

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

January 15, 2020

PERMIT TO INSTALL
292-07B

ISSUED TO
Van Elderen, Inc.

LOCATED AT
899 East Allegan Street
Martin, Michigan

IN THE COUNTY OF
Allegan

STATE REGISTRATION NUMBER
N5140

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 12, 2019	
DATE PERMIT TO INSTALL APPROVED: January 15, 2020	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 ₂ e	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 ₂ S	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 conditions 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))	Flexible Group ID
EUDLVSPRAYDRY	Spray drying operation consisting of a "DeLaval" spray dryer that is vented to the primary cyclones. The cyclones recover product and vent to a baghouse or wet particle scrubber and vents to a regenerative thermal oxidizer (RTO) or packed tower scrubber (PTS) for odor control. The powdered product stream is conveyed by air to the sifter and packaging area.	FG899MAIN
EUMWSPRAYDRY	"Marriot Walker box spray dryer. Air is heated by a direct-fired natural gas burner and is vented to the primary cyclones. The cyclones recover product and vent to a baghouse or wet scrubber which vent to a regenerative thermal oxidizer (RTO) or a packed tower scrubber (PTS) for odor control. The powdered product stream is conveyed by air to the sifter and packaging area.	FG899MAIN
EUFMSPRAYDRY	Spray drying operation consisting of a "Foremost" spray dryer that is vented to six cyclones. The cyclones recover product and vent to a baghouse or wet scrubber which vent to a regenerative thermal oxidizer (RTO) or a packed tower scrubber (PTS) for odor control. The powdered product stream is conveyed by air to the sifter and packaging area.	FG899MAIN
EUFLUIDBED1	Fluid bed dryer/finisher for finishing powdered product. The Fluid bed is vented to a cyclone for product recovery and the Fluid Bed baghouse for additional control before recycling to intake.	FG899MAIN
EUFLUIDBED2	Fluid bed dryer/finisher for finishing powdered product. Fluid Bed is vented to a cyclone for product recovery and then the Fluid Bed baghouse for additional control before recycling to intake.	FG899MAIN
EUROTARYDRYER	Rotary Steam Tube Dryer where raw material is delivered to a mixer and mixed with recirculated dry product. Air is blown through the rotating dryer to transport the evaporated moisture from the raw material as well as assist in movement of material from the dryer. The exhaust air is vented to a cyclone.	FG899MAIN

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.

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
FG899MAIN	Includes the DeLaval Dryer, Foremost Dryer, Marriot Walker, and Rotary Steam Tube Dryer. Product is collected with cyclones for each dryer. Odors are controlled by a regenerative thermal oxidizer (RTO) and a packed tower scrubber (PTS). Process air and a rotary steam tube dryer also exhaust through the same stack. Emissions from each emission unit can go to either piece of pollution control equipment.	EUDLVSPRAYDRY, EUMWSPRAYDRY, EUFMSPRAYDRY, EUFLUIDBED1, EUFLUIDBED2, EUROTARYDRYER

**FG-899MAIN
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Includes the DeLaval Dryer, Foremost Dryer, Marriot Walker, and Rotary Steam Tube Dryer. Product is collected with cyclones for each dryer. Odors are controlled by an Eisenmann regenerative thermal oxidizer (RTO) and a Viron packed tower scrubber (PTS). Process air and a rotary steam tube dryer also exhaust through the same stack. Emissions from each emission unit can go to either piece of pollution control equipment.

Emission Unit: EUDLVSPRAYDRY, EUMWSPRAYDRY, EUFMSPRAYDRY, EUFLUIDBED1, EUFLUIDBED2, EUROTARYDRYER

POLLUTION CONTROL EQUIPMENT

A Regenerative Thermal Oxidizer (RTO) and Packed Tower Scrubber (PTS)

EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	0.05 lb per 1000 lbs of exhaust gas ^a	Hourly	FG-899MAIN	SC VI.3	R 336.1331
^a on a dry gas basis					

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FG-899MAIN unless a malfunction abatement plan (MAP) as described in Rule 911(2), for addressing odors from the RTO and PTS and particulate emissions from the baghouse filter(s) or wet particulate scrubber(s), has been submitted within 60 days of permit issuance, and 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 336.1331, R 336.1910, R 336.1911, 40 CFR 52.21(c) and (d))**

2. The permittee shall keep all doors, windows, etc. of the process building associated with FG-899MAIN are closed while spray drying. The only exception will be during times of entering or exiting the process building, at which times exposure shall be kept to a minimum. **(R 336.1901)**
3. The permittee shall maintain negative pressure in the process building associated with FG-899MAIN during normal operation. This includes, but is not limited to, complying with SC III.2 of FGMAIN899 section while maintaining the treatment building's proper structural integrity. Negative pressure shall be verified using the procedure outlined in Appendix A. **(R 336.1901)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not operate FG-899MAIN unless the RTO is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the RTO requires a minimum VOC destruction efficiency of 95 percent (by weight), and maintaining a minimum temperature of 1400°F and a minimum retention time of 0.5 second. **(R 336.1901, R 336.1910)**
2. The permittee shall not operate FG-899MAIN unless the PTS is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining and operating the scrubber in accordance with the MAP. **(R 336.1901, R 336.1910)**
3. The permittee shall not operate FG-899MAIN unless each respective baghouse or wet particulate scrubber is installed, maintained, and operated in a satisfactory manner. Satisfactory operation includes maintaining and operating the baghouse(s) and/or wet particulate scrubber(s) in accordance with the MAP. **(R 336.1331, R 336.1901, R 336.1910)**

V. TESTING/SAMPLING

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

1. Upon request of the District Supervisor, the permittee shall verify the destruction efficiency of the RTO 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 60, Appendix A. 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 336.1901, R 336.1910)**
2. Upon request of the District Supervisor, the permittee shall verify the collection efficiency of the PTS 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 60, Appendix A. 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 336.1901, 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 and record, in a satisfactory manner, the temperature in the combustion chamber of the thermal oxidizer, on a continuous basis, during operation of FG-899MAIN. Temperature data recording shall consist of measurements made at equally spaced intervals, not to exceed 15 minutes per interval. **(R 336.1901, R 336.1910)**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner devices to monitor and record the following parameters for the packed column scrubber on a continuous basis. The permittee shall keep, in a satisfactory manner, daily records of these operating parameters for FGSPRAYDRY. The permittee shall keep all records on file at the facility and be made available to the Department upon request. **(R 336.1901, R 336.1910)**
 - a) The scrubber recirculated liquid flow rate.
 - b) The scrubber liquid pH.
 - c) The scrubber liquid Oxidation Reduction Potential (ORP) value.
3. The permittee shall monitor, in a satisfactory manner, the operating variables cited in the MAP written for FGMAIN899, as required in SC III.1 of FG-899MAIN section, on a continuous basis. **(R 336.1331, R 336.1901, R 336.1910)**
4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the differential pressures for each baghouse on a continuous basis. **(R 336.1331, R 336.1910)**
5. The permittee shall keep, in a satisfactory manner, weekly records of the operating variables cited in the MAP for FG-899MAIN, as required by SC VI.2 of FG-899MAIN section. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request. **(R 336.1331, R 336.1901, R 336.1910)**
6. The permittee shall keep, in a satisfactory manner, weekly records of the differential pressures of each baghouse in FG-899MAIN, as required by SC VI.3 of FG-899MAIN section. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request. **(R 336.1331, R 336.1901, 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 the Viron PTS and Eisenmann RTO. **(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. SV899MAIN ^a	72	97.5	R 336.1901
2. SVRTO ^b	42	35	R 336.1901
3. SVFMSPRAYDRY ^b	32	70	R 336.1901
^a . These parameters are applicable upon commencement of trial operation of the new Viron PTS and Eisenmann RTO. ^b . These parameters are applicable until commencement of trial operation of the new Viron PTS and Eisenmann RTO and do not apply thereafter.			

IX. OTHER REQUIREMENT(S)

NA

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

APPENDIX A

Protocol for Determining Building Negative Pressure

Van Elderen, Incorporated will demonstrate that the process building meets the criteria of a permanent total enclosure using US EPA's "Procedure T" described in 40 CFR Section 52.741. These criteria are listed as follows:

- a) Any natural draft opening (NDO) shall be at least four (4) equivalent diameters from each odor/PM emitting point.
- b) The total area of all NDOs shall not exceed five (5) percent of the surface area of the enclosure's four walls, floor, and ceiling.
- c) The average facial velocity (FV) of air through all NDOs shall be at least 3,600 m/hr (200 fpm). The direction of air through all NDOs shall be into the building.
- d) All access doors and windows whose areas are not included in the area calculation described in item 2 and are not included in the calculation in item 3 shall be closed during routine operation of the process.
- e) Air emissions must be captured and contained for discharge through a control device.

The demonstration shall be submitted to the Air Quality Division within thirty days from the end of the trial operation period.

Furthermore, Van Elderen, Incorporated shall implement a standard operating procedure which includes the following:

- a) No more than one large bay door shall be open during normal operation.
- b) The main system fan shall be maintained according to vendor's recommendations.
- c) The process building shall be maintained at negative pressure during normal operation.
- d) The main system fan shall continue to run for 30 minutes after spray drying activities have stopped.