

Lane Regional Air Protection Agency
Simple "Low" Air Contaminant Discharge Permit

REVIEW REPORT

Gheen Irrigation Works, Inc.
1248 Willagillespie Road
Eugene, Oregon 97401

Permit No.203109

Source Information:

SIC	3479 - Galvanizing and Pipe Coating
NAICS	332812 - Metal Coating

Source Categories (LRAPA Title 37, Table 1)	B.30 Galvanizing and Pipe Coating
Public Notice Category	II

Compliance and Emissions Monitoring Requirements:

Unassigned emissions	n
Emission credits	n
Special Conditions	n
Compliance schedule	n

Source test [date(s)]	n
COMS	n
CEMS	n
Ambient monitoring	n

Reporting Requirements:

Annual report (due date)	Feb 15
NSPS Report (due date)	n
Monthly report (due dates)	n

Excess emissions report	y
Other reports	n

Air Programs:

NSPS (list subparts)	n
NESHAP (list subparts)	n
CAM	n
Regional Haze (RH)	n
Synthetic Minor (SM)	n
Part 68 Risk Management	n
Title V	n
ACDP (SIP)	n
New Source Review (NSR)	n
Prevention of Significant Deterioration (PSD)	n
Acid Rain	n
Clean Air Mercury Rule (CAMR)	n
TACT	n

Permitting Action

1. The permit is a renewal for an existing Air Contaminant Discharge Permit (ACDP) which was issued on January 29, 2013 and was originally scheduled to expire on January 29, 2018. The existing permit remains valid until the proposed permit is issued because the facility submitted a timely and complete application for renewal. The facility was issued its first ACDP on January 1, 1983.

The facility indicated in their 2018 renewal application that there were changes made to the facility since the last renewal. These changes are summarized below in Item 4 of this review report.

Other Permits

2. No other permits have been issued or are required by LRAPA for this facility.

Attainment Status

3. The facility is located in a maintenance area for CO and PM₁₀. The area is in attainment for all other criteria pollutants.

General Background Information

4. Gheen Irrigation Works has been manufacturing agricultural irrigation fittings since 1933. The Willagillespie location is the original location. This location suffered a fire in April of 2007 which spurred the purchase of the Airport Road location (November 2007) and then the purchase of the Peoria Road location in Harrisburg (September 2009). Gheen has been gradually reconfiguring the duties of their three sites.

The 2008 and 2013 site inspection reports documented that the Chemlok process had been discontinued. The renewal for the 2018 permit listed that the Hot Dip Galvanizing process was no longer performed at this location.

Overview of the processes used. Steel can be dipped in a pickling bath, consisting of either sulfuric acid or hydrochloric acid, which removes mill scale and iron oxides. The pickling process is typically used in the hot dip galvanizing process but is also useful in preparation for powder coating. The most common method of powder coating is through a spray gun that applies an electrostatic charge to the powder particles which are then attracted to a grounded metal part. Gheen uses the fluidized bed and fusion bonding method instead. The parts to be powder coated are heated in the oven, and then dipped into a fluidized bed of powder. The powder coating melts to the hot surface, thereby coating it, and allowing the fusion bonding to occur. Finally, the coated parts are cured in the oven. In both powder coating systems, the lost coating particles are usually captured and reused, resulting in powder utilization rates of 90 to 95 percent.

There is a small natural gas-fired boiler, (1 MMBtu/hr input), used to heat the sulfuric acid. Some of the natural gas goes to run the boiler but the amount is small in comparison to the amount used for the oven, therefore all of the natural gas usage is reported and calculated for usage in the oven. Also, with a heat input less than 2 MMBtu/hr, the boiler is considered categorically insignificant, and is therefore not listed as an emission unit.

The operating schedule for the facility is 2,210 hours per year (8.5 hours per day, 5 days per week and 52 weeks per year). In 2002, the facility produced approximately 1.2 million irrigation pieces.

Reasons for Permit Issuance

5. Lane Regional Air Protection Agency (LRAPA) has determined that the facility qualifies for the Simple

“Low” fee category for the following reasons: Emissions from this facility are estimated to be less than 5 tons per year of particulate matter and less than 10 tons per year for the criteria gaseous pollutants.

Emission Unit Description

6. The facility controls particulate matter emissions by the use of one (1) baghouse. Other specific emission sources include:

EU ID	Emission Unit (EU)	Control Device
EU-1	Natural Gas Fired Oven	NA
EU-2	Powder Coating	Baghouse
EU-3	Sulfuric Acid Baths	NA

Compliance History

7. The facility was inspected on February 04, 2013 and found to be in compliance with permit conditions.

Plant Site Emission Limits (PSELs) Information

- 8.

Annual Plant Site Emission Limits (PSELs)
 (tons per year)

Source	PM	PM ₁₀	PM _{2.5}	VOC
Metal Fitting Manufacturing	24	14	9	39

- a. The proposed PSELs for all pollutants are equal to the Generic PSEL in accordance with LRAPA 37-0064(3)(b) and the netting basis is zero in accordance with 42-0040(2).
 - b. PSELs for CO, NO_x, SO₂ and GHGs are not included in this permit since emissions of these pollutants are less than the respective de minimis emission rates. PSELs for PM, PM₁₀, PM_{2.5}, and VOC are included even though emissions are expected to be de minimis.
 - c. The PSEL is a federally enforceable limit on the potential to emit.
 - d. Recordkeeping of the parameters listed in Condition 10 of the permit and Item 14 of this review report will be used to ensure compliance with the PSELs.
9. The pollutants of concern associated with this type of facility are epoxy dust, and emissions from natural gas combustion. The attachment to this review report contains emissions estimates for the facilities natural gas combustion and for other applicable emission units.

Baseline Emission Rate (BER) and Significant Emission Rate (SER)

10. Baseline Emissions were not set in the permit because the facility is well below the Significant Emission Rates (SERs) as listed in Title 12 of LRAPA's Rules and Regulations and because the facility has chosen not to maintain the baseline emissions by way of the Simple ACDP permit type selection.

Hazardous Air Pollutants (HAPs)

11. A major source for hazardous air pollutants (HAP) is a facility that has the potential to emit 10 or more tons per year of any single HAP or 25 or more tons per year of combined HAPs. This source is not a major source of hazardous air pollutants.

The projected maximum potential HAP emissions from the facility are shown in the following table:

Pollutant	Pounds/year	Tons/year
Xylenes	9	0.0045

NESHAPs/MACT Applicability

12. There are no sources at this facility for which NESHAPs/MACT, (National Emissions Standards for Hazardous Air Pollutants / Maximum Achievable Control Technology), standards have been promulgated. The Subpart 6X Metal Fabrication NESHAP is not applicable because the facility is not one of the affected groups of sources. The facility specifies their primary SIC code as 3479 which is not an SIC code listed as being an applicable source.

NSPS Applicability

13. There are no sources at this facility for which New Source Performance Standards (NSPS) standards have been promulgated.

Record Keeping and Reporting

14. A record of the following data must be maintained for a period of at least **five (5) years** at the plant site and must be available for inspection by authorized representatives of LRAPA:

Activity	Parameter	Units	Recording Frequency
Natural Gas Combustion	Material Usage	Therms	Monthly
Epoxy Powder Coating	Coating Usage	Pounds	Annually
Sulfuric Acid	Material Usage	Gallons	Annually
Solvent/Thinner	Material Usage and VOC/HAP content	Gallons	Annually
Baghouse Maintenance	NA	NA	On Occurrence

15. The facility is required to submit an annual report by **February 15th** each year to include the information identified in Item 14 above.

Additional Limitations

16. The facility is subject to the visible emissions standards in LRAPA 32-010(3), the particulate grain-loading standard in LRAPA 32-015(2)(b)(B), the highest and best requirement of LRAPA 32-005. Operation of a well-maintained baghouse filter should assure compliance with the grain-loading and visible emissions limits.

Public Notice

17. The draft permit was on public notice from January 9, 2019 to February 7, 2019. No written comments were submitted during the 30-day comment period.

CNC/cmw
02/08/2019

Gheen Emission Details

EU-1 - Natural-gas Usage: Ovens (1)				
Pollutant	Projected Max. Gas Usage (cubic ft/yr)	Emission Factor (lbs/10 ⁶ ft ³)	Conversion Factor (tons/lb)	Annual Emissions (tons)
PM/PM ₁₀ /PM _{2.5}	4,063,450	7.6	0.0005	0.015
SO ₂	4,063,450	0.6	0.0005	0.001
NO _x	4,063,450	100	0.0005	0.203
CO	4,063,450	84	0.0005	0.171
VOC	4,063,450	5.5	0.0005	0.011

The Oven operates at an approximate total rate of 40,634 therms/year. From highest Annual Report value (2013) Oven operates at an approx. rate of 4.06 million cubic ft/yr (1 therm = 100 cu ft).
 Gaseous Emission Factors were obtained from AP-42 table 1.4-2
 Annual Emissions (tons) = Projected Maximum Gas Usage x Emission Factor/10⁶ x Conversion Factor.

EU-2 - Powder Coating				
Pollutant	Projected Max. Epoxy Coating Usage (lb/yr)	Emission Factor (lb lost/lb used)	Conversion Factor (tons/lb)	Annual Emissions (tons)
PM/PM ₁₀ /PM _{2.5}	26,910	0.05	0.0005	0.673

Powder Coating Utilization Rate Emission Factor was obtained from AP-42 Ch. 4.2.2.12
 Filter emissions assumed to be 100% PM_{2.5} emissions from DEQ AQ-EF08
 Projected Annual Emissions = Projected Maximum Usage x Emission Factor x Conversion Factor.

EU-3 - Sulfuric Acid Baths					
Pollutant	Surface Area of Tanks (ft ²)	Emission Factor (lbs/hr-ft ²)	Control Emission Factor	Annual Emissions (lb)	Annual Emissions (ton)
Sulfuric Acid	61	0.00015	0.5	40.08	0.02

Emission Factors derived from Texas Commission on Environmental Quality (TCEQ), Calculation Guidance Package - Hot Dip Galvanizing
 Control Emission factor for uncontrolled fugitive emissions was used (50%). If controls are used, use the control efficiency instead.
 Acid tanks are always emitting, therefore 8760 hours used.
 Annual Emissions (pounds) = Surface Area of Tanks x Emission Factor x Control Emission Factor x 8760 hrs.

Misc. Emissions - Xylene Thinner				
Pollutant	Projected Max. Xylene Usage (gal/yr)	Density (lb/gal)	Conversion Factor (tons/lb)	Annual Emissions (tons)
Xylene (VOC)	1.25	7.238	0.0005	0.0045

Uncontrolled VOC emissions from solvents and surface coatings considered 100% emitted from AP-42 Ch. 4.2.2.1.2
 Projected Annual Emissions = Projected Maximum Usage x Density x Conversion Factor.

Total Site Emissions	
Pollutant	Projected Annual Emissions (tons)
PM/PM ₁₀ /PM _{2.5}	0.688
SO ₂	0.001
NO _x	0.203
CO	0.171
VOC	0.016
Sulfuric Acid	0.020