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

March 26, 2020

PERMIT TO INSTALL
160-19

ISSUED TO
Dow AgroSciences, LLC

LOCATED AT
701 Washington Street, 954 Building
Midland, Michigan 48674

IN THE COUNTY OF
Midland

STATE REGISTRATION NUMBER
P1028

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 30, 2019**	
DATE PERMIT TO INSTALL APPROVED: **March 26, 2020**	SIGNATURE: Annette Switzer
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 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))	Installation Date / Modification Date	Flexible Group ID
EU05-S1	Aqueous HCl (32%) storage and distribution process at 954 Building. Aqueous HCl is brought in via railcar and offloaded into two storage tanks, V-2126 and V-2127. These tanks can also receive excess 32% HCl that is produced by EU11. Aqueous HCl is loaded into rail cars and trucks from tank nos. V-2126 & V-2127. Vents on the aqueous HCl storage tanks, rail cars, and tank trucks in EU05-S1 are connected to the T-101 Scrubber (SRN P1027) prior to venting to the atmosphere. In some circumstances, the Backup Venturi Scrubber (SRN P1027) is used as a back-up control device if the T-101 Scrubber is down. Tank nos. V-2126 and V-2127 and the tank truck and rail car loading transfer racks are subject to 40 CFR Part 63, Subpart NNNNN. This emission unit was permitted in PTI 160-19.	4/22/04 3/26/20	FGHCLSCRUBBER-S1 (SRN P1027) FGHCLMACT

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.

EU05-S1
EMISSION UNIT CONDITIONS

DESCRIPTION

Aqueous HCl (32%) storage and distribution process at 954 Building.

Aqueous HCl is brought in via railcar and offloaded into two storage tanks, V-2126 and V-2127. These tanks can also receive excess 32% HCl that is produced by EU11.

Aqueous HCl is loaded into rail cars and trucks from tank nos. V-2126 & V-2127. Vents on the aqueous HCl storage tanks, rail cars, and tank trucks in EU05-S1 are connected to the T-101 Scrubber (SRN P1027) prior to venting to the atmosphere. In some circumstances, the Backup Venturi Scrubber (SRN P1027) is used as a back-up control device if the T-101 Scrubber is down.

Tank nos. V-2126 and V-2127 and the tank truck and rail car loading transfer racks are subject to 40 CFR Part 63, Subpart NNNNN.

This emission unit was permitted in PTI 160-19.

Flexible Group ID: FGHCLSCRUBBER-S1 (SRN P1027), FGHCLMACT

POLLUTION CONTROL EQUIPMENT

FGHCLSCRUBBER (SRN P1027)

- T-101 Scrubber: This scrubber receives the exhaust from E-101 Absorber in FGHCLSCRUBBER, which receives process exhaust from the anhydrous HCl distribution system in EU06-S1 (all storage tanks and rail cars and the tank truck unloading facilities) and from the aqueous HCl storage and distribution system in EU05-S1. The design vapor flow rate of the scrubber is 470 SCFM and the absorbing media used is recirculated water (approximately 6% HCl). The T-101 Scrubber vents to Vent No. SVHCLSCRUBBER01.
- Backup Venturi Scrubber: In some circumstances, this scrubber is used as backup to the T-101 Scrubber for exhaust vents from EU05-S1. The scrubbing media of the Backup Venturi Scrubber is water. This scrubber vents to Vent No. SVHCLSCRUBBER02.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not exhaust EU05-S1 emissions from the V-2126 and V-2127 storage tanks to the Backup Venturi Scrubber for more than 240 hours per year, based on a 12-month rolling time period as determined at the end of each calendar month. For this condition, “emissions from the V-2126 and V-2127 storage tanks” includes only the following. **(R 336.1225, R 336.1910)**
   a) Breathing losses
   b) Working losses caused by receiving aqueous HCl from tank trucks or railcars
   c) Working losses caused by receiving liquid HCl product from an HCl production unit, as these terms are used and defined in 40 CFR Part 63, Subpart NNNNN

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall not conduct the activities listed below in EU05-S1 unless the equipment identified below is installed, maintained, and operated in a satisfactory manner. **(R 336.1225, R 336.1910)**

	Activity	Equipment required to be installed, maintained, and operated in a satisfactory manner
	For up to 240 hours per year, as provided in SC III.1	
a)	Receive liquid HCl product* into the V-2126 and V-2127 storage tanks from an HCl production unit*	Backup Venturi Scrubber+
b)	Unload tank trucks or railcars to V-2126 and V-2127 storage tanks	Backup Venturi Scrubber+
c)	Breathing losses from V-2126 and V-2127 storage tanks	Backup Venturi Scrubber+
	At all times other than the 240 hours per year addressed in SC III.1	
d)	Receive liquid HCl product* into the V-2126 and V-2127 storage tanks from an HCl production unit*	T-101 Scrubber++
e)	Unload tank trucks or railcars to V-2126 and V-2127 storage tanks	T-101 Scrubber++
f)	Breathing losses from V-2126 and V-2127 storage tanks	T-101 Scrubber++
	At all times	
g)	Load tank trucks or railcars from V-2126 and V-2127 storage tanks	T-101 Scrubber++

* For this condition, "liquid HCl product" and "HCl production unit" have the meanings given to these terms in 40 CFR Part 63, Subpart NNNNN.

\+ Satisfactory operation of the Backup Venturi Scrubber includes the conditions outlined in FGHCLSCRUBBER (SRN P1027) that apply to the Backup Venturi Scrubber and attaining at least 80 percent removal of HCl.

++ Satisfactory operation of the T-101 Scrubber includes the conditions outlined in FGHCLSCRUBBER (SRN P1027) that apply to the T-101 Scrubber and attaining at least 99.6 percent removal of HCl.

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. Within 60 days after issuance of PTI No. 160-19, the permittee shall submit a plan to the AQD District Supervisor identifying the operating parameters for FGHCLSCRUBBER-S1 (SRN P1027) that shall be obtained from the operator or owner of FGHCLSCRUBBER-S1 (SRN P1027). All operating parameter data in the plan for FGHCLSCRUBBER-S1 (SRN P1027) shall be obtained within 30 days of the end of the month to which it pertains. If the plan fails to provide adequate information to demonstrate the HCl removal required by SC IV.1, the permittee shall amend the plan. The permittee shall also amend the plan within 45 days after receiving notification from the AQD District Supervisor that the plan does not provide adequate information to demonstrate the HCl removal required by SC IV.1. The permittee shall keep the plan and recorded parameter data on file at the facility and make them available to the Department upon request. **(R 336.1910)**

2. The permittee shall record, in a satisfactory manner, the amount of time, in hours, during which EU05-S1 exhausts to the backup venturi scrubber on a monthly basis and shall calculate and record the total hours for the 12-month rolling time period ending that calendar month. **(R 336.1225, 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. SVHCLSCRUBBER01 (T-101 scrubber) [A]	6	60	R 336.1225, 40 CFR 52.21(c)&(d)
2. SVHCLSCRUBBER02 (backup venturi scrubber) [A]	6	60	R 336.1225, 40 CFR 52.21(c)&(d)
[A] This stack's requirements also appear in the conditions for FGHCLSCRUBBER-S1 (SRN P1027).			

IX. OTHER REQUIREMENT(S)

NA

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

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
FGHCLMACT	Emission units and emission control devices subject to the requirements of 40 CFR Part 63, Subpart A (General Provisions) and Subpart NNNNN (National Emission Standard for Hazardous Air Pollutants: Hydrochloric Acid Production). This flexible group was permitted in PTI No. 160-19.	EU05-S1, EU11-S1

FGHCLMACT
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Equipment subject to the requirements of 40 CFR Part 63, Subpart A (General Provisions) and Subpart NNNNN (National Emission Standard for Hazardous Air Pollutants: Hydrochloric Acid Production).

This flexible group was permitted in PTI No. 160-19.

Emission Unit: EU05-S1, EU11-S1

POLLUTION CONTROL EQUIPMENT

- T-101 Scrubber: This scrubber vents to Vent No. SVHCLSCRUBBER01 (SRN P1027).
- Scrubber No. 1 (T-302, EU11) - Packed column caustic scrubber discharging to SV11006.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall set operational parameters based on the minimum or maximum parameter measured during the performance test, as applicable, in accordance with 40 CFR Part 63, Subpart NNNNN, section 63.9020(e). **(40 CFR Part 63, Subpart NNNNN)**

2. The permittee shall report, in the semiannual compliance reports required in SC VII.3, each instance in which an emission limit, work practice standard or operating limit required under this subpart was not met. This includes periods of startup, shutdown, and malfunction. **(40 CFR Part 63, Subpart NNNNN, Section 63.9040(c)-(e))**

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 comply with the applicable parametric monitoring requirements of 40 CFR Part 63, Subpart NNNNN, Sections 63.9025 (What are my monitoring installation, operation, and maintenance requirements?), 63.9035 (How do I monitor and collect data to demonstrate continuous compliance?), and Table 5 (Continuous Compliance with Emission Limitations and Work Practice Standards). **(40 CFR Part 63, Subpart NNNNN)**

2. The permittee shall prepare an equipment Leak Detection and Repair (LDAR) plan that describes in detail the measures that will be put in place to detect leaks and repair them in a timely fashion; and operate at all times according to this plan. **(40 CFR Part 63, Subpart NNNNN, Table 1)**

3. The permittee shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart NNNNN as referenced in Sections 63.9035 (How do I monitor and collect data to demonstrate continuous compliance?), 63.9055 (What records must I keep?) and 63.9060 (In what form and how long must I keep my records?). **(40 CFR Part 63, Subpart NNNNN)**

VII. REPORTING

1. A Notification of Performance Test must be submitted at least 60 days before the test is scheduled to begin. **(40 CFR Part 63, Subpart A, Sections 63.7(b), (c), 63.9(e); 40 CFR Part 63, Subpart NNNNN, Sections 63.9045(a) and (d))**

2. A request to use alternative monitoring parameters, request to use an alternative to the relative accuracy test, or request for extension of compliance must be submitted, if desired, according to 40 CFR Part 63, Subpart A, Sections 63.8(f)(4), (f)(6), and 63.9(c), respectively. **(40 CFR Part 63, Subpart A, Sections 63.8(f)(4) & (6), and 63.9(c); 40 CFR Part 63, Subpart NNNNN, Section 63.9045(a))**

3. Semiannual Compliance Reports may be submitted either on January 31 and July 31 of each year, in accordance with 63.9050(b)(1)-(4), or on March 15 and September 15 of each year, in accordance with 63.9050(b)(5). The compliance report must include the information in 63.9050(c) through (e). **(40 CFR Part 63, Subpart NNNNN, Section 63.9050 and Table 6)**

4. A report must be submitted within 2 working days (and a follow-up report within 7 days) for each startup, shutdown, or malfunction during the reporting period that is not consistent with your startup, shutdown, and malfunction plan. This data must also be submitted in the semiannual compliance report. **(40 CFR Part 63, Subpart NNNNN, Section 63.9050(f) and Table 6)**

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:

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subparts A (General Provisions). The applicable sections of Subpart A are listed in Table 7 of Subpart NNNNN. **(40 CFR Part 63, Subparts A & NNNNN)**

2. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart NNNNN (Hydrochloric Acid Production MACT). The applicable sections of Subpart NNNNN may include: **(40 CFR Part 63, Subpart NNNNN)**
   a) 63.8980 What is the purpose of this subpart?
   b) 63.8985 Am I subject to this subpart?
   c) 63.8990 What parts of my plant does this subpart cover?
   d) 63.8995 When do I have to comply with this subpart?
   e) 63.9000 What emission limitations and work practice standards must I meet?
   f) 63.9005 What are my general requirements for complying with this subpart?
   g) 63.9010 By what date must I conduct performance tests?
   h) 63.9015 When must I conduct subsequent performance tests?
   i) 63.9020 What performance tests and other procedures must I use?
   j) 63.9025 What are my monitoring installation, operation, and maintenance requirements?
   k) 63.9030 How do I demonstrate initial compliance with the emission limitations and work practice standards?

l) 63.9035 How do I monitor and collect data to demonstrate continuous compliance?
m) 63.9040 How do I demonstrate continuous compliance with the emission limitations and work practice standards?
n) 63.9045 What notifications must I submit and when?
o) 63.9050 What reports must I submit and when?
p) 63.9055 What records must I keep?
q) 63.9060 In what form and how long must I keep my records?
r) 63.9065 What parts of the General Provisions apply to me?
s) 63.9070 Who implements and enforces this subpart?
t) 63.9075 What definitions apply to this subpart?

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