MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

October 26, 2022

PERMIT TO INSTALL
139-22

ISSUED TO
Ultium Cells, LLC

LOCATED AT
7111 Davis Highway
Lansing, Michigan 48917

IN THE COUNTY OF
Eaton

STATE REGISTRATION NUMBER
P1269

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: **September 29, 2022**	
DATE PERMIT TO INSTALL APPROVED: **October 26, 2022**	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H_2S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO_x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal condition or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUANOMIX1	#1 anode material metering and mixing line to produce an anode slurry. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-MIXING
EUANOMIX2	#2 anode material metering and mixing line to produce an anode slurry. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-MIXING
EUANOMIX3	#3 anode- material metering and mixing line to produce an anode slurry. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-MIXING
EUANOMIX4	#4 anode material metering and mixing line to produce an anode slurry. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-MIXING
EUANOMIX5	#5 anode material metering and mixing line to produce an anode slurry. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-MIXING
EUCATMIX1	#1 cathode material metering and mixing line to produce an anode slurry. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-MIXING
EUCATMIX2	#2 cathode material metering and mixing line to produce an anode slurry. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-MIXING
EUCATMIX3	#3 cathode material metering and mixing line to produce an anode slurry. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-MIXING
EUCATMIX4	#4 cathode material metering and mixing line to produce an anode slurry. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-MIXING
EUCATMIX5	#5 cathode material metering and mixing line to produce an anode slurry. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-MIXING
EUANOCOATER1	#1 anode coating and slitting line where slurry is applied to copper foil and dried using a heat exchanger.	TBD	FG-COATING

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUANOCOATER2	#2 anode coating and slitting line where slurry is applied to copper foil and dried using a heat exchanger.	TBD	FG-COATING
EUANOCOATER3	#3 anode coating and slitting line where slurry is applied to copper foil and dried using a heat exchanger.	TBD	FG-COATING
EUANOCOATER4	#4 anode coating and slitting line where slurry is applied to copper foil and dried using a heat exchanger.	TBD	FG-COATING
EUANOCOATER5	#5 anode coating and slitting line where slurry is applied to copper foil and dried using a heat exchanger.	TBD	FG-COATING
EUCATCOATER1	#1 cathode coating and silting line where slurry is applied to aluminum foil and dried using a heat exchanger. VOC emissions are controlled by adsorption columns.	TBD	FG-COATING
EUCATCOATER2	#2 cathode coating and silting line where slurry is applied to aluminum foil and dried using a heat exchanger. VOC emissions are controlled by adsorption columns.	TBD	FG-COATING
EUCATCOATER3	#3 cathode coating and silting line where slurry is applied to aluminum foil and dried using a heat exchanger. VOC emissions are controlled by adsorption columns.	TBD	FG-COATING
EUCATCOATER4	#4 cathode coating and silting line where slurry is applied to aluminum foil and dried using a heat exchanger. VOC emissions are controlled by adsorption columns.	TBD	FG-COATING
EUCATCOATER5	#5 cathode coating and silting line where slurry is applied to aluminum foil and dried using a heat exchanger. VOC emissions are controlled by adsorption columns.	TBD	FG-COATING
EUNMPRCVY	N-methyl-2-pyrollidone (NMP) recovery system utilizing ten (10) adsorption columns and five (5) distillation columns to recover NMP lost from the slurry application lines for re-use in the material metering and mixing lines.	TBD	FG-COATING
EUANONOTCH1	#1 anode slitting and notching line. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-NOTCHING
EUANONOTCH2	#2 anode slitting and notching line. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-NOTCHING
EUANONOTCH3	#3 anode slitting and notching line. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-NOTCHING
EUANONOTCH4	#4 anode slitting and notching line. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-NOTCHING
EUANONOTCH5	#5 anode slitting and notching line. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-NOTCHING

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUCATNOTCH1	#1 cathode slitting and notching line. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-NOTCHING
EUCATNOTCH2	#2 cathode slitting and notching line. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-NOTCHING
EUCATNOTCH3	#3 cathode slitting and notching line. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-NOTCHING
EUCATNOTCH4	#4 cathode slitting and notching line. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-NOTCHING
EUCATNOTCH5	#5 cathode slitting and notching line. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-NOTCHING
EUASSEMBLYPKG1	#1 cell assembly operations including laser welding of aluminum and copper tabs. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-ASSEMBLY
EUASSEMBLYPKG2	#2 cell assembly operations including laser welding of aluminum and copper tabs. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-ASSEMBLY
EUASSEMBLYPKG3	#3 cell assembly operations including laser welding of aluminum and copper tabs. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-ASSEMBLY
EUASSEMBLYPKG4	#4 cell assembly operations including laser welding of aluminum and copper tabs. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-ASSEMBLY
EUASSEMBLYPKG5	#5 cell assembly operations including laser welding of aluminum and copper tabs. Particulate emissions are controlled by baghouse dust collectors.	TBD	FG-ASSEMBLY
EUELECFILL1	#1 electrolyte injection line. Electrolyte solution is injected into battery cells under vacuum pressure. VOC emissions are controlled by activated carbon (AC) towers.	TBD	FG-ELECTROLYTE
EUELECFILL2	#2 electrolyte injection line. Electrolyte solution is injected into battery cells under vacuum pressure. VOC emissions are controlled by activated carbon (AC) towers.	TBD	FG-ELECTROLYTE
EUELECFILL3	#3 electrolyte injection line. Electrolyte solution is injected into battery cells under vacuum pressure. VOC emissions are controlled by activated carbon (AC) towers.	TBD	FG-ELECTROLYTE
EUELECFILL4	#4 electrolyte injection line. Electrolyte solution is injected into battery cells under vacuum pressure. VOC emissions are controlled by activated carbon (AC) towers.	TBD	FG-ELECTROLYTE

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUELECFILL5	#5 electrolyte injection line. Electrolyte solution is injected into battery cells under vacuum pressure. VOC emissions are controlled by activated carbon (AC) towers.	TBD	FG-ELECTROLYTE
EUSOLVENT	Facility-wide usage of cleaning solvents and printing and make-up ink for finished battery cells.	TBD	NA
EUDEGAS	Degassing process to extract residual gas from finished cells under vacuum pressure. Emissions are controlled by activated carbon (AC) towers.	TBD	NA
EUSAFETYTEST	Safety testing and cell disposal operations. Emissions are controlled by 3 activated carbon (AC) towers.	TBD	NA
EUNMPTANKS	Five (5) storage tanks used to store NMP for the cathode slurry mixing process. Each tank has a volume of 23,253 gallons.	TBD	NA
EUELECTANKS	Six (6) storage tanks used to store electrolyte solution for FG-ELECTROLYTE. Each tank has a volume of 13,071 gallons.	TBD	NA
EUHEATERS	Various dock heaters used throughout the facility. Total maximum heat input: 8 MMBTU/hr.	TBD	NA
EUAIRHANDLE	Various air handling units (AHUs) throughout the facility. Total maximum heat input: 157.0 MMBTU/hr.	TBD	NA
EUHOBOIL1	26.2 MMBtu/hr natural gas-fired hot oil boiler.	TBD	FG-BOILERS
EUHOBOIL2	26.2 MMBtu/hr natural gas-fired hot oil boiler.	TBD	FG-BOILERS
EUHOBOIL3	26.2 MMBtu/hr natural gas-fired hot oil boiler.	TBD	FG-BOILERS
EUHOBOIL4	26.2 MMBtu/hr natural gas-fired hot oil boiler.	TBD	FG-BOILERS
EUHOBOIL5	26.2 MMBtu/hr natural gas-fired hot oil boiler.	TBD	FG-BOILERS
EUHOBOIL6	26.2 MMBtu/hr natural gas-fired hot oil boiler.	TBD	FG-BOILERS
EUHOBOIL7	26.2 MMBtu/hr natural gas-fired hot oil boiler.	TBD	FG-BOILERS
EUHOBOIL8	26.2 MMBtu/hr natural gas-fired hot oil boiler.	TBD	FG-BOILERS
EUHOBOIL9	26.2 MMBtu/hr natural gas-fired hot oil boiler.	TBD	FG-BOILERS
EUHOBOIL10	26.2 MMBtu/hr natural gas-fired hot oil boiler.	TBD	FG-BOILERS
EUSTEAMBOIL1	8.2 MMBtu/hr natural gas-fired steam boiler.	TBD	FG-BOILERS
EUSTEAMBOIL2	8.2 MMBtu/hr natural gas-fired steam boiler.	TBD	FG-BOILERS

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUSTEAMBOIL3	8.2 MMBtu/hr natural gas-fired steam boiler.	TBD	FG-BOILERS
EUHWBOIL1	5 MMBtu/hr natural gas-fired hot water boiler.	TBD	FG-BOILERS
EUHWBOIL2	5 MMBtu/hr natural gas-fired hot water boiler.	TBD	FG-BOILERS
EUHWBOIL3	5 MMBtu/hr natural gas-fired hot water boiler.	TBD	FG-BOILERS
EUFIREPUMP1	A 305 HP (227.5 kW) diesel-fueled fire pump for emergency use only.	TBD	FG-FIREPUMPS
EUFIREPUMP2	A 305 HP (227.5 kW) diesel-fueled fire pump for emergency use only.	TBD	FG-FIREPUMPS
EUEMGEN1	A 324 HP (238.3 kW) diesel-fueled emergency engine with a model year of 2011 or later and a displacement of 1.12 liters/cylinder.	TBD	FG-EMGENS
EUEMGEN2	A 324 HP (238.3 kW) diesel-fueled emergency engine with a model year of 2011 or later and a displacement of 1.12 liters/cylinder.	TBD	FG-EMGENS
EUEMGEN3	A 324 HP (238.3 kW) diesel-fueled emergency engine with a model year of 2011 or later and a displacement of 1.12 liters/cylinder.	TBD	FG-EMGENS
EUEMGEN4	A 324 HP (238.3 kW) diesel-fueled emergency engine with a model year of 2011 or later and a displacement of 1.12 liters/cylinder.	TBD	FG-EMGENS

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 336.1291.

EUSOLVENT
EMISSION UNIT CONDITIONS

DESCRIPTION

Facility-wide usage of cleaning solvents and printing and make-up ink for finished battery cells.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. VOC	13.65 tpy	12-month rolling time period as determined at the end of each calendar month	EUSOLVENT	SC VI.2	R 336.1205, R 336.1225, R 336.1702(a)

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall handle all VOC and/or HAP containing materials, including coatings, reducers, solvents, and thinners, in a manner to minimize the generation of fugitive emissions. The permittee shall keep containers covered at all times except when operator access is necessary. **(R 336.1224, R 336.1225, R 336.1702(a))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall keep the following information on a monthly basis for EUSOLVENT:
   a) The VOC content, in pounds per gallon, of each solvent, printing ink, and marking ink used.
   b) VOC mass emission calculations determining the monthly emission rate in pounds per calendar month and in tons per calendar month.

c) VOC mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702(a))**

3. The permittee shall maintain a current listing from the manufacturer of the chemical composition of the printing and marking ink, including the weight percent of each component. The data may consist of Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

EUDEGAS
EMISSION UNIT CONDITIONS

DESCRIPTION

Degassing process to extract residual gas from finished cells under vacuum pressure. Emissions are controlled by activated carbon (AC) towers.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Six (6) AC towers.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. VOC	3.00 tpy	12-month rolling time period as determined at the end of each calendar month	EUDEGAS	SC VI.3	R 336.1205, R 336.1225, R 336.1702(a)

II. MATERIAL LIMIT(S)

1. The permittee shall not process more than 55,479,720 pounds of electrolyte solution in EUDEGAS per 12-month rolling time period, as determined at the end of each calendar month. **(R 336.1225, R 336.1702(a))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUDEGAS unless the AC towers are installed, maintained, and operated in a satisfactory manner. Satisfactory operation of each AC tower includes a minimum control efficiency of 98 percent (by weight). **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall not operate EUDEGAS unless a malfunction abatement plan (MAP), as described in Rule 911(2), for the AC towers is implemented and maintained. The MAP shall, at a minimum, specify the following:

   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed, or upon request from the District Supervisor. The permittee shall submit the MAP, and any amendments to the MAP, to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall

implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within one year after commencement of initial startup, the permittee shall test, at owner's expense and in accordance with Department requirements, a representative AC tower in EUDEGAS to verify the control efficiency. The result of the test shall determine an acceptable outlet concentration that will meet a minimum 98% control efficiency. Testing shall be performed using an approved EPA Method approved by the AQD supervisor. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

2. The permittee shall test, in a satisfactory manner, each AC tower for breakthrough of the carbon at least once every month. Breakthrough is considered to occur when the amount of VOCs in the sampled carbon is greater than or equal to 20 percent of the virgin carbon weight. If breakthrough is detected, the permittee shall not operate the associated AC tower until the carbon has been replaced. Upon written approval of the AQD District Supervisor, the permittee may change the testing frequency. **(R 336.1702, R 336.1910)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall record the amount of electrolyte solution, in pounds, processed per 12-month rolling time period, as determined at the end of each calendar month. The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, and make them available to the Department upon request. **(R 336.1702(a))**

3. The permittee shall calculate the VOC emission rate from EUDEGAS monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, 336.1702)**

4. The permittee shall monitor, in a satisfactory manner acceptable to the AQD District Supervisor, the AC towers for breakthrough of the first canister (i.e. "first stage contactor") at least once per week. If breakthrough is detected, the permittee shall not operate the system until the carbon in the first stage contactor has been replaced and the operating order of the vessels has been reversed. The permittee shall evaluate "breakthrough" via Tedlar bag sampling followed by laboratory analysis, by use of a hand-held instrument capable of detecting concentrations at the levels expected, or equivalent. A reading at the point between the first and second contactors that is 20 percent of the influent concentration into the first contactor is considered to be "breakthrough". The permittee shall measure the influent concentration upon start-up of the system, and subsequently after each carbon change. The permittee shall use the most recently measured influent concentration to establish "breakthrough." The permittee shall submit any request for a change in the

monitoring frequency the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1702, R 336.1910)**

5. The permittee shall keep, in a satisfactory manner, all records of calibration, maintenance, and carbon replacement for the AC towers on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EUDEGAS. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVDEGAS1	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVDEGAS2	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVDEGAS3	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
4. SVDEGAS4	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
5. SVDEGAS5	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
6. SVDEGAS6	26	20	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

EUSAFETYTEST
EMISSION UNIT CONDITIONS

DESCRIPTION

Safety testing and cell disposal operations. Emissions are controlled by 3 activated carbon (AC) towers.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Three (3) AC towers.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Chlorine (CAS No. 7782-50-5)	0.59 pph[1]	Hourly	EUSAFETYTEST	SC V.1	R 336.1225
2. Chlorine (CAS No. 7782-50-5)	2.60 tpy[1]	12-month rolling time period as determined at the end of each calendar month	EUSAFETYTEST	SC VI.2	R 336.1225

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUSAFETYTEST unless the AC towers are installed, maintained, and operated in a satisfactory manner. Satisfactory operation of each AC tower includes a minimum control efficiency of 98 percent (by weight). **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall not operate EUSAFETYTEST unless a malfunction abatement plan (MAP), as described in Rule 911(2), for the AC towers is implemented and maintained. The MAP shall, at a minimum, specify the following:
   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed, or upon request from the District Supervisor. The permittee shall submit the MAP, and any amendments to the MAP, to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall

implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1205, R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within one year after commencement of initial startup, the permittee shall verify chlorine emission rates from EUSAFETYTEST by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in 40 CFR Part 60, Appendix A. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1225, R 336.2001, R 336.2003, R 336.2004)**

2. The permittee shall test, in a satisfactory manner, each AC tower for breakthrough of the carbon at least once every month. Breakthrough is considered to occur when the amount of chlorine in the sampled carbon is greater than or equal to 20 percent of the virgin carbon weight. If breakthrough is detected, the permittee shall not operate the associated AC tower until the carbon has been replaced. Upon written approval of the AQD District Supervisor, the permittee may change the testing frequency. **(R 336.1702, R 336.1910)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205, R 336.1224, R 336.1225, R 336.1910)**

2. The permittee shall keep the following information on a monthly basis for FG-MIXING:
   a) The combined exhaust flow rate through the AC towers, in cubic feet, recorded on a weekly basis.
   b) Chlorine (CAS No. 7782-50-5) mass emission calculations, using the flow rate and either a guaranteed emission factor or an emission factor from the most recent stack test, determining the monthly emission rate in pounds per calendar month and in tons per calendar month.
   c) Chlorine (CAS No. 7782-50-5) mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

3. The permittee shall monitor, in a satisfactory manner acceptable to the AQD District Supervisor, the AC tower for breakthrough of the first canister (i.e. "first stage contactor") at least once per week. If breakthrough is detected, the permittee shall not operate the system until the carbon in the first stage contactor has been replaced and the operating order of the vessels has been reversed. The permittee shall evaluate "breakthrough" via Tedlar bag sampling followed by laboratory analysis, by use of a hand-held instrument capable of detecting concentrations at the levels expected, or equivalent. A reading at the point between the first and second contactors that is 20 percent of the influent concentration into the first contactor is considered to be "breakthrough". The permittee shall measure the influent concentration upon start-up of the system, and subsequently after each carbon change. The permittee shall use the most recently measured influent concentration to establish "breakthrough." The permittee shall submit any request for a change in the monitoring frequency the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1702, R 336.1910)**

4. The permittee shall keep, in a satisfactory manner, all records of calibration, maintenance, and carbon replacement for the AC towers on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EUSAFETYTEST. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVSAFETYTEST1	26	50	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVSAFETYTEST2	26	50	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVSAFETYTEST3	26	50	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

NA

EUELECTANKS
EMISSION UNIT CONDITIONS

DESCRIPTION

Six (6) storage tanks used to store electrolyte solution for FG-ELECTROLYTE. Each tank has a volume of 13,071 gallons.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

One (1) AC tower.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUELECTANKS unless the AC tower is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of each AC tower includes a minimum control efficiency of 98 percent (by weight). **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall not operate EUELECTANKS unless a malfunction abatement plan (MAP), as described in Rule 911(2), for the AC tower is implemented and maintained. The MAP shall, at a minimum, specify the following:

   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed, or upon request from the District Supervisor. The permittee shall submit the MAP, and any amendments to the MAP, to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1205, R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Upon request of the AQD District Supervisor, the permittee may test, at owner's expense and in accordance with Department requirements, the AC tower in EUELECTANKS to verify the control efficiency. The result of the test shall determine an acceptable outlet concentration that will meet a minimum 98% control efficiency. Testing shall be performed using an approved EPA Method approved by the AQD supervisor. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

2. The permittee shall test, in a satisfactory manner, the AC tower for breakthrough of the carbon at least once every month. Breakthrough is considered to occur when the amount of VOCs in the sampled carbon is greater than or equal to 20 percent of the virgin carbon weight. If breakthrough is detected, the permittee shall not operate the associated AC tower until the carbon has been replaced. Upon written approval of the AQD District Supervisor, the permittee may change the testing frequency. **(R 336.1702, R 336.1910)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor, in a satisfactory manner acceptable to the AQD District Supervisor, the AC towers for breakthrough of the first canister (i.e. "first stage contactor") at least once per week. If breakthrough is detected, the permittee shall not operate the system until the carbon in the first stage contactor has been replaced and the operating order of the vessels has been reversed. The permittee shall evaluate "breakthrough" via Tedlar bag sampling followed by laboratory analysis, by use of a hand-held instrument capable of detecting concentrations at the levels expected, or equivalent. A reading at the point between the first and second contactors that is 20 percent of the influent concentration into the first contactor is considered to be "breakthrough". The permittee shall measure the influent concentration upon start-up of the system, and subsequently after each carbon change. The permittee shall use the most recently measured influent concentration to establish "breakthrough." The permittee shall submit any request for a change in the monitoring frequency the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1702, R 336.1910)**

2. The permittee shall keep, in a satisfactory manner, all records of calibration, maintenance, and carbon replacement for the AC tower on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVELECTANKSAC	26	20.3	R 336.1225, 40 CFR 52.21 (c) & (d)

IX. OTHER REQUIREMENT(S)

NA

EUHEATERS
EMISSION UNIT CONDITIONS

DESCRIPTION

Various dock heaters used throughout the facility. Total maximum heat input: 8 MMBTU/hr.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall burn only natural gas in EUHEATERS. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

2. The natural gas usage for EUHEATERS shall not exceed 68.7 MMscf per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, R 336.1225, R 336.1702(a), 40 CFR 52.21)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The maximum design heat input capacity for EUHEATERS shall not exceed 8 MMBTU per hour on a fuel heat input basis. **(R 336.1205, R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall keep, in a satisfactory manner, records of the total volume (in MMscf) natural gas burned in EUHEATERS on a monthly and 12-month rolling time period. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVHEATER1*	63	55	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVHEATER2*	63	55	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVHEATER3*	63	58	R 336.1225, 40 CFR 52.21(c) & (d)
4. SVHEATER4*	63	58	R 336.1225, 40 CFR 52.21(c) & (d)
5. SVHEATER5*	63	25	R 336.1225, 40 CFR 52.21(c) & (d)
*May be discharged horizontally			

IX. OTHER REQUIREMENT(S)

NA

EUAIRHANDLE
EMISSION UNIT CONDITIONS

DESCRIPTION

Various air handling units (AHUs) throughout the facility. Total maximum heat input: 157.0 MMBTU/hr.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NO_x	15.39 pph	Hourly	EUAIRHANDLE	SC V.1	40 CFR 52.21(c) & (d)
2. NO_x	67.42 tpy	12-month rolling time period as determined at the end of each calendar month	EUAIRHANDLE	SC VI.3	40 CFR 52.21(c) & (d)
3. PM2.5	1.17 pph	Hourly	EUAIRHANDLE	SC V.1	40 CFR 52.21(c) & (d)
4. PM2.5	5.12 tpy	12-month rolling time period as determined at the end of each calendar month	EUAIRHANDLE	SC VI.3	R 336.1205, 40 CFR 52.21(c) & (d)

II. MATERIAL LIMIT(S)

1. The permittee shall burn only natural gas in EUAIRHANDLE. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

2. The natural gas usage for EUAIRHANDLE shall not exceed 1,348.4 MMscf per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, R 336.1225, R 336.1702(a), 40 CFR 52.21)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The maximum design heat input capacity of EUAIRHANDLE shall not exceed 157.0 MMBTU per hour on a fuel heat input basis. **(40 CFR 52.21(c) & (d))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 180 days of initial startup, the permittee shall verify NO_x and PM2.5 emission rates from a respective air handling unit in EUAIRHANDLE by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in the table below.

Pollutant	Test Method Reference
NO_x	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM2.5	40 CFR Part 51, Appendix M

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1224, R 336.1225, R 336.1702, R 336.1910)**

2. The permittee shall keep, in a satisfactory manner, records of the total volume (in MMscf) natural gas burned in EUAIRHANDLE on a monthly and 12-month rolling time period. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

3. The permittee shall calculate the NO_x and PM2.5 emission rates from EUAIRHANDLE for each calendar month and 12-month rolling time period, using fuel usage records and an emission factor (AP-42, manufacturer's or test data) that is approved by the AQD District Supervisor. **(40 CFR 52.21(c) & (d))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVAHU1*	79	59	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVAHU2*	79	59	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVAHU3*	79	59	R 336.1225, 40 CFR 52.21(c) & (d)
4. SVAHU4*	79	59	R 336.1225, 40 CFR 52.21(c) & (d)
5. SVAHU5*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
6. SVAHU6*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
7. SVAHU7*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
8. SVAHU8*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
9. SVAHU9*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
10. SVAHU10*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
11. SVAHU11*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
12. SVAHU12*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
13. SVAHU13*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
14. SVAHU14*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
15. SVAHU15*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
16. SVAHU16*	79	55	R 336.1225, 40 CFR 52.21(c) & (d)
17. SVAHU17*	79	68	R 336.1225, 40 CFR 52.21(c) & (d)
18. SVAHU18*	79	68	R 336.1225, 40 CFR 52.21(c) & (d)
19. SVAHU19*	79	68	R 336.1225, 40 CFR 52.21(c) & (d)
20. SVAHU20*	79	68	R 336.1225, 40 CFR 52.21(c) & (d)
21. SVAHU21*	79	68	R 336.1225, 40 CFR 52.21(c) & (d)
22. SVAHU22*	79	68	R 336.1225, 40 CFR 52.21(c) & (d)
23. SVAHU23*	79	68	R 336.1225, 40 CFR 52.21(c) & (d)
24. SVAHU24*	79	68	R 336.1225, 40 CFR 52.21(c) & (d)
25. SVAHU25*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
26. SVAHU26*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
27. SVAHU27*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
28. SVAHU28*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
29. SVAHU29*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
30. SVAHU30*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
31. SVAHU31*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
32. SVAHU32*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
33. SVAHU33*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
34. SVAHU34*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
35. SVAHU35*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
36. SVAHU36*	79	63	R 336.1225, 40 CFR 52.21(c) & (d)
*Stacks in EUAIRHANDLE may be discharged horizontally			

IX. OTHER REQUIREMENT(S)

NA

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-MIXING	Anode and cathode material metering and mixing process. Particulate emissions from all emission units are controlled by ten (10) baghouse dust collectors. Acetone emissions are controlled by six (6) activated carbon towers.	EUANOMIX1, EUANOMIX2, EUANOMIX3, EUANOMIX4, EUANOMIX5, EUCATMIX1, EUCATMIX2, EUCATMIX3, EUCATMIX4, EUCATMIX5
FG-COATING	Anode and cathode slurry coating and slitting process. NMP from the cathode slurry is recovered using a solvent recovery unit (EUNMPRCVY) composed of ten (10) adsorption columns and five (5) distillation columns.	EUANOCOATER1, EUANOCOATER2, EUANOCOATER3, EUANOCOATER4, EUANOCOATER5, EUCATCOATER1, EUCATCOATER2, EUCATCOATER3, EUCATCOATER4, EUCATCOATER5, EUNMPRCVY
FG-NOTCHING	Anode and cathode material notching and drying process. Particulate emissions from all emission units are controlled by thirty-two (32) baghouse dust collectors.	EUANONOTCH1, EUANONOTCH2, EUANONOTCH3, EUANONOTCH4, EUANONOTCH5, EUCATNOTCH1, EUCATNOTCH2, EUCATNOTCH3, EUCATNOTCH4, EUCATNOTCH5
FG-ASSEMBLY	Battery cell packaging process where aluminum and copper tabs are laser-welded to the cells. Additional cutting of the cells may occur. Emissions are controlled by thirty-one (31) baghouse dust collectors.	EUASSEMBLYPKG1, EUASSEMBLYPKG2, EUASSEMBLYPKG3, EUASSEMBLYPKG4, EUASSEMBLYPKG5
FG-ELECTROLYTE	Electrolyte injection line where electrolyte is injected into battery cells under vacuum pressure. VOC emissions are controlled by eight (8) activated carbon (AC) towers.	EUELECFILL1, EUELECFILL2, EUELECFILL3, EUELECFILL4, EUELECFILL5

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-BOILERS	Hot oil, steam, and hot water boilers with low NO_x burners.	EUHOBOIL1, EUHOBOIL2, EUHOBOIL3, EUHOBOIL4, EUHOBOIL5, EUHOBOIL6, EUHOBOIL7, EUHOBOIL8, EUHOBOIL9, EUHOBOIL10, EUSTEAMBOIL1, EUSTEAMBOIL2, EUSTEAMBOIL3, EUHWBOIL1, EUHWBOIL2, EUHWBOIL3
FG-FIREPUMPS	Two (2) 305 HP (227.5 kilowatts (kW)) diesel-fueled fire pumps for emergency use only.	EUFIREPUMP1, EUFIREPUMP2
FG-EMGENS	Four (4) 324 HP (238.3 kilowatts (kW)) diesel-fueled emergency engines with a model year of 2011 or later, and a displacement of 1.12 liters/cylinder.	EUEMGEN1, EUEMGEN2, EUEMGEN3, EUEMGEN4
FG-TACS	Process units affected by emissions limits under R 336.1225(1).	EUANOMIX1, EUANOMIX2, EUANOMIX3, EUANOMIX4, EUANOMIX5, EUCATMIX1, EUCATMIX2, EUCATMIX3, EUCATMIX4, EUCATMIX5, EUANONOTCH1, EUANONOTCH2, EUANONOTCH3, EUANONOTCH4, EUANONOTCH5, EUCATNOTCH1, EUCATNOTCH2, EUCATNOTCH3, EUCATNOTCH4, EUCATNOTCH5, EUELECFILL1, EUELECFILL2, EUELECFILL3, EUELECFILL4, EUELECFILL5, EUASSEMBLYPKG1, EUASSEMBLYPKG2, EUASSEMBLYPKG3, EUASSEMBLYPKG4, EUASSEMBLYPKG5, EUDEGAS, EUELECTANKS

FG-MIXING
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Anode and cathode material metering and mixing process. Particulate emissions from all emission units are controlled by ten (10) baghouse dust collectors. Acetone emissions are controlled by six (6) activated carbon towers.

Emission Unit: EUANOMIX1, EUANOMIX2, EUANOMIX3, EUANOMIX4, EUANOMIX5, EUCATMIX1, EUCATMIX2, EUCATMIX3, EUCATMIX4, EUCATMIX5

POLLUTION CONTROL EQUIPMENT

Ten (10) dust collectors and six (6) activated carbon (AC) towers.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. VOC	0.20 tpy	12-month rolling time period as determined at the end of each calendar month	FG-MIXING	SC VI.2	R 336.1205, R 336.1225, R 336.1702(a)
2. Acetone (CAS No. 67-64-1)	4.87 tpy[1]	12-month rolling time period as determined at the end of each calendar month	FG-MIXING	SC VI.2	R 336.1225
3. PM	8.74×10^{-4} grains per cubic foot of exhaust[1]	Hourly	FG-MIXING	SC V.3	R 336.1331
[1]Equivalent to 1.63×10^{-4} lb/1,000 lb exhaust. The limit under Rule 331 is subsumed.					

4. There shall be no visible emissions from each dust collector stack in FG-MIXING. **(R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

II. MATERIAL LIMIT(S)

1. The permittee shall not use more than 73,261 gallons of acetone (CAS No. 67-64-1) in FG-MIXING per 12-month rolling time period, as determined at the end of each calendar month. **(R 336.1225)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FG-MIXING unless the dust collectors are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1224, R 336.1225, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

2. The permittee shall not operate FG-MIXING unless the AC towers are installed, maintained, and operated in a satisfactory manner. Satisfactory operation of each AC tower includes a minimum control efficiency of 98 percent (by weight). **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

3. The permittee shall not operate FG-MIXING unless a malfunction abatement plan (MAP), as described in Rule 911(2), for the dust collectors and AC towers is implemented and maintained. The MAP shall, at a minimum, specify the following:

a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed, or upon request from the District Supervisor. The permittee shall submit the MAP, and any amendments to the MAP, to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1205, R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor the pressure drop for the FG-MIXING dust collectors on a continuous basis. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within one year after commencement of initial startup, the permittee shall test, at owner's expense and in accordance with Department requirements, a representative AC tower in FG-MIXING to verify the control efficiency. The result of the test shall determine an acceptable outlet concentration that will meet a minimum 98% control efficiency. Testing shall be performed using an approved EPA Method approved by the AQD supervisor. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

2. The permittee shall test, in a satisfactory manner, each AC tower for breakthrough of the carbon at least once every month. Breakthrough is considered to occur when the amount of VOCs in the sampled carbon is greater than or equal to 20 percent of the virgin carbon weight. If breakthrough is detected, the permittee shall not operate the associated AC tower until the carbon has been replaced. Upon written approval of the AQD District Supervisor, the permittee may change the testing frequency. **(R 336.1702, R 336.1910)**

3. Within one year after commencement of initial startup, the permittee shall verify the PM emission rate from a representative dust collector in FG-MIXING by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior

to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.1225, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205, R 336.1224, R 336.1225, R 336.1910)**

2. The permittee shall keep the following information on a monthly basis for FG-MIXING:
   a) The amount, in gallons, of acetone used per calendar month and per 12-month rolling time period as determined at the end of each calendar month.
   b) Acetone (CAS No. 67-64-1) mass emission calculations determining the monthly emission rate in tons per calendar month.
   c) Acetone (CAS No. 67-64-1) mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.
   d) VOC mass emission calculations determining the monthly emission rate in pounds per calendar month.
   e) VOC mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

   The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, and make them available to the Department upon request. **(R 336.1224, R 336.1225)**

3. The permittee shall monitor, in a satisfactory manner acceptable to the AQD District Supervisor, the AC towers for breakthrough of the first canister (i.e. "first stage contactor") at least once per week. If breakthrough is detected, the permittee shall not operate the system until the carbon in the first stage contactor has been replaced and the operating order of the vessels has been reversed. The permittee shall evaluate "breakthrough" via Tedlar bag sampling followed by laboratory analysis, by use of a hand-held instrument capable of detecting concentrations at the levels expected, or equivalent. A reading at the point between the first and second contactors that is 20 percent of the influent concentration into the first contactor is considered to be "breakthrough". The permittee shall measure the influent concentration upon start-up of the system, and subsequently after each carbon change. The permittee shall use the most recently measured influent concentration to establish "breakthrough." The permittee shall submit any request for a change in the monitoring frequency the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1702, R 336.1910)**

4. The permittee shall keep, in a satisfactory manner, all records of calibration, maintenance, and carbon replacement for the AC towers on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

5. The permittee shall continuously monitor and record the pressure drop for the FG-MIXING dust collectors, during operation, with instrumentation acceptable to the AQD District Supervisor. The permittee shall keep these records on file at the facility and make them available to the Department upon request. **(R 336.1301, R 336.1910)**

6. The permittee shall monitor the dust collector emission points to verify the filters are operating properly, by taking visible emission readings for FG-MIXING a minimum of once per calendar week. A “visible emissions reading” refers to a survey to be performed for the purpose of determining if there is the presence of visible emissions or if there are no visible emissions, other than uncombined water vapor. Visible emission readings shall be taken at least once per week, for one minute in duration, during daylight hours and during routine operating conditions. This can be performed by either a certified or non-certified reader. Such readings do not have to be conducted per the requirements of Method 9. Multiple stacks may be observed simultaneously. If any visible emissions (other than uncombined water vapor) are observed, the permittee shall inspect the

filters and perform any required maintenance within two hours of the visible emissions occurrence. **(R 336.1910)**

7. The permittee shall keep, in a satisfactory manner, records of all visible emission readings for FG-MIXING. At a minimum, records shall include the date, time, name of observer/reader, whether the reader is certified, status of visible emissions, and the type of maintenance performed. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1301, R 336.1303, R 336.1910)**

8. The permittee shall keep a record of all inspections and maintenance, and any corrective actions performed on the baghouses, in accordance with the MAP. The permittee shall maintain this record on site and make it available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

9. The permittee shall keep documentation listing the manufacturer's specifications for the baghouse dust collectors, including the maximum allowable flow rate and guaranteed concentration of PM through the collectors. The permittee shall maintain this record on site and make it available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of FG-MIXING. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVANOMIXDC	57	63	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVCATMIXDC	57	63	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVMIXACTOWER1	26	24	R 336.1225, 40 CFR 52.21(c) & (d)
4. SVMIXACTOWER2	26	24	R 336.1225, 40 CFR 52.21(c) & (d)
5. SVMIXACTOWER3	26	24	R 336.1225, 40 CFR 52.21(c) & (d)
6. SVMIXACTOWER4	26	24	R 336.1225, 40 CFR 52.21(c) & (d)
7. SVMIXACTOWER5	26	24	R 336.1225, 40 CFR 52.21(c) & (d)
8. SVMIXACTOWER6	26	24	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subpart CCCCCCC, as they apply to each emission unit in FG-MIXING. **(40 CFR Part 63 Subpart CCCCCCC, 40 CFR 63.11599)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FG-COATING
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Anode and cathode slurry coating and slitting process. NMP from the cathode slurry is recovered using a solvent recovery unit (EUNMPRCVY) composed of ten (10) adsorption columns and five (5) distillation columns.

Emission Unit: EUANOCOATER1, EUANOCOATER2, EUANOCOATER3, EUANOCOATER4, EUANOCOATER5, EUCATCOATER1, EUCATCOATER2, EUCATCOATER3, EUCATCOATER4, EUCATCOATER5, EUNMPRCVY

POLLUTION CONTROL EQUIPMENT

The cathode coaters are controlled by a solvent recovery unit consisting of ten (10) adsorption columns and five (5) distillation columns. The adsorption columns convert gaseous NMP into a liquid NMP and deionized water solution. The distillation columns are in an enclosed system and are used to remove deionized water and other impurities from the liquid NMP. Recovered liquid NMP is sent to storage tanks for re-use in FG-COATING.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. VOC	0.01 lb/gal (minus water)[a] as applied	Calendar Day	Each cathode coating line (EUCATCOATER1 through EUCATCOATER5)	SC V.2, SC VI.3	R 336.1702(a)
2. VOC	20.51 tpy	12-month rolling time period as determined at the end of each calendar month	All cathode coating lines combined (EUCATCOATER1 through EUCATCOATER5)	SC VI.3	R 336.1205, R 336.1225, R 336.1702(a)

[a] The phrase “minus water” shall also include compounds which are used as organic solvents and which are excluded from the definition of volatile organic compound. **(R 336.1602(4))**

II. MATERIAL LIMIT(S)

1. The permittee shall not process more than 41,026,000 pounds of NMP (CAS No. 872-50-4) in EUCATCOATER1 through EUCATCOATER5 combined per 12-month rolling time period, as determined at the end of each calendar month. **(R 336.1205, R 336.1225, R 336.1702(a))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate the cathode coating lines in FG-COATING (EUCATCOATER1 through EUCATCOATER5) unless the associated adsorption columns are installed, maintained, and operated in a satisfactory manner. Satisfactory operation of each adsorption column includes a minimum control efficiency of 99.9 percent (by weight). **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall not operate the cathode coating lines in FG-COATING (EUCATCOATER1 through EUCATCOATER5) if the pressure or temperature in the adsorption units in EUNMPRCVY are outside the following range:

a) Pressure range of 754-763 mm Hg for each adsorption tower
b) Temperature range of 73-122°F for each adsorption tower
(R 336.1205, R 336.1224, R 336.1225, R 336.1702, R 336.1910)

3. The permittee shall not operate FG-COATING unless a malfunction abatement plan (MAP), as described in Rule 911(2), for the adsorption columns is implemented and maintained. The MAP shall, at a minimum, specify the following:
   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed, or upon request from the District Supervisor. The permittee shall submit the MAP, and any amendments to the MAP, to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1205, R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor the pressure and temperature for the adsorption columns in EUNMPRCVY on a continuous basis. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within one year after commencement of initial startup, the permittee shall test, at owner's expense and in accordance with Department requirements, a representative adsorption column in EUNMPRCVY to verify the control efficiency. The result of the test shall determine an acceptable outlet concentration that will meet a minimum 99.9% control efficiency. Testing shall be performed using an approved EPA Method approved by the AQD supervisor. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

2. The permittee shall determine the VOC content, water content and density of any material, as applied, using federal Reference Test Method 24. Upon prior written approval by the AQD District Supervisor, the permittee may determine the VOC content from manufacturer's formulation data. If the Method 24 and the formulation values should differ, the permittee shall use the Method 24 results to determine compliance. **(R 336.1205, R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004, R 336.2040(5))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall continuously monitor and record the following parameters for EUNMPRCVY while operating:
   a) The pressure in each Adsorption Column 1.
   b) The temperature in each Adsorption Columns 2-9.
   (R 336.1205, R 336.1224, R 336.1225, R 336.1702, R 336.1910)

3. The permittee shall keep the following information for EUCATCOATER1 through EUCATCOATER5:
   a) Gallons (minus water and with water) of cathode slurry used, recorded on a daily basis, for each individual line and all lines combined.
   b) The amount of NMP, in pounds, processed per 12-month rolling time period, as determined at the end of each calendar month.
   c) VOC emission calculations determining the volume-weighted average VOC content of the materials (minus water and with water) as applied on a daily basis, for each individual line.
   d) VOC mass emission calculations determining the monthly emission rate in tons per calendar month, for each individual line and all lines combined.
   e) VOC mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month, for each individual line and all lines combined.
   f) Hours of operation for each individual line, recorded on a daily basis.

   The permittee shall keep the records using mass balance, or an alternative method and format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1702(a) & (d))**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of FG-COATING. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVCOATADSORP1	95	82	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVCOATADSORP2	95	82	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVCOATADSORP3	95	82	R 336.1225, 40 CFR 52.21(c) & (d)
4. SVCOATADSORP4	95	82	R 336.1225, 40 CFR 52.21(c) & (d)

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
5. SVCOATADSORP5	95	82	R 336.1225, 40 CFR 52.21(c) & (d)
6. SVCOATADSORP6	95	82	R 336.1225, 40 CFR 52.21(c) & (d)
7. SVCOATADSORP7	95	82	R 336.1225, 40 CFR 52.21(c) & (d)
8. SVCOATADSORP8	95	82	R 336.1225, 40 CFR 52.21(c) & (d)
9. SVCOATADSORP9	95	82	R 336.1225, 40 CFR 52.21(c) & (d)
10. SVCOATADSORP10	95	82	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subpart CCCCCCC, as they apply to each emission unit in FG-COATING. **(40 CFR Part 63 Subpart CCCCCCC, 40 CFR 63.11599)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FG-NOTCHING
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Anode and cathode material notching and drying process. Particulate emissions from all emission units are controlled by thirty-two (32) baghouse dust collectors.

Emission Unit: EUANONOTCH1, EUANONOTCH2, EUANONOTCH3, EUANONOTCH4, EUANONOTCH5, EUCATNOTCH1, EUCATNOTCH2, EUCATNOTCH3, EUCATNOTCH4, EUCATNOTCH5

POLLUTION CONTROL EQUIPMENT

Thirty-two (32) dust collectors.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	4.37 x 10^{-4} grains per cubic foot of exhaust[1]	Hourly	FG-NOTCHING	SC V.1	R 336.1331
[1]Equivalent to 8.15 x 10^{-5} lb/1,000 lb exhaust. The limit under Rule 331 is subsumed.					

2. There shall be no visible emissions from any stack in FG-NOTCHING. **(R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FG-NOTCHING unless the dust collectors are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1224, R 336.1225, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

2. The permittee shall not operate FG-NOTCHING unless a malfunction abatement plan (MAP), as described in Rule 911(2), for the dust collectors is implemented and maintained. The MAP shall, at a minimum, specify the following:

   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed, or upon request from the District

Supervisor. The permittee shall submit the MAP, and any amendments to the MAP, to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1205, R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor the pressure drop for each FG-NOTCHING dust collector on a continuous basis. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within one year after commencement of initial startup, the permittee shall verify the PM emission rate from a representative dust collector in FG-NOTCHING by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.1225, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall continuously monitor and record the pressure drop for the FG-NOTCHING dust collectors, during operation, with instrumentation acceptable to the AQD District Supervisor. The permittee shall keep these records on file at the facility and make them available to the Department upon request. **(R 336.1301, R 336.1910)**

2. The permittee shall monitor the dust collector emission points to verify the filters are operating properly, by taking visible emission readings for FG-NOTCHING a minimum of once per calendar week. A “visible emissions reading” refers to a survey to be performed for the purpose of determining if there is the presence of visible emissions or if there are no visible emissions, other than uncombined water vapor. Visible emission readings shall be taken at least once per week, for one minute in duration, during daylight hours and during routine operating conditions. This can be performed by either a certified or non-certified reader. Such readings do not have to be conducted per the requirements of Method 9. Multiple stacks may be observed simultaneously. If any visible emissions (other than uncombined water vapor) are observed, the permittee shall inspect the filters and perform any required maintenance within two hours of the visible emissions occurrence. **(R 336.1910)**

3. The permittee shall keep, in a satisfactory manner, records of all visible emission readings for FG-NOTCHING. At a minimum, records shall include the date, time, name of observer/reader, whether the reader is certified, status of visible emissions, and the type of maintenance performed. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1301, R 336.1303, R 336.1910)**

4. The permittee shall keep a record of all inspections and maintenance, and any corrective actions performed on the baghouse, in accordance with the MAP. The permittee shall maintain this record on site and make it available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

5. The permittee shall keep documentation listing the manufacturer's specifications for the baghouse dust collectors, including the maximum allowable flow rate and guaranteed concentration of PM through the collectors. The permittee shall maintain this record on site and make it available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of FG-NOTCHING. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVNOTCHING1	38	63	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVNOTCHING2	38	63	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVNOTCHING3	38	69	R 336.1225, 40 CFR 52.21(c) & (d)
4. SVNOTCHING4	38	69	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FG-ASSEMBLY
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Battery cell packaging process where aluminum and copper tabs are laser-welded to the cells. Additional cutting of the cells may occur. Emissions are controlled by thirty-one (31) baghouse dust collectors.

Emission Unit: EUASSEMBLYPKG1, EUASSEMBLYPKG2, EUASSEMBLYPKG3, EUASSEMBLYPKG4, EUASSEMBLYPKG5

POLLUTION CONTROL EQUIPMENT

Thirty-one (31) dust collectors.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	4.37 x 10^{-4} grains per cubic foot of exhaust[1]	Hourly	FG-ASSEMBLY	SC V.1	R 336.1331
[1]Equivalent to 8.15 x 10^{-5} lb/1,000 lb exhaust. The limit under Rule 331 is subsumed.					

2. There shall be no visible emissions from any stack in FG-ASSEMBLY. **(R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FG-ASSEMBLY unless the dust collectors are installed, maintained, and operated in a satisfactory manner. **(R 336.1205, R 336.1224, R 336.1225, R 336.1331, R 336.1910, 40 CFR 52.21(c) & (d))**

2. The permittee shall not operate FG-ASSEMBLY unless a malfunction abatement plan (MAP), as described in Rule 911(2), for the dust collectors is implemented and maintained. The MAP shall, at a minimum, specify the following:

   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed, or upon request from the District

Supervisor. The permittee shall submit the MAP, and any amendments to the MAP, to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1205, R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor the pressure drop for each FG-ASSEMBLY dust collector on a continuous basis. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, R 336.1910)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within one year after commencement of initial startup, the permittee shall verify the PM emission rate from a representative dust collector in FG-ASSEMBLY by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205, R 336.1225, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall continuously monitor and record the pressure drop for the FG-ASSEMBLY dust collectors, during operation, with instrumentation acceptable to the AQD District Supervisor. The permittee shall keep these records on file at the facility and make them available to the Department upon request. **(R 336.1301, R 336.1910)**

2. The permittee shall monitor the dust collector emission points to verify the filters are operating properly, by taking visible emission readings for FG-ASSEMBLY a minimum of once per calendar week. A “visible emissions reading” refers to a survey to be performed for the purpose of determining if there is the presence of visible emissions or if there are no visible emissions, other than uncombined water vapor. Visible emission readings shall be taken at least once per week, for one minute in duration, during daylight hours and during routine operating conditions. This can be performed by either a certified or non-certified reader. Such readings do not have to be conducted per the requirements of Method 9. Multiple stacks may be observed simultaneously. If any visible emissions (other than uncombined water vapor) are observed, the permittee shall inspect the filters and perform any required maintenance within two hours of the visible emissions occurrence. **(R 336.1910)**

3. The permittee shall keep, in a satisfactory manner, records of all visible emission readings for FG-ASSEMBLY. At a minimum, records shall include the date, time, name of observer/reader, whether the reader is certified, status of visible emissions, and the type of maintenance performed. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1301, R 336.1303, R 336.1910)**

4. The permittee shall keep a record of all inspections and maintenance, and any corrective actions performed on the baghouse, in accordance with the MAP. The permittee shall maintain this record on site and make it available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

5. The permittee shall keep documentation listing the manufacturer's specifications for the baghouse dust collectors, including the maximum allowable flow rate and guaranteed concentration of PM through the collectors. The permittee shall maintain this record on site and make it available to the Department upon request. **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of FG-ASSEMBLY. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVPKGLASER1	38	69	R 336.1225, 40 CFR 52.21 (c) & (d)
2. SVPKGLASER2	38	69	R 336.1225, 40 CFR 52.21 (c) & (d)
3. SVPKGSCRAP1	38	69	R 336.1225, 40 CFR 52.21 (c) & (d)
4. SVPKGSCRAP2	38	69	R 336.1225, 40 CFR 52.21 (c) & (d)
5. SVPKGDUST1	38	69	R 336.1225, 40 CFR 52.21 (c) & (d)
6. SVPKGDUST2	38	69	R 336.1225, 40 CFR 52.21 (c) & (d)

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FG-ELECTROLYTE
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Electrolyte injection line where electrolyte solution is injected into folded battery cells under vacuum pressure. VOC emissions are controlled by eight (8) activated carbon (AC) towers.

Emission Unit: EUELECFILL1, EUELECFILL2, EUELECFILL3, EUELECFILL4, EUELECFILL5

POLLUTION CONTROL EQUIPMENT

Eight (8) AC towers.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. VOC	3.46 tpy	12-month rolling time period as determined at the end of each calendar month	FG-ELECTROLYTE	SC VI.3	R 336.1205, R 336.1225, R 336.1702(a)

II. MATERIAL LIMIT(S)

1. The permittee shall not use more than 64,060,000 pounds of electrolyte solution in FG-ELECTROLYTE per 12-month rolling time period, as determined at the end of each calendar month. **(R 336.1225, R 336.1702(a))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FG-ELECTROLYTE unless the AC towers are installed, maintained, and operated in a satisfactory manner. Satisfactory operation of each AC tower includes a minimum control efficiency of 98 percent (by weight). **(R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

2. The permittee shall not operate FG-ELECTROLYTE unless a malfunction abatement plan (MAP), as described in Rule 911(2), for the AC towers is implemented and maintained. The MAP shall, at a minimum, specify the following:

   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
   c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

   If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed, or upon request from the District Supervisor. The permittee shall submit the MAP, and any amendments to the MAP, to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall

implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within one year after commencement of initial startup, the permittee shall test, at owner's expense and in accordance with Department requirements, a representative AC tower in FG-ELECTROLYTE to verify the control efficiency. The result of the test shall determine an acceptable outlet concentration that will meet a minimum 98% control efficiency. Testing shall be performed using an approved EPA Method approved by the AQD supervisor. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1225, R 336.1702, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

2. The permittee shall test, in a satisfactory manner, each AC tower for breakthrough of the carbon at least once every month. Breakthrough is considered to occur when the amount of VOCs in the sampled carbon is greater than or equal to 20 percent of the virgin carbon weight. If breakthrough is detected, the permittee shall not operate the associated AC tower until the carbon has been replaced. Upon written approval of the AQD District Supervisor, the permittee may change the testing frequency. **(R 336.1702, R 336.1910)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall record the amount of electrolyte solution used in FG-ELECTROLYTE on a monthly basis. The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, and make them available to the Department upon request. **(R 336.1225, R 336.1702(a))**

2. The permittee shall record the amount of electrolyte solution, in pounds, processed per 12-month rolling time period, as determined at the end of each calendar month. The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, and make them available to the Department upon request. **(R 336.1702(a))**

3. The permittee shall calculate the VOC emission rate from FG-ELECTROLYTE monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, 336.1702)**

4. The permittee shall monitor, in a satisfactory manner acceptable to the AQD District Supervisor, the AC towers for breakthrough of the first canister (i.e. "first stage contactor") at least once per week. If breakthrough is detected, the permittee shall not operate the system until the carbon in the first stage contactor has been replaced and the operating order of the vessels has been reversed. The permittee shall evaluate "breakthrough" via Tedlar bag sampling followed by laboratory analysis, by use of a hand-held instrument capable of detecting concentrations at the levels expected, or equivalent. A reading at the point between the first and second contactors that is 20 percent of the influent concentration into the first contactor is considered to be "breakthrough". The permittee shall measure the influent concentration upon start-up of the system, and subsequently after each carbon change. The permittee shall use the most recently measured influent concentration to establish "breakthrough." The permittee shall submit any request for a change in the monitoring frequency the AQD District Supervisor for review and approval. **(R 336.1225, R 336.1702, R 336.1910)**

5. The permittee shall keep, in a satisfactory manner, all records of calibration, maintenance, and carbon replacement for the AC towers on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702(a), R 336.1910)**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of FG-ELECTROLYTE. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVELECACTOWER1	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVELECACTOWER2	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVELECACTOWER3	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
4. SVELECACTOWER4	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
5. SVELECACTOWER5	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
6. SVELECACTOWER6	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
7. SVELECACTOWER7	26	20	R 336.1225, 40 CFR 52.21(c) & (d)
8. SVELECACTOWER8	26	20	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

NA

FG-BOILERS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Hot oil, steam, and hot water boilers with low NO_x burners.

Emission Unit: EUHOBOIL1, EUHOBOIL2, EUHOBOIL3, EUHOBOIL4, EUHOBOIL5, EUHOBOIL6, EUHOBOIL7, EUHOBOIL8, EUHOBOIL9, EUHOBOIL10, EUSTEAMBOIL1, EUSTEAMBOIL2, EUSTEAMBOIL3, EUHWBOIL1, EUHWBOIL2, EUHWBOIL3

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NO_x	9.54 pph	Hourly	All hot oil boilers (EUHOBOIL1 through EUHOBOIL10)	SC V.1	40 CFR 52.21(c) & (d)
2. NO_x	41.78 tpy	12-month rolling period as determined at the end of each calendar month	All hot oil boilers (EUHOBOIL1 through EUHOBOIL10)	SC VI.2	40 CFR 52.21(c) & (d)
3. PM2.5	2.00 pph	Hourly	All hot oil boilers (EUHOBOIL1 through EUHOBOIL10)	SC V.1	40 CFR 52.21(c) & (d)
4. PM2.5	8.57 tpy	12-month rolling period as determined at the end of each calendar month	All hot oil boilers (EUHOBOIL1 through EUHOBOIL10)	SC VI.2	40 CFR 52.21(c) & (d)

II. MATERIAL LIMIT(S)

1. The permittee shall burn only natural gas in each boiler in FG-BOILERS. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d), 40 CFR Part 60 Subpart Dc)**

2. The natural gas usage for FG-BOILERS shall not exceed 2,596 MMscf per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205, R 336.1225, R 336.1702(a), 40 CFR 52.21)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The maximum design heat input capacity for FG-BOILERS shall not exceed 301.6 MMBTU per hour on a fuel heat input basis. **(R 336.1205, R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 180 days of initial startup, the permittee shall verify NO_x and PM2.5 emission rates from a respective hot oil boiler (EUHOBOIL1 through EUHOBOIL10) by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in the table below.

Pollutant	Test Method Reference
NO_x	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM2.5	40 CFR Part 51, Appendix M

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1224, R 336.1225, R 336.1702, R 336.1910)**

2. The permittee shall calculate the NO_x and PM2.5 emission rates from FG-BOILERS for each calendar month and 12-month rolling time period, using fuel usage records and an emission factor (AP-42, manufacturer's or test data) that is approved by the AQD District Supervisor. **(40 CFR 52.21(c) & (d))**

3. The permittee shall record, in a satisfactory manner, the natural gas usage rate, in MMscf, for FG-BOILERS on a monthly basis. **(R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d), 40 CFR 60.48c(g))**

4. The permittee shall keep, in a satisfactory manner, all monthly fuel use records for FG-BOILERS, as required by SC VI.1, on file at the facility and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d), 40 CFR 60.48c(g))**

5. The permittee shall monitor emissions, operating information, and keep records for each hot oil boiler in FG-BOILERS in accordance with the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Dc. The permittee shall make all records available to the Department upon request. **(40 CFR Part 60 Subparts A & Dc)**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation,

construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of FG-BOILERS. **(R 336.1201(7)(a))**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVHOBOIL1	72	70	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVHOBOIL2	72	70	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVSTEAMBOIL1	16	23	R 336.1225, 40 CFR 52.21(c) & (d)
4. SVSTEAMBOIL2	16	23	R 336.1225, 40 CFR 52.21(c) & (d)
5. SVSTEAMBOIL3	16	23	R 336.1225, 40 CFR 52.21(c) & (d)
6. SVHWBOIL1	14	62	R 336.1225, 40 CFR 52.21(c) & (d)
7. SVHWBOIL2	14	62	R 336.1225, 40 CFR 52.21(c) & (d)
8. SVHWBOIL3	14	62	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Dc, as they apply to each boiler in FG-BOILERS. **(40 CFR Part 60 Subparts A & Dc)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FG-FIREPUMPS
EMISSION UNIT CONDITIONS

DESCRIPTION

Two (2) 305 HP (227.5 kilowatts (kW)) diesel-fueled fire pumps for emergency use only.

Emission Unit ID: EUFIREPUMP1, EUFIREPUMP2

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NMHC + NOx	4.0 g/kW-hr	Hourly[A]	Each engine in FG-FIREPUMPS	SC V.1 SC VI.2	40 CFR 60.4205, Table 4 of 40 CFR Part 60, Subpart IIII
2. CO	3.5 g/kW-hr	Hourly[A]	Each engine in FG-FIREPUMPS	SC V.1 SC VI.2	40 CFR 60.4205, Table 4 of 40 CFR Part 60, Subpart IIII
3. PM	0.20 g/kW-hr	Hourly[A]	Each engine in FG-FIREPUMPS	SC V.1 SC VI.2	40 CFR 60.4205, Table 4 of 40 CFR Part 60, Subpart IIII

g/kW-hr = grams per kilowatt-hour
[A]These emission limits are for certified engines; if testing becomes required to demonstrate compliance, then the tested values must be compared to the Not to Exceed (NTE) requirements determined through 40 CFR 60.4212(c).

II. MATERIAL LIMIT(S)

1. The permittee shall burn only diesel fuel in each engine in FG-FIREPUMPS with a maximum sulfur content of 15 ppm (0.0015 percent) by weight and a minimum Cetane index of 40 or a maximum aromatic content of 35 volume percent. **(R 336.1205(1)(a) & (3), 40 CFR 60.4207, 40 CFR 1090.305)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate each engine in FG-FIREPUMPS for more than 500 hours per year based on a 12-month rolling time period as determined at the end of each calendar month. The 500 hours includes the hours for the purpose of necessary maintenance checks and readiness testing as described in SC III.2. **(R 336.1205(1)(a) & (3)), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))**

2. The permittee may operate each engine in FG-FIREPUMPS for no more than 100 hours per calendar year 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, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per calendar year. **(40 CFR 60.4211(f)(2))**

3. The permittee may operate each engine in FG-FIREPUMPS up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted as part of the 100 hours per calendar year provided for maintenance and testing as provided in 40 CFR 60.4211(f)(2). Except as provided in 40 CFR 60.4211(f)(3)(i), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. **(40 CFR 60.4211(f)(3))**

4. If the permittee purchased a certified engine, according to procedures specified in 40 CFR Part 60, Subpart IIII, for the same model year, the permittee shall meet the following requirements for each engine in FG-FIREPUMPS:

   a) Operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions,

   b) Change only those emission-related settings that are permitted by the manufacturer, and

   c) Meet the requirements as specified in 40 CFR 1068, as they apply to the engine.

   If you do not operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine. **(40 CFR 60.4211(a) & (c))**

5. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan for each engine in FG-FIREPUMPS and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 60.4211(g)(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each engine in FG-FIREPUMPS with non-resettable hours meters to track the operating hours. **(R 336.1205(1)(a) & (3), R 336.1225, 40 CFR 60.4209)**

2. The maximum rated power output of each engine in FG-FIREPUMPS shall not exceed 550 HP (410.1 kW), as certified by the equipment manufacturer. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 60.4202, 40 CFR 60.4205, 40 CFR 1039, 40 CFR 1042)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. If any engine in FG-FIREPUMPS is not installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee must demonstrate compliance as follows:

   a) Conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.

   b) If a performance test is required, the performance tests shall be conducted according to need to pick one or use both of the following requirements depending on the engine cylinder size 40 CFR 60.4212.

   c) Conduct subsequent performance testing every 8,760 hours of engine operation or every 3 years thereafter, whichever comes first, to demonstrate compliance with the applicable emission standards.

   No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(40 CFR 60.4211(g)(3), 40 CFR 60.4212)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (3), R 336.1225, 40 CFR 52.21 (c) & (d), 40 CFR Part 60, Subpart IIII)**

2. The permittee shall keep, in a satisfactory manner, the following records for each engine in FG-FIREPUMPS:

   a) For each certified engine: The permittee shall keep records of the manufacturer certification documentation.

   b) For each uncertified engine: The permittee shall keep records of testing required in SC V.1.

   The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4211)**

3. The permittee shall keep, in a satisfactory manner, the following records of maintenance activity for each engine in FG-FIREPUMPS:

   a) For each certified engine: The permittee shall keep records of the manufacturer's emission-related written instructions, and records demonstrating that the engine has been maintained according to those instructions, as specified in SC III.4.

   b) For each uncertified engine: The permittee shall keep records of a maintenance plan, as required by SC III.5, and maintenance activities.

   The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4211)**

4. The permittee shall monitor and record, the total hours of operation for each engine in FG-FIREPUMPS on a monthly and 12-month rolling time period basis, and the hours of operation during emergency and non-emergency service that are recorded through the non-resettable hour meter for each engine in FG-FIREPUMPS, on a calendar year basis, in a manner acceptable to the AQD District Supervisor. The permittee shall document how many hours are spent for emergency operation of each engine in FG-FIREPUMPS, including what classified the operation as emergency and how many hours are spent for non-emergency operation. **(R 336.1205(1)(a) & (3), 40 CFR 60.4211, 40 CFR 60.4214)**

5. The permittee shall keep, in a satisfactory manner, fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil used in FG-FIREPUMPS, demonstrating that the fuel meets the requirement of 40 CFR 1090.305. The certification or test data shall include the name of the oil supplier or laboratory, the sulfur content, and cetane index or aromatic content of the fuel oil. **(R 336.1205(1)(a) & (3)**, **40 CFR 60.4207(b), 40 CFR 1090.305)**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of each engine of FG-FIREPUMPS. **(R 336.1201(7)(a))**

2. The permittee shall submit a notification specifying whether each engine of FG-FIREPUMPS will be operated in a certified or a non-certified manner to the AQD District Supervisor, in writing, within 30 days following the initial startup of the engine and within 30 days of switching the manner of operation. **(40 CFR Part 60, Subpart IIII)**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVFIREPUMP1	6	6	R 336.1225, 40 CFR 52.21 (c) & (d)
2. SVFIREPUMP2	6	6	R 336.1225, 40 CFR 52.21 (c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and IIII, as they apply to each engine of FG-FIREPUMPS. **(40 CFR Part 60, Subparts A & IIII, 40 CFR 63.6590(c))**

2. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and ZZZZ, as they apply to each engine in FG-FIREPUMPS. **(40 CFR Part 63, Subparts A & ZZZZ, 40 CFR 63.6585)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FG-EMGENS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Four (4) 324 HP (238.3 kilowatts (kW)) diesel-fueled emergency engines with a model year of 2011 or later, and a displacement of 1.12 liters/cylinder.

Emission Unit: EUEMGEN1, EUEMGEN2, EUEMGEN3, EUEMGEN4

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NMHC + NOx	4.0 g/kW-hr	Hourly[A]	Each engine in FG-EMGENS	SC V.1 SC VI.2	40 CFR 60.4202, Table 3 to Appendix I of 40 CFR 1039
2. CO	3.5 g/kW-hr	Hourly[A]	Each engine in FG-EMGENS	SC V.1 SC VI.2	40 CFR 60.4202, Table 3 to Appendix I of 40 CFR 1039
3. PM	0.20 g/kW-hr	Hourly[A]	Each engine in FG-EMGENS	SC V.1 SC VI.2	40 CFR 60.4202, Table 3 to Appendix I of 40 CFR 1039

g/kW-hr = grams per kilowatt-hour

[A]These emission limits are for certified engines; if testing becomes required to demonstrate compliance, then the tested values must be compared to the Not to Exceed (NTE) requirements determined through 40 CFR 60.4212(c).

II. MATERIAL LIMIT(S)

1. The permittee shall burn only diesel fuel in each engine in FG-EMGENS with a maximum sulfur content of 15 ppm (0.0015 percent) by weight and a minimum Cetane index of 40 or a maximum aromatic content of 35 volume percent. **(R 336.1205(1)(a) & (3), 40 CFR 60.4207, 40 CFR 1090.305)**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate each engine in FG-EMGENS for more than 500 hours per year based on a 12-month rolling time period as determined at the end of each calendar month. The 500 hours includes the hours for the purpose of necessary maintenance checks and readiness testing as described in SC III.2. **(R 336.1205(1)(a) or (3), R 336.1225, R 336.1702(a), 40 CFR 52.21(c) & (d))**

2. The permittee may operate each engine in FG-EMGENS for no more than 100 hours per calendar year 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, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per calendar year. **(40 CFR 60.4211(f)(2))**

3. The permittee may operate each engine in FG-EMGENS up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted as part of the 100 hours per calendar year provided for maintenance and testing as provided in 40 CFR 60.4211(f)(2). Except as provided in 40 CFR 60.4211(f)(3)(i), the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. **(40 CFR 60.4211(f)(3))**

4. If the permittee purchased a certified engine, according to procedures specified in 40 CFR Part 60, Subpart IIII, for the same model year, the permittee shall meet the following requirements for each engine in FG-EMGENS:

   a) Operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions,

   b) Change only those emission-related settings that are permitted by the manufacturer, and

   c) Meet the requirements as specified in 40 CFR 1068, as they apply to the engine.

   If you do not operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine. **(40 CFR 60.4211(a) & (c))**

5. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan for each engine in FG-EMGENS and shall, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 60.4211(g)(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain each engine in FG-EMGENS with non-resettable hours meters to track the operating hours. **(R 336.1205(1)(a) & (3), R 336.1225, 40 CFR 60.4209)**

2. The maximum rated power output of each engine in FG-EMGENS shall not exceed 389 HP (290 kW), as certified by the equipment manufacturer. **(R 336.1205(1)(a) & (3), R 336.1225, R 336.1702(a), 40 CFR 60.4202, 40 CFR 60.4205, 40 CFR 1039, 40 CFR 1042)**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. If the any engine in FG-EMGENS is not installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee must demonstrate compliance as follows:

   a) Conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.

   b) If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4212.

   No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(40 CFR 60.4211(g)(2), 40 CFR 60.4212)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any

monitoring/recordkeeping special condition. **(R 336.1205(1)(a)&(3), R 336.1225, 40 CFR 52.21 (c) & (d), 40 CFR Part 60, Subpart IIII)**

2. The permittee shall keep, in a satisfactory manner, the following records for each engine in FG-EMGENS:

   a) For each certified engine: The permittee shall keep records of the manufacturer certification documentation.

   b) For each uncertified engine: The permittee shall keep records of testing required in SC V.1.

   The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4211)**

3. The permittee shall keep, in a satisfactory manner, the following records of maintenance activity for each engine in FG-EMGENS:

   a) For each certified engine: The permittee shall keep records of the manufacturer's emission-related written instructions, and records demonstrating that the engine has been maintained according to those instructions, as specified in SC III.4.

   b) For each uncertified engine: The permittee shall keep records of a maintenance plan, as required by SC III.5, and maintenance activities.

   The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4211)**

4. The permittee shall monitor and record, the total hours of operation for each engine in FG-EMGENS on a monthly and 12-month rolling time period basis, and the hours of operation during emergency and non-emergency service that are recorded through the non-resettable hour meter for each engine in FG-EMGENS, on a calendar year basis, in a manner acceptable to the AQD District Supervisor. The permittee shall document how many hours are spent for emergency operation of each engine in FG-EMGENS, including what classified the operation as emergency and how many hours are spent for non-emergency operation. **(R 336.1205(1)(a) & (3), 40 CFR 60.4211, 40 CFR 60.4214)**

5. The permittee shall keep, in a satisfactory manner, fuel supplier certification records or fuel sample test data, for each delivery of diesel fuel oil used in FG-EMGENS, demonstrating that the fuel meets the requirement of 40 CFR 1090.305. The certification or test data shall include the name of the oil supplier or laboratory, the sulfur content, and cetane index or aromatic content of the fuel oil. **(R 336.1205(1)(a) & (3), 40 CFR 60.4207(b), 40 CFR 1090.305)**

VII. REPORTING

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of each engine of FG-EMGENS. **(R 336.1201(7)(a))**

2. The permittee shall submit a notification specifying whether each engine of FG-EMGENS will be operated in a certified or a non-certified manner to the AQD District Supervisor, in writing, within 30 days following the initial startup of the engine and within 30 days of switching the manner of operation. **(40 CFR Part 60, Subpart IIII)**

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVEMGEN1	6	10	R 336.1225, 40 CFR 52.21 (c) & (d)
2. SVEMGEN2	6	10	R 336.1225, 40 CFR 52.21 (c) & (d)
3. SVEMGEN3	6	10	R 336.1225, 40 CFR 52.21 (c) & (d)
4. SVEMGEN4	6	10	R 336.1225, 40 CFR 52.21 (c) & (d)

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60, Subparts A and IIII, as they apply to each engine of FG-EMGENS. **(40 CFR Part 60, Subparts A & IIII, 40 CFR 63.6590(c))**

2. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63, Subparts A and ZZZZ, as they apply to each engine of FG-EMGENS. **(40 CFR Part 63, Subparts A & ZZZZ, 40 CFR 63.6585)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FG-TACS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Process units affected by emission limits under R 336.1225(1).

Emission Unit: EUANOMIX1, EUANOMIX2, EUANOMIX3, EUANOMIX4, EUANOMIX5, EUCATMIX1, EUCATMIX2, EUCATMIX3, EUCATMIX4, EUCATMIX5, EUANONOTCH1, EUANONOTCH2, EUANONOTCH3, EUANONOTCH4, EUANONOTCH5, EUCATNOTCH1, EUCATNOTCH2, EUCATNOTCH3, EUCATNOTCH4, EUCATNOTCH5, EUELECFILL1, EUELECFILL2, EUELECFILL3, EUELECFILL4, EUELECFILL5, EUASSEMBLYPKG1, EUASSEMBLYPKG2, EUASSEMBLYPKG3, EUASSEMBLYPKG4, EUASSEMBLYPKG5, EUDEGAS, EUELECTANKS

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Lithium hexafluorophosphate (CAS No. 21324-40-3)	0.755 tpy[1]	12-month rolling period as determined at the end of each calendar month	FG-TACS	SC VI.2	R 336.1225
2. Cobalt (CAS No. 7440-48-4)	6.69 lb/yr[1]	12-month rolling period as determined at the end of each calendar month	FG-TACS	SC VI.3	R 336.1225

*Lithium hexafluorophosphate emissions are limited by the amount of electrolyte solution processed in EUDEGAS and FG-ELECTROLYTE. Cobalt emissions are limited by manufacturer's design, including flow rate and concentration, of dust collectors in FG-MIXING, FG-NOTCHING and FG-ASSEMBLY.

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205, R 336.1224, R 336.1225)**

2. The permittee shall calculate the lithium hexafluorophosphate emission rates from FG-TACS monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[1] **(R 336.1225)**

3. The permittee shall calculate the cobalt emission rates from FG-TACS monthly, for the preceding 12-month rolling time period, using a method acceptable to the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[1] **(R 336.1225)**

4. The permittee shall maintain a current listing from the manufacturer of the chemical composition of the electrolyte solution and the anode and cathode active materials, including the weight percent of each component. The data may consist of Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205, R 336.1224, R 336.1225, R 336.1702)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).