DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
**ACTIVITY REPORT: Self Initiated Inspection**

U3507022936052

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|---|---|---|
| **FACILITY:** Iosco County General | | **SRN / ID:** U35070229 |
| **LOCATION:** Any Iosco Co. Rd., Any Iosco Co. Town | | **DISTRICT:** Saginaw Bay |
| **CITY:** Any Iosco Co. Town | | **COUNTY:** IOSCO |
| **CONTACT:** | | **ACTIVITY DATE:** 08/09/2016 |
| **STAFF:** Sharon LeBlanc | **COMPLIANCE STATUS:** Non Compliance | **SOURCE CLASS:** |
| **SUBJECT:** Self-initiated site inspection of ongoing maintenance, repair and overhaul facility (Kalitta) located at the former Wurtsmith Airforce base, Oscoda, Michigan. Initial inspection activities and limited supplemental data appear to indicate that permit to install may be required for facility. | | |
| **RESOLVED COMPLAINTS:** | | |

**On Tuesday, August 9, 2016, AQD District Staff conducted a self-initiated site inspection of Kalitta Air-OSC Division (Kalitta) 5063 Skyway Street, Oscoda, Michigan, (Former Wurtsmith Air Force Base). The referenced facility is an unregistered facility, and based on readily available records at one time operated as American International Airways, Inc. (AIA) (5063 Skyway Road, Oscoda, Michigan).**

**AQD District Staff had previously conducted a self-initiated site inspection on Friday, October 8, 2010. Staff at that time met with Joel Beaubien and Cathy Pincot, Night Manager and Safety Managers, respectively regarding repair and maintenance operations onsite and potential AQD permitting requirements. At the time of the previous inspection, it had been determined that the company was in communications with AQD Permit Staff regarding activities onsite, and that activities at that time were determined to not require permitting.**

**Information obtained more recently from Kalamazoo District Staff indicated that the Facility may have some permitting issues to address, with regards to:**

- **whole plane painting operations conducted in the hangars,**
- **RCRA metal based paint use,**
- **electrostatic painting operations,**
- **cold cleaners, and**
- **open top, heated parts cleaners on site.**

**An April 15, 2013, Aviation Week newsletter article indicated that the company's Oscoda location is/has positioned itself to increase it's Maintenance, Repair and Overhaul (MRO) business by increasing the amount of hanger and shop space available as well as installation of an engine test cell. The purpose of the site visit was to better determine if recent facility upgrades were such that air permitting was required. Discussions with the previous solid waste inspector for the facility indicated that the company is proactive with respect to environmental concerns and regulations.**

## FACILITY DESCRIPTION/HISTORY

**Located on the former Wurtsmith Air Force Base, Oscoda Michigan, Kalitta is one of two aircraft maintenance facilities known to exist in the area, the other being at HAECO Americas [AKA HAECO, formerly Timco Aviation Services, Inc. Engine Center (SRN N5053)]. Both facilities are located on the south side of the air strip associated with the former base, and share a common parent company in American International Airways (AIA).**

**AIA grew from a one-man/one-plane cargo service started in 1967 by Conrad Kalitta, and in 1997 AIA merged with Kitty Hawk, Inc. becoming Kitty Hawk International. AIA founder Conrad Kalitta resigned at that time and started Kalitta Leasing, which bought, sold and leased large aircraft. In early 2000, Kitty Hawk International ceased operations, and Conrad Kalitta rescued the company creating Kalitta Air that same year. During this process a portion of the former Kitty Hawk International facility was purchased by Aviation Sales Company, and the facility became Timco-Oscoda, a division of Aviation Sales. Timco-Oscoda presently operates as HAECO. AQD permits held by Kitty Hawk International were transferred to Timco-Oscoda in 2000.**

**A number of the buildings formerly associated with AIA are presently being operated by Kallita, which provides some equivalent services to the former AIA and the present HAECO. Amongst other activities AIA was reported to retrofit commercial airliners for cargo. At the time of the 2010 inspection, Kalitta facility was comprised of six pre-existing buildings and a newly constructed airport hangar for their repair and renovation activities. Information available from the company webpage indicated that the company continues to provide domestic and international cargo service.**

**The company headquarters is located in Ypsilanti Township, Michigan.**

**At the time of the August 9, 2016 site visit, the facility reported having five aircraft hangers devoted to maintenance, one machine shop with a heat treat process, one engine test cell, and two engine facilities for rebuilds and modification. An additional hangar (no. 6) acts as a stock room.**

**The buildings and activities/equipment of interest are summarized below.**

| Hanger No. | Cold Cleaner/Parts Washer* | Heated Parts Washer | Paint Booth ** | Whole Plane Coating Activities (aircraft size) | Hangar Use |
|---|---|---|---|---|---|
| 2 | one | no | no | no | Aircraft Loading |
| 3 | one | no | yes | yes (727) | Maintenance |
| 4 | two | no | no | no | Ground Power Services |
| 5 | one | no | yes | yes (727) | Maintenance |
| 6 | no | no | no | no | Stock Room-Storage |
| 7 | one | no | Yes (60 cubic feet) | yes (747-200) | Maintenance |
| 8 | one | no | yes | yes (747-400) | Maintenance |
| 9 | one | no | yes | yes (747-400) | Maintenance |
| JT9 | one | yes | no | no | Engine -Rebuilds |
| CF6 | one | yes | no | no | Engine - |
| Mod Shop | one | | | | |
| Engine Test Cell*** | no | no | no | no | no |

*Cold Cleaners are located in most all of the hangars, and are recycling parts washers with 140/142 solvent (or equivalent). Safety guidelines were posted, all tanks/work areas were covered at the time of the inspection, and appeared to be less than 10 square foot of surface area.

**Unless otherwise indicated the paint booth was estimated to be approximately 6'X10'X10'. All paint booths are three sided with fans and filters as pollution control devices. HVLP sprayers are not in use in the booths, the facility uses preval sprayers.

*** Engine Test Cell was reported to have just completed construction at time of August 9, 2016, inspection.

REGULATORY REVIEW

Based on the assumption that various coatings utilized at the site may contain targeted particulate hazardous air pollutants (HAPS), and the assumption that the facility is a minor source of HAPS, it is believed that the site is subject to 40 CFR Part 63, Subpart HHHHHH ("6H") – National Emission Standards for Hazardous Air Pollutants (NESHAP): Paint stripping and misc. Surface Coating Operations at Area Sources.

The subject site if determined to be a major source, would be subject to 40 CFR Part 63, Subpart GG Aerospace Manufacturing and Rework Facilities NESHAP (Source Category MACT).

COMPLIANCE EVALUATION

As indicated above, the referenced facility is the Kalitta repair facility. Activities include plane renovation, sheet metal repair, engine shop, parts replacement, and surface coating activities. No dust collectors (multi-clones, bag houses, etc) were identified during the site inspection.

At the time of the 2010 site visit, Mr. Beaubien reported that the facility had switched over to water based and high solid content paints, and report using well below 200 gallons of paint per month (normal range was reported to be 99-105 gallons per month), permitted activities such as parts washing, and engine test cells, were not conducted, or activities were reported to be within exemption limits. In the past six years the facility has expanded, and the purpose of the more recent site inspection, and supplemental data requests was conducted to determine if changes have resulted in the need for permitting under the AQD program.

A number of potentially applicable exemptions from permitting do exist, and identified in this section. However, the facility will need to further evaluate and document the applicability of the exemptions to permitting, including a Rule 336.1278a demonstration for their files.

Paint Booths - As part of the August 9, 2016, site visit, AQD District Staff viewed the existing paint booths, which are 3 sided structures located in the various maintenance hangars for coating of smaller individual components. The booth is equipped with fan and filter pollution controls. Duct work to the outside appeared to confirm adequate control, some staining was noted, but may have been associated with the former military base for some of the older duct work. Filters were newer looking, and in most cases were only partially covered in paint. No paint was noted outside the paint booths. The paint booths do not have any associated compressors providing pressure to an applicator such as an HVLP.

The facility makes use of an atomizing system known as Preval to apply coatings to components in the booths. An evaluation of the Preval system appears to indicate that it is comparable to aerosol cans, but allows the user a greater selection in coatings from what may be available for purchase in aerosol spray cans.

Rule 336.1285 (hh) which exempts processes that use only hand-held aerosol spray cans, including the puncturing and disposing of the spray cans, and Rule 336.1287(b) which exempts surface coating processes that use only hand-held aerosol spray cans, including the puncturing and disposing of the spray cans may be applied to the spray booths onsite.

**Whole Plane Coating Activities - Discussions with Mr. Greg Ruby, Structures Manager for Kalitta indicated that the facility does have the capability to do whole plane paint jobs, and that for whole plane activities, that in fact the hangar is closed off and is used as a paint booth, with GF exhaust filters and fans (reported 98% particulate capture) which vent out the building and a mobile filter for in-hangar capture and exhaust. Post site visit review of various reports indicates that this is an accepted practice in the industry due to size.**

**Mr. Ruby reported that it requires almost a month to prep a whole plane for a paint job, and that with additional staffing the facility could complete one plane a month for each of the 5 maintenance hangers, but at present they are completing one-two a month. Based on this information the actual emissions that are associated with the facility are lower than the unpermitted potential emissions for painting activities onsite.**

**Supplemental information provided by the facility for a whole plane re-paint of a 747 (the largest plane they are capable of working on at present) indicates the following material usage.**

| Product | Material | Volume (gallons) | Density (lb/gallon) | Total Weight (lbs) | VOC Density (lb/gallon) | VOC Weight (lbs) | VOC (gallon) |
|---|---|---|---|---|---|---|---|
| Jet Glo | paint - snow white | 40 | 12.28 | 491.2 | 3.82 | 152.8 | 12.44 |
| Jet Glo | paint - sunfast red | 14 | 8.81 | 123.34 | 4.8 | 67.2 | 7.63 |
| Jet Glo | paint - gloss black | 4 | 8.71 | 34.84 | 5 | 43.55 | 2.3 |
| Jet Glo | paint - Gray BAC 707 | 20 | 12.05 | 241 | 3.9 | 78 | 6.47 |
| Jet Glo | catalyst | 78 | 8.09 | 631.02 | 4.87 | 379.86 | 46.95 |
| Jet Glo/ AcryGlo | thinner (AKA reducer) | 34 | 7.83 | 266.22 | 7.82 | 265.88 | 34 |
| | | | | | | | |
| ACRY Glo | paint - kalitta gold mettalic | 9 | 9.31 | 83.79 | 4.53 | 40.77 | 4.38 |
| ACRY Glo | paint - clear | 15 | 8.34 | 125.1 | 4.54 | 68.1 | 8.17 |
| ACRY Glo | Hardener | 9 | 8.36 | 75.24 | 4.16 | 37.44 | 4.48 |
| ACRY Glo | Stabilizer | 2 | 7.61 | 15.22 | 6.52 | 13.04 | 1.71 |
| | | | | | | | |
| Preval | Method of paint application | 2.27 | | | | | 2.27 |
| Total VOC (gallons) | | | | | | | 130.8 |
| Total Gallons less H20 | | 227.27 | | | | | |
| Total pounds of VOCs | | | | | | 1146.64 | |

**Note: the highlighted sections reflect data from either older MSDS sheets, or in the case of the Preval, estimations based on unit weight. For the products listed above no H2O content was provided, and each has a VOC content, so it has been assumed that they are not water based.**

**Information provided by the facility indicates that they do not use solvents to prep the planes prior to repainting, that the plane is "soft scuffed" to prep the surface.**

**Rule 336.1287(c) provides an exemption for a surface coating line if all of the following conditions are met:**

- **(i) the coating rate is not more than 200 gallons, as applied, minus water, per month.**
- **(ii) any exhaust system that serves only coating spray equipment is supplied with a properly installed and operating particulate control system.**
- **(iii) Monthly coating use records are maintained on file for the most recent 2-year period and are made available to the air quality division upon request.**

**Based on a total volume of 227 gallons of coating, it appears that the Rule 287(c) exemption would not be applicable for repaints of the size presented, and that an Air Quality Division Permit to Install (PTI) would be required for continued activities of that size.**

**Parts Heat Treatment - The heat treat room is located in the engine maintenance-machine shop. The heat treat room contains two ovens (JPW Industrial Oven with electronic controller, and a Rimstone Equipment Company oven with a chart recorder) and two quenchers (one oil and the other aqueous) to treat engine parts for strength by hardening the components. Components treated are clean metal, with no surface coatings. Quenching is conducted at lower temps to minimize the chance of warping the components.**

**Other equipment in the building includes 6 operating computerized parts milling machines. The machines are self-contained and emit only into the general work environment. A seventh mill exists, but is not operational at this time.**

**Cold Cleaners - As previously indicated the existing cold cleaners viewed onsite appeared to be predominantly newer recycling parts washers (System One® with 140/142 solvent or equivalent). Cold Cleaners are defined as a tank containing an organic solvent at a room temperature below its boiling point which is used to spray, brush, flush or immerse a metal object for the purpose of cleaning or degreasing.**

**Based on the approximate size, it appears that these units may be exempt from permitting under Rule 336.1281(h), which exempts cold cleaners that have an air/vapor interface of not more than 10 square feet. The facility would need to confirm and document the interface dimensions for the units exempted.**

**Parts Cleaners - Other part cleaning tanks are concentrated in the JT9 ("mod shop" clean room) and the CF6 Engine Shop. Based on information provided by the facility: parts cleaning tanks in the two referenced locations consist of:**

| Building | | Content | Comment | |
|---|---|---|---|---|

| | Tank Size (gallon) | | | Component of concern |
|---|---|---|---|---|
| JT9 Facility Clean Shop (southside) | 79 | Enstrip Products: S-180A (15%), S-180B Special (16.7 oz/gallon), S-180 oxidizer (3.73 oz/gallon) | Cyanide free product for removal of coatings and filler metals from steel alloy base metal parts in aerospace industry | |
| | 76 | Ammonia Nitrate | | |
| | 500 | Burn-off tank | Rinse water tank | 95% water, 5% ardox solution |
| | 29"X 60"X 32" | Ardox® 185L (50%) | Alkaline degreaser removes rust and scale from ferrous metals | Sodium Hydroxide |
| | 500 | Ardox® 6376 | Solvent free cleaner for compressor portions of gas turbine engines | Potassium hydroxide, dipropylene glycol methyl ether, surfactant blend, trade secret registry |
| | 500 | Ardox® 185L (46%) | Alkaline degreaser | Sodium Hydroxide |
| | 500 | Rinse Water | | |
| | 500 | Hot Water | | |
| | 24" X 24" X 24" | Water | | |
| CF6 Engine Shop | 5' X 5' X 4' | Ardrox® 188RFU | Alkaline permanganate, scale conditioner for high chromium steels, as well as nickel and cobalt alloys. Can be used as pretreatment for scale removal with Ardrox 1873A. | Sodium hydroxide & Potassium Permanganate |
| | 5' X 5' X 4' | Ardrox® 1873A | Scale Remover | Diammonium citrate & Diethylhydroxyamine |
| | 5' X 5' X 4' | Ardox® 185L | Alkaline degreaser | Sodium Hydroxide |

| | | | | |
|---|---|---|---|---|
| | | | removes rust and scale from ferrous metals | |
| | 5' X 5' X 4' | Ardrox® 6085 | Heavy duty exterior cleaner, water based and free of hydrocarbon solvents | Trade secret registry |
| | 5' X 5' X 4' | Ardrox® 6376 | Solvent free cleaner for compressor portions of gas turbine engines | Potassium hydroxide, dipropylene glycol methyl ether, surfactant blend, trade secret registry |

**In addition to the above referenced tanks, the JT9 Clean Shop (north side) has three additional tanks of 48" X 48" X 24" that are utilized in their activities. The CF6 Engine Shop has three additional 5' X 5' X 4' tanks, and one 36" X 36" X 12" tank utilized in building activities.**

**Note Safety Data Sheets provided indicated that in addition to the above products, that the facility also uses Ardrox 1218 (an inhibited phosphoric acid scale and rust remover) and Tectyl 275 (a water displacing, solvent cutback corrosion preventive compound, lubricant, and penetrant. The film is an ultra-light, transparent oil)**

**Based on the wide variety of metal treatments being conducted in the various hangars, including but not limited to the tanks listed above, one or more of the following metal treatment process exemptions may be applicable:**

- **Rule 336.1285(r) any of the following metal treatment processes if the process emissions are only released into the general in-plant environment;**
  - **(i) surface treatment**
  - **(ii) pickling,**
  - **(iii) acid dipping,**
  - **(iv) cleaning,**
  - **(v) etching,**
  - **(vi) electropolishing,**
  - **(vii) electrolytic stripping or electrolytic plating.**
- **Rule 336.1285 (l)(iii), which exempts equipment for surface preparation of metals by use of aqueous solutions, except for acid solutions, as well as any exhaust system or collector exclusively serving the equipment.**

**<u>Other Activities</u> - With respect to the various maintenance and Engine shop activities conducted onsite, Rule 336.1283(1) (d) which exempts equipment for the inspection of metal, wood or plastic products may be applicable, though it was not evaluated for at this time.**

**Rule 336 .1285 (l) provides an exemption for various equipment and any exhaust systems or collectors exclusively serving the equipment. Equipment potentially of interest under the referenced rule may be (vi) Equipment for carving, cutting, routing, turning, drilling, machining, sawing, surface grinding, sanding, planning, buffing, sand blast cleaning, shot blasting, shot**

**peening, or polishing ceramic artwork, leather , metals, graphite, plastics, concrete, rubber, paper stock, wood, or wood products which meets any of the following:**

- **Equipment used on a nonproduction basis,**
- **(B) Equipment has emissions that are released only into the general in-plant environment,**
- **(C) Equipment has externally vented emissions controlled by an appropriately designed and operated fabric filter collector that, for all specified operations with metal, is preceded by a mechanical precleaner.**

**Electrostatic painting activities were identified as potentially occurring onsite, but were inadvertently not discussed during the August 9, 2016, site visit. Under Rule 336.1287(d) powder coating booths that have appropriately designed and operated particulate control systems and associated ovens are exempt from obtaining a permit to install. District Staff recommends that the facility should determine whether or not they are conducting electrostatic painting or powder coating activities onsite, and if the referenced exemption rule would apply to their existing equipment.**

**District Staff also has not determined if fuel or other tanks are present onsite, and if so which if any meet any of the exemptions under Rule 336.1284 for containers.**

**The most recent documentation with regards to engine test cells would appear to indicate that the newly installed engine test cell may not require a permit to operate, however, this interpretation of Federal Regs has been reported to vary widely across the country. The present interpretation being based on the engine being a component of a mobile source, which would not be regulated. No exemption presently exists for the emission unit.**

SUMMARY

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AQD District Staff had previously conducted a self-initiated site inspection on Friday, October 8, 2010. At the time it had been determined that the company was in communications with AQD Permit Staff regarding activities onsite, and that activities at that time were determined to not require permitting.

Information obtained more recently from Kalamazoo District Staff indicated that the Facility may have some permitting issues to address, with regards to:

- whole plane painting operations conducted in the hangars,
- RCRA metal based paint use,
- electrostatic painting operations,
- cold cleaners, and
- open top, heated parts cleaners on site.

This was backed up with by April 15, 2013, Aviation Week newsletter article indicated that the company's Oscoda location is/has positioned itself to increase its Maintenance, Repair and Overhaul (MRO) business by increasing the amount of hanger and shop space available as well as installation of an engine test cell.

The purpose of the site visit was to better determine if recent facility upgrades were such that air permitting was required.

**Limited coating information provided for whole plane re-painting of a 747 aircraft appears to indicate that based on a coating volume of over 200 gallons that a Permit to Install (PTI) may be required for those hangars utilized for such large scale coating operations.**

**A number of potentially applicable exemptions from permitting do exist for other onsite activities, and were identified within the body of this document. However, the facility will need to further evaluate and document the applicability of the exemptions to permitting, including a Rule 336.1278a demonstration for their files. Such a demonstration may include the following information: (a) A description of the exempt process or process equipment including the date of installation. (b) the specific exemption being used by the process or process equipment. (c) any analysis demonstrating that Rule 336.1278 does not apply to the process or process equipment. It should be noted that Rule 336.1278 identifies situations in which the exemptions cannot be used to avoid permitting. Rule 336.1278(a)(2) requires that any records required by the rule shall be provided, in addition to any other records required within a specific exemption.**

**This information has been provided to company personnel who have indicated that they will move forward with a more detailed evaluation of their activities and potential to emit. They have been provided information regarding registration to upcoming Permit to Install sessions with AQD Staff. The progress of the facility to resolve any permitting requirements as well as Rule 336.278(a) evaluation will be monitored by District Staff.**

NAME Shawna L Blue DATE 8/22/16 SUPERVISOR C. Hare