STANDARD

AIR CONTAMINANT DISCHARGE PERMIT

Department of Environmental Quality
Northwest Region
2020 SW 4th Avenue, #400
Portland, Oregon 97201
(503) 229-5554

This permit is being issued in accordance with the provisions of ORS 468A.040 and based on the land use compatibility findings included in the permit record.

ISSUED TO:

Hercules Incorporated
3366 NW Yeon
Portland, OR 97210

INFORMATION RELIED UPON:

Application No.: 021947
Date Received: 09-20-2006

PLANT SITE LOCATION:

3366 NW Yeon
Portland, OR 97210

LAND USE COMPATIBILITY FINDING:

Approving Authority: City of Portland
Approval Date: 09/13/1994

ISSUED BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY

_____ _____
Ed Druback, Northwest Region Air Quality Manager Dated

Source(s) Permitted to Discharge Air Contaminants (OAR 340-216-0020):

Table 1 Code	Source Description	SIC
Part B, 51.	Industrial inorganic and organic chemical manufacturing and distribution	2861 2869
Part B, 12.	Oil fired boiler, in AQMA, over 10 million Btu/hr	4961

TABLE OF CONTENTS

1.0 GENERAL EMISSION STANDARDS AND LIMITS

1.1. Visible Emissions The permittee must comply with the following visible emission limits, as applicable:

a. Emissions from any air contaminant source installed, constructed, or modified after June 1, 1970 must not exceed an opacity equal to or greater than 20% for a period aggregating more than 3 minutes in any one hour.

b. Emissions from any air contaminant source other than fuel burning equipment must not exceed an opacity equal to or greater than 20% for a period aggregating more than 30 seconds in any one hour.

1.2. Particulate Matter Emissions The permittee must comply with the following particulate matter emission limits, as applicable:

a. Particulate matter emissions from any burning equipment installed, constructed, or modified after June 1, 1970 must not exceed 0.1 grains per standard cubic foot, corrected to 12% CO_2 or 50% excess air.

b. Particulate matter emissions from any air contaminant source installed, constructed, or modified after June 1, 1970 other than fuel burning equipment and fugitive emission sources must not exceed 0.1 grains per standard cubic foot.

1.3. Fugitive Emissions The permittee must take reasonable precautions to prevent fugitive dust emissions by:

a. Treating vehicular traffic areas of the plant site under the control of the permittee.

b. Operating all air contaminant-generating processes so that fugitive type dust associated with the operation will be adequately controlled at all times.

1.4. Particulate Matter Fallout The permittee must not cause or permit the emission of any particulate matter larger than 250 microns in size at sufficient duration or quantity, as to create an observable deposition upon the real property of another person. The department will verify that the deposition exists and will notify the permittee that the deposition must be controlled.

1.5. Odors and Fugitive Emissions The permittee shall not allow the emission of odorous or other fugitive emissions so as to create nuisance conditions (OAR 340-208-0010(6)) off the permittee's property. See Condition 5.1

1.6. Fuels

The permittee must not use any fuel other than natural gas, propane, butane, ASTM grade fuel oils, or on-specification used oil.

a. Fuel oils must not contain more than:

i. 0.3% sulfur by weight for ASTM Grade 1 distillate oil;

ii. 0.5% sulfur by weight for ASTM Grade 2 distillate oil;

b. The permittee is allowed to use on-specification used oil as fuel which contains no more than 0.5% sulfur by weight. The permittee must obtain analyses from the marketer or, if generated on site, have the used oil analyzed, so that it can be demonstrated that each shipment of oil does not exceed the used oil specifications contained in 40 CFR Part 279.11, Table 1.

2.0 SPECIFIC PERFORMANCE AND EMISSION STANDARDS

2.1. Device/Process

The following processes shall be controlled to prevent nuisance and odor conditions:

a. Size Scrubber: Except for periods of process shutdown, the permittee shall control vapors emitted by the size reactor/melter by a wet scrubber. The scrubbing solution shall be circulated at a minimum rate of 10 gallons per minute.

b. Kymene Scrubber: Except for periods of process shutdown, the permittee shall control epichlorohydrin in the process exhaust (air) stream by a wet scrubber.

c. Process Chemical Scrubber: Except for periods of process shutdown, the permittee shall control vapors emitted by the batch process exhaust (air) stream by a wet scrubber

2.2. New Source Performance Standards

The Nebraska and Cleaver Brooks boilers are subject to the NSPS requirements in 40 CFR Part 60 Subpart Dc.

a. Fuel type and quantities combusted in the boilers must be monitored and recorded in accordance with the NSPS.

b. Fuel oil burned in the Cleaver Brooks boiler may not exceed 0.5 weight percent sulfur.

3.0 PLANT SITE EMISSION LIMITS

3.1. Plant Site Emission Limits (PSEL)

Plant site emissions must not exceed the following:

Pollutant	Limit	Units
PM	24	tons per year
PM_{10}	14	tons per year
SO_2	55	tons per year
NO_X	39	tons per year
CO	99	tons per year
VOC	39	tons per year
Single HAP	9	tons per year
Combined HAPs	24	tons per year

3.2. Annual Period

The annual plant site emissions limits apply to any 12-consecutive calendar month period.

4.0 COMPLIANCE DEMONSTRATION

4.1. Monitoring Requirements

The permittee must monitor the operation and maintenance of the plant and associated air contaminant control devices as follows:

a. Inspect and maintain scrubbers, baghouses and associated pollution control system equipment on a timely basis, based on manufacturer's recommendations.

b. Repairs shall be made within 72 hours, or within 24 hours of receiving repair parts ordered.

4.2. PSEL Compliance Monitoring

Compliance with the PSEL is determined for each 12-consecutive calendar month period based on the following calculation for all pollutants except VOC and SO_2:

$$E = \Sigma(EF \times P)/2000 \text{ lbs}$$

where,

E = pollutant emissions (ton/yr);

EF = pollutant emission factor (see Condition 11.0);
P = process production (see Condition 12.0)

4.3. Emission Factors The permittee must use the default emission factors provided in condition 11.0 for calculating pollutant emissions, unless alternative emission factors are approved by the Department. The permittee may request or the Department may require using alternative emission factors provided they are based on actual test data or other documentation (e.g., AP-42 compilation of emission factors) that has been reviewed and approved by the Department.

For the epichlorohydrin emissions, monthly emissions will be calculated using the latest SOCMI emission calculations (1995) to better take into account continuous emissions and production dependent emissions.

4.4. VOC Mass Balance Calculations Annual VOC emissions for each 12 consecutive calendar month period are calculated by the following formula:

E_{VOC-A} = $[\sum(C_X * D_X * K_X) - W] \times 1ton/2000$ pounds

Where,

E_{VOC-A} = Annual VOC emissions in tons
C = Material usage for the period in gallons
D = Material density in pounds per gallon
K = VOC concentration expressed as a decimal
X = Subscript X represents a specific material
W = Weight of VOC shipped offsite

4.5. SO2 Calculations At the end of each month, the permittee shall review the fuel usage record and calculate the SO_2 emissions. The emission factors from Condition 11.0 may be used, or they may be calculated from the formulas below if better data is available.

SO_2 Emission (tons/yr) = [2.6 NG + 142(%S) DIST] / 2000

where: NG = 10^6 ft^3 of natural gas used during previous 12-month period
DIST = 10^3 gallons of distillate oil used during previous 12-month period
%S = percent sulfur of either distillate or residual, as determined from Condition 1.6 or suppliers laboratory testing.

5.0 SPECIAL CONDITIONS

5.1. Nuisance and Odors

The creation of nuisance conditions may, in addition to other action the Department may take, result in a permit modification to require a compliance schedule to control the nuisance condition. The permittee shall adhere to the following conditions:

a. Respond: The permittee shall investigate any nuisance complaint received immediately following the receipt of the complaint. Within 24 hours after the investigation, the permittee shall provide a response to the complainant.

b. Document: The permittee shall maintain records (e.g., compliant log) of the complaints received and all follow-up actions taken by the permittee. Documentation shall include date and time of contact, time of reported complaint condition, description of complaint condition, location of receptor, and status of plant operation during the observed period.

6.0 RECORDKEEPING REQUIREMENTS

6.1. Operation and Maintenance

The permittee must maintain the following records related to the operation and maintenance of the plant and associated air contaminant control devices:

a. maintenance and inspection logs for scrubbers, boiler exhaust and associated air pollution control equipment.

b. Fuel supplier oil sulfur content certification.

6.2. PSEL Compliance Monitoring

The permittee must maintain the following records related to the operation of the process equipment and boilers, per Condition 11.

a. cubic feet of natural gas and gallons of distillate fuels, residual fuels or waste oil consumed in process boilers.

b. production records of VOC-producing processes per Condition 11.

c. If used oil is used, the permittee must obtain analyses from the marketer or, if generated on site, have the used oil analyzed, so that it can be demonstrated that each shipment of oil does not exceed the used oil specifications contained in 40 CFR Part 279.11, Table 1.

d. For other oil fuels, the sulfur content may be obtained from the supplier and used in lieu of the values in

Condition 1.6

6.3. Excess Emissions The permittee must maintain records of excess emissions as defined in OAR 340-214-0300 through 340-214-0340 (recorded on occurrence). Typically, excess emissions are caused by process upsets, startups, shutdowns, or scheduled maintenance. In many cases, excess emissions are evident when visible emissions are greater than 20% opacity for 3 minutes or more in any 60-minute period.

6.4. Complaint Log The permittee must maintain a log of all written complaints and complaints received via telephone that specifically refer to air pollution concerns associated to the permitted facility. The log must include a record of the permittee's actions to investigate the validity of each complaint and a record of actions taken for complaint resolution, per Condition 5.1

6.5. Retention of Records Unless otherwise specified, all records must be maintained on site for a period of five (5) years and made available to the Department upon request.

7.0 REPORTING REQUIREMENTS

7.1. Excess Emissions The permittee must notify the Department by telephone or in person of any excess emissions which are of a nature that could immediately endanger public health or safety.

a. Notify the local emergency response agencies per the plant emergency action plan.

b. Notice to the Department must be provided as soon as possible, but never more than one hour after becoming aware of the problem. Notice must be made to the regional office identified in Condition 8.4.

c. If the excess emissions occur during non-business hours, the permittee must notify the Department by calling the Oregon Emergency Response System (OERS). The current number is 1-800-452-0311.

d. The permittee must also submit follow-up reports when required by the Department.

7.2. Semi-annual Report The permittee must submit to the Department by **August 15** of each year this permit is in effect two (2) copies of the following information for the first six months of the year, January through June:

a. Operating parameters:

i. Monthly fuel usage for each type of fuel, for the Cleaver Brooks boiler.

ii. Log of planned and unplanned excess emissions per OAR 340-214-0340(4)(a).

iii. Name of oil supplier and certification of oil sulfur content.

7.3. Annual Report

The permittee must submit to the Department by **February 15** of each year this permit is in effect two (2) copies of the following information for the previous calendar year:

a. Operating parameters:

i. Annual fuel usage per Condition 12.

ii. Monthly emissions for PM_{10}, SO_2, NO_X, CO and VOC.

iii. 12 month rolling totals for PM_{10}, SO_2, NO_X, CO and VOC.

iv. Name of oil supplier and certification of oil sulfur content

b. Records of all planned and unplanned excess emissions events.

c. Summary of complaints relating to air quality received by permittee during the year. Report shall include date of contact, time of observed complaint condition, description of complaint condition, location of receptor, and status of plant operation during the observed period.

d. List permanent changes made in plant process, production levels, and pollution control equipment which affected air contaminant emissions.

e. List major maintenance performed on pollution control equipment.

7.4. Notice of Change of Ownership or Company Name

The permittee must notify the Department in writing using a Departmental "Permit Application Form" within 60 days after the following:

a. Legal change of the name of the company as registered with the Corporations Division of the State of Oregon; or

b. Sale or exchange of the activity or facility.

7.5. Construction or Modification Notices

The permittee must notify the Department in writing using a Departmental "Notice of Construction Form," or "Permit Application Form," and obtain approval in accordance with OAR 340-210-0205 through 340-210-0250 before:

a. Constructing or installing any new source of air contaminant emissions, including air pollution control equipment;

b. Modifying or altering an existing source that may significantly affect the emission of air contaminants;

c. Making any physical change which increases emissions; or

d. Changing the method of operation, the process, or the fuel use, or increasing the normal hours of operation that result in increased emissions.

7.6. Where to Send Reports and Notices

The reports, with the permit number prominently displayed, must be sent to the Permit Coordinator for the region where the source is located as identified in Condition 8.3.

8.0 ADMINISTRATIVE REQUIREMENTS

8.1. Permit Renewal Application

The completed application package for renewal of this permit is due on September 1, 2011. Two (2) copies of the application must be submitted to the DEQ Permit Coordinator listed in condition 8.3

8.2. Permit Modifications

Application for a modification of this permit must be submitted not less than **60** days prior to the source modification. A special activity fee must be submitted with an application for the permit modification. The fees and two (2) copies of the application must be submitted to the Business Office of the Department.

8.3. Permit Coordinator Address

All reports, notices, and applications should be directed to the Permit Coordinator for the Northwest Region. The Permit Coordinator address is as follows:

Department of Environmental Quality
Northwest Region
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
Telephone: (503) 229-5582

8.4. Department

Information about air quality permits and the Department's regulations may be obtained from the DEQ web page at

Contacts

www.deq.state.or.us. All inquiries about this permit should be directed to the regional office for the area where the source is located. The Department's regional offices are as follows:

Department of Environmental Quality
Portland Office
2020 SW 4th Avenue, Suite 400
Portland, OR 97201-4987
Telephone: (503) 229-5554

9.0 FEES

9.1. Annual Compliance Fee

The Annual Fee specified in OAR 340-216-0020, Table 2, Part 2 for a Standard ACDP is due on **December 1** of each year this permit is in effect. An invoice indicating the amount, as determined by Department regulations, will be mailed prior to the above date.

9.2. Change of Ownership or Company Name Fee

The non-technical permit modification fee specified in OAR 340-216-0020, Table 2, Part 3(a) is due with an application for changing the ownership or the name of the company.

9.3. Special Activity Fees

The special activity fees specified in OAR 340-216-0020, Table 2, Part 3 (b through i) are due with an application to modify the permit.

9.4. Where to Submit Fees

Fees must be submitted to:

Department of Environmental Quality
Business Office
811 SW Sixth Avenue
Portland, Oregon 97204-1390

10.0 GENERAL CONDITIONS AND DISCLAIMERS

10.1. Permitted Activities

This permit allows the permittee to discharge air contaminants from processes and activities related to the air contaminant source(s) listed on the first page of this permit until this permit expires, is modified, or is revoked.

10.2. Other Regulations

In addition to the specific requirements listed in this permit, the permittee must comply with all other legal requirements enforceable by the Department.

10.3.	**Conflicting Conditions**	In any instance in which there is an apparent conflict relative to conditions in this permit, the most stringent conditions apply.
10.4.	**Masking of Emissions**	The permittee must not cause or permit the installation of any device or use any means designed to mask the emissions of an air contaminant that causes or is likely to cause detriment to health, safety, or welfare of any person or otherwise violate any other regulation or requirement.
10.5.	**Department Access**	The permittee must allow the Department's representatives access to the plant site and pertinent records at all reasonable times for the purposes of performing inspections, surveys, collecting samples, obtaining data, reviewing and copying air contaminant emissions discharge records and conducting all necessary functions related to this permit in accordance with ORS 468-095.
10.6.	**Permit Availability**	The permittee must have a copy of the permit available at the facility at all times.
10.7.	**Open Burning**	The permittee may not conduct any open burning except as allowed by OAR 340 Division 264.
10.8.	**Asbestos**	The permittee must comply with the asbestos abatement requirements in OAR 340, Division 248 for all activities involving asbestos-containing materials, including, but not limit to, demolition, renovation, repair, construction, and maintenance.
10.9.	**Property Rights**	The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
10.10.	**Termination, Revocation, or Modification**	The Department may modify or revoke this permit pursuant to OAR 340-216-0082 and 340-216-0084.

11.0 EMISSION FACTORS

Emissions device or activity	Pollutant	Emission Factor (EF)	EF units	EF Reference
Nebraska Boiler or Cleaver Brooks	PM	2.5	lbs/million ft^3 natural gas	DEQ
Cleaver Brooks	PM	2.0	lbs/1000 gal distillate fuel	AP-42 Section 1.3
Nebraska Boiler or Cleaver Brooks	PM_{10}	2.5	lbs/million ft^3 natural gas	DEQ
Cleaver Brooks	PM_{10}	2.0	lbs/1000 gal distillate fuel	AP-42 Section 1.3
Cooling Tower	PM_{10}	0.019	lbs/1000 gal flow	AP-42 Section 1.3
Nebraska Boiler or Cleaver Brooks	SO2	2.6	lbs/million ft^3 natural gas	DEQ
Cleaver Brooks	SO2	71	lbs/1000 gal distillate fuel	AP-42 Section 1.3
Nebraska Boiler or Cleaver Brooks	NOx	140	lbs/million ft^3 natural gas	DEQ
Cleaver Brooks	NOx	20.0	lbs/1000 gal distillate fuel	AP-42 Section 1.3
Nebraska Boiler or Cleaver Brooks	CO	35	lbs/million ft^3 natural gas	DEQ
Cleaver Brooks	CO	5.0	lbs/1000 gal distillate fuel	AP-42 Section 1.3
Nebraska Boiler or Cleaver Brooks	VOC	2.8	lbs/million ft^3 natural gas	DEQ
Cleaver Brooks	VOC	0.25	lbs/1000 gal distillate fuel	AP-42 Section 1.3

EMISSION FACTORS (CONTINUED)

Process VOC Sources	Pollutant	Emission Factor (EF)	EF units	EF Reference
Basins, Skimmer, Wastewater	VOC	69	lbs/million gal effluent	SIMS estimated air emissions
Dimer Melter	VOC	2.1	lbs/ton dimer consumed	Mass Balance
EPI Tank and Transfer System	VOC	---	lbs/ton EPI used	SOCMI 1995 factors
Aromatic Solvent Tank and Transfer System	VOC	---	Lbs/ton Aromatic Solvent used	SOCMI 1995 factors

12.0 PROCESS/PRODUCTION RECORDS

Emissions device or activity	Process or production parameter	Frequency
Nebraska and Cleaver Brooks Boilers	Cubic feet of natural gas	Monthly
Cleaver Brooks Boiler	Gallons of distillate fuel, No. 1, No. 2, or waste oil.	Monthly – record each fuel separately
Kymene Process	Pounds of production	Monthly
Neuphor Process	Pounds of production	Monthly
Basins, Skimmer, Wastewater	gallons effluent to POTW	Monthly
Dimer Melter	lbs dimer consumed	Monthly
EPI Tank and Transfer System	lbs EPI used	Monthly
Aromatic Solvent Tank and Transfer System	lbs Aromatic Solvent used	Monthly

13.0 ABBREVIATIONS, ACRONYMS, AND DEFINITIONS

ACDP	Air Contaminant Discharge Permit
ASTM	American Society for Testing and Materials
AQMA	Air Quality Maintenance Area
calendar year	The 12-month period beginning January 1st and ending December 31st
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Oregon Department of Environmental Quality
dscf	dry standard cubic foot
EPA	US Environmental Protection Agency
FCAA	Federal Clean Air Act
gal	gallon(s)
gr/dscf	grains per dry standard cubic foot
HAP	Hazardous Air Pollutant as defined by OAR 340-244-0040
I&M	inspection and maintenance
lb	pound(s)
MMBtu	million British thermal units
NA	not applicable
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NO_X	nitrogen oxides
NSPS	New Source Performance Standard
NSR	New Source Review
O_2	oxygen
OAR	Oregon Administrative Rules
ORS	Oregon Revised Statutes
O&M	operation and maintenance
Pb	lead
PCD	pollution control device
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in size
ppm	part per million
PSD	Prevention of Significant Deterioration
PSEL	Plant Site Emission Limit
PTE	Potential to Emit
RACT	Reasonably Available Control Technology
scf	standard cubic foot
SER	Significant Emission Rate
SIC	Standard Industrial Code
SIP	State Implementation Plan
SO_2	sulfur dioxide
Special Control Area	as defined in OAR 340-204-0070
VE	visible emissions
VOC	volatile organic compound
year	A period consisting of any 12-consecutive calendar months