

Permit No.: 5-12
 Company Name: Polar Environmental Service
 SRN: M3445
 Engineer: Paul Schleusener
 Last Updated: 10/22/2012

SOURCE

Polar is a treatment, storage, and disposal facility for waste oils, water, and coolants that are not hazardous waste. Treatment of non-oily wastewater involves pH adjustment, oxidizing volatiles and metals, and flocculation of contaminants. Treatment of oily wastewater involves heating and addition of treatment polymers. For both types of waste, the treatment produces materials that tend to separate into layers in the treatment tanks. The facility separates the layers and then disposes of the material or ships it to a customer, as appropriate.

The company submitted the application in response to violation notices the AQD sent in October and December, 2011.

The facility has some 9-horsepower pumps with integral gasoline-fueled engines. Based on information from the facility communicated to the permit engineer, District staff believes that the permit does not need to address these pumps.

NAICS: 562219

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EU_Tank1	Tank 1: Storage tank, fixed roof, capacity 200,000 gallons. Potential multiuse tank: storage of materials from other tanks as needed during tank cleaning (i.e. good oil, rag oil, treated water, non-oily wastewater and coolant and oil-contaminated wastewaters).	---
EU_Tank2	Tank 2: Product tank, fixed roof, capacity 22,000 gallons. Stores product oil from FG-OilTreat.	---
EU_Tank3	Tank 3: Product tank, fixed roof, capacity 22,000 gallons. Stores product oil from FG-OilTreat.	---
EU_Tank4	Tank 4: Product tank, fixed roof, capacity 20,000 gallons. Stores rag oil produced by FG-OilTreat.	---
EU_Tank5	Tank 5: Product tank, fixed roof, capacity 20,000 gallons. Stores rag oil produced by FG-OilTreat.	---
EU_Tank6	Tank 6: Process tank, fixed roof, capacity 10,000 gallons, used to treat oily waste. Equipped with a non-contact steam heat exchanger used to heat tank contents to temperatures between 170 and 180 degrees F. Can be sparged with air to aid even heating of contents. During heating step, tank is vented to carbon drums and bleach bubbler.	FG-OilTreat
EU_Tank7	Tank 7: Process tank, fixed roof, capacity 10,000 gallons, used to treat oily waste. Equipped with a non-contact steam heat exchanger used to heat tank contents to temperatures between 170 and 180 degrees F. Can be sparged with air to aid even heating of contents. During heating step, tank is vented to carbon drums and bleach bubbler.	FG-OilTreat

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Flexible Group ID
EU_Tank8	Tank 8: Process tank, fixed roof, capacity 10,000 gallons, used to treat oily waste. Equipped with a non-contact steam heat exchanger used to heat tank contents to temperatures between 170 and 180 degrees F. Can be sparged with air to aid even heating of contents. During heating step, tank is vented to carbon drums and bleach bubbler.	FG-OilTreat
EU_Tank11	Tank 11: Observation tank for treated water to be discharged.	---
EU_Tank12	Tank 12: Observation tank for treated water to be discharged.	---
EU_Tank13	Tank 13: Product tank, fixed roof, capacity 15,000 gallons, where product oil from FG-OilTreat is stored.	---
EU_Tank14	Tank 14: Product tank, fixed roof, capacity 15,000 gallons, where product oil from FG-OilTreat is stored.	---
EU_Tank18	Tank 18: Storage tank for treated water.	---
EU_Tank19	Tank 19: Supply tank, fixed roof, capacity 150,000 gallons. This tank receives oily waste to be treated. It also receives the heavy flocculent layer generated by treatment operations in Tanks 21 and 22. Equipped with a non-contact steam heat exchanger that maintains tank contents at temperatures between 100 and 120 degrees F.	FG-OilTreat
EU_Tank20	Tank 20: Equalization tank, fixed roof, capacity 600,000 gallons, which receives non-oily wastewater and coolant- and oil-contaminated wastewaters to be treated.	FG-WaterTreat
EU_Tank21	Tank 21: Process tank, fixed roof, capacity 100,000 gallons, used to treat non-oily wastewater and coolant- and oil-contaminated wastewaters. Mechanically stirred.	FG-WaterTreat
EU_Tank22	Tank 22: Process tank, fixed roof, capacity 100,000 gallons, used to treat non-oily wastewater and coolant- and oil-contaminated wastewaters. Mechanically stirred.	FG-WaterTreat
EU_NorthPit	North holding pit, covered, capacity 25,000 gallons, which receives wastes from offsite locations.	---
EU_SouthPit	South holding pit, covered, capacity 25,000 gallons, which receives wastes from offsite locations.	---
Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.		

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-OilTreat	Supply tank and treatment tanks for oily waste and heavy flocculent from the water treatment process tanks. All of these tanks are heated with non-contact steam. The process tanks exhaust through the carbon drums and bleach bubbler drum during certain process steps.	EU_Tank6, EU_Tank7, EU_Tank8, EU_Tank19
FG-WaterTreat	Equalization tank and treatment tanks for non-oily wastewater and coolant- and oil-contaminated wastewaters.	EU_Tank20, EU_Tank21, EU_Tank22
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment.	----

MONITORING

- ⇒ Number of batches processed in EU_Tank6, EU_Tank7, and EU_Tank8, for each calendar month
- ⇒ Total halogens content of material received for processing in FG-OilTreat
- ⇒ Temperatures during processing of each batch.
- ⇒ Various information for each batch received for treatment (FGFACILITY SC VI.1)
- ⇒ Various information for each batch treated (FGFACILITY SC VI.2)
- ⇒ Records of inspections and of maintenance and repair activities for emission control devices.
- ⇒ Records of malfunctions and process upsets, and of corrective actions taken.

BYPASS

NA

WASTE DISPOSAL

Wastes are shipped for appropriate disposal.

GENERAL COMMENTS

Process and pollutants – overview: The facility processes wastewaters that include varying amounts of oil or oily material. The wastes are not hazardous wastes. A later submittal provided alternate terms to refer to these wastewaters. Some equipment details were also more fully explained in later submittals.

Considering the controversy surrounding the source, and the odor event traced to the source, it is important to note the following: The purpose of a Permit to Install review is not to permit abnormal operation. Rather, the review's purpose is to determine whether the process complies with the air quality regulations that apply to it. If the process complies, the review then goes on to permit normal operation and include appropriate requirements to reduce the likelihood of emissions that violate air quality requirements.

Received materials are treated either as oily materials or as wastewaters.

The wastewaters are treated at ambient temperature. They are not heated. These materials can be odorous and transfers of the material may cause odors. But the treatment method itself does not generate odorous emissions. The odor management plan will address odorous emissions from wastewater treatment and transfer.

Treatment of the oily materials includes heating them, which can generate emissions. The odor management plan also addresses odors from oily materials treatment and transfer.

Emission calculations: The application estimated emissions by using transfer operations at the maximum processing temperature (180 degrees F). Transfers actually occur at a lower temperature near 100 degrees F. Using the higher temperature for emission calculations significantly overestimates the emissions from transfers. Emissions from heating the oily material for treatment exhaust through the two carbon drums. The carbon drums will reduce emissions from the heating step, to some degree. Therefore, the estimated transfer emissions

adequately address the highest emission rates for toxic air contaminants during normal process operation.

Control technology – Rule 702: The materials received and processed have low volatility. The carbon drums used during the heating step for the oily material are intended to reduce odorous emissions. They will also provide some reduction of volatile organic compound emissions. At the low level of volatile organic compound emissions from this source, AQD experience is that add-on emission control is not cost effective. Therefore, the process as proposed complies with Rule 702(a).

Toxic Air Contaminants (TACs) – Rule 224: Rule 224 requires the use of best available control technology for toxics. The proposed process complies with Rule 224 for these reasons:

- For TACs that are also volatile organic compounds (VOCs), Rule 224 does not apply if the process provides best available control technology (BACT) for VOC emissions. As noted above, the process complies with Rule 702(a), which requires the use of BACT.
- Emissions of TACs that are not VOCs are very small. AQD experience is that add-on emission control for such pollutants is not cost effective for very small emission rates. Therefore, the process as proposed complies with Rule 224.

TACs – Rule 225: The Rule 225 review focused on emissions from wastes handled and treated as oily materials. These wastes are the most likely to emit TACs in quantities that would exceed their AQD screening levels. The application used three compounds to characterize the emissions of TACs during processing. The applicant review, verified by the AQD, showed that the TAC emissions comply with Rule 225.

The AQD review added one more TAC, “chlorinated paraffins,” because one of the materials the facility processes is cutting fluids from the metalworking industry. These cutting fluids can contain chlorinated paraffins.

The term “chlorinated paraffins” does not refer to a single chemical compound. It refers to various mixtures of compounds. They can be described as “straight-chain hydrocarbons that have been chlorinated.” Their chlorine content ranges from about 35% by weight to more than 70% by weight. They have low vapor pressures.

The AQD has listed a screening level for one particular “chlorinated paraffins” mixture, with Chemical Abstracts Service Registry Number 63449-39-8. Its initial risk screening level is 0.03 microgram per cubic meter.

The chlorinated paraffins review used two presumptions that tend to overestimate the emissions of chlorinated paraffins:

- All the halogens in the material to be treated were from chlorinated paraffins
- The chlorinated paraffins have lower chlorine content than noted above: 30%. Since the calculation of chlorinated paraffins emissions involves dividing the total halogens by the percent chlorine of the chlorinated paraffins, using a *lower* chlorine content makes the estimated emissions *higher*.

This analysis showed that “total halogens” of 30% by weight could be “chlorinated paraffins” and still meet the AQD screening level with room to spare.

Material limits in conditions: The conditions include a material composition limit for “total halogens” for material received for treatment in FG-OilTreat. An alternate approach would have set a limit for each batch processed. Based on discussion with District staff, the “material received for treatment” approach seemed best, since it provides a straightforward way to demonstrate compliance. The facility may have knowledge of the waste (or other relevant information). It will have analytical data. The condition is not intended to require analytical data for every load received or for every batch processed. The limit of 300,000 parts per million by weight provides some conservatism in the chlorinated paraffins review, since it meets the screening level with room to spare. (See above.)

The AQD review considered whether the conditions should include a material limit for the chlorinated compounds included in the F001 and F002 lists for hazardous waste. (The descriptions of the F001 and F002 lists are attached.) Since the Rule 225 review used 100 parts per million by weight (ppmw), this was a likely value to include in such a condition. Possible reasons to include a limit like this relate to concerns of hazardous waste and to Rule 225 compliance. The AQD review determined that the conditions do not need such a limit, for these reasons:

- This limit is not needed to prohibit processing of hazardous waste. Another condition in the permit prohibits the applicant from receiving material that is hazardous waste. The presence of more than 100 ppmw of any of these compounds in waste having a total halogens content greater than 1,000 ppmw would cause the waste to be considered hazardous waste. Therefore, the prohibition on hazardous waste addresses this matter.
- The permit application presented an acceptable Rule 225 demonstration for one of these compounds, trichloroethylene (TCE). The application demonstrated that if TCE were present in the treated material at 100 ppmw, it would have impacts less than one-half of its AQD screening levels. TCE is a good candidate for this analysis because it has one of the lowest boiling points of any of these compounds, meaning it is more likely to be emitted. It also has one of the lowest screening levels, meaning that its emissions are more likely to trigger a concern. The only compound in the lists that is close to TCE in these characteristics has a similar boiling point and a similar screening level. All the other compounds have higher boiling points and higher screening levels. Some of the screening levels are much higher. Therefore, the TCE analysis shows that adding such a material limit does not aid in demonstrating that the process complies with Rule 225.

Odors: Odors are a key air quality concern with the processes covered by this application. To address this, the conditions require the facility to follow an AQD-approved odor management plan. The odor management plan covers all facility activities.

The plan will be available to the public for their comments during the public comment period.

Facility potential to emit: As noted above in the Rule 702 discussion, the facility receives and processes materials with low volatility. This is part of the process design. Handling materials with significantly more volatility would cause operational difficulties and would require a Permit to Install.

Based on the types of materials handled, maximum VOC emissions are less than 0.2 ton per year, and HAP emissions would be no more than that.

RECOMMENDATIONS

Because of the public controversy concerning the facility, the AQD will hold a public comment period and public hearing for this application.

Conditions properly address applicable requirements and have been accepted by the District and the applicant. I recommend proceeding to public comment.

***** Notes following public comment *****

The decision-maker requested that we prepare a Response to Comments document.

No changes were made to the permit in response to public comment.