolling 12-month time period:

Pollutant	Limit
Individual HAPs	9 tons/year
Aggregate HAPs	22.5 tons/year
NOx	83.9 tons/year
CO	80.6 tons/year
SO2	4.2 tons/year
PM10	19.5 tons/year
VOC	44.2 tons/year

Ken provided records of the facility-wide emissions for the 12-month periods ending December 2019 and December 2020 (Attachment 8). The reported emissions for the 12-month periods ending in December 2019 and December 2020 are listed below:

Pollutant	Highest 12-month Rolling Reported Emissions	12-month Rolling Period Ending w/Highest Reported Emissions
Aggregate HAPs	2.34 tons/year*	Nov. 2021
	0.62 tons/year	Sept. 2021
NOx	25.39 tons/year	Dec. 2021
CO	12.33 tons/year	Dec. 2021
SO2	0.06 tons/year	Dec. 2021
PM10	1.62 tons/year	Dec. 2021
VOC	6.23 tons/year	Dec. 2021

*The emissions during 12-month rolling periods ending Oct 2021 – Jan 2022 are an order of magnitude higher than the rest of the 12-month rolling periods. The higher reported emissions for these time periods is due to a calculation error. Specifically, the 12-month rolling periods ending Oct 2021 – Jan 2022 reference the lbs/12-month period for lead from small arms instead of the tons/year. The months with the lower aggregate emissions reference the tons/year lead from small arms.

EU-BULBCRUSHER

SANGB installed a fluorescent bulb crusher in January 2016. Permit-to-install No. 10-15 was issued for this equipment.

PTI No. 10-15

Special Condition II.1. limits the eight-foot equivalent bulbs crushed per day to 400. Ken provided records of the number of bulbs crushed per day for January 2021 through August 2022 (Attachment 9). The records indicate the highest number of eight-foot equivalent bulbs crushed in a day occurred on February 1, 2022 with 283 eight-foot equivalent bulbs.

Special Condition II.2. limits the eight-foot equivalent bulbs crushed per year, based on a 12-month rolling time period, to 5,000. Ken provided records of the number of bulbs crushed per 12-month rolling time period for the periods ending July 2021 through August 2022 (Attachment 10). These records indicate the highest 12-month rolling eight-foot equivalent bulbs crushed was 1,170 in the 12-month period ending May 2022 and June 2022.

Special Condition III.1 requires SANGB to follow the Recommended Best Management Practices for Drum-top Crushers and Recommended Best Management Practices for Lamp Handling & Storage are specified in Appendices 1 and 2 of PTI No. 10-15 and maintain and operate the crusher according to the manufacturer's specifications. Appendix 1 requires the following:

1. EU-BULBCRUSHER should have a vacuum pump to create negative internal pressure and well designed and tightly fitted seals at all connection points. EU-BULBCRUSHER must include a bag filter followed in series by a HEPA filter and an activated carbon filter to control particulate emissions.
2. EU-BULBCRUSHER should be used and stored in a room completely segregated from other parts of the building, with a dedicated ventilation/exhaust system that discharges to the ambient air. EU-BULBCRUSHER should not be used or stored in areas where the temperature is elevated (e.g., a boiler room). Use workroom ventilation to create a slight negative pressure throughout the entire work area, so any fugitive emissions are captured by the facility's air filtration system. Workroom ventilation/exhaust or exhaust from EU-BULBCRUSHER should be located away from air intakes.
3. If EU-BULBCRUSHER must be moved, all ports should be covered or plugged and movement should be done in a manner to avoid disturbing the contents of the drum. Ports should also be plugged or sealed when the DTC is not in use.
4. All operators should be trained in the proper assembly, maintenance and operation of the EU-BULBCRUSHER.
5. All operators should wear appropriate Personal Protective Equipment (PPE) when operating EU-BULBCRUSHER
6. Before each use, the operator should inspect EU-BULBCRUSHER for damage or worn components; improper assembly; missing, damaged or improperly fitted seals; seal integrity between the crusher unit and the drum; proper vacuum (negative pressure); and proper air flow.

7. EU-BULBCRUSHER should be operated according to manufacturer's recommendations. This includes not crushing more than the manufacturer-recommended number of lamps per drum and not using EU-BULBCRUSHER continually for longer than the manufacturer recommends. EU-BULBCRUSHER should not be opened to put debris into the drum.
8. The manufacturer's recommended maintenance schedule should be followed for carbon filter and drum change outs. A maintenance log should be kept with EU-BULBCRUSHER recording all carbon filter changes, drum change outs and other maintenance.
9. Drum change-outs should be performed according to the manufacturer's specifications and procedures, and operators conducting change-outs should wear appropriate PPE. Before changing a drum, allow the contents to settle for at least 15 minutes before removing the DTC from the drum. The drum should be changed by two trained operators, and the full drum should be covered as quickly as possible and tightly sealed. Crushed lamps should not be removed from the drum.
10. EU-BULBCRUSHER should not be used if there is phosphor (white powder) on or around the DTC; there is any damage to EU-BULBCRUSHER, especially the vacuum system, seals or filters; or the EU-BULBCRUSHER has been incorrectly assembled or modified in any way.
11. Drums containing crushed lamps should be managed according to applicable federal and state regulations and sent to a commercial recycler.

Special Condition IV.1, 2, and 3 require a bag filter followed in series by a HEPA filter and an activated carbon filter are installed, maintained, and operated in a satisfactory manner, SANGB not operate EU-BULBCRUSHER with a warped drum that prevents the crushing unit from sealing flush with the drum top and that SANGB verify that the seal between the crusher unit and the drum is tight before each use, and SANGB seal the feed chute of EU-BULBCRUSHER with a cap or other similar device whenever the unit is not in use.

During the inspection EU-BULBCRUSHER was not being operated and, as a result, I did not evaluate compliance with numbers 3, 5, 6, and 9 of Appendix 1. I inspected EU-BULBCRUSHER, which is located in a building used for storage/recycling. I did not observe any other processes or process equipment in the building containing EU-BULBCRUSHER. I observed the manufacturer's operating instructions posted on EU-BULBCRUSHER and in a binder used by the operators to also track the amount of bulbs crushed. There was a filter on the top of the crusher and a bolted-on cover was sealed flush with the drum top. A cap was covering the feed chute where bulbs are inserted. I did not see about a half table spoon of light gray powder on the top of the bulb crusher during the inspection. I pointed the powder out to Ken who let another employee know that the powder was there and needed to be placed in the waste drum with the rest of the crushed bulbs. There is a special key that is required to operate EU-BULBCRUSHER and only trained employees are permitted to operate EU-BULBCRUSHER. Drums containing crushed lamps and spent filters are sealed and stored in the 90-day waste holding area while awaiting proper disposal.

Appendix 2 contains best management practices for handling and storing of spent lamps including; storing lamps in closed, structurally sound containers in a clean, dry room away from high traffic areas. During the inspection I observed spent lamps were stored in sturdy cardboard containers located in a clean, dry, low/no traffic area near the bulb crusher.

Special Condition III.2 and 4 requires SANGB to maintain, operate, and perform drum change outs of EU-BULBCRUSHER according to the manufacturer's specifications and procedures. During the inspection I observed that manufacturer's operating instructions posted on EU-BULBCRUSHER and in a binder used by the operators.

Special Condition III.3. states EU-BULBCRUSHER shall be located a minimum of 50 feet from the property line; 300 feet from any existing places of residence or private or public assembly; 500 feet from a school, apartment building, or institutional occupancy; and not less than 1000 feet from a hospital or nursing home. Based on Google Earth satellite images and measurements, and my knowledge of the facilities/properties on and off the base, EU-BULBCRUSHER appears to be located more than 1,000 feet from the property line, existing places of residence or private or public assembly, schools, apartment buildings, or buildings used for institutional occupancy, and hospitals and nursing homes.

Special Condition III.5 requires SANGB to completely replace the carbon within the activated carbon filter or replace the entire activated carbon filter, a minimum of once every two calendar years. Records provided during the last inspection indicate the carbon filters were changed November 25, 2019. The next carbon filter change is required no later than November 25, 2021.

I asked Ken for records of the carbon filter changes occurring after November 25, 2019. Ken responded that, in accordance with Special Condition III.2 of PTI 10-15, SANGB was operating and maintaining the bulb crusher and changing out filters in accordance with the manufacturer's specifications and procedures. However, as indicated under Special Condition III.5 of PTI 10-15, more stringent change out requirements for the carbon filter were specified. This special condition factor has made the 127th Wing Environmental Management Office reevaluate continuing operation of the bulb crusher. Based upon costs to replace the carbon filter every two years and other factors, SANGB will no longer be utilizing the bulb crushing unit and has taken it out of service. From this point forward SANGB will collect and then ship used bulbs off site for disposal. At this time SANGB would like to terminate bulb crushing permit 10-15.

Special Condition III.6 requires all broken glass and metal pieces collected in the 55-gallon drum portion of EU-BULBCRUSHER be properly handled, transported, and disposed of in accordance with all applicable State rules and federal regulations. Based on my observations and information gathered during this inspection, SANGB is properly handling, transporting, and disposing of all broken glass and metal pieces collected in the 55-gallon drum portion of EU-BULBCRUSHER.

Special Condition VIII.1 prohibits exhaust gases from bulb crusher from being discharged into the ambient air. I did not see an exhaust system on EU-BULBCRUSHER.

HUSH HOUSES

There are two "Hush Houses" at SANGB where jet planes are tested. In the "Hush House", a fully assembled jet plane is ushered into the building, tail first, and the engine exhaust goes through a binocular shaped receptacle. The emissions from the jet exit the narrow end of the receptacle and enter a tunnel outside of the building that muffles the jet engine noise. In letter from EPA Region 4 to Georgia Dept. of Natural Resources, Air Protection Branch, dated March 12, 1996, EPA indicated hush houses are not considered stationary sources since the aircraft engines are not removed from the aircraft prior to testing.

NATURAL GAS-FIRED GENERATORS

SANGB operates 7 natural gas-fired emergency engines. The natural gas-fired engines range in size from 47 HP to 684 HP. Six of the natural gas-fired engines are less than 500 HP. Internal combustion engines (ICE) that have a heat input capacity of less than 10 MMBtu/hour are exempt from the requirements to obtain a PTI per Rule 282(2)(g). I inspected the natural gas-fired engines located at Building 1436 and 1429. The nameplates on these engine generators matched the description in the list provided by Ken. In addition, the hours on the non-resettable hours meter for the engine at Building 1429 that I noted during the inspection are about an hour less than the hours recorded for May 2022 in the records provided by Ken. I didn't note the hours on the meter for the engine at Building 1436 during the inspection.

NESHAP for Stationary Reciprocating Internal Combustion Engines (40 CFR Part 63, Subpart ZZZZ) The emergency engines at SANGB may be subject to the 40 CFR Part 63, Subpart ZZZZ. Compliance with the 40 CFR Part 63, Subpart ZZZZ was not evaluated during this inspection because EGLE-AQD has not accepted delegation to implement and enforce the 40 CFR Part 63, Subpart ZZZZ at area sources of HAPs.

NSPS for Stationary Compression Ignition ICE (40 CFR Part 60, Subpart IIII)

Emergency natural gas-fired engines at the facility that were ordered after June 12, 2006 and manufactured after January 1, 2008 for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP or manufactured after July 1, 2008 for engines with a maximum engine power less than 500 HP are be subject to 40 CFR Part 60, Subpart JJJJ. According to records provided by Ken, six of the emergency natural gas-fired engines at SANGB meet this criteria.

40 CFR Part 60, Subpart JJJJ establishes emissions limits for emergency natural gas-fired engines. Compliance with these emission limits can be demonstrated by purchasing an engine certified by the manufacturer to meet the emission limits and by operating the engines according to the manufacturer's emission-related written instructions or through performance testing conducted by the owner/operator. Records provided by Ken for the August 6, 2021 inspection indicated that each stationary natural gas-fired engine at SANGB subject to 40 CFR 60 Subpart JJJJ is certified. The nameplates on the natural gas-fired generator engines that I inspected, located at Building 1436 and 1429, each had a certification placard. The certification on the engine at Building 1436 states the engine family is HPSIB21.9NGP. The engine family listed on the placard for the engine located at Building 1429 is HSP18.3NGP.

Per 40 CFR 60.4243(d), to be considered an emergency engine, each engine may be operated for no more than 100 hours per calendar year (CY) for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Each engine may be operated up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per calendar year provided for maintenance and testing. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or to generate income. Ken provided records of each engine's operating hours for CY 2021 (Confidential - Attachment 5). These records were marked as unclassified information under operational security. Data with this designation is related to fuel throughput and emergency generators at the installation and, according to Ken, controlled unclassified information under operational security should not be disclosed to the general public even under a FOIA request. Based on these records, it appears all engines subject to 40 CFR 60 Subpart JJJJ were operated for less than 100 hours for non-emergency purposes in calendar year 2021.

WOOD SHOP

During the inspection I observed a dust collector outside of Building 126. Ken indicated that woodworking activities are performed in the building and that the electrical to the baghouse had been disconnected. I did not observe any emissions from the building or dust collector. The area around the dust collector was free from dust as well. Inside Building 126 I observed a fully enclosed portable sand blast unit, a table with a hood and sign saying no painting and a welding torch next to it, two table saws, and other pieces of woodworking equipment. None of the equipment was being operated during the inspection. The equipment that I observed in Building 126 meets the PTI exemptions in Rule 285(2)(i) and (l)(vi).

FIRE SUPPRESSION TESTING

I inspected the fire suppression testing lab located in Building 1437. In this building, research and development on fire suppression media is performed. I saw a make-shift military vehicle with two outlet ducts in this building. According to personnel in the lab, FM-200, HF-227c, and HFC-125 are delivered into the crew compartment of the make-shift vehicle. Most of the tests are "dry tests" where no fire is used, only sodium bicarbonate, to test for obscuration. Occasionally, a fireball generator is used. The fireball generator uses JP-8 fuel pressurized with nitrogen to atomize the fuel which is then ignited with an electric match. I didn't see any emissions from the equipment or stack during the inspection. According to lab personnel, they track their material usage and give the information to Ken for emissions calculations. Pilot processes or pilot process equipment for physical or empirical research utilizing T-BACT are exempt from PTI per Rule 283(2)(a). Fire extinguisher filling, testing, spraying, and repairing are exempt from Rule 201 per Rule 285(2)(ff).

MISCELLANEOUS EQUIPMENT

In Building 120 I inspected a shredder, laser etcher, vinyl cutter, laminator, ink jet plotter, a CNC, a plastic media blaster, a hydraulic pressure tester, and a large sanding booth. This equipment appears to be used on a non-production basis.

The laser etcher ductwork was disconnected and, according to an employee, the etcher does not work. The etcher was used to make plaques/labels for identifying items/places at the base. Ken stated that Selfridge is planning to purchase a replacement etcher and is evaluating applicable air requirements for the new etcher.

The CNC uses water and garnet (loose grit material) to cut steel and aluminum for aircraft parts. The CNC was not being operated during the inspection and was surrounded by a curtain. Emissions from the equipment are released to the general in-plant environment.

The plastic media blaster was equipped with a HEPA filter.

The sanding booths are used to sand metal trailers for AGE equipment. The sanding booths were equipped with filters and mechanical pre-cleaners.

The hydraulic pressure tester is electrically powered and is used to pressure test pumps.

The vinyl cutter was not in use during the inspection. Emissions from the cutter are released to the general in-plant environment.

In another building I saw a hard drive shredder/degausser and SSMD-2mm solid state drive shredder. These units are self-contained, contain air filtration systems, and are vented to the in-plant environment.

Equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planing, buffing, sand blast cleaning, shot blasting, shot peening, or polishing ceramic artwork, leather, metals, graphite, plastics, concrete, rubber, paper board, wood, wood products, stone, glass, fiberglass, or fabric that is used on a non-production basis is exempt from Rule 201 per Rule 285(2)(l)(vi).

Equipment used for hydraulic or hydrostatic testing is exempt from Rule 201 per Rule 283(2)(c).

Rule 290(2) and Rule 291(2) exempt equipment/processes with emission units/processes with limited emissions and "de minimis" emissions respectively.

CONCLUSION

SANGB exceeded the 450,000 kW hours per 12-month time period limit for diesel generators in SC 4.1, starting with the 12-month period ending September 2021. The exceedance was due to a prolonged power outage at SANGB that started on August 26, 2021. The majority of SANGB facilities impacted were back on the electrical grid by September 2, 2021. However, power could not be restored to some facilities until September 17, 2021. A notice of violation was issued November 22, 2021 for the exceedance. I spoke with the Warren District Supervisor, Joyce Zhu, about the violation and resolution. Due to the potential for other unforeseen catastrophic power failures, along with the resolution stated in the violation response, Joyce and I determined the violation will be resolved when SANGB obtains a permit to install that either be removes or raises appropriately the kW hour limit.

NAME K. KellyDATE 9/29/2022SUPERVISOR Joyce Zhu