MINNESOTA POLLUTION CONTROL AGENCY

Air Individual Permit
State Permit
14100076-101

Permittee: **Northern Metals LLC**

Facility name: **Northern Metals Recycling - Becker**
13196 Hancock St SE
Becker, MN 55308
Sherburne County

Expiration date: Non-expiring Permit

State Permit: June 14, 2018

Permit characteristics: State; Limits to avoid Part 70/ Limits to avoid NSR; Limits to avoid NSR

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the submittals listed in the Permit Applications Table.

This permit authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in the permit. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Unless otherwise indicated, all the Minnesota rules cited as the origin of the permit terms are incorporated into the State Implementation Plan (SIP) under 40 CFR § 52.1220 and as such are enforceable by EPA Administrator or citizens under the Clean Air Act.

Signature: Carolina Espejel-Schutt

This document has been electronically signed.

for Don Smith, P.E., Manager
Air Quality Permits Section
Industrial Division

for the Minnesota Pollution Control Agency

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1. Permit applications table

Title description	Application receipt date	Action number
State Air Permit Application	08/01/2017	14100076-101
State Air Permit Application – Supplemental Information	04/13/2018	14100076-101

2. Where to send submittals

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Chief Air Enforcement
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by Minn. R. 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Send any application for a permit or permit amendment to:

Fiscal Services – 6th Floor
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Document Coordinator notices of:

a. Accumulated insignificant activities
b. Installation of control equipment
c. Replacement of an emissions unit, and
d. Changes that contravene a permit term

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator Industrial Division Minnesota Pollution Control Agency 520 Lafayette Road North St. Paul, Minnesota 55155-4194	**Or**	Email a signed and scanned PDF copy to: submitstacktest.pca@state.mn.us *(for submittals related to stack testing)* AQRoutineReport.PCA@state.mn.us *(for other compliance submittals)* (See complete email instructions in "Routine Air Report Instructions Letter" at http://www.pca.state.mn.us/nwqh472.)

3. Facility description

The Northern Metals Recycling - Becker (facility) is located at 13196 Hancock St SE in Becker, MN, Sherburne County, Minnesota.

Northern Metals Recycling - Becker is a proposed scrap metal recycling facility. The facility proposes to operate a shredder, a metal recovery plant (MRP), an end-of-life vehicle (ELV) process, and a community metals receiving center. The main sources of air emissions are the shredder and MRP processes and fugitive dust from paved roads and material handling. The shredder and MRP process will be enclosed in buildings and controlled by particulate matter control devices. Fugitive dust will be mitigated by sweeping, watering and other best management practices laid out in the facility's fugitive dust control plan.

4. Summary of subject items

SI ID: Description	Relationship Type	Related SI ID: Description
TFAC 1:		
ACTV 1: All IAs		
COMG 1: Ferrous Building Equipment	has members	EQUI 3, EQUI 4, EQUI 5, EQUI 6, EQUI 12, EQUI 13, EQUI 14, EQUI 15, EQUI 16, EQUI 17, EQUI 18, EQUI 19, EQUI 20, EQUI 23, EQUI 25, EQUI 91, EQUI 105, EQUI 106, EQUI 107, EQUI 108, EQUI 109, EQUI 110, EQUI 111
COMG 2: Metal Recovery Plant	has members	EQUI 26, EQUI 27, EQUI 28, EQUI 29, EQUI 32, EQUI 34, EQUI 37, EQUI 38, EQUI 39, EQUI 40, EQUI 43, EQUI 44, EQUI 46, EQUI 49, EQUI 50, EQUI 51, EQUI 52, EQUI 53, EQUI 55, EQUI 56, EQUI 59, EQUI 60, EQUI 61, EQUI 62, EQUI 63, EQUI 64, EQUI 65, EQUI 66, EQUI 67, EQUI 68, EQUI 69, EQUI 70, EQUI 71, EQUI 72, EQUI 73, EQUI 74, EQUI 75, EQUI 76, EQUI 77, EQUI 78, EQUI 79, EQUI 80, EQUI 81, EQUI 82, EQUI 83, EQUI 84, EQUI 85, EQUI 86, EQUI 87, EQUI 88, EQUI 89, EQUI 90, EQUI 92, EQUI 93, EQUI 94, EQUI 95, EQUI 96, EQUI 97, EQUI 98, EQUI 99, EQUI 100, EQUI 101, EQUI 102, EQUI 103, EQUI 104, EQUI 105, EQUI 112, EQUI 113, EQUI 114, EQUI 115, EQUI 116, EQUI 117, EQUI 118, EQUI 119, EQUI 120, EQUI 121, EQUI 122, EQUI 123, EQUI 124, EQUI 125
COMG 3: Shredder Control Equipment	has members	TREA 1, TREA 2, TREA 3
COMG 4: Control Equipment for Ferrous Building Equipment	has members	TREA 2, TREA 3, TREA 4
COMG 5: Shredder Building Equipment	has members	EQUI 2, EQUI 3
EQUI 2: Shredder	sends to	STRU 19: Combined Stack
EQUI 2: Shredder	is controlled by	TREA 1: Cyclone - Shredder
EQUI 2: Shredder	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 2: Shredder	is	TREA 3: Fabric

SI ID: Description	Relationship Type	Related SI ID: Description
	controlled by	Filter - Shredder
EQUI 2: Shredder	is controlled by	TREA 8: Thermal Oxidizer
EQUI 3: UMO	sends to	STRU 19: Combined Stack
EQUI 3: UMO	is controlled by	TREA 1: Cyclone - Shredder
EQUI 3: UMO	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 3: UMO	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 3: UMO	is controlled by	TREA 8: Thermal Oxidizer
EQUI 4: Poker Picker	sends to	STRU 19: Combined Stack
EQUI 4: Poker Picker	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 4: Poker Picker	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 4: Poker Picker	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 4: Poker Picker	is controlled by	TREA 8: Thermal Oxidizer
EQUI 5: Magstand	sends to	STRU 19: Combined Stack
EQUI 5: Magstand	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 5: Magstand	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 5: Magstand	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 5: Magstand	is controlled by	TREA 8: Thermal Oxidizer
EQUI 6: Z-Box	sends to	STRU 19: Combined Stack
EQUI 6: Z-Box	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 6: Z-Box	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 6: Z-Box	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 6: Z-Box	is controlled by	TREA 8: Thermal Oxidizer
EQUI 12: FEC001	sends to	STRU 19: Combined Stack
EQUI 12: FEC001	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 12: FEC001	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 12: FEC001	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 12: FEC001	is controlled by	TREA 8: Thermal Oxidizer
EQUI 13: FEC002	sends to	STRU 19: Combined Stack
EQUI 13: FEC002	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 13: FEC002	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 13: FEC002	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 13: FEC002	is controlled by	TREA 8: Thermal Oxidizer

SI ID: Description	Relationship Type	Related SI ID: Description
EQUI 14: FEC003	sends to	STRU 19: Combined Stack
EQUI 14: FEC003	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 14: FEC003	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 14: FEC003	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 14: FEC003	is controlled by	TREA 8: Thermal Oxidizer
EQUI 15: FEC004	sends to	STRU 19: Combined Stack
EQUI 15: FEC004	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 15: FEC004	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 15: FEC004	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 15: FEC004	is controlled by	TREA 8: Thermal Oxidizer
EQUI 16: FEC005	sends to	STRU 19: Combined Stack
EQUI 16: FEC005	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 16: FEC005	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 16: FEC005	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 16: FEC005	is controlled by	TREA 8: Thermal Oxidizer
EQUI 17: FEC006	sends to	STRU 19: Combined Stack
EQUI 17: FEC006	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 17: FEC006	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 17: FEC006	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 17: FEC006	is controlled by	TREA 8: Thermal Oxidizer
EQUI 18: FEC007	sends to	STRU 19: Combined Stack
EQUI 18: FEC007	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 18: FEC007	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 18: FEC007	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 18: FEC007	is controlled by	TREA 8: Thermal Oxidizer
EQUI 19: FEC008	sends to	STRU 19: Combined Stack
EQUI 19: FEC008	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 19: FEC008	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 19: FEC008	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 19: FEC008	is controlled by	TREA 8: Thermal Oxidizer
EQUI 20: FEC009		
EQUI 23: FEC010	sends to	STRU 19: Combined Stack

SI ID: Description	Relationship Type	Related SI ID: Description
EQUI 23: FEC010	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 23: FEC010	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 23: FEC010	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 23: FEC010	is controlled by	TREA 8: Thermal Oxidizer
EQUI 25: FEC014	sends to	STRU 19: Combined Stack
EQUI 25: FEC014	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 25: FEC014	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 25: FEC014	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 25: FEC014	is controlled by	TREA 8: Thermal Oxidizer
EQUI 26: Creep Feeder	sends to	STRU 19: Combined Stack
EQUI 26: Creep Feeder	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 27: Tumbleback	sends to	STRU 19: Combined Stack
EQUI 27: Tumbleback	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 28: Screen #1	sends to	STRU 19: Combined Stack
EQUI 28: Screen #1	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 29: Trommel	sends to	STRU 19: Combined Stack
EQUI 29: Trommel	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 32: SMB #1	sends to	STRU 19: Combined Stack
EQUI 32: SMB #1	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 34: SMB #2	sends to	STRU 19: Combined Stack
EQUI 34: SMB #2	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 37: ECS #3	sends to	STRU 19: Combined Stack
EQUI 37: ECS #3	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 38: Feeder #2	sends to	STRU 19: Combined Stack
EQUI 38: Feeder #2	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 39: Finder #1	sends to	STRU 19: Combined Stack
EQUI 39: Finder #1	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 40: Sifter #1	sends to	STRU 19: Combined Stack
EQUI 40: Sifter #1	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 43: ECS #4	sends to	STRU 19: Combined Stack
EQUI 43: ECS #4	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 44: Finder #2	sends to	STRU 19: Combined Stack
EQUI 44: Finder #2	is controlled	TREA 7: Fabric Filter - MRP

SI ID: Description	Relationship Type	Related SI ID: Description
	by	
EQUI 46: FE Separator #2	sends to	STRU 19: Combined Stack
EQUI 46: FE Separator #2	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 49: Finder #3	sends to	STRU 19: Combined Stack
EQUI 49: Finder #3	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 50: Sifter #3	sends to	STRU 19: Combined Stack
EQUI 50: Sifter #3	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 51: FE Separator #3	sends to	STRU 19: Combined Stack
EQUI 51: FE Separator #3	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 52: Feeder #4	sends to	STRU 19: Combined Stack
EQUI 52: Feeder #4	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 53: ECS #6	sends to	STRU 19: Combined Stack
EQUI 53: ECS #6	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 55: Sifter #4	sends to	STRU 19: Combined Stack
EQUI 55: Sifter #4	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 56: FE Separator #4	sends to	STRU 19: Combined Stack
EQUI 56: FE Separator #4	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 59: NFC001	sends to	STRU 19: Combined Stack
EQUI 59: NFC001	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 60: NFC002	sends to	STRU 19: Combined Stack
EQUI 60: NFC002	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 61: NFC003	sends to	STRU 19: Combined Stack
EQUI 61: NFC003	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 62: NFC004	sends to	STRU 19: Combined Stack
EQUI 62: NFC004	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 63: NFC005	sends to	STRU 19: Combined Stack
EQUI 63: NFC005	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 64: NFC006	sends to	STRU 19: Combined Stack
EQUI 64: NFC006	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 65: NFC007	sends to	STRU 19: Combined Stack
EQUI 65: NFC007	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 66: NFC008	sends to	STRU 19: Combined Stack
EQUI 66: NFC008	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 67: NFC009	sends to	STRU 19: Combined Stack

SI ID: Description	Relationship Type	Related SI ID: Description
EQUI 67: NFC009	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 68: NFC010	sends to	STRU 19: Combined Stack
EQUI 68: NFC010	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 69: NFC011	sends to	STRU 19: Combined Stack
EQUI 69: NFC011	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 70: NFC012	sends to	STRU 19: Combined Stack
EQUI 70: NFC012	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 71: NFC013	sends to	STRU 19: Combined Stack
EQUI 71: NFC013	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 72: NFC014	sends to	STRU 19: Combined Stack
EQUI 72: NFC014	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 73: NFC015	sends to	STRU 19: Combined Stack
EQUI 73: NFC015	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 74: NFC016	sends to	STRU 19: Combined Stack
EQUI 74: NFC016	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 75: NFC017	sends to	STRU 19: Combined Stack
EQUI 75: NFC017	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 76: NFC018	sends to	STRU 19: Combined Stack
EQUI 76: NFC018	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 77: NFC019	sends to	STRU 19: Combined Stack
EQUI 77: NFC019	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 78: NFC020	sends to	STRU 19: Combined Stack
EQUI 78: NFC020	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 79: NFC021	sends to	STRU 19: Combined Stack
EQUI 79: NFC021	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 80: NFC022	sends to	STRU 19: Combined Stack
EQUI 80: NFC022	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 81: NFC023	sends to	STRU 19: Combined Stack
EQUI 81: NFC023	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 82: NFC024	sends to	STRU 19: Combined Stack
EQUI 82: NFC024	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 83: NFC025	sends to	STRU 19: Combined Stack
EQUI 83: NFC025	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 84: NFC026	sends to	STRU 19:

SI ID: Description	Relationship Type	Related SI ID: Description
		Combined Stack
EQUI 84: NFC026	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 85: NFC027	sends to	STRU 19: Combined Stack
EQUI 85: NFC027	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 86: NFC028	sends to	STRU 19: Combined Stack
EQUI 86: NFC028	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 87: NFC029	sends to	STRU 19: Combined Stack
EQUI 87: NFC029	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 88: NFC030	sends to	STRU 19: Combined Stack
EQUI 88: NFC030	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 89: NFC031	sends to	STRU 19: Combined Stack
EQUI 89: NFC031	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 90: NFC032	sends to	STRU 19: Combined Stack
EQUI 90: NFC032	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 91: Magstand	sends to	STRU 19: Combined Stack
EQUI 91: Magstand	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 91: Magstand	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 91: Magstand	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 92: Screen #2	sends to	STRU 19: Combined Stack
EQUI 92: Screen #2	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 93: ECS #1	sends to	STRU 19: Combined Stack
EQUI 93: ECS #1	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 94: FE Separator #1	sends to	STRU 19: Combined Stack
EQUI 94: FE Separator #1	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 95: Sifter #2	sends to	STRU 19: Combined Stack
EQUI 95: Sifter #2	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 96: ECS #5	sends to	STRU 19: Combined Stack
EQUI 96: ECS #5	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 97: Finder #4	sends to	STRU 19: Combined Stack
EQUI 97: Finder #4	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 98: ECS #7	sends to	STRU 19: Combined Stack
EQUI 98: ECS #7	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 99: ECS #2	sends to	STRU 19: Combined Stack
EQUI 99: ECS #2	is	TREA 7: Fabric

SI ID: Description	Relationship Type	Related SI ID: Description
	controlled by	Filter - MRP
EQUI 100: Screen #3	sends to	STRU 19: Combined Stack
EQUI 100: Screen #3	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 101: Feeder #1	sends to	STRU 19: Combined Stack
EQUI 101: Feeder #1	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 102: Feeder #3	sends to	STRU 19: Combined Stack
EQUI 102: Feeder #3	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 103: Feeder #8	sends to	STRU 19: Combined Stack
EQUI 103: Feeder #8	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 104: Feeder #5	sends to	STRU 19: Combined Stack
EQUI 104: Feeder #5	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 105: FEC015	sends to	STRU 19: Combined Stack
EQUI 105: FEC015	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 105: FEC015	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 105: FEC015	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 105: FEC015	is controlled by	TREA 8: Thermal Oxidizer
EQUI 106: FEC016	sends to	STRU 19: Combined Stack
EQUI 106: FEC016	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 106: FEC016	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 106: FEC016	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 106: FEC016	is controlled by	TREA 8: Thermal Oxidizer
EQUI 107: FEC017	sends to	STRU 19: Combined Stack
EQUI 107: FEC017	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 107: FEC017	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 107: FEC017	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 107: FEC017	is controlled by	TREA 8: Thermal Oxidizer
EQUI 108: FEC018	sends to	STRU 19: Combined Stack
EQUI 108: FEC018	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 108: FEC018	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 108: FEC018	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 108: FEC018	is controlled by	TREA 8: Thermal Oxidizer
EQUI 109: FEC019	sends to	STRU 19: Combined Stack
EQUI 109: FEC019	is	TREA 2: Fabric

SI ID: Description	Relationship Type	Related SI ID: Description
	controlled by	Filter - Shredder
EQUI 109: FEC019	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 109: FEC019	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 109: FEC019	is controlled by	TREA 8: Thermal Oxidizer
EQUI 110: FEC020	sends to	STRU 19: Combined Stack
EQUI 110: FEC020	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 110: FEC020	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 110: FEC020	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 110: FEC020	is controlled by	TREA 8: Thermal Oxidizer
EQUI 111: FEC021	sends to	STRU 19: Combined Stack
EQUI 111: FEC021	is controlled by	TREA 2: Fabric Filter - Shredder
EQUI 111: FEC021	is controlled by	TREA 3: Fabric Filter - Shredder
EQUI 111: FEC021	is controlled by	TREA 4: Cyclone - Cascade Cleaning
EQUI 111: FEC021	is controlled by	TREA 8: Thermal Oxidizer
EQUI 112: NFC033	sends to	STRU 19: Combined Stack
EQUI 112: NFC033	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 113: NFC034	sends to	STRU 19: Combined Stack
EQUI 113: NFC034	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 114: NFC035	sends to	STRU 19: Combined Stack
EQUI 114: NFC035	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 115: NFC036	sends to	STRU 19: Combined Stack
EQUI 115: NFC036	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 116: NFC037	sends to	STRU 19: Combined Stack
EQUI 116: NFC037	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 117: NFC038	sends to	STRU 19: Combined Stack
EQUI 117: NFC038	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 118: NFC039	sends to	STRU 19: Combined Stack
EQUI 118: NFC039	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 119: NFC040	sends to	STRU 19: Combined Stack
EQUI 119: NFC040	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 120: Feeder #6	sends to	STRU 19: Combined Stack
EQUI 120: Feeder #6	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 121: Feeder #7	sends to	STRU 19: Combined

SI ID: Description	Relationship Type	Related SI ID: Description
		Stack
EQUI 121: Feeder #7	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 122: Finder #5	sends to	STRU 19: Combined Stack
EQUI 122: Finder #5	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 123: Finder #6	sends to	STRU 19: Combined Stack
EQUI 123: Finder #6	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 124: Sensor #1	sends to	STRU 19: Combined Stack
EQUI 124: Sensor #1	is controlled by	TREA 7: Fabric Filter - MRP
EQUI 125: NFC041	sends to	STRU 19: Combined Stack
EQUI 125: NFC041	is controlled by	TREA 7: Fabric Filter - MRP
FUGI 140: Truck Traffic - Paved Roads		
FUGI 141: Waste Fluff Handling		
FUGI 142: Ferrous Product Handling		
STRU 5: Motor Control and Operator Facility		
STRU 6: Shredder Building		
STRU 7: Shredder Control Equipment Building		
STRU 8: Employee Locker Room		
STRU 10: MRP Building		
STRU 11: MRP Baghouse		

SI ID: Description	Relationship Type	Related SI ID: Description
Building		
STRU 12: Waste Fluff Storage		
STRU 13: Office Building		
STRU 14: Shredded Clips Storage		
STRU 16: Ferrous Building		
STRU 17: Feeder Yard Building		
STRU 18: End of Vehicle Life Building		
STRU 19: Combined Stack		
STRU 20: Shredder Control Equipment Building - Downstream Ferrous		
STRU 21: Shredder Maintenance Building		
STRU 22: Maintenance Building		
TREA 1: Cyclone - Shredder	is controlled in series by	TREA 2: Fabric Filter - Shredder
TREA 1: Cyclone - Shredder	is controlled in series by	TREA 3: Fabric Filter - Shredder
TREA 1: Cyclone - Shredder	is controlled in series by	TREA 8: Thermal Oxidizer
TREA 2: Fabric Filter - Shredder		
TREA 3: Fabric Filter - Shredder		
TREA 4: Cyclone - Cascade Cleaning	is controlled in series by	TREA 2: Fabric Filter - Shredder
TREA 4: Cyclone - Cascade Cleaning	is controlled in series by	TREA 3: Fabric Filter - Shredder
TREA 7: Fabric Filter - MRP		
TREA 8: Thermal Oxidizer		

5. Limits and other requirements

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TFAC 1			
	5.1.1		The Permittee shall follow the requirements and recordkeeping in the Feedstock Control Plan contained in Appendix C of the permit. The Permittee shall update the Feedstock Control Plan to address any of the following: 1. new regulations that affect the control of feedstock; 2. the removal or segregation of hazardous material(s) from new scrap stream(s); 3. initial and periodic employee training for identification and removal or segregation of hazardous material(s) from new scrap stream(s); or 4. supplier education on new regulations or restrictions on new scrap streams. New scrap streams are scrap streams that contain either 1. new products not identified in the Permittee's current Feedstock Control Plan and that contain hazardous materials or 2. existing products that may or may not be identified in the Permittee's current Feedstock Control Plan and to which a change in product design has added hazardous materials to the product. Hazardous Materials are electronic waste, refrigerants, all items identified in Appendix A to the Feedstock Control Plan "Unacceptable Materials List", and any material that becomes unacceptable or hazardous due to a change in regulations. The Permittee shall update the Feedstock Control Plan and, as applicable, all written materials for training of employees, for reference by employees, and for education of suppliers prior to accepting any new scrap streams or prior to the effective date of any new regulation that affects the control of feedstock. The Permittee shall train applicable employees on identification and removal or segregation of hazardous material(s) from new scrap streams prior to accepting new scrap streams. An updated Feedstock Control Plan that addresses new regulations or new scrap streams as described above and does not change existing Feedstock Control Plan requirements supersedes the Feedstock Control Plan in Appendix C of this permit. If the Permittee wishes to revise any of the Feedstock Control Plan requirements in effect upon issuance of the permit, the Permittee shall apply for a permit amendment as applicable. The Permittee shall maintain the current version of the Feedstock Control Plan on-site. The Permittee shall retain the records required by the Feedstock Control Plan on-site for a period of 5

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			years from the creation of the record. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subp. 2(B), Minn. R. 7007.0800, subp. 4, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.1.2		Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in Appendices: Appendix A: Insignificant Activities and General Applicable Requirements Appendix B: Fugitive Dust Control Plan Appendix C: Feedstock Control Plan Appendix D: Criteria Air Dispersion Modeling Parameters (included for reference only as described elsewhere in this permit.) Appendix E: Air Toxics Modeling Parameters (included for reference only as described elsewhere in this permit.) Appendix F: list of SIs that the Permittee is authorized to construct and operate under permit 14100079-101. [Minn. R. 7007.0800, subp. 2]
	5.1.3		PERMIT SHIELD: Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements. This permit shall not alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance. [Minn. R. 7007.1800, (A)(2)]
	5.1.4		Comply with Fugitive Emission Control Plan: The Permittee shall follow the actions and recordkeeping specified in the fugitive dust control plan in Appendix B of this permit. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner. [Findings of EAW, 2018, Minn. R. 7007.0100, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. 7009.0020, Minn. R. 7011.0150, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]
	5.1.5		Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted. [Minn. R. 7011.0020]

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	5.1.6		Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated. [Minn. R. 7007.0800, subp. 16(J), Minn. R. 7007.0800, subp. 2]
	5.1.7		Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 16(J)]
	5.1.8		Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate. [Minn. R. 7019.1000, subp. 4]
	5.1.9		Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150. [Minn. R. 7011.0150]
	5.1.10		Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Minn. R. 7030.0010-7030.0080]
	5.1.11		Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A). [Minn. R. 7007.0800, subp. 9(A)]
	5.1.12		The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16. [Minn. R. 7007.0800, subp. 16]
	5.1.13		Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in this permit. [Minn. R. ch. 7017]
	5.1.14		Performance Test Notifications and Submittals: Performance Test Notification and Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test

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			The Notification, Test Plan, and Test Report must be submitted in a format specified by the commissioner. [Minn. R. 7017.2017, Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2]
	5.1.15		Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025, subp. 3]
	5.1.16		Monitoring Equipment Calibration - The Permittee shall either: 1. Calibrate or replace required monitoring equipment every 12 months; or 2. Calibrate at the frequency stated in the manufacturer's specifications. For each monitor, the Permittee shall maintain a record of all calibrations, including the date conducted, and any corrective action that resulted. The Permittee shall include the calibration frequencies, procedures, and manufacturer's specifications (if applicable) in the Operations and Maintenance Plan. Any requirements applying to continuous emission monitors are listed separately in this permit. [Minn. R. 7007.0800, subp. 4(D)]
	5.1.17		Operation of Monitoring Equipment: Unless noted elsewhere in this permit, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system. [Minn. R. 7007.0800, subp. 4(D)]
	5.1.18		Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A). [Minn. R. 7007.0800, subp. 5(C)]
	5.1.19		Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes. [Minn. R. 7007.0800, subp. 5(B)]
	5.1.20		If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For non-expiring permits, these records shall be kept for

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			a period of five years from the date that the change was made. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format. [Minn. R. 7007.1200, subp. 4]
	5.1.21		Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over. [Minn. R. 7019.1000, subp. 3]
	5.1.22		Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over. [Minn. R. 7019.1000, subp. 2]
	5.1.23		Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment. [Minn. R. 7019.1000, subp. 1]
	5.1.24		Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent

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			reoccurrence of the deviation. [Minn. R. 7019.1000, subp. 1]
	5.1.25		Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed. Upon adoption of a new or amended federal applicable requirement, and if there are 3 or more years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150 - 7007.1500]
	5.1.26		Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H). [Minn. R. 7007.1400, subp. 1(H)]
	5.1.27		Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. Submit in a format specified by the Commissioner. [Minn. R. 7019.3000-7019.3100]
	5.1.28		Emission Fees: due 30 days after receipt of an MPCA bill. [Minn. R. 7002.0005-7002.0095]
	5.1.29		Modeled Parameters for PM10, PM2.5, CO, NOx, SO2, and Air Toxics: The parameters used in PM10, PM2.5, CO, NOx, and SO2 SIL modeling are listed in Appendix D of this permit. The parameters used in the air toxics modeling are listed in Appendix E. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes. [Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.1.30		This permit establishes limits on the facility to keep it a minor source under the New Source Review and NESHAP standards. The Permittee cannot make any change at the source that would make the source a major source under the New Source Review and NESHAP programs until a permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments. [Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
	5.1.31		Equipment Labeling: The Permittee shall permanently affix a unique number to each emissions unit for tracking purposes. The numbers shall correlate the unit to the appropriate Subject Item numbers used in this permit. The number can be affixed by placard, stencil,

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			or other means. The number shall be maintained so that it is readable and visible at all times from a safe distance. If equipment is added, it shall be given a new unique number; numbers from replaced or removed equipment shall not be reused. [Minn. R. 7007.0800, subp. 2]
	5.1.32		Equipment Inventory: The Permittee shall maintain a written list of all emissions units and control equipment on site. The Permittee shall update the list to include any replaced, modified, or new equipment prior to making the change. The list shall correlate the units to the Subject Item numbers used in this permit and shall include the data on GI-04, GI-05B, GI-05C, and GI-05F. The date of construction shall be the date the change was made for replaced, modified, or new equipment. [Minn. R. 7007.0800, subp. 2]
	5.1.33		The Permittee is authorized to construct and operate all SIs listed and defined in Appendix F of the permit. The Permittee shall commence construction within 18 months of permit issuance. The units shall meet the requirements of this permit. [Minn. R. 7007.0800, subp. 2]
COMG 1		Ferrous Building Equipment	
	5.2.1		Opacity <= 20 percent opacity. This limit applies individually to each piece of equipment in COMG 1. [Minn. R. 7011.0715, subp. 1(B)]
	5.2.2		Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each piece of equipment in COMG 1. [Minn. R. 7011.0715, subp. 1(A)]
	5.2.3		The Permittee shall limit the ferrous building (COMG 1) operating Hours <= 3744 hours per year 12-month rolling sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. Until the Permittee has 12 months of data the hours of operation limit for each month is described below. P = 3744/12*n P = The hours of operation limit for month n n = number of months in operation. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.2.4		Daily Recordkeeping. On each day of operation, the Permittee shall record and maintain a record of the hours of operation of the ferrous building (COMG 1). This shall be based on written or

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			electronic logs. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.2.5		Monthly Recordkeeping. By the 15th of the month, the Permittee shall calculate and record the following: 1) The total hours of operation for the previous calendar month using the daily records; and 2) The 12-month rolling sum hours of operation for the previous 12-month period by summing the monthly hours of operation for the previous 12 months. If the Permittee has less than 12 months of data, the Permittee shall sum the monthly hours of operation for all previous months of operation. [Minn. R. 7007.0800, subps. 4-5]
	5.2.6		The Permittee shall vent emissions from each piece of equipment in COMG 1 to control equipment in series meeting the requirements of TREAs 2, 3, 4, and 8 and COMG 4 and that vents to STRU 19 whenever any piece of equipment in COMG 1 operates. Equipment in COMG 1 includes each new, modified, or replaced pieces of equipment added to COMG 1. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.2.7		The Permittee shall vent emissions from cleaning of the ferrous building and cleaning of the ferrous building equipment to control equipment in series meeting the requirements of TREAs 2, 3, 4, and 8 and COMG 4 and that vents to STRU 19. The Permittee is not required to vent to control equipment when cleaning the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.2.8		The Permittee shall maintain the ferrous building as a total enclosure, as described below, during operation of any piece of equipment in COMG 1, during cleaning of the ferrous building, and for at least 15 minutes after operation or cleaning ceases unless and emergency requires the ferrous building to be opened. For the ferrous building to qualify as a total enclosure the following conditions must be met: 1) The openings for conveyor EQUI 23 (conveyor from the ferrous

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			building to the ferrous pile), EQUI 3 (conveyor to the ferrous building from the shredder building), and EQUI 105 (conveyor from the ferrous building to the metal recovery plant) shall be covered by a plastic strip curtains or a similar barrier; 2) all other openings in the ferrous building shall either be closed or vented to control equipment in series meeting the requirements of TREAs 2, 3, 4, 8 and GOMG 4 as described in this permit; and 3) EQUI 3 (conveyor from the shredder building to the ferrous building) and EQUI 105 (conveyor from the ferrous building to the metal recovery plant) shall be covered. If the Permittee replaces EQUIs 3, 23, or 105, the replacement conveyor shall comply with the requirements above for the conveyor it replaces. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.2.9		On each operating day, prior to start up of any equipment in COMG 1, the Permittee shall inspect all openings in the ferrous building not vented to control equipment or leading to or from conveyors to ensure that they are closed. The Permittee shall maintain records of each inspection. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.2.10		The Permittee shall posts signs at all openings of the ferrous building that are not vented to control equipment of leading to or from a conveyor indicating that except during emergencies, openings must be closed during operation, cleaning, and at least 15 minutes after cleaning or operation ceases. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4]
	5.2.11		If a building opening must be opened during operation or cleaning for an event such as an emergency, the Permittee shall maintain a record of the cause of the event, its duration, and any corrective action taken. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.2.12		On a monthly basis, the Permittee shall inspect the doors, windows, or other barriers on the outside of the ferrous building for damage which would result in particulate emissions escaping the building. The Permittee shall repair the damage as soon as possible, but no later than two weeks after identification. The Permittee shall maintain records of the monthly inspections, and if repair is required, a record of the type of repair needed, the schedule for completion of such repair, and the date that the repair was started and completed. [Minn. R. 7007.0800, subp. 2(A), Minn. R.

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			7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.2.13		If the Permittee replaces any existing particulate-emitting ferrous processing equipment in the ferrous building (COMG 1), adds new particulate-emitting ferrous processing equipment to COMG 1, or modifies the existing equipment in COMG 1, such equipment is subject to all of the requirements of COMG 1. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9 , Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 2		Metal Recovery Plant	
	5.3.1		Opacity <= 20 percent opacity. This limit applies individually to each piece of equipment in COMG 2. [Minn. R. 7011.0715, subp. 1(B)]
	5.3.2		Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each piece of equipment in COMG 2. [Minn. R. 7011.0715, subp. 1(A)]
	5.3.3		The Permittee shall vent emissions from each piece of equipment in COMG 2 to control equipment meeting the requirements of TREA 7 that vents to STRU 19 whenever any piece of equipment in COMG 2 operates. Equipment in COMG 2 includes each new, modified, or replaced piece of equipment added to COMG 2. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.3.4		The Permittee shall vent emissions from cleaning of the MRP and the MRP equipment to control equipment meeting the requirements of TREA 7 and that vents to STRU 19. The Permittee is not required to vent emissions from cleaning control equipment to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R.

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			7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.3.5		The Permittee shall maintain the metal recovery plant building as a total enclosure, as described below, during operation of any equipment in COMG 2, during cleaning of the metal recovery plant building, and for at least 15 minutes after operation or cleaning ceases unless there is an emergency that requires the metal recovery plant building to be opened. For the metal recovery plant to qualify as a total enclosure the following conditions must be met: 1) the openings for EQUI 125 (conveyor from the metal recovery plant to the waste fluff pile) and EQUI 105 (conveyor to the metal recovery plant from the ferrous building) shall be covered with plastic strip curtains or a similar barrier; 2) any other openings in the metal recovery plant building shall be either closed or vented to control equipment meeting the requirements of TREA 7; 3) the EQUI 105 (conveyor from the ferrous building to the metal recovery plant building) must be covered. If the Permittee replaces EQUIs 105 or 125 the replacement conveyor shall comply with the requirements above for the conveyor it replaces. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.3.6		Each operating day, prior to start up of any equipment in COMG 2, the Permittee shall inspect all openings in the metal recovery plant building not vented to control equipment or that lead to or from a conveyor to ensure that they are closed. The Permittee shall maintain records of each inspection. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.3.7		The Permittee shall post signs at all openings of the metal recovery plant building that are not vented to control equipment or that lead to or from a conveyor indicating that with the exception of emergencies, openings must be closed during operation, cleaning, and at least 15 minutes after cleaning or operation ceases. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4]
	5.3.8		If a metal recovery plant building opening must be opened during operation or cleaning for an event such as an emergency, the

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			Permittee shall maintain a record of the cause of the event and its duration and any corrective actions taken. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.3.9		On a monthly basis, the Permittee shall inspect, the doors, windows, or other barriers on the outside of the metal recovery plant building for damage which would result in particulate emissions escaping the building. The Permittee shall repair the damage as soon as possible, but no later than two weeks after identification. The Permittee shall maintain records of the monthly inspections, and if repair is required, a record of the type of repair needed, the schedule for completion of such repair, and the date the repair was started and completed. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.3.10		If the Permittee replaces any existing particulate-emitting metal processing plant equipment in the metal recovery plant (COMG 2), adds new particulate-emitting metal processing plant equipment to COMG 2, or modifies the existing equipment in COMG 2, such equipment is subject to all of the requirements of COMG 2. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 3		Shredder Control Equipment	
	5.4.1		The Permittee shall operate and maintain the control equipment in COMG 3 such that it achieves an overall control efficiency for HAPs - Metal >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of a cyclone and two fabric filters in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREA 1, 2, and 3. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.4.2		The Permittee shall operate and maintain control equipment in COMG 3 such that it achieves an overall control efficiency for Particulate Matter >= 99 percent control efficiency (100 percent

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			capture efficiency and 99 percent collection efficiency). This is the overall control efficiency of the pollution control train of a cyclone and two fabric filters in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREA 1, 2, and 3. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.4.3		The Permittee shall operate and maintain control equipment in COMG 3 such that it achieves an overall control efficiency for PM < 10 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of a cyclone and two fabric filters in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREA 1, 2, and 3. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.4.4		The Permittee shall operate and maintain control equipment in COMG 3 such that it achieves an overall control efficiency for PM < 2.5 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of a cyclone and two fabric filters in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREA 1, 2, and 3. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 4		Control Equipment for Ferrous Building Equipment	
	5.5.1		The Permittee shall operate and maintain the control equipment in COMG 4 such that it achieves an overall control efficiency for HAPs - Metal >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of any combination of a cyclone and two fabric filters in COMG 4 in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREAs 2, 3, and 4. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn.

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			Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.5.2		The Permittee shall operate and maintain control equipment in COMG 4 such that it achieves an overall control efficiency for Particulate Matter >= 99 percent control efficiency (100 percent capture efficiency and 99 percent collection efficiency). This is the overall control efficiency of the pollution control train of any combination of a cyclone and two fabric filters in COMG 4 in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREAs 2, 3, and 4. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.5.3		The Permittee shall operate and maintain control equipment in COMG 4 such that it achieves an overall control efficiency for PM < 10 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of any combination of a cyclone and two fabric filters in COMG 4 in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREAs 2, 3, and 4. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.5.4		The Permittee shall operate and maintain control equipment in COMG 4 such that it achieves an overall control efficiency for PM < 2.5 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of any combination of a cyclone and two fabric filters in COMG 4 in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREAs 2, 3, and 4. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 5		Shredder Building Equipment	
	5.6.1		Opacity <= 20 percent opacity This limit applies individually to each piece of equipment in COMG 5. [Minn. R. 7011.0715, subp. 1(B)]
	5.6.2		Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each piece of

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			equipment in COMG 5. [Minn. R. 7011.0715, subp. 1(A)]
	5.6.3		Process Throughput: The Permittee shall maintain daily records of the total shredder throughput. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1&2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.6.4		The Permittee shall limit the shredder building (COMG 5) operating Hours <= 3744 hours per year 12-month rolling sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. Until the Permittee has 12 months of data the hours of operation limit for each month is described below. P = 3744/12*n P = the hours of operation limit for month n n = number of months in operation. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.6.5		Daily Recordkeeping. On each day of operation, the Permittee shall record and maintain a record of the hours of operation of the shredder building (COMG 5). This shall be based on written or electronic logs. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.6.6		Monthly Recordkeeping. By the 15th of the month, the Permittee shall calculate and record the following: 1) The total hours of operation for the previous calendar month using the daily records; and 2) The 12-month rolling sum hours of operation for the previous 12-month period by summing the monthly hours of operation for the previous 12 months. If the Permittee has less than 12 months of data, the Permittee shall sum the monthly hours of operation for all previous months of operation. [Minn. R. 7007.0800, subps. 4-5]
	5.6.7		The Permittee shall vent emissions from each piece of equipment in COMG 5 to control equipment in series meeting the requirements of TREA 1, 2, 3, and 8 and COMG 3 that vents to STRU 19 whenever any piece of equipment in COMG 5 operates. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

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	5.6.8		The Permittee shall vent emissions from cleaning of the shredder and shredder building to control equipment meeting the requirements of TREAs 1, 2, 3, and 8 and COMG 3 and that vents to STRU 19. The Permittee is not required to vent emissions from cleaning of the control equipment to control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 63.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.6.9		The Permittee shall maintain the shredder building as a total enclosure, as described below, during operation of any equipment in COMG 5, during cleaning of the shredder building, and for at least 15 minutes after operation or cleaning ceases unless there is an emergency that requires the building to be opened. For the shredder building to qualify as a total enclosure the following conditions must be met: 1) the openings in the shredder building from the infeed conveyor and EQUI 3 (conveyor from the shredder building to the ferrous building) shall be covered by plastic strip curtains or a similar barrier; 2) all other openings in the shredder building shall be either closed or vented to control equipment in series meeting the requirements of TREAs 1, 2, 3, and 8 and COMG 3; and 3) EQUI 3 (conveyor from the shredder building to the ferrous building) shall be covered. If the Permittee replaces EQUI 3, the replacement conveyor shall comply with the requirements above for the conveyor it replaces. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.6.10		Each operating day, prior to start up of EQUI 2, the Permittee shall inspect all openings of the shredder building not vented to control equipment or leading to or from a conveyor to ensure that they are closed. The Permittee shall maintain records of each inspection. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

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	5.6.11		The Permittee shall post signs at all openings of the shredder building that are not vented to control equipment or leading to or from a conveyor indicating that except during emergencies, openings must be closed during operation, cleaning, and at least 15 minutes after cleaning or operation ceases. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4]
	5.6.12		If a building opening must be opened during operation, cleaning, for an event such as an emergency, the Permittee shall maintain a record of the cause of the event, its duration, and any corrective action taken. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.6.13		On a monthly basis, the Permittee shall inspect the doors, windows, or other barriers on the outside of the shredder building for damage which would result in particulate emissions escaping the building. The Permittee shall repair the damage as soon as possible, but no later than two weeks after identification. The Permittee shall maintain records of the monthly inspections, and if repair is required, a record of the type of repair needed, the schedule for completion of such repair and date the repair is started and completed. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.6.14		If the Permittee replaces or modifies shredder building equipment the equipment is subject to all of the requirements of COMG 5. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9 , Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 19		Combined Stack	
	5.7.1		The Permittee shall limit emission of Particulate Matter <= 3.41 pounds per hour from STRU 19. [Findings of EAW, 2018, Minn. R. 7007.0800, subp. 1, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 9, Minn. Stat. 116.07, subd.4a, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.7.2		The Permittee shall limit emissions of PM < 10 micron <= 3.41 pounds per hour from STRU 19. [Findings of EAW, 2018, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subp. 1, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R.

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			7007.0200]
	5.7.3		The Permittee shall limit emissions of PM < 2.5 micron <= 3.41 pounds per hour from STRU 19. [Findings of EAW, 2018, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subp. 1, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.7.4		The Permittee shall limit emissions of Mercury <= 3 pounds per year 12-month rolling sum from STRU 19 to be calculated by the 15th of the month for the previous 12-month period as described later in this permit. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps.1&2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.7.5		Mercury: Monthly Recordkeeping. By the 15th of the month the Permittee shall calculate and record the following: 1) The total shredder throughput for the previous month using the throughput records required at COMG 5, in tons; 2) The mercury emissions from STRU 19 for the previous month using the formula specified below; and 3) The 12-month rolling sum mercury emissions from STRU 19 for the previous 12-month period by summing the monthly mercury emissions data for the previous 12 months. [Minn. R. 7007.0800, subp. 4-5]
	5.7.6		Mercury: Monthly Calculation. The Permittee shall calculate mercury emissions using the following equation Ehg = EFhg x A where: Ehg = mercury emissions in lb/month EFhg = mercury emission factor calculated as described below in lb/ton throughput A = total shredder throughput in tons/month. [Minn. R. 7007.0800, subps. 4-5]

	5.7.7		Mercury: Emission Factor.
			Within 15 days after receipt of a Notice of Compliance from the MPCA for a mercury performance test, the Permittee shall calculate a mercury emission factor based on the performance test results. The emission factor shall be calculated as follows:
			EFhg = [sum(E1 + E2 + E3...En)/n] / [sum(A1 + A2 + A3...An)/n]
			where:
			EFhg = mercury emission factor in lb/ton throughput
			E# = mercury emission rate from test run # in lb/hr
			A# = throughput from test run # in tons/hr
			n = total number of test runs

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			Where the mercury emission rate for a test run is below the method detection limit, the method detection limit shall be used in the emission factor calculation. The Permittee shall begin using the new emission factor in the first monthly mercury emissions calculation that is required after the emission factor is calculated and until a new emission factor is calculated based on the next performance test and the requirements of this permit. Until the first emission factor is calculated based on the initial mercury performance test required by this permit the Permittee shall use an emission factor of 0.00000329 lb/ton. [Minn. R. 7007.subps. 4-5]
	5.7.8		If the Permittee determines, prior to submitting the performance test plan for a performance test required by this permit, that the total airflow through STRU 19 due to simultaneous operation of the units in COMG 1, 2, and 5 would cause the detection limit of the required test method to be above a permit limit or an emission rate listed in Appendix E for a given pollutant, the Permittee may, subject to the approval of the MPCA, not operate the equipment in COMG 2 or route airflow from the MRP building to STRU 19 during the test. This condition is only applicable to performance testing for pollutants not emitted by the MRP which include dioxin/furan, PCBs, mercury, and VOCs. This approach must be approved by the MPCA in a test plan required by Minn. R. 7017.2030, subp. 2. [Minn. R. 7007.0800, subp. 2(A)]
TREA 1		Cyclone - Shredder	
	5.8.1		The Permittee shall vent emissions from equipment in COMG 5 to control equipment meeting the requirements of TREA 1 whenever the equipment in COMG 5 operates. The Permittee shall operate and maintain control equipment meeting the requirements of TREA 1 at all times that any emissions are vented to the control equipment, which includes 1) during operation of equipment in COMG 5, 2) for at least 15 minutes after the equipment in COMG 5 cease operation, 3) during cleaning of the shredder building, and 4) for at least 15 minutes after cleaning of the shredder building ceases. The Permittee shall document periods of non-operation of TREA 1 when emissions are required to vent to control equipment meeting the requirements TREA 1 as described above. When cleaning control equipment, the Permittee is not required to operate fans that supply air to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.8.2		If the Permittee replaces TREA 1, the replacement control, in combination with the COMG 3 control equipment in series, must meet or exceed the control efficiency requirements of COMG 3 as

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			well as comply with all other requirements of TREA 1. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.8.3		Once each day during operation, while material is being processed in the shredder, the Permittee shall record the pressure drop across the cyclone. The record shall include the date and time of the pressure drop reading and whether or not the observed pressure drop was within the range specified in this permit. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009-0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.8.4		Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored cyclone is in operation. [Minn. R. 7007.0800, subp. 4]
	5.8.5		The Permittee shall operate and maintain the cyclone in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	5.8.6		Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the cyclone or any of its components are found during the inspection to need repair. Corrective action shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the cyclone. The Permittee shall keep a record of the type and date of any corrective action taken for each control device. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2, Minn. R. 7007.0800, subps. 4-5]

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	5.8.7		The Permittee shall maintain the pressure drop across the control equipment according to the manufacturer's specifications until a new range is set pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test required by this permit for PM, PM10, and PM2.5 and as described below. Upon receipt of the Notice of Compliance letter from the MPCA that approves the test results, the Permittee shall maintain the pressure drop according to the range established during the initial performance test, unless a new range is during a subsequent performance test pursuant to Minn. R. 7017.2025, subp. 3. If the recorded pressure drop is outside the required range, the emissions during that time shall be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range shall be reported as a deviation. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7((A)), Minn. R. 7007.0100, subp. 7((L)), Minn. R. 7007.0100, subp. 7((M)), Minn. R. 7007.0800, subp. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and MInn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.8.8		Protocol for Re-Setting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM, PM10, and PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be re-set, the re-set shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee shall calculate the average pressure drop based on the average exhibited over all three or more, if applicable, compliant test runs. Downtime of 15 minutes or more is not to be included as operating time. The established Pressure Drop Range Limit shall be re-set as follows: - if the 3-hr average pressure drop recorded during the test is within the established range, it shall not be re-set and the established values remain the Pressure Drop Range Limit; or - if the 3-hr average pressure drop is outside the range specified above, the range limit shall be re-set based upon the minimum and maximum pressure drop values exhibited during the performance test. The new minimum value for the range limit shall be half the lowest recorded reading and the new maximum value for the range limit shall be two times the highest recorded value. Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test.

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			The new Pressure Drop Range Limit shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2025, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.8.9		The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Pressure Drop Range Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
	5.8.10		Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
TREA 2		Fabric Filter - Shredder	
	5.9.1		The Permittee shall vent emissions from equipment in COMG 1 and COMG 5 to control equipment meeting the requirements of TREA 2 whenever the equipment in COMG 1 or COMG 5 operates. The Permittee shall operate and maintain control equipment meeting the requirements of TREA 2 at all times that any emissions are vented to the control equipment, which includes 1) during operation of equipment in COMG 1 or COMG 5, 2) for at least 15 minutes after the equipment in COMG 1 and COMG 5 cease operation, 3) during cleaning of the shredder building or ferrous building, and 4) for at least 15 minutes after cleaning of the shredder building and ferrous building ceases. The Permittee shall document periods of non-operation of TREA 2 when emissions are required to vent to control equipment meeting the requirements TREA 2 as described above. When cleaning control equipment, the Permittee is not required to operate fans that supply air to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.9.2		If the Permittee replaces TREA 2, the replacement control, in combination with the COMG 3 and COMG 4 control equipment in series, must meet or exceed the control efficiency requirements of

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			COMG 3 and COMG 4 respectively as well as comply with all other requirements of TREA 2. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.9.3		The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	5.9.4		Pressure Drop: Once each day of operation, while processing material in the shredder, the Permittee shall record the pressure drop across the fabric filter. The record shall include the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.9.5		Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.9.6		Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when

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			the monitored fabric filter is in operation. [Minn. R. 7007.0800, subp. 4]
	5.9.7		Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.9.8		Pressure Drop >= 28 inches of water column until a new range is set pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test required by this permit PM, PM10, and PM2.5 and as described below. Upon receipt of the Notice of Compliance letter from the MPCA that approves the test results, the Permittee shall maintain the pressure drop according to the range established during the initial performance test, unless a new range is during a subsequent performance test pursuant to Minn. R. 7017.2025, subp. 3. If the recorded pressure drop is outside the required range, the emissions during that time shall be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range shall be reported as a deviation. This is the pressure drop across both TREA 2 and 3 combined. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7((A)), Minn. R. 7007.0100, subp. 7((L)), Minn. R. 7007.0100, subp. 7((M)), Minn. R. 7007.0800, subp. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and MInn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.9.9		Protocol for Re-Setting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM, PM10, and PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be re-set, the re-set shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee shall calculate the average pressure drop based on the average exhibited over all three or more, if applicable, compliant test runs. Downtime of 15 minutes or more is not to be included as operating time. The established Pressure Drop Range Limit shall be re-set as follows: - if the 3-hr average pressure drop recorded during the test is within the established range, it shall not be re-set and the established values remain the Pressure Drop Range Limit; or

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			- if the 3-hr average pressure drop is outside the range specified above, the range limit shall be re-set based upon the minimum and maximum pressure drop values exhibited during the performance test. The new minimum value for the range limit shall be half the lowest recorded reading and the new maximum value for the range limit shall be two times the highest recorded value. Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2025, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.9.10		The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Pressure Drop Range Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
	5.9.11		Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
TREA 3		Fabric Filter - Shredder	
	5.10.1		The Permittee shall vent emissions from equipment in COMG 1 and COMG 5 to control equipment meeting the requirements of TREA 3 whenever the equipment in COMG 1 or COMG 5 operates. The Permittee shall operate and maintain control equipment meeting the requirements of TREA 3 at all times that any emissions are vented to the control equipment, which includes 1) during operation of equipment in COMG 1 or COMG 5, 2) for at least 15 minutes after the equipment in COMG 1 and COMG 5 cease operation, 3) during cleaning of the shredder building or ferrous building, and 4) for at least 15 minutes after cleaning of the shredder building and ferrous building ceases. The Permittee shall document periods of non-operation of TREA 3 when emissions are required to vent to control equipment meeting the requirements TREA 3 as described above. When cleaning control equipment, the Permittee is not required to operate fans that supply air to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100,

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			subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.10.2		If the Permittee replaces TREA 3, the replacement control, in combination with the COMG 3 and COMG 4 control equipment in series, must meet or exceed the control efficiency requirements of COMG 3 and COMG 4 respectively as well as comply with all other requirements of TREA 3. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.10.3		The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	5.10.4		Pressure Drop: Once each day of operation, while processing material in the shredder, the Permittee shall record the pressure drop across the fabric filter. The record shall include the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.10.5		Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions

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			include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.10.6		Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation. [Minn. R. 7007.0800, subp. 4]
	5.10.7		Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.10.8		Pressure Drop >= 28 inches of water column until a new range is set pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test required by this permit for PM, PM10, and PM2.5 and as described below. Upon receipt of the Notice of Compliance letter from the MPCA that approves the test results, the Permittee shall maintain the pressure drop according to the range established during the initial performance test, unless a new range is during a subsequent performance test pursuant to Minn. R. 7017.2025, subp. 3. If the recorded pressure drop is outside the required range, the emissions during that time shall be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range shall be reported as a deviation. This is the pressure drop across both TREA 2 and 3 combined. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7((A)), Minn. R. 7007.0100, subp. 7((L)), Minn. R. 7007.0100, subp. 7((M)), Minn. R. 7007.0800, subp. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and MInn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.10.9		Protocol for Re-Setting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM, PM10, and PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be re-set, the re-set shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee shall calculate the average pressure drop based on the average exhibited over all three or more, if applicable, compliant test runs. Downtime of 15

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			minutes or more is not to be included as operating time. The established Pressure Drop Range Limit shall be re-set as follows: - if the 3-hr average pressure drop recorded during the test is within the established range, it shall not be re-set and the established values remain the Pressure Drop Range Limit; or - if the 3-hr average pressure drop is outside the range specified above, the range limit shall be re-set based upon the minimum and maximum pressure drop values exhibited during the performance test. The new minimum value for the range limit shall be half the lowest recorded reading and the new maximum value for the range limit shall be two times the highest recorded value. Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2025, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.10.10		The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Pressure Drop Range Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
	5.10.11		Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
TREA 4		Cyclone - Cascade Cleaning	
	5.11.1		The Permittee shall vent emissions from all equipment in COMG 1 to control equipment meeting the requirements of TREA 4 whenever equipment in COMG 1 operates. The Permittee shall operate and maintain control equipment meeting the requirements of TREA 4 at all times that any emissions are vented to control equipment meeting the requirements of TREA 4, which includes 1) during operation of equipment in COMG 1, 2) for at least 15

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			minutes after all equipment in COMG 1 ceases operation, 3) during cleaning of the ferrous building, and 4) for at least 15 minutes after cleaning of the ferrous building ceases. The Permittee shall document periods of non-operation of control equipment meeting the requirements of TREA 4 when emissions are required to vent to the control equipment as described above. When cleaning control equipment, the Permittee is not required to operate fans that supply air to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.11.2		If the Permittee replaces TREA 4, the replacement control, in combination with the other COMG 4 control equipment in series, must meet or exceed the control efficiency requirements of COMG 4 as well as comply with all other requirements of TREA 4. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, 2018, Minn. R. 4410, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.11.3		Once each day during operation, while material is being processed in the ferrous building, the Permittee shall record the pressure drop across the cyclone. The record shall include the date and time of the pressure drop reading and whether or not the observed pressure drop was within the range specified in this permit. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009-0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.11.4		Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored cyclone is in operation. [Minn. R. 7007.0800, subp. 4]
	5.11.5		The Permittee shall operate and maintain the cyclone in accordance with the Operation and Maintenance (O & M) Plan. The Permittee

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			shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	5.11.6		Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the cyclone or any of its components are found during the inspection to need repair. Corrective action shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the cyclone. The Permittee shall keep a record of the type and date of any corrective action taken for each control device. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2, Minn. R. 7007.0800, subps. 4-5]
	5.11.7		The Permittee shall maintain the pressure drop across the control equipment according to the manufacturer's specifications until a new range is set pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test required by this permit for PM, PM10, and PM2.5 and as described below. Upon receipt of the Notice of Compliance letter from the MPCA that approves the test results, the Permittee shall maintain the pressure drop according to the range established during the initial performance test, unless a new range is during a subsequent performance test pursuant to Minn. R. 7017.2025, subp. 3. If the recorded pressure drop is outside the required range, the emissions during that time shall be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range shall be reported as a deviation. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7((A)), Minn. R. 7007.0100, subp. 7((L)), Minn. R. 7007.0100, subp. 7((M)), Minn. R. 7007.0800, subp. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and MInn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.11.8		Protocol for Re-Setting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM, PM10, and PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be re-set, the re-set shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee shall calculate the average pressure drop based on the average exhibited over all three or more, if applicable, compliant test runs. Downtime of 15 minutes or more is not to be included as operating time.

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			The established Pressure Drop Range Limit shall be re-set as follows: - if the 3-hr average pressure drop recorded during the test is within the established range, it shall not be re-set and the established values remain the Pressure Drop Range Limit; or - if the 3-hr average pressure drop is outside the range specified above, the range limit shall be re-set based upon the minimum and maximum pressure drop values exhibited during the performance test. The new minimum value for the range limit shall be half the lowest recorded reading and the new maximum value for the range limit shall be two times the highest recorded value. Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2025, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.11.9		The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Pressure Drop Range Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
	5.11.10		Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
TREA 7		Fabric Filter - MRP	
	5.12.1		The Permittee shall vent emissions from the equipment in COMG 2 to TREA 7 whenever the equipment in COMG 2 operates. The Permittee shall operate and maintain TREA 7 at all times that any emissions are vented to TREA 7, which includes 1) during operation of the equipment in COMG 2, 2) for at least 15 minutes after the equipment in COMG 2 ceases operation, 3) during cleaning of the metal recovery plant building, and 4) for at least 15 minutes after cleaning of the metal recovery plant building ceases. The Permittee shall document periods of non-operation of TREA 7 when emissions

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			are required to vent to TREA 7 as described above. When cleaning control equipment, the Permittee is not required to operate fans that supply air to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.12.2		If the Permittee replaces TREA 7, the replacement control must meet or exceed the control efficiency requirements of TREA 7 as well as comply with all other requirements of TREA 7. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.12.3		The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for HAPs - Metal >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency) This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.12.4		The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter >= 99 percent control efficiency (100 percent capture efficiency and 99 percent collection efficiency). [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.12.5		The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd.

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			4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.12.6		The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.12.7		The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	5.12.8		Pressure Drop: Once each day of operation, while material is being processed in the MRP, the Permittee shall record the pressure drop across the fabric filter. The record shall include the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.12.9		Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.12.10		Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation. [Minn. R. 7007.0800, subp. 4]
	5.12.11		Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The

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			Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.12.12		Pressure Drop >= 0.1 and <= 6.0 inches of water column until a new range is set pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test required by this permit for PM, PM10, and PM2.5 and as described below. Upon receipt of the Notice of Compliance letter from the MPCA that approves the test results, the Permittee shall maintain the pressure drop according to the range established during the initial performance test, unless a new range is during a subsequent performance test pursuant to Minn. R. 7017.2025, subp. 3. If the recorded pressure drop is outside the required range, the emissions during that time shall be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range shall be reported as a deviation. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7((A)), Minn. R. 7007.0100, subp. 7((L)), Minn. R. 7007.0100, subp. 7((M)), Minn. R. 7007.0800, subp. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and MInn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.12.13		Protocol for Re-Setting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM, PM10, and PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be re-set, the re-set shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee shall calculate the average pressure drop based on the average exhibited over all three or more, if applicable, compliant test runs. Downtime of 15 minutes or more is not to be included as operating time. The established Pressure Drop Range Limit shall be re-set as follows: - if the 3-hr average pressure drop recorded during the test is within the established range, it shall not be re-set and the established values remain the Pressure Drop Range Limit; or - if the 3-hr average pressure drop is outside the range specified above, the range limit shall be re-set based upon the minimum and maximum pressure drop values exhibited during the performance test. The new minimum value for the range limit shall be half the lowest recorded reading and the new maximum value for the range limit shall be two times the highest recorded value. Ongoing compliance with the Pressure Drop Range Limit will be determined

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			using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2025, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.12.14		The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Pressure Drop Range Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
	5.12.15		Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
TREA 8		Thermal Oxidizer	
	5.13.1		Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
	5.13.2		Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. [Minn. R. 7011.0610, subp. 1(A)(1)]
	5.13.3		The Permittee shall vent emissions from equipment in COMG 1 and COMG 5 to TREA 8 whenever equipment in COMG 1 or COMG 5 operates, and operate and maintain TREA 8 at all times that any emissions are vented to TREA 8. The Permittee shall document periods of non-operation of the control equipment TREA 8 whenever equipment in COMG 1 or COMG 5 is operating. [Findings of EAW, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.13.4		If the Permittee replaces TREA 8, the replacement control must meet or exceed the control efficiency requirements of TREA 8 as well as comply with all other requirements of TREA 8. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable.

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			If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.13.5		The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Total PCDD/PCDF >= 50 percent control efficiency (100 percent capture efficiency and 50 percent collection efficiency) This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
	5.13.6		The Permittee shall operate and maintain control equipment such that it achieves an overall control efficiency for, Volatile Organic Compounds >= 95 percent control efficiency. [Findings of EAW, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.13.7		The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
	5.13.8		The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for, HAPs - Volatile >= 95 percent control efficiency. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.13.9		Temperature Monitoring: The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 4.5 degrees Fahrenheit. The recording device shall also calculate the three-hour rolling average combustion chamber temperature. Recorded values outside the range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

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	5.13.10		Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
	5.13.11		Daily Monitoring: The Permittee shall physically verify the operation of the temperature recording device at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.13.12		Annual Calibration: The Permittee shall calibrate the temperature monitor at least once every 12 months and shall maintain a written record of the calibration and any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.13.13		The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings and calculated three hour rolling average temperatures for the combustion chamber. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.13.14		Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment internal and external system components, including but not limited to the refractory, heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.13.15		Annual Inspection: At least once per calendar year, the Permittee shall conduct an internal inspection of the control device that includes all operating systems of the control device. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.13.16		Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp.

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			14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
	5.13.17		Temperature >= 1550 degrees Fahrenheit 3-hour rolling average at the combustion chamber outlet (Minimum Temperature Limit), unless a new limit is set pursuant to Minn. R. 7017.2025, subp. 3, as detailed below. If the recorded 3-hour rolling average temperature is below the Minimum Temperature Limit, the VOC and volatile HAP emitted during that time shall be considered uncontrolled until the average temperature is above the Minimum Temperature Limit. This shall be reported as a deviation. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.13.18		Protocol for Re-Setting the Minimum Temperature Limit: The Permittee shall conduct performance testing to measure the VOC and volatile HAP destruction efficiency as required elsewhere in this permit. If the Minimum Temperature Limit is to be re-set, the re-set shall be based on the average temperature values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the temperature in the combustion chamber The Permittee shall calculate the average temperature from the combustion chamber by reducing the temperature data to an average temperature based on the average exhibited over all three compliant test runs. Downtime of 15 minutes or more is not to be included as operating time. The Minimum Temperature Limit shall be re-set as follows: - if the 3-hour average temperature recorded during the test is within 25 deg F of the limit, it shall not be re-set and the established Minimum Temperature Limit remains unchanged; or - if the 3-hour average temperature is more than 25 deg F greater or less than the established limit, it shall be re-set as the average temperature of the performance test. Ongoing compliance with the temperature limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Minimum Temperature Limit determined using this Protocol shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	5.13.19		The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Minimum Temperature Limit required by this

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			permit. [Minn. R. 7007.1500, subp. 1]
	5.13.20		Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

6. Submittal/action requirements

This section lists most of the submittals required by this permit. Please note that some submittal requirements may appear in the Limits and Other Requirements section, or, if applicable, within a Compliance Schedule section.

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TFAC 1			
	6.1.1		The Permittee shall conduct a performance test to measure noise due 180 calendar days after startup of EQUI 2. The performance test shall measure noise to determine compliance with the noise standards in Minn. R. 7030.0040 and shall be conducted in accordance with the requirements of Minn. R. 7030.0060. During daytime measurements, the Permittee shall operate EQUI 2, the equipment in COMG 1, and the equipment COMG 2 simultaneously and, to the greatest extent practicable, conduct loading, unloading, and material transfer operations in the yard. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Minn. R. 7030.0010-7030.0080]
	6.1.2		The Permittee shall submit a semiannual deviations report : Due semiannually, by the 30th of January and July. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. Submit this on form DRF-2 (Deviation Reporting Form). If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(A)(2)]
	6.1.3		The Permittee shall submit a compliance certification : Due annually, by the 31st of January (for the previous calendar year). Submit this on form CR-04 (Annual Compliance Certification Report). This report covers all deviations experienced during the calendar year. If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(C)]
	6.1.4		The Permittee shall submit an annual report by the 31st of January. The report shall describe the changes made at the

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			Facility during the previous calendar year using the latest MPCA application forms. The report shall include information for any new or replaced Subject Items. The report shall be submitted with the annual Compliance Certification required by this permit. [Minn. R. 7007.0800, subp. 2]
	6.1.5		The Permittee shall submit a notification of the date construction began : Due 30 calendar days after Date of Construction Start. [Minn. R. 7007.0800, subp. 2, Minn. R. 7007.0800, subp. 5]
COMG 5		Shredder Building Equipment	
	6.2.1		The Permittee shall submit a notification of the actual date of initial startup : Due 30 calendar days after Initial Startup Date of EQUI 2. [Minn. R. 7007.0800, subp. 2, Minn. R. 7007.0800, subp. 6]
STRU 19		Combined Stack	
	6.3.1		PM < 10 micron: The Permittee shall conduct an initial performance test due 180 calendar days after the initial startup date of EQUI 2 to measure PM <10 micron emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. [Findings of EAW, 2018, Minn. R. 7007.0100, subps. 7(A), 7(L) & 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	6.3.2		PM < 2.5 micron: The Permittee shall conduct an initial performance test due 180 calendar days after the initial startup date of EQUI 2 to measure PM <2.5 micron emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. [Findings of EAW, 2018, Minn. R. 4410, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subds.4a&9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	6.3.3		Particulate Matter: Particulate Matter: The Permittee shall conduct an initial performance test due 180 calendar days after the initial startup date of EQUI 2 to measure particulate matter emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan

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			approval. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	6.3.4		PM < 10 micron: The Permittee shall submit a test frequency plan for PM10: Due 60 calendar days after Initial Performance Test Date for PM10 emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA. [Findings of EAW, 2018, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7019.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	6.3.5		PM < 2.5 micron: The Permittee shall submit a test frequency plan for PM2.5: Due 60 calendar days after Initial Performance Test Date for PM2.5 emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA. [Findings of EAW, 2018, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	6.3.6		Particulate Matter: The Permittee shall submit a test frequency plan for Particulate Matter: Due 60 calendar days after Initial Performance Test Date for PM emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.116, 07(subds.4a&9), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	6.3.7		Volatile Organic Compounds: The Permittee shall conduct an initial performance test due 180 calendar days after initial startup date of EQUI 2 to measure VOC emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 25A, or other method approved by the MPCA in the performance test plan approval. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 &

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			Minn. R. 7007.0200]
	6.3.8		HAPs - Volatile: The Permittee shall conduct an initial performance test due 180 calendar days after startup of EQUI 2 to verify volatile HAP emissions from STRU 19. Volatile HAPs for the purpose of this requirement include: Chloromethane, vinyl chloride, 1,3-butadiene, bromomethane, chloroethane, acetonitrile, acrolein, acrylonitrile, 1,1-dichloroethene, 3-Chloro-1-propene, Carbon disulfide, 1,1-Dichloroethane, Methyl t-Butyl ether, Vinyl acetate, n-Hexane, Chloroform, 1,2-Dichloroethane, benzene, carbon tetrachloride, 1-2-dichloropropane, Trichloroethene 1,4-Dioxane, Methyl methacrylate, 4-Methyl-2-pentanone, 1,1,2-Trichloroethane, Toluene, 1,2-Dibromoethane, Chlorobenzene, Ethylbenzene, m,p-Xylenes, Bromoform, Styrene, o-Xylene, 1,1,2,2-Tetrachloroethane, Cumene, Benzyl chloride, 1,4-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, Naphthalene, Hexachlorobutadiene, and Isooctane. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA reference Method 18, or other method approved by MPCA in the performance test plan approval. If the tested emissions rates of any of the volatile HAPs listed above are greater than those listed in Appendix E the Permittee shall conduct a risk recalculation. The Permittee shall use the 2018 Northern Metals Becker Air Emissions Risk Analysis (AERA) report as a template for recalculating and submitting the risk estimates, for updating the qualitative description of the risks (e.g. land use and exposure assumptions), and comparing the recalculated risk estimates for all pollutants emitted from the facility to the risk management guidelines used in the 2018 Northern Metals Becker AERA report. Updated toxicological values, emission estimates, and risk assessment guidance should be incorporated when appropriate. The Permittee shall submit the report to the MPCA for approval. If the recalculated risk estimates for the facility exceed the risk management guidelines used in the 2018 Northern Metals Becker AERA, the MPCA may require the Permittee to either refine its assessment or apply for a permit amendment to modify its permit. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
	6.3.9		Total PCDD/PCDF: The Permittee shall conduct an initial performance test due 180 calendar days after startup of EQUI 2 to measure total Polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF) emissions from STRU 19. The performance test shall be conducted at worst-case

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			conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA reference Method 23, or other method approved by MPCA in the performance test plan approval. If the tested emissions rates of any PCDD/PCDF is greater than the emission rates listed in Appendix E the Permittee shall conduct a risk recalculation. The Permittee shall use the 2018 Northern Metals Becker Air Emissions Risk Analysis (AERA) report as a template for recalculating and submitting the risk estimates, for updating the qualitative description of the risks (e.g. land use and exposure assumptions), and comparing the recalculated risk estimates for all pollutants emitted from the facility to the risk management guidelines used in the 2018 Northern Metals Becker AERA report. Updated toxicological values, emission estimates, and risk assessment guidance should be incorporated when appropriate. The Permittee shall submit the report to the MPCA for approval. If the recalculated risk estimates for the facility exceed the risk management guidelines used in the 2018 Northern Metals Becker AERA, the MPCA may require the Permittee to either refine its assessment or apply for a permit amendment to modify its permit. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]
	6.3.10		Polychlorinated biphenyls (PCBs): The Permittee shall conduct an initial performance test due 180 calendar days after startup of EQUI 2 to measure PCBs emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA reference Method 23, or other method approved by MPCA in the performance test plan approval. If the tested emissions rates of PCBs is greater than the emission rates listed in Appendix E the Permittee shall conduct a risk recalculation. The Permittee shall use the 2018 Northern Metals Becker Air Emissions Risk Analysis (AERA) report as a template for recalculating and submitting the risk estimates, for updating the qualitative description of the risks (e.g. land use and exposure assumptions), and comparing the recalculated risk estimates for all pollutants emitted from the facility to the risk management guidelines used in the 2018 Northern Metals Becker AERA report. Updated toxicological values, emission estimates, and risk assessment guidance should be incorporated when appropriate. The Permittee shall submit the report to the MPCA for approval. If the recalculated risk estimates for the facility exceed the risk management guidelines used in the 2018 Northern Metals Becker AERA, the MPCA may require the Permittee to either refine its assessment or apply for a permit

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			amendment to modify its permit. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]
	6.3.11		Mercury: The Permittee shall conduct an initial performance test due 180 calendar days after startup of EQUI 2 to measure Mercury emissions from STRU 19. The performance test shall consist of a minimum of 12 hours of testing to be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA reference Method 29, or other method approved by MPCA in the performance test plan approval. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]
	6.3.12		Mercury: The Permittee shall conduct a performance test 24 months after the initial performance test date to verify the emission factor of mercury in lb/ton throughput. After the initial 24 months following the initial performance test date, the Permittee shall conduct a performance test every 60 months. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 29, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a Notice of Compliance letter. Testing conducted more than two months prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]
	6.3.13		HAPs - Metal: The Permittee shall conduct an initial performance test due 180 calendar days after startup of EQUI 2 to verify metal HAP emissions rates from STRU 19. Metal HAPs include: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Lead, Manganese, Nickel, and Selenium. Testing of Mercury required separately. The performance test shall be conducted at

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			worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA reference Method 29, or other method approved by MPCA in the performance test plan approval. If the tested emissions rates of any of the metal HAPs listed above are greater than those listed in Appendix E the Permittee shall conduct a risk recalculation. The Permittee shall use the 2018 Northern Metals Becker Air Emissions Risk Analysis (AERA) report as a template for recalculating and submitting the risk estimates, for updating the qualitative description of the risks (e.g. land use and exposure assumptions), and comparing the recalculated risk estimates for all pollutants emitted from the facility to the risk management guidelines used in the 2018 Northern Metals Becker AERA report. Updated toxicological values, emission estimates, and risk assessment guidance should be incorporated when appropriate. The Permittee shall submit the report to the MPCA for approval. If the recalculated risk estimates for the facility exceed the risk management guidelines used in the 2018 Northern Metals Becker AERA, the MPCA may require the Permittee to either refine its assessment or apply for a permit amendment to modify its permit. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]

7. Appendices

Appendix A. Insignificant Activities and General Applicable Requirements

The table below lists the insignificant activities that are currently at the Facility and their associated general applicable requirements.

Minn. R.	Rule description of the activity	General applicable requirement
Minn. R. 7007.1300, subp. 3(E)(2)	Nonhazardous air pollutant VOC storage tanks with total capacity not more than 10,000 gallons meeting certain vapor pressure requirements. The Permittee proposes the following tanks: • two 5,500 gallon and one 1,000 gallon oil/water mix tanks • One 2,600 process water tank • One 250 gallon 50% ethylene glycol tank • One 1,580 gallon 0.2% soda ash solution tank • One 490 gallon antifreeze tank.	Permanent submerged fill pipe (Minn. R. 7011.1505, subp. 3(B)) This applies to two 5,500 gallon oil/water mix tanks PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715) This rule applies to the remainder of the tanks that qualify under Minn. R. 7007.1300, subp. 3(E)(2)
Minn. R. 7007.1300, subp. 3(H)(3)	Brazing, soldering or welding equipment	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)
Minn. R. 7007.1300, subp. 3(H)(7)	Cleaning operations: alkaline/phosphate cleaners and associated cleaners. The Permittee proposes one 30 gallon parts washer.	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)

Minn. R.	Rule description of the activity	General applicable requirement
Minn. R. 7007.1300, subp. 3(I)	Individual units with potential emissions less than 2000 lb/year of certain pollutants. The Permittee proposes the following combustion units: • 0.38 MMBtu/hr natural gas fired boiler • Five 64,000 Btu/r natural gas fired rooftop heaters • Four 173,250 Btu/hr natural gas fired space heaters • 750,000 and 395,000 Btu/hr natural gas fired evaporators • Infeed conveyor, stacking conveyor, and 2 shredded clip conveyors	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0610) PM <= 0.40 lb/MMBtu Opacity <= 20% (Minn. R. 7011.0515) PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)

Appendix B. Fugitive Dust Control Plan

FUGTIVE DUST CONTROL PLAN

Northern Metals, LLC> Becker, MN

Prepared By:

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March 2018

Project 172401.0066

Trinity Consultants

Environmental solutions delivered uncommonly well

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1. EXECUTIVE SUMMARY

Northern Metals, LLC (Northern Metals) seeks a permit to construct a metal recycling facility in Becker, Minnesota (Becker facility).

This Fugitive Dust Control Plan describes the active and passive control measures and operational practices and procedures to curtail and control fugitive dust emissions, including the employee procedures and training, as well as the recordkeeping and reporting to demonstrate compliance with said procedures. Active measures include sweeping and watering of roads, watering storage piles, and ensuring buildings with recycling recovery activities (i.e., shredder, Metal Recovery Plant) are totally enclosed. Passive measures include paving roads and use of covered conveyors to minimize fugitive dust from transfer operations.

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2. SOURCES OF FUGITIVE DUST EMISSIONS, OPERATING PRACTICES, AND CONTROL MEASURES

2.1. FUGI1 - TRUCK TRAFFIC - PAVED ROADS

Unit Description: All roads at the facility traveled by Northern Metals vehicles (haul trucks and front-end loaders) are paved to reduce emissions.

Controls: All roads at the facility will be paved. Each road shall be swept on a regular schedule and, as outlined below, watered as required to control dust. If fugitive emissions are observed additional watering or sweeping will occur until such fugitive emission no longer occur.

Emission Limitations: Per Minn. 7011.0150, Northern Metals shall not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Furthermore, Northern Metals shall apply all such reasonable measures as may be required to prevent particulate matter from becoming airborne and to prevent the discharge of visible fugitive dust emissions beyond the lot line of the property of the Becker facility.

Practices Include, But Are Not Limited to:

- Broom sweeping of all on-property roads, not less frequently than daily, except
  - If there was at least 0.1 inches of rainfall in the previous 24 hours, or
  - If the roads are covered with snow or ice, or
  - When the ambient temperature outside at the Becker facility is at or below 35 °F.
- Water will be applied to the active paved roads as required by weather, traffic, and road conditions. Water trucks will be dispatched and the paved roads will be watered if visible dust is encountered. Some weather conditions during the summer months, such as low humidity and high winds, may warrant a higher watering frequency. The water application rate will be adjusted, depending on weather conditions. Watering will not occur:
  - If there was at least 0.1 inches of rainfall in the previous 24 hours, or
  - If the roads are covered with snow or ice, or
  - When the ambient temperature outside at the Becker facility is at or below 35 °F.
- Daily visible emission checks on all roads during daylight hours while in operation.

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- If visible emissions are observed, the cause will be determined, and corrective actions will be taken to minimize the visible emissions.

Recordkeeping: Northern Metals will keep and maintain the following records on site in hardcopy or electronic format, examples of which can be found in Appendix A:

- The date and time of each fugitive dust control measure;
- The roads/areas that were cleaned;
- If dust control measures were not taken because of a rainfall event or because an area is snow or ice-covered, documentation of the event or condition along with the source of measurement for rainfall (i.e. on-site rain gauge);
- If dust control measures were not taken because of weather conditions, documentation of the date and the weather conditions (e.g. documentation that the temperature indicated freezing conditions);
- Any cleaning equipment breakdown and corrective actions;
- Time and date of visible Emissions Inspections (including any corrective actions taken).

2.2. FUGI2 - WASTE FLUFF HANDLING, STOCKPILE AREAS, MATERIAL TRANSFERS VIA FRONT-END LOADERS, MATERIAL HANDLERS

Unit Description: Fugitive dust emissions due to material handling and wind erosion of waste fluff pile.

Controls: The waste fluff pile will be regularly watered to control dust as outlined below. If fugitive emissions are visible from the pile, additional watering activities will be employed. Furthermore, the storage pile will be partially enclosed to reduce fugitive emissions. Good housekeeping practices will also be used for the partial enclosure.

Emission Limitations: Per Minn. 7011.0150, Northern Metals shall not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Furthermore, Northern Metals shall apply all such reasonable measures as may be required to prevent particulate matter from becoming airborne and to prevent the discharge of visible fugitive dust emissions beyond the lot line of the property of the Becker facility.

Practices Include, But Are Not Limited to:

- Water cannons will be used to spray waste fluff pile product piles at least once daily when the ambient temperature is above 35 °F to control fugitive emissions. Water cannons will also be used to minimize visible dust from handling of other commodities. The water cannons will be installed and operating prior to commencing operations.

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- Waste fluff and shredder clip storage piles are enclosed by a three-sided shed to reduce fugitive dust emissions caused by wind erosion.

- Promptly cleaning up spills in any material handling process (e.g., loading waste fluff into truck).

- Daily visible emissions checks on all storage piles during daylight hours.

  - If visible emissions are observed, the cause will be determined, and corrective actions will be taken as soon as possible to minimize the visible emissions.

Recordkeeping: Northern Metals will keep and maintain the following records on site in hardcopy or electronic format, examples of which can be found in Appendix A:

- Time and date of visible Emissions Inspections (including any corrective actions taken);

- The date and time of each fugitive dust control measure;

- Records of maintenance and breakdowns of water cannons;

- If dust control measures were not taken because of weather conditions, documentation of the date and the weather conditions (e.g. documentation that the temperature indicated freezing conditions).

2.3. FUGI3 - SHREDDED FERROUS PILE

Unit Description: Fugitive emissions due to outdoor handling of the shredded ferrous product.

Controls: The stacker conveyor, which piles the shredded ferrous product, is equipped with spray bars that water the shredded product as a way to both cool the ferrous and reduce fugitive emissions. The spray bars operate both when the stacker conveyor is in operation, which is expected to be daily, and when the temperature is above 35°F. In addition, the ferrous pile is sprayed with water cannons during loadout into vehicles whenever the temperature is above 35°F.

Emission Limitations: Per Minn. 7011.0150, Northern Metals shall not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Furthermore, Northern Metals shall apply all such reasonable measures as may be required to prevent particulate matter from becoming airborne and to prevent the discharge of visible fugitive dust emissions beyond the lot line of the property of the Becker facility.

Practices Include, But Are Not Limited to:

- Spray bars will be installed on the stacker conveyor to spray water on the shredded ferrous product as a way to both a cool the ferrous and control fugitive emissions. The spray bars will operate whenever the temperature is

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above 35°F and whenever the stacker conveyor is operational. The spray bars will be installed and operating prior to commencing operations.

- Water cannons will be used to spray the shredded ferrous product during loadout into vehicles when the ambient temperature is above 35 °F in order to control fugitive emissions. The water cannons will be installed and operating prior to commencing operations.

- If visible emissions are observed, the cause will be determined, and corrective actions will be taken as soon as possible to minimize the visible emissions.

Recordkeeping: Northern Metals will keep and maintain the following records on site in hardcopy or electronic format, examples of which can be found in Appendix A:

- The date and time of each fugitive dust control measure; and

- Records of any breakdowns or maintenance of the water cannons and spray bars

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3. RECORDKEEPING

Northern Metals will maintain the following records on site in hardcopy or electronic format for at least five years:

- Watering and sweeping records
- Visible Emissions Inspections, including any corrective actions taken
- Employee Training Records
- Weekly Weather Information Reports
  - Collected from either a National Weather Service Report or an on-site meteorological data station.
  - At a minimum, the facility will track temperature, wind speed, and precipitation.
- A current copy of the Fugitive Dust Control Plan.
- MPCA Letter of Approval of this Fugitive Dust Control Plan.

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Fugitive Dust Control Plan: The initial Fugitive Dust Control Plan will be submitted to the MPCA for review and approval.

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5. TRAINING

The Fugitive Dust Control Plan includes training for Northern Metals staff in order to fully implement the requirements of said plan. Personnel at the facility receive comprehensive training that will cover the following employee responsibilities, as applicable to the employee's position:

- Dust suppression techniques
- Equipment operation in a way that minimizes fugitive dust
- Forms and Recordkeeping
- Reporting
- Dust Observation and Visibility Training
- Weather Observations

New employees will be trained in the areas above as predicated by their position. Annual refresher training is provided to all existing employees. Northern Metals keeps training records for documentation.

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APPENDIX A: EXAMPLE RECORDKEEPING FORMS

(An example will be provided upon issuance of the Individual State Air Permit)

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FEEDSTOCK CONTROL PLAN

Northern Metals, LLC> Becker, MN

Prepared By:

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March 2018

Project 172401.0066

Trinity Consultants

Environmental solutions delivered uncommonly well

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1. INTRODUCTION

Northern Metals, LLC (Northern Metals) seeks a permit to construct a metals recycling facility in Becker, Minnesota (Becker facility). *<Update language upon final permit issuance.>* Northern Metals considers environmentally-responsible recycling a major part of the company's corporate culture. Environmental policies and procedures designed to ensure environmental responsibility are an integral part of all company operations from purchasing of scrap materials from suppliers to sales to consuming steel mills and other customers. While this Feedstock Control Plan is specific to controlling the input feedstock for the Becker facility shredder, it relies in part on environmental programs that are implemented at all Northern Metals facilities.

This Feedstock Control Plan has been developed to comply with the following federal and state rules, policies, guidance documents, and permits:

- Stratospheric Ozone Protection Requirements (1990 Clean Air Act, as amended, Sections 601-618; 40 CFR 82) ("CFC Requirements") Recycling and Emissions Reduction;
- National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries (40 CFR 63 Subpart EEEEE) (Northern Metals is not subject to this standard, but must meet the requirements for metallic scrap to provide scrap to iron and steel foundries);
- National Emission Standards for Hazardous Air Pollutants for Area Sources: Electric Arc Furnace Steelmaking Facilities (40 CFR 63 Subpart YYYYY) (Northern Metals is not subject to this standard, but must meet the requirements for metallic scrap to provide scrap to electric arc furnace steelmaking facilities);
- National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources (40 CFR 63 Subpart ZZZZZ) (Northern Metals is not subject to this standard, but must meet the requirements for metallic scrap to provide scrap for iron and steel foundries);Implementation Plan for Minnesota's Statewide Mercury Total Maximum Daily Load, October 2009, Smelters & Shredders that Recycle Cars & Appliances;
- Draft Air Emission Permit No. 14100076-101 ("Air Emission Permit"); and
- National Pollutant Elimination System (NPDES)/State Disposal System (SDS) General Permit MNR050000 for Industrial Stormwater Multi-Sector (ISW), issued April 5, 2015 (ONCE COVERAGE TO BECKER FACILITY IS IN PLACE)

The Feedstock Control Plan is comprised of the following sections:

- Ferrous Receiving;
- Internal Practices And Training;
- Restrictions On Incoming Scrap Materials;
- Supplier Education;
- Load Inspections; and
- Recordkeeping.

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This Feedstock Control Plan must meet certain requirements as stated in Air Emission Permit No. 14100076-1001. However, Northern Metals retains the right to update this Feedstock Control Plan without receiving the approval of the Commissioner as long as the updated language continues to meet the minimum requirements as stated in the Air Emission Permit. Updates may be incorporated into this Feedstock Control Plan in order to address items such as new regulations that affect the control of feedstock, the removal or segregation of hazardous material(s) from new scrap stream(s), initial and periodic employee training for identification and removal or segregation of hazardous material(s) from new scrap stream(s), and supplier education on new regulations or restrictions on new scrap streams. However, whenever updates are made to this Feedstock Control Plan, Northern Metals will review the Minnesota Administrative Rules to confirm whether or not said changes will require a permit amendment application to be filed prior to making the changes. If it is found that a permit amendment application is required, Northern Metals will file the applicable application prior to implementing the desired changes to this Feedstock Control Plan.

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The Northern Metals Becker facility will receive feedstock in three ways, each with their own receiving scale. Feedstock will mainly be delivered in the form of ferrous loads received at the main truck scale. The Becker site will also be equipped to receive ferrous loads arriving by rail. Finally, the Becker site will operate a Community Recycling Center (CRC), an on-site metals receiving center as a service to the community (public) for smaller loads. Northern Metals staff serving this center will inspect and segregate scrap metals provided by the public, and will weigh commodity metals and reimburse those turning in commodity metals. The center will publicize its operating hours, and may operate separately from the rest of the metals recycling facility. Northern Metals will continue to place restrictions on what it will shred, and some materials received from the community will be sent elsewhere for processing.

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3. INTERNAL PRACTICES AND TRAINING

For many years, Northern Metals has used internal Best Management Practices ("BMPs") at its facilities to assure compliance with environmental laws and regulations. These practices are described in this section and will be used at the Becker Facility as part of this Plan.

3.1. FULL-TIME ENVIRONMENTAL MANAGER

Northern Metals will employ a full time Environmental Manager to establish environmental policies, oversee their implementation, and educate Northern Metals personnel on existing and new environmental regulations and environmental procedures.

3.2. AWARENESS OF REGULATORY CHANGES AND UPDATES

The Environmental Manager regularly attends educational conferences, primarily in the areas of solid and hazardous waste management, to keep abreast of new state and local regulations. The Environmental Manager also participates in trade associations that track legislative and regulatory developments on the federal and state level. This educational information is used to continually update procedures to reflect the latest changes in regulations, laws, and programs.

3.3. COMPREHENSIVE SORTING PRIOR TO SHREDDING

Northern Metals will maintain a comprehensive sorting program to separate out hazardous materials as described in this plan from the shredder feedstock for appropriate processing and recycling. This sorting program first educates suppliers and has them certify their product as free of hazardous material (see section 4, below), according to Northern Metals' restrictions on incoming scrap guideline (see section 3, below). Employee training and inspection programs (see section 2.4, below) are also part of the sorting program to prevent hazardous materials as described in this plan from entering the shredder.

Northern Metals will not place the same restrictions on the community members providing scrap to the CRC as it does its other suppliers using the main truck scale. Instead, Northern Metals will sort those materials received on-site to remove hazardous materials as described in this plan and other waste (e.g., e-scrap, see section 4.2) from shredder feedstock.

3.4. ENVIRONMENTAL TRAINING AND SUPERVISION

3.4.1. General Employee Training

Northern Metals trains its applicable yard employees prior to their performing specific inspection or other compliance matters and at least once every 12 months to be aware of environmental specifications and inspection procedures. This training takes place at annual OSHA Right-To-Know training and at special meetings when needed based on changes to operating conditions and/or new legal requirements. This includes training on how to clean up various spills and how employees can protect themselves from spills. In addition, employees with field experience conduct hands on training in the identification of unacceptable and provisionally unacceptable materials, and in the identification, removal, and proper storage of hazardous materials, pollutants, and contaminants. Environmental procedures and policies are also disseminated at monthly safety committee meetings. Training for new employees is completed prior to assignment of duties.

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3.4.2. Special Appliance-Processing Training

New employees who process appliances will be trained on how to identify and remove hazardous materials, including mercury containing components, from appliances prior to beginning work in this area. In addition, all employees who process appliances will be re-trained annually. These employees process scrap metal that may have contained hazardous materials and mercury containing components that have not been processed before arriving at a facility.

3.4.3. Special Vehicle Processing Training[1]

New employees who process vehicles will be trained in End of Vehicle Life (ELV) processing prior to beginning work in this area. In addition, all employees who process vehicles will be re-trained on ELV processing annually. ELV processing uses state of the art techniques and equipment to remove hazardous materials, pollutants, and contaminants from vehicles before they are crushed, shredded, or otherwise processed. This training includes specific instructions about the End of Life Vehicle Solutions' (ELVS') educational materials and collection program for mercury components from vehicles. This was developed as part of the National Vehicle Mercury Switch Recovery Program (NVMSRP)2, also known as the National Mercury Switch Recovery Program (NMSRP) which is the approved mercury compliance option under the Electric Arc Furnace Steelmaking Facilities National Emission Standards for Hazardous Air Pollutants for Area Sources Electric Arc Furnace Area Source (40 CFR 63 Subpart YYYYY rule) as well as the National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources (40 CFR 63 Subpart ZZZZZ).

3.5. REGULAR SUPERVISION

Supervisors in charge of feedstock-related work areas, including the inbound scale house and the feedstock inspection areas, conduct inspections once a week and document their inspections. As part of these area inspections, the supervisors check that hazardous materials are segregated from the feedstock materials and properly disposed of.

The Environmental Manger performs monthly spot inspections to ensure compliance with established BMPs. If any issues are found during the weekly or monthly reviews, prompt corrective actions will be taken to remedy the issue(s). Supervisors will be trained annually on what corrective actions must be taken if any issues are identified.

3.6. REGULAR ENVIRONMENTAL INSPECTIONS

In addition to load inspections described in Section 5, twice a year the Environmental Manager conducts an environmental inspection of each Northern Metals facility to ensure that the facility is in compliance with water quality, air quality, and solid and hazardous waste regulations. Northern Metals will also use and maintain the BMPs identified in its Storm Water Pollution Prevention Plan. These inspections are part

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[1] In this Plan, Northern Metal uses the term "vehicles" which includes auto hulks but also includes trucks and other vehicles that may be recycled; this may also include vehicle scrap components and subassemblies.

[2] See http://elvsolutions.org/.

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of Northern Metals' environmental program and are also required to comply with certain regulatory obligations.

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4. RESTRICTIONS ON INCOMING SCRAP MATERIALS

Northern Metals maintains restrictions on incoming scrap material in order to limit hazardous wastes, pollutants, and contaminants entering its facilities and prevent explosions at its facilities (and specifically in the shredder). The restrictions described in this section will be employed at the Becker facility as part of this Feedstock Control Plan.

4.1. RESTRICTION ON INCOMING SCRAP MATERIALS

Northern Metals has adopted a formal corporate environmental policy and has developed written environmental specifications to identify scrap materials that will not be accepted, or will be accepted only under certain conditions, at the company's facilities, including the Becker facility.

For a listing of scrap materials that Northern Metals will NOT accept at its facilities, see Appendix A, Unacceptable Materials.

For a listing of scrap materials that Northern Metals will accept only under certain circumstances, see Appendix B, Provisionally Acceptable Materials.

Subject to these restrictions, Northern Metals will maintain and operate a CRC as a service to the Becker community.

4.2. ELECTRONIC WASTE OR E-SCRAP

With certain exclusions (see Appendix A and elsewhere in this Plan), Northern Metals will accept electronic waste or "e-scrap" at the Becker facility, and will store it in the Feeder Yard Building. However, these items will not be processed or shredded, but instead will be shipped elsewhere for processing and/or recycling. Suppliers must separate and designate their e-scrap.

Typical items of electronic waste that are acceptable at the Becker facility includes the following:

- Audio playback devices (e.g., iPods™, MP3s)
- Battery back-up units
- Cathode ray tubes
- Capacitors
- Cell phones and similar devices
- Clocks
- Communications equipment
- Computer CRTs and monitors
- Computer hard and back-up drives
- Computer keyboards and mice
- Computer parts and accessories
- Desktop computers
- Electrolytic capacitors
- DVD and CD players
- Fax machines
- Heat sinks
- Laptop computers
- Mainframe computers
- Printed circuit boards
- Semiconductor equipment
- Smoke alarms
- Test equipment (e.g., electronic device from blood pressure cuff)
- Printers
- Phones
- Radios and stereos
- Telecommunications equipment
- Video monitors

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The list identifies examples of electronic waste and is not all-inclusive. This list of typical electronic waste, as well as the list of acceptable materials, provisionally acceptable materials, and unacceptable materials will be posted for easy access by employees.

4.3. WRITTEN SPECIFICATIONS FOR CERTAIN SCRAP WASTE STREAMS

Northern Metals places specific restrictions on certain scrap waste streams – appliances, electronic waste, medical and dental equipment, and vehicles – that likely include hazardous materials, pollutants, and contaminants, including mercury containing components.

4.3.1. Appliances

4.3.1.1. Special Restrictions

Except as described below, at the Becker facility, Northern Metals will not accept appliances that need further processing before shredding. Only appliances that have been processed by a certified appliance recycler or by Northern Metals trained employees are accepted to avoid accidental shredding of appliances that contain hazardous materials, including mercury containing components.[3]

4.3.1.2. General Restrictions

When disposing of appliances or industrial process refrigeration equipment, federal and state law do not allow someone to knowingly vent or otherwise release into the environment any class I or class II substances used as a refrigerant in any appliance or industrial process refrigeration equipment. Instead, refrigerants must be removed prior to disposal or delivery for recycling.

Except in the CRC,[4] Northern Metals does not accept any appliances that contain refrigerants. Common refrigerants include ozone-depleting substance called chlorofluorocarbons ("CFCs") and hydrochlorofluorocarbons ("HCFCs"), which are also known by the trade name Freon. The following appliances are not accepted at the main truck scale or rail scale until refrigerants have been removed:

- Air conditioners;
- Dehumidifiers;
- Freezers;
- Ice makers;
- Refrigerators;
- Vending machines; and
- Water coolers.

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[3] Mercury containing components could refer to typical devices found in household and commercial appliances such as mercury flame sensors, tilt switches, mercury displacement relays, and occasionally mercury containing thermometers, pressurestats, and aquastats as examples.

[4] Northern Metals will accept refrigerant containing devices from the public as a community service. The liquids in these devices will be removed on-site or the devices will be sent to an appliance recycler certified to remove refrigerants.

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When suppliers bring these refrigerant-containing appliances to a facility, one of two things will happen. Either the load is rejected, or Northern Metals will accept the appliances after the supplier pays a refrigerant removal surcharge. If the load is rejected, and the supplier is directed to an appliance recycler certified to remove the refrigerants or the CRC. Once the certified recycler completes these removals, Northern Metals will accept the appliances for recycling at the main truck scale.

Northern Metals accepts appliances that either (a) have been processed by a certified appliance recycler or (b) do not contain refrigerants and can be processed to remove the hazardous material, including mercury containing components, associated with appliances. Each shipment from a supplier must be accompanied by a certificate of refrigerant removal from the certified appliance recycler. The following list shows appliances that are accepted for further processing by Northern Metals:

- Clothes washers;
- Clothes dryers (gas and electric);
- Dishwashers;
- Garbage disposals;
- Gas furnaces and boilers (residential and commercial);
- Gas water heaters (residential and commercial);
- Conventional ovens (gas and electric);
- Microwave ovens;
- Ranges (gas and electric);
- Space heaters; (gas and electric);
- Stoves (gas and electric); and
- Trash compactors.

Once these unprocessed appliances are accepted, Northern Metals' trained employees inspect each accepted appliance for hazardous materials, including mercury containing components, and remove any such components. Checklists of items to look for on given equipment will be posted for easy access by employees. Removed components will be routed to the proper recycling destination.

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4.3.2. Medical and Dental Equipment

Northern Metals lists medical and dental equipment as Provisionally Acceptable Materials at the company's facilities. The provisions are: (a) the equipment cannot contain any hazardous wastes, pollutants or contaminants, including mercury containing components; and (b) a trained Northern Metals employee must inspect the equipment and approve its acceptance. Checklists of items to look for on given equipment will be posted for easy access by employees.

4.3.3. Vehicles

Northern Metals will accept vehicles at the Becker facility. Vehicles arrive in one of two conditions – either (a) they have been processed by a vehicle supplier to remove refrigerants, hazardous wastes, pollutants, and contaminants, including mercury containing components or (b) they have not been processed. Unprocessed vehicles are inspected by the company's trained personnel who remove refrigerants, hazardous materials, contaminants, and pollutants, including mercury-containing components.

Under Minnesota Statutes § 116.92, subd.4(c), "A person may not crush a motor vehicle unless the person has first made a good faith effort to remove all of the mercury switches in the motor vehicle." As part of its commitment to comply with this statute, Northern Metals participates in the NVMSRP. EPA announced this national program on August 11, 2006. The NVMSRP is designed to recover 80 to 90 percent of available mercury switches, or an estimated 40 million mercury containing switches from scrap vehicles that are melted to make new steel. Northern Metals joined the NVMSRP on November 6, 2006.

The automotive industry has identified BMPs that address mercury containing devices in vehicles including air bag sensor switches, automatic braking system switches, and light switches. Northern Metals processes all vehicles it receives using these BMPs, unless they have been processed by another company before purchase by Northern Metals.

4.3.4. Radioactive Materials

Northern Metals does NOT accept any radioactive materials at any of its facilities, including the Becker facility. Northern Metals will operate a state-of-the-art radiation monitoring system at the Becker facility to enforce this restriction. The truck scale and rail scale are both equipped with the most advanced technology for detecting all types of radiation above background levels. Industrial smoke detectors, navigational equipment, spark gap indicators, thermostats, luminous signs, and ignition exciters are examples of scrap materials that my contain radiation.

Northern Metals has also developed and uses a set of Radiation Protection Safety Procedures. See Appendix C, Radiation Protection Safety Procedures.

4.3.5. Potentially Explosive Materials

To minimize explosions in the shredder and in other handling and processing equipment at its facilities, Northern Metals has adopted the following specifications.

- Northern Metals does NOT accept any explosive or flammable materials or containers that hold these materials.
- Northern Metals will accept containers that previously held explosive or flammable materials, but only if the container has been emptied and cut into two pieces.

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- Northern Metals will accept compressed gas cylinders and oxygen bottles, but only if the cylinder or bottle has been emptied and cut into two pieces, and the valves have been removed.
- Northern Metals will accept gas tanks or fuel tanks, but only if the tanks have been separated from other materials, completely drained, and cut into two pieces.
- Northern Metals will accept larger tanks that previously held explosive or flammable materials, but only if the tank is accompanied by a certification that the materials have been removed and either 1) is cut into two pieces or 2) has a hole for the purpose of and adequate for visual inspection by a trained Northern Metals employee.
- Northern Metals will accept baled, crushed, logged, or otherwise compressed vehicles, but only if the gas tank has been removed.

4.3.6. Lead

In general, Northern Metals does not shred or process lead material on-site. Lead containing products in vehicles such as wheel balancing products, vehicle fuel tanks and lead-acid batteries/cables are removed before said vehicles are processed. Larger non-vehicle lead items, such as lead sewer pipes, are pulled out of the general scrap pile and stored with other lead containing materials to be processed off-site. The recycling of lead-acid batteries is addressed in Section 5 below.

4.3.7. Demolition Debris

Anyone conducting demolition or renovation in Minnesota is subject to Minn. R. 7035.0805 and must remove hazardous materials, including mercury, lead, asbestos, PCBs, oils, CFCs, electronic waste, radioactive materials, and other hazardous waste prior to renovation or demolition. Northern Metals does not accept these materials and they are all included in Appendix A Unacceptable Materials List. As described under section 3.3 suppliers must certify their product is free of hazardous material and unacceptable material.

4.3.8. Industrial Equipment

Certain types of industrial machinery or equipment such as equipment associated with rigging, erection, millwright service, elevators, boilers, manufacturing, material handling, water treatment, pipeline companies, etc. may contain mercury devices. Types of mercury containing devices could include displacement relays, measurement and control devices, low water shutoff devices, mechanical load balancing devices, industrial/power plant electrical devices. Suppliers must remove these devices prior to supplying metallic scrap associated with this equipment to Northern Metals. As described under section 3.3 suppliers must certify their product is free of hazardous material and unacceptable material.

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Northern Metals maintains a supplier education program in order to limit hazardous wastes, pollutants, and contaminants entering its facilities and prevent explosions at its facilities (specifically in the shredder). The restrictions described in this section will be employed at the Becker facility as part of this Feedstock Control Plan.

Northern Metals uses its Unacceptable Materials and Provisionally Acceptable Materials lists as educational tools with its suppliers. The lists are sent to suppliers annually and when they are updated. The lists are also available at the company's facilities for new suppliers where they are given to new and prospective suppliers. The Environmental Manager also communicates regularly with customers about these lists and answers compliance questions from suppliers.

To assist suppliers with recycling of materials that Northern Metals will not accept, the company maintains an up-to-date referral list of facilities which can legally accept and recycle these materials. Items such as unprocessed used appliances, cracked and/or broken lead acid batteries (including pieces of batteries)[5], fluorescent bulbs, ballasts, mercury thermostats, electronic wastes, and tanks or other containers with liquids are included on this list. This referral list is sent annually to suppliers and is also given to suppliers when they bring unacceptable materials to a company facility.

Northern Metals uses its rejected load documentation and signs in the lobbies at its facilities to educate suppliers about acceptable and unacceptable materials. The Environmental Manager communicates with the company's buyers and inspections personnel about working with suppliers to comply with environmental requirements.

[5] Intact lead-acid batteries are accepted by Northern Metals. However, these batteries will be handled according to applicable regulations and shipped offsite for processing; they will not be processed or shredded by Northern Metals.

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Northern Metals maintains a load inspection program in order to limit hazardous wastes, pollutants, and contaminants entering its facilities and prevent explosions at its facilities (and specifically in the shredder). The restrictions described in this section will be employed at the Becker facility as part of this Feedstock Control Plan.

6.1. VISUAL INSPECTIONS OF INCOMING MATERIAL AT THE TRUCK SCALE

All trucks entering the Becker facility will be weighed on the incoming truck scale or the rail scale. During this weighing process, the scale operator visually monitors (through a closed circuit video system) each load to initially review for any objectionable materials, weighs the inbound truck and directs the shipment to the load inspector. The load inspector reviews the load to determine its contents, inspects the truck after it has been unloaded and generates a signed and dated inspection ticket that includes the grade of material, any comments regarding deductions taken (e.g., ice, snow, trash, etc.) and directs the truck to the outbound scale. The scale ticket documents the date, time, customer account number, where the load originated, vehicle number, hauler and Northern Metals scale operator. An example inspection ticket showing the seller's obligation and commitment to supply only approved materials is provided in Appendix D. When the load inspector identifies material in a load that does not meet Northern Metals' specifications, the load inspector rejects the load and documents the inspection ticket accordingly. Northern Metals' policy is then to contact the supplier and explain the reason for the rejection.

6.2. YARD INSPECTIONS

The load inspector inspects every truck when it is unloaded in the yard. The crane operator also routinely examines the material as it is unloaded with the overhead cranes. If the crane operator or any other yard personnel see materials which do not meet specifications, the material is immediately segregated. The load inspector performs an additional inspection on the segregated material. If the load inspector determines that material does not meet specifications, the Yard Supervisor or Operations Manager is notified, and inspects the load. If the load is rejected, the inspection ticket is documented accordingly and the supplier is contacted.

A third check of the material is made by the shredder operator when scrap metal is loaded on to the in-feed conveyor of the shredder. The shredder operator is stationed in a room with a view of the material on the in-feed conveyor. If the shredder operator sees material that does not appear to meet specifications, the shredder operator will stop the conveyor until the material can be removed. The load inspector performs an additional inspection on any material removed from the conveyor. If the load inspector determines that material does not meet specifications, the Yard Supervisor or Operations Manager is notified and inspects the load.

As stated, Northern Metals has multiple stages of inspection to help achieve a reasonably safe and effective Feedstock Control Plan at the Becker facility.

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6.3. REJECTION PROCEDURE

Northern Metals' rejection procedure is to: (a) segregate the unacceptable materials; (b) document the reason for the rejection on the inspection ticket, (c) call the supplier as soon as possible to explain the reason for the rejection; and take pictures of each rejected load to be shared with Northern Metals personnel and the supplier(s). This documentation sets forth exactly what materials were rejected and why. The rejection information and communication is intended to be, and is, an effective tool to educate suppliers. The supplier must pay for return transportation and any special handling costs. The weight of the rejected material is deducted from the weight of the affected load for payment purposes, as partial loads are sometimes rejected and the balance of the load accepted.

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7. RECORDKEEPING

Northern Metals will maintain the following records for at least five years.

- Computerized records that show the date, weight, scrap metal grade (which specifically indicates whether the load will be shredded or otherwise recycled), supplier, and truck description for all loads.
- Inspection tickets for each load.
- Daily weights of all ferrous metals produced at the shredder.
- Daily weights of all nonferrous metals produced by the Metal Recycling Plant (MRP) from processed shredder residue.
- Description of materials rejected and documentation providing the reason for rejection.
- Documentation of supplier certification for suppliers of the following:
    - Items which had previously contained refrigerants;
    - Appliances; and
    - Vehicles.
- For vehicle scrap, records of the number of mercury switches removed (or the weight of mercury recovered from the switches), the estimated number of vehicles processed, an estimate of the percent of mercury switches recovered, and certification that the recovered mercury switches were either returned to the supplier or recycled at a facility with a permit as required under RCRA Subtitle C, or managed through the switch collection/recycling program operated by ELVS for the NVMSRP.
- Documentation that Northern Metals is an active participant in the NVMSRP and is regularly removing and shipping switches through the ELVS program.
- Documentation of employee training, including the date of training, names of persons trained, a description of the content of the training, names of course instructors, and number of contact hours for each training event.
- Records of weekly inspections by area supervisors, including the date of inspection, the results of the inspection, and any corrective actions taken as a result of the inspection.
- Records of monthly and semiannual inspections by the environmental manager, including the date of inspection, the results of the inspection, and any corrective actions taken as a result of the inspection.

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APPENDIX A: UNACCEPTABLE MATERIALS LIST

The following is a list of materials that, by themselves,[6] Northern Metals **WILL NOT ACCEPT** at any of its facilities:

1. **Airbag canisters.**
2. **Asbestos or asbestos containing materials,** including any wire or cable that contains asbestos.
3. **Chemicals or containers that currently contain chemicals.**
4. **Cracked and/or broken lead-acid batteries,** including pieces of batteries.[7]
5. **NiCad, lithium or other batteries that are not lead-acid type.**
6. **Explosive or flammable materials.**
7. **Fluorescent lights including ballasts.**
8. **Any "Hazardous Waste" as defined by any applicable federal, state, or local legal requirement.**
9. **Mercury or any mercury containing device or material.**
10. **PCB capacitors, PCB capacitor-bearing materials, PCB containing transformers, and any other PCB containing device or material.**
11. **Radioactive materials.**
12. **Vehicle used oil filters.**
13. **Waste oil in free-flowing form.**

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[6] Note that some of these materials may be found in vehicles to be processed in the ELV. These vehicles will be processed as addressed in this plan.

[7] Intact lead-acid batteries are accepted by Northern Metals. However, these batteries will be handled according to applicable regulations and shipped offsite for processing; they will not be processed or shredded by Northern Metals.

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APPENDIX B: PROVISIONALLY ACCEPTABLE MATERIALS LIST

The following is a list of materials that Northern Metals **WILL ACCEPT** at its facilities, **BUT ONLY IF THEY MEET THE LISTED PROVISIONS**:

1. **Appliances that normally contain refrigerants,** including air conditioners, dehumidifiers, freezers, ice makers, refrigerators, vending machines, and water coolers, BUT ONLY IF the refrigerants, hazardous wastes, pollutants, and contaminants, including mercury containing components, are or have been removed by Northern Metals or a state certified appliance recycler.
2. **Barrels, drums, or other containers,** BUT ONLY IF they have been emptied and cut into two pieces.
3. **Brake shoes,** BUT ONLY IF they contain no asbestos.
4. **Compressed gas cylinders and oxygen bottles,** BUT ONLY IF they have been cut into two pieces, and the valves have been removed.
5. **Gauges and measuring devices,** BUT ONLY IF free of hazardous materials, specifically including mercury and radioactive materials.
6. **Gas tanks or fuel tanks,** BUT ONLY IF the tanks have been completely drained and cut into two pieces.
7. **Larger tanks,** BUT ONLY IF the tank is accompanied by a certification that the material inside the tank has been removed and the tank either is cut into two pieces or has a hole for the purpose of and adequate for visual inspection by a trained Northern Metals employee.
8. **Medical and dental equipment,** BUT ONLY IF the equipment does not contain any electronics, hazardous wastes, pollutants, and contaminants, and the Environmental Manager has inspected the equipment and approved its acceptance.
9. **Metallic sludges and drosses,** BUT ONLY IF the supplier provides documentation acceptable to the Environmental Manager or his/her designee showing the sludge or dross does not contain hazardous wastes, pollutants or contaminants and has been generate in compliance with applicable legal requirements.
10. **Military and/or government scrap,** BUT ONLY IF it is certified to be free of explosive, flammable, and hazardous materials.
11. **Sealed units,** including drivelines, hydraulic cylinders and jacks, propane tanks, and shock absorbers BUT ONLY IF drained of all oils and other nonmetallic substances and punctured.
12. **Transformers and transformer components,** BUT ONLY IF certified to be free of PCBs and other hazardous materials, pollutants, and contaminants.
13. **Vehicles that have been baled, logged, crushed or otherwise compressed,** BUT ONLY IF the gas tanks, any refrigerants, and any hazardous materials, pollutants, or contaminant, including mercury containing components, have been removed.
14. **Vehicle scrap associated with oils,** including motor blocks, torque converters, and transmissions, BUT ONLY IF they have been drained of all fluids.

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INTRODUCTION

General

1. Ionizing Radiation is defined as electromagnetic or particulate radiation capable of producing ions, directly or indirectly, by interaction with matter. Ionizing radiation cannot be felt, seen, heard, tasted, or smelled. However, ionization radiation can be guarded by the use of barriers and warning devices.

2. Radioactive material occurs in many forms, shapes and sizes and is used in many different applications: level control gauges in steel making, thickness of foil, smoke detectors, medicine, watch dials, etc. There are also applications where radioactive particles commonly found on Earth are transferred as small particles to processing equipment; contaminating pipes, heat exchangers, beams, etc.

Objective

3. Northern Metals' objective is to detect ionizing radiation in scrap metals before processing the metals to:

    a. Minimize the likelihood of radioactive waste being a hazard to Northern Metals' employees;

    b. To minimize environmental contamination; and

    c. To assure our markets that no radioactive materials are shipped from Northern Metals. Northern Metals will monitor all incoming and outgoing scrap, vehicles and rail cars. The Rad Com portal radiation monitors, located on the truck scale and rail scale, will ensure all scrap entering and exiting the facility has been checked for radiation.

Exposure Protection

The basic measure of protection from radiation hazards is *TIME, DISTANCE, and SHIELDING.*

4. Minimize TIME of Exposure

    a. The longer the exposure, the greater the chance of injury. Reducing the exposure time by one-half reduces the radiation dose by one-half.

5. Increase DISTANCE from Source

    a. Increasing the distance greatly reduces the exposure. Doubling the distance reduces the exposure by 1/4 of the original amount.

6. Maintain SHIELDING

    a. Shielding is important during the construction of radioactive devices, but unfortunately is an unknown factor when dealing with scrap waste since the type of shielding necessary is dependent upon the type of radioactive particle. Shielding around a radioactive device should never be tampered with.

It is of the utmost importance that all Northern Metals' employees never approach a suspected radioactive load without previously monitoring surrounding radiation. Northern Metals' radiation safety officers will rope off the

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load at distances which will not present a hazard to Northern Metals employees. Employees should never go closer than the "roped off" distances.

RESPONSIBILITIES

Scale Operator

7. Maintain working knowledge of the Rad Comm Radiation monitor and notify the radiation protection officer in the event of any alarm situation.

Radiation Safety Officer

8. Maintain working knowledge of the Rad Comm Radiation Monitor.
9. Conduct testing of suspected radioactive loads.
10. Notify the affected agencies of any suspected loads.
11. Complete the radiation detection report after detection of load.
12. Conduct periodic inspections of the Rad Comm monitor.

Northern Metals Employees

13. Never approach an unevaluated suspected radioactive load.
14. Maintain distances beyond the "roped off" areas.
15. Although incoming loads are being evaluated for radioactivity, all employees should be alert for devices marked with the following symbol. If such a marked device is found, immediately notify the Northern Metals radiation safety officer and maintain at least a 120 foot distance away from the device.

RAD COMM ALARM SAFETY PROCEDURES

Alarm Sounds

16. Scale operator will notify radiation safety officer. Ask driver to stop vehicle immediately and pull his/her vehicle at least 120 feet from entrance down Becker facility. Also tell the driver to wait a couple minutes before coming back for a retest.
17. Scale operator will reset alarm. Ensure that all personnel stay at a safe distance of at least 120 feet from truck.

Confirmation of Alarm Condition

18. Ask the driver to drive the vehicle at a slow speed (5 mph) past the detector without stopping. If an alarm occurs follow procedures for POSITIVE CONFIRMATION. If an alarm does NOT occur after repeating this procedure, the load can be allowed to be unloaded.

Positive Confirmation of Alarm Condition

19. Ask the driver to drive vehicle to an area on Becker facility at least 120 feet from personnel.

20. Check the RC/2 portable monitor for proper operation.
21. Radiation safety officer will use the RC/2 portable monitor and with the monitor operating and held in front of the officer, will approach the vehicle. The entire perimeter of the vehicle should be checked. AT NO TIME SHALL THE SAFETY OFFICER OR ANY EMPLOYEE APPROACH THE VEHICLE AT A DISTANCE CLOSER THAN THAT WHICH WOULD PRODUCE A READING ABOVE 5000 COUNT. THE AREA AROUND THE VEHICLE SHALL BE ROPED OFF TO PREVENT EMPLOYEES FROM BEING EXPOSED TO ABOVE A 5000 COUNT READING. THE "RADIATION AREA" SIGN SHALL ALSO BE POSTED.
22. ALL DETECTIONS SHOULD BE HANDLED WITH CAUTION AND NEVER HANDLED WITHOUT THE PROPER PERSONNEL PROTECTION EQUIPMENT AND TRAINING.
23. The Radiation Detection Report shall be complete by the safety officer and contact made to Minnesota Department of Health, Radiation Group or to the Nuclear Regulatory Regional Office, depending on the particular type of scrap and the vehicle's owner.

RAD COMM DEVICE INSPECTION

The following will be inspected daily:

24. Operation Status Indicator Lights
    a. Monitor Indicator is green and should be steady on (flashing or off indicates defective operation)
    b. Low Battery Indicator
    c. Charge Indicator

The following will be inspected quarterly:

25. Adequacy of signal activation device
26. All power sources
27. Function of alarm circuits and trouble indicating lights
28. Check source test; fast & slow response test on external units
29. Check source test on portable
30. System power interruption test

REFERENCES

31. 29 CFR Part 1910-96 - OSHA - Ionizing radiation
32. 10 CFR Part 20 Nuclear Regulatory Commission's Standards for Protection

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APPENDIX D: EXAMPLE INSPECTOR TICKET

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Payment Records

VSXDOR 30 LDBCASH

Northern Metal Recycling
521 Barge Channel Road, St. Paul, Minnesota, 55107

MAXIS

Paid Tickets

Date	Ticket	Subcode	Description	Qty	Gross	Tare	Net	Price	Total
3/25/2016	5128594								
3/28/2016	5129513								
3/28/2016	5129635								
3/28/2016	5129653								

Paid Other Items

Payment Breakdown Details

Paid By	ATM Card No	Check No	Amount
Auto Cheque			

By signing below, Seller hereby agrees to indemnify, Hold Harmless and defend Northern Metal Recycling, from any and all present and/or future, known, unknown, contingent and claims or causes of action, or liabilities or losses may have, including from or occasioned by Seller's negligence or the negligence of the sellers employee(s), or arising in any way from Seller's presence on the premises Northern Metal Recycling's premises. Additionally, Seller agrees to waive on behalf of Seller, and forever release (a) any claim or cause of action or remedy against Northern Metal Recycling and its affiliates.

Seller further certifies that the items delivered pursuant to this sale do not contain the following prohibited items:

* Mercury switches
* Microwave Ovens
* Fluorescent Lights
* Mercury Switches
* Propane cylinders
* Hazardous waste
* Operations exceeding one ton in weight.

Seller's signature hereon serves as a release from on the check issued in payment hereof and/or for the sale of the vehicle and as a waiver of the property described herein, and that Seller is the person shown on the title, or is authorized to sell the vehicle on behalf of the Seller, to release to Northern Metal Recycling, Inc. from any other claim, demand, fines, fees, costs, damages or loss of any kind, including, in addition to, and from claims based on the negligence.

I hereby swear and affirm under penalty of perjury pursuant to M.S. 609.48, that the vehicle by me to be purchased from Northern Metal Recycling, Inc. is free and clear of any lien, that I have a right to possess and sell the vehicle and/or scrap metal. I further acknowledge that the foregoing is a material statement that I rely upon in the purchase and sale.

Seller:

Authorized Signature of Individual
Or U.S. Authorized Representative

Date Signed

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Appendix D. Criteria Air Dispersion Modeling Parameters

Point Sources

Permit	AERMOD	Pollutant	Averaging Time	Easting X1	Northing Y1	Base Elev.	Emission Rate	Emission Rate	Height	Exit Temp	Exit Vel.	Diam.	Flow Rate
ID	ID			[m]	[m]	[m]	[m]	[g/sec]	[m]	[K]	[m/s]	[m]	[ACFM]
STRU19	NMBSV019	PM2.5	24-hr	430,784.880	5,026,509.390	296.27	3.4097	0.4296	48.768	307.61	17	2.53	181,086.500
STRU19	NMBSV019	PM2.5	Annual	430,784.880	5,026,509.390	296.27	3.4097	0.4296	48.768	307.61	17	2.53	181,086.500
STRU19	NMBSV019	PM10	24-hr	430,784.880	5,026,509.390	296.27	3.4097	0.4296	48.768	307.61	17	2.53	181,086.500
STRU19	NMBSV019	NO2	1-hr	430,784.880	5,026,509.390	296.27	1.73	0.2174	48.768	307.61	17	2.53	181,086.500
STRU19	NMBSV019	NO2	Annual	430,784.880	5,026,509.390	296.27	1.73	0.2174	48.768	307.61	17	2.53	181,086.500
STRU19	NMBSV019	CO	1-hr	430,784.880	5,026,509.390	296.27	1.45	0.1826	48.768	307.61	17	2.53	181,086.500
STRU19	NMBSV019	CO	8-hr	430,784.880	5,026,509.390	296.27	1.45	0.1826	48.768	307.61	17	2.53	181,086.500
STRU19	NMBSV019	SO2	1-hr	430,784.880	5,026,509.390	296.27	0.0104	0.001304	48.768	307.61	17	2.53	181,086.500
STRU19	NMBSV019	SO2	3-hr	430,784.880	5,026,509.390	296.27	0.0104	0.001304	48.768	307.61	17	2.53	181,086.500
STRU19	NMBSV019	SO2	24-hr	430,784.880	5,026,509.390	296.27	0.0104	0.001304	48.768	307.61	17	2.53	181,086.500
STRU19	NMBSV019	SO2	Annual	430,784.880	5,026,509.390	296.27	0.0104	0.001304	48.768	307.61	17	2.53	181,086.500

Volume Sources

Permit	AERMOD	Pollutant	Averaging Time	Easting X1	Northing Y1	Base Elev.	Emission Rate	Emission Rate	Height	Lateral Dimension SigmaY	Vertical Dimension SigmaZ
ID	ID			[m]	[m]	[m]	[lb/hr]	[g/sec]	[m]	[m]	
FUGI2	NMBVL001	PM2.5	24-hr	430,879.700	5,026,576.150	296.58	0.002974	0.000375	6.096	6.76	5.66928
FUGI2	NMBVL001	PM2.5	Annual	430,879.700	5,026,576.150	296.58	0.002974	0.000375	6.096	6.76	5.66928
FUGI2	NMBVL001	PM10	24-hr	430,879.700	5,026,576.150	296.58	0.01964	0.002475	6.096	6.76	5.66928
FUGI3	NMBVL002	PM2.5	24-hr	430,708.900	5,026,552.300	296.45	0.006216	0.0007832	7.314	0.2835	1.1796
FUGI3	NMBVL002	PM2.5	Annual	430,708.900	5,026,552.300	296.45	0.006216	0.0007832	7.314	0.2835	1.1796
FUGI3	NMBVL002	PM10	24-hr	430,708.900	5,026,552.300	296.45	0.04105	0.005172	7.314	0.2835	1.1796

Appendix E. Air Toxics Modeling Parameters

Stack Parameters

Point Source

Permit	Easting X1	Northing Y1	Base Elev.	Height	Exit Temp	Exit Vel.	Diam.	Flow Rate	Distance to Property Line or Receptor
ID	[m]	[m]	[m]	[m]	[K]	[m/s]	[m]	[ACFM]	[m]
STRU19	430,784.880	5,026,509.390	296.27	48.768	307.61	17	2.53	181,086.500	160

Volume Source

Permit	Easting X1	Northing Y1	Base Elev.	Height	Lateral Dimension SigmaY	Vertical Dimension SigmaZ	Distance to Property Line or Receptor
ID	[m]	[m]	[m]	[m]	[m]	[m]	[m]
FUGI2	430,879.700	5,026,576.150	296.58	6.096	6.76	5.66928	34

Default Dispersion Factors

Permit	Height	Distance to Property Line or Receptor
ID	[m]	[m]
IAs	6.7056	6.76

Emission Rates

CAS # or MPCA#	Chemical Name	HAP	STRU 19		Insignificant Activities		FUGI 2 Waste Fluff	
			Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
75-05-8	Acetonitrile	YES	3.74E-03	7.00E-03				
107-02-8	Acrolein	YES	3.73E-03	6.98E-03				
107-13-1	Acrylonitrile	YES	3.75E-03	7.02E-03				
107-05-1	Allyl chloride	YES	3.76E-03	7.04E-03				
7429-90-5	Aluminum	NO	8.13E-03	1.52E-02			8.71E-05	3.81E-04
7440-36-0	Antimony	YES	3.25E-04	6.08E-04			3.48E-06	1.52E-05
7440-38-2	Arsenic	YES	1.24E-03	2.33E-03	4.98E-07	2.18E-06	1.32E-05	5.80E-05
71-43-2	Benzene	YES	9.60E-02	1.80E-01	5.23E-06	2.29E-05		
207-08-9	Benzo(k)fluoranthene	YES	3.11E-08	1.36E-07				

CAS # or MPCA#	Chemical Name	HAP	STRU 19		Insignificant Activities		FUGI 2 Waste Fluff	
			Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
56-55-3	Benzo[a]anthracene	YES	3.11E-08	1.36E-07				
50-32-8	Benzo[a]pyrene	YES	2.07E-08	9.07E-08				
205-99-2	Benzo[b]fluoranthene	YES	3.11E-08	1.36E-07				
191-24-2	Benzo[g,h,i]perylene	YES	2.07E-08	9.07E-08				
100-44-7	Benzyl chloride	YES	3.76E-03	7.03E-03				
7440-41-7	Beryllium	YES	8.89E-05	1.67E-04			9.50E-07	4.16E-06
75-25-2	Bromoform	YES	3.88E-03	7.26E-03				
106-99-0	Butadiene, 1,3-	YES	3.77E-03	7.05E-03				
7440-43-9	Cadmium	YES	9.32E-04	1.79E-03	2.74E-06	1.20E-05	9.78E-06	4.29E-05
75-15-0	Carbon disulfide	YES	3.74E-03	7.00E-03				
630-08-0	Carbon Monoxide	NO	1.45E+00	6.35E+00	2.09E-01	9.17E-01		
56-23-5	Carbon tetrachloride	YES	3.78E-03	7.07E-03				
108-90-7	Chlorobenzene	YES	3.80E-03	7.12E-03				
67-66-3	Chloroform	YES	3.79E-03	7.09E-03				
7440-47-3	Chromium	YES	1.19E-03	2.30E-03	3.49E-06	1.53E-05		
18540-29-9	Chromium (Hexavalent) (particulate)	YES	3.81E-04	7.13E-04				
218-01-9	Chrysene (Benzo(a)phenanthrene)	YES	3.11E-08	1.36E-07				
7440-48-4	Cobalt	YES	1.48E-04	2.80E-04	2.09E-07	9.17E-07	1.57E-06	6.86E-06
7440-50-8	Copper	NO	3.85E-03	7.24E-03	2.12E-06	9.28E-06	4.10E-05	1.80E-04
98-82-8	Cumene	YES	8.49E-03	1.59E-02				
110-82-7	Cyclohexane	NO	3.10E-02	5.81E-02				
53-70-3	Dibenz[a,h]anthracene	YES	2.07E-08	9.07E-08				
106-46-7	Dichlorobenzene(p), 1,4-	YES	3.76E-03	7.04E-03				
25321-22-6	Dichlorobenzenes	Some	2.07E-05	9.07E-05	2.99E-06	1.31E-05		
75-35-4	Dichloroethylene (1,1-) (Vinylidene chloride)	YES	3.77E-03	7.06E-03				
156-60-5	Dichloroethylene, trans-1,2-	NO	3.77E-03	7.06E-03				

CAS # or MPCA#	Chemical Name	HAP	STRU 19		Insignificant Activities		FUGI 2 Waste Fluff	
			Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
57-97-6	Dimethylbenz[a]anthracene, 7,12-	YES	2.76E-07	1.21E-06				
123-91-1	Dioxane, 1,4- (1,4-Diethylene dioxide)	YES	3.79E-03	7.09E-03				
141-78-6	Ethyl acetate	NO	2.04E-02	3.82E-02				
100-41-4	Ethyl benzene	YES	8.74E-02	1.64E-01				
75-00-3	Ethyl chloride (Chloroethane)	YES	3.76E-03	7.05E-03				
106-93-4	Ethylene dibromide (Dibromoethane)	YES	3.85E-03	7.20E-03				
107-06-2	Ethylene dichloride (1,2-Dichloroethane)	YES	3.74E-03	7.01E-03				
75-34-3	Ethylidene dichloride (1,1-Dichloroethane)	YES	3.75E-03	7.02E-03				
206-44-0	Fluoranthene	YES	5.18E-08	2.27E-07	7.48E-09	3.27E-08		
50-00-0	Formaldehyde	YES	1.29E-03	5.67E-03	1.87E-04	8.19E-04		
87-68-3	Hexachlorobutadiene	YES	3.74E-03	7.00E-03				
00-08-3	Hexachlorodibenzodioxins, All Isomers	YES	3.62E-09	6.77E-09				
00-08-2	Hexachlorodibenzofurans, All Isomers	YES	3.62E-09	6.77E-09				
110-54-3	Hexane	NO	2.25E-01	4.99E-01	4.49E-03	1.96E-02		
591-78-6	Hexanone-2	NO	3.79E-03	7.10E-03				
7647-01-0	Hydrochloric acid (hydrogen chloride)	YES	2.08E-01	3.88E-01				
193-39-5	Indeno(1,2,3-cd)pyrene	YES	3.11E-08	1.36E-07				
67-63-0	Isopropyl alcohol	NO	3.69E-02	6.91E-02				
7439-92-1	Lead	YES	1.47E-03	2.78E-03				
00-07-8	m- and p-Xylenes	YES	3.04E-01	5.70E-01				
7439-96-5	Manganese	YES	3.08E-03	5.78E-03	9.47E-07	4.15E-06	3.29E-05	1.44E-04
7439-97-6	Mercury (elemental)	YES	1.32E-03	1.50E-03	6.48E-07	2.84E-06		

CAS # or MPCA#	Chemical Name	HAP	STRU 19		Insignificant Activities		FUGI 2 Waste Fluff	
			Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
74-83-9	Methyl bromide (Bromomethane)	YES	3.79E-03	7.10E-03				
74-87-3	Methyl chloride (Chloromethane)	YES	3.77E-03	7.06E-03				
78-93-3	Methyl ethyl ketone (2-Butanone)	NO	5.27E-02	9.87E-02				
108-10-1	Methyl isobutyl ketone (Hexone)	YES	1.83E-02	3.43E-02				
80-62-6	Methyl methacrylate	YES	7.48E-03	1.40E-02				
1634-04-4	Methyl tert butyl ether	YES	3.79E-03	7.09E-03				
56-49-5	Methylcholanthrene, 3-	YES	3.11E-08	1.36E-07				
91-20-3	Naphthalene	YES	8.28E-03	1.55E-02	1.52E-06	6.66E-06		
7440-02-0	Nickel	YES	6.18E-03	1.17E-02	5.23E-06	2.29E-05	6.58E-05	2.88E-04
10102-44-0	Nitrogen dioxide (NO2)	NO	1.73E+00	7.56E+00	2.49E-01	1.09E+00		
111-84-2	N-Nonane	NO	2.89E-02	5.40E-02				
109-66-0	Pentane, n-	NO	5.35E-01	1.11E+00	6.48E-03	2.84E-02		
85-01-8	Phenanthrene	YES	2.93E-07	1.28E-06	4.24E-08	1.86E-07		
1336-36-3	Polychlorinated biphenyls (Aroclors unspeciated)	YES	1.54E-02	2.88E-02				
00-01-7	Polycyclic Organic Matter (POM)	YES	6.52E-07	2.86E-06	2.20E-07	9.63E-07		
115-07-1	Propylene	NO	1.08E-02	2.02E-02				
78-87-5	Propylene dichloride (1,2-Dichloropropane)	YES	3.70E-03	6.93E-03				
7782-49-2	Selenium	YES	2.34E-03	4.38E-03			2.51E-05	1.10E-04
100-42-5	Styrene	YES	6.85E-02	1.28E-01				
7446-09-5	Sulfur dioxide	NO	1.04E-02	4.53E-02	1.50E-03	6.55E-03		
79-34-5	Tetrachloroethane, 1,1,2,2-	YES	3.78E-03	7.08E-03				
109-99-9	Tetrahydrofuran	NO	8.08E-03	1.51E-02				
108-88-3	Toluene	YES	3.96E-01	7.42E-01	8.47E-06	3.71E-05		
120-82-1	Trichlorobenzene, 1,2,4-	YES	3.71E-03	6.95E-03				

CAS # or MPCA#	Chemical Name	HAP	STRU 19		Insignificant Activities		FUGI 2 Waste Fluff	
			Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
79-00-5	Trichloroethane, 1,1,2-	YES	3.82E-03	7.16E-03				
79-01-6	Trichloroethylene	YES	2.69E-02	5.04E-02				
95-63-6	Trimethylbenzene, 1,2,4-	NO	1.37E-01	2.57E-01				
108-05-4	Vinyl acetate	YES	3.79E-02	7.09E-02				
75-01-4	Vinyl chloride	YES	3.77E-03	7.07E-03				
95-47-6	Xylenes, o-	YES	1.10E-01	2.07E-01				

Appendix F. List of SIs that the Permittee is authorized to construct and operate under permit 141000079-101

Subject Item Type Description	Subject Item ID	SI Designation and Description*	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units (numerator)	Max Design Capacity Units (denominator)	Material
Conveyor	EQUI3	UMO	Wendt	TBD	350	tons	hours	Metal
Conveyor	EQUI12	FEC001	Wendt	TBD	350	tons	hours	Metal
Conveyor	EQUI13	FEC002	Wendt	TBD	350	tons	hours	Metal
Conveyor	EQUI14	FEC003	Wendt	TBD	350	tons	hours	Metal
Conveyor	EQUI15	FEC004	Wendt	TBD	150	tons	hours	Metal
Conveyor	EQUI16	FEC005	Wendt	TBD	150	tons	hours	Metal
Conveyor	EQUI17	FEC006	Wendt	TBD	100	tons	hours	Metal
Conveyor	EQUI18	FEC007	Wendt	TBD	100	tons	hours	Metal
Conveyor	EQUI19	FEC008	Wendt	TBD	100	tons	hours	Metal
Conveyor	EQUI20	FEC009	Wendt	TBD	100	tons	hours	Metal
Conveyor	EQUI23	FEC010	Wendt	TBD	300	tons	hours	Metal
Conveyor	EQUI25	FEC014	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI26	Creep Feeder	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI27	Tumbleback	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI38	Feeder #2	BPS	TBD	2.5	tons	hours	Metal
Conveyor	EQUI52	Feeder #4	BPS	TBD	7	tons	hours	Metal
Conveyor	EQUI59	NFC001	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI60	NFC002	Wendt	TBD	70	tons	hours	Metal
Conveyor	EQUI61	NFC003	Wendt	TBD	70	tons	hours	Metal
Conveyor	EQUI62	NFC004	Wendt	TBD	63	tons	hours	Metal
Conveyor	EQUI63	NFC005	Wendt	TBD	63	tons	hours	Metal
Conveyor	EQUI64	NFC006	Wendt	TBD	34	tons	hours	Metal
Conveyor	EQUI65	NFC007	Wendt	TBD	34	tons	hours	Metal
Conveyor	EQUI66	NFC008	Wendt	TBD	34	tons	hours	Metal

Subject Item Type Description	Subject Item ID	SI Designation and Description*	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units (numerator)	Max Design Capacity Units (denominator)	Material
Conveyor	EQUI67	NFC009	Wendt	TBD	18	tons	hours	Metal
Conveyor	EQUI68	NFC010	Wendt	TBD	17	tons	hours	Metal
Conveyor	EQUI69	NFC011	Wendt	TBD	17	tons	hours	Metal
Conveyor	EQUI70	NFC012	Wendt	TBD	3	tons	hours	Metal
Conveyor	EQUI71	NFC013	Wendt	TBD	10	tons	hours	Metal
Conveyor	EQUI72	NFC014	Wendt	TBD	10	tons	hours	Metal
Conveyor	EQUI73	NFC015	Wendt	TBD	6	tons	hours	Metal
Conveyor	EQUI74	NFC016	Wendt	TBD	10	tons	hours	Metal
Conveyor	EQUI75	NFC017	Wendt	TBD	10	tons	hours	Metal
Conveyor	EQUI76	NFC018	Wendt	TBD	6	tons	hours	Metal
Conveyor	EQUI77	NFC019	Wendt	TBD	10	tons	hours	Metal
Conveyor	EQUI78	NFC020	Wendt	TBD	7	tons	hours	Metal
Conveyor	EQUI79	NFC021	Wendt	TBD	8	tons	hours	Metal
Conveyor	EQUI80	NFC022	Wendt	TBD	6	tons	hours	Metal
Conveyor	EQUI81	NFC023	Wendt	TBD	4	tons	hours	Metal
Conveyor	EQUI82	NFC024	Wendt	TBD	4	tons	hours	Metal
Conveyor	EQUI83	NFC025	Wendt	TBD	1.5	tons	hours	Metal
Conveyor	EQUI84	NFC026	Wendt	TBD	3.5	tons	hours	Metal
Conveyor	EQUI85	NFC027	Wendt	TBD	0.2	tons	hours	Metal
Conveyor	EQUI86	NFC028	Wendt	TBD	10.5	tons	hours	Metal
Conveyor	EQUI87	NFC029	Wendt	TBD	1.5	tons	hours	Metal
Conveyor	EQUI88	NFC030	Wendt	TBD	0.75	tons	hours	Metal
Conveyor	EQUI89	NFC031	Wendt	TBD	1.75	tons	hours	Metal
Conveyor	EQUI90	NFC032	Wendt	TBD	0.5	tons	hours	Metal
Conveyor	EQUI96	ECS #5	STEINERT	TBD	6	tons	hours	Metal
Conveyor	EQUI101	Feeder #1	BPS	TBD	3	tons	hours	Metal

Subject Item Type Description	Subject Item ID	SI Designation and Description*	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units (numerator)	Max Design Capacity Units (denominator)	Material
Conveyor	EQUI102	Feeder #3	JOEST	TBD	6	tons	hours	Metal
Conveyor	EQUI103	Feeder #8	JOEST	TBD	6	tons	hours	Metal
Conveyor	EQUI104	Feeder #5	JOEST	TBD	6	tons	hours	Metal
Conveyor	EQUI105	FEC015	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI106	FEC016	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI107	FEC017	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI108	FEC018	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI109	FEC019	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI110	FEC020	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI111	FEC021	Wendt	TBD	75	tons	hours	Metal
Conveyor	EQUI112	NFC033	Wendt	TBD	5	tons	hours	Metal
Conveyor	EQUI113	NFC034	Wendt	TBD	3.75	tons	hours	Metal
Conveyor	EQUI114	NFC035	Wendt	TBD	8	tons	hours	Metal
Conveyor	EQUI115	NFC036	Wendt	TBD	21	tons	hours	Metal
Conveyor	EQUI116	NFC037	Wendt	TBD	29	tons	hours	Metal
Conveyor	EQUI117	NFC038	Wendt	TBD	40	tons	hours	Metal
Conveyor	EQUI118	NFC039	Wendt	TBD	45	tons	hours	Metal
Conveyor	EQUI119	NFC040	Wendt	TBD	56	tons	hours	Metal
Conveyor	EQUI120	Feeder #6	JOEST	TBD	4	tons	hours	Metal
Conveyor	EQUI121	Feeder #7	JOEST	TBD	5	tons	hours	Metal
Conveyor	EQUI125	NFC041	Wendt	TBD	56	tons	hours	Metal
Screens	EQUI28	Screen #1	Wendt	TBD	75	tons	hours	Metal
Screens	EQUI92	Screen #2	AEI	TBD	63	tons	hours	Metal
Screens	EQUI100	Screen #3	AEI	TBD	34	tons	hours	Metal
Separation Equipment	EQUI4	Poker Picker	Wendt	TBD	350	tons	hours	Metal
Separation Equipment	EQUI5	Magstand	Wendt	TBD	350	tons	hours	Metal

Subject Item Type Description	Subject Item ID	SI Designation and Description*	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units (numerator)	Max Design Capacity Units (denominator)	Material
Separation Equipment	EQUI6	Z-Box	Wendt	TBD	300	tons	hours	Metal
Separation Equipment	EQUI29	Trommel	Wendt	TBD	71	tons	hours	Metal
Separation Equipment	EQUI32	SMB #1	MTB	TBD	18	tons	hours	Metal
Separation Equipment	EQUI34	SMB #2	MTB	TBD	17	tons	hours	Metal
Separation Equipment	EQUI37	ECS #3	MTB	TBD	3	tons	hours	Metal
Separation Equipment	EQUI39	Finder #1	Wendt	TBD	2.5	tons	hours	Metal
Separation Equipment	EQUI40	Sifter #1	JOEST	TBD	10	tons	hours	Metal
Separation Equipment	EQUI43	ECS #4	STEINERT	TBD	6	tons	hours	Metal
Separation Equipment	EQUI44	Finder #2	Wendt	TBD	3	tons	hours	Metal
Separation Equipment	EQUI46	FE Separator #2	Wendt	TBD	7	tons	hours	Metal
Separation Equipment	EQUI49	Finder #3	Wendt	TBD	3	tons	hours	Metal
Separation Equipment	EQUI50	Sifter #3	JOEST	TBD	10	tons	hours	Metal
Separation Equipment	EQUI51	FE Separator #3	Wendt	TBD	7	tons	hours	Metal
Separation Equipment	EQUI53	ECS #6	STEINERT	TBD	7	tons	hours	Metal
Separation Equipment	EQUI55	Sifter #4	JOEST	TBD	8	tons	hours	Metal
Separation Equipment	EQUI56	FE Separator #4	Wendt	TBD	6	tons	hours	Material
Separation Equipment	EQUI91	Magstand	Wendt	TBD	150	tons	hours	Metal
Separation Equipment	EQUI93	ECS #1	MTB	TBD	5	tons	hours	Metal
Separation Equipment	EQUI94	FE Separator #1	Wendt	TBD	7	tons	hours	Metal
Separation Equipment	EQUI95	Sifter #2	JOEST	TBD	10	tons	hours	Metal
Separation Equipment	EQUI97	Finder #4	Wendt	TBD	3.5	tons	hours	Metal
Separation Equipment	EQUI98	ECS #7	MTB	TBD	6	tons	hours	Metal
Separation Equipment	EQUI99	ECS #2	MTB	TBD	7	tons	hours	Metal
Separation Equipment	EQUI122	Finder #5	Wendt	TBD	4	tons	hours	Metal
Separation Equipment	EQUI123	Finder #6	Wendt	TBD	4	tons	hours	Metal
Separation Equipment	EQUI124	Sensor #1	SGM	TBD	5	tons	hours	Metal

Subject Item Type Description	Subject Item ID	SI Designation and Description*	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units (numerator)	Max Design Capacity Units (denominator)	Material
Shredding Equipment	EQUI2	Shredder	Wendt	TBD	350	tons	hours	Metal

*SI designation and description of units may change upon final design, but the equipment function, capacity, and potential emissions will not change.

Technical Support Document
for
Air Emission Permit No. 14100076-101

This technical support document (TSD) is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the determination to issue the permit.

1. General information

1.1 Applicant and stationary source location

Table 1. Applicant and source address

Applicant/Address	**Stationary source/Address** (SIC Code: 5093)
EMR USA 143 Harding Ave Bellmawr, New Jersey 08031-2430	Northern Metals, LLC 13196 Hancock Street SE Becker, MN 55308
Contact: Thomas Swafford Phone: 651-328-8825	

1.2 Facility description

Northern Metals, LLC in Becker ("Permittee" or "facility") is a proposed scrap metal recycling facility. The facility will operate a shredder, associated ferrous processing equipment, a metal recovery plant (MRP), an end-of-life vehicle (ELV) process, and a community metals receiving center. The main sources of air emissions are the shredder, ferrous process, MRP, and fugitive dust from paved roads and material handling. The shredder, ferrous process, and MRP will be enclosed in buildings and controlled by particulate matter control devices. The shredder will also be controlled by a thermal oxidizer. Fugitive dust will be mitigated by sweeping, watering and other best management practices as required by the facility's fugitive dust control plan.

General description of the proposed process

1. **Scrap receiving.** Northern Metals will receive scrap by truck and occasionally by rail from contracted suppliers. Northern Metals will also receive scrap from the public through its community metals receiving center.
2. **Inspection and depollution.** Northern Metals' suppliers certify that their loads are free of hazardous or unacceptable materials. Hazardous or unacceptable materials are defined by the facility's feedstock control plan, which is Appendix C of the permit. Northern Metals will inspect all loads and segregate hazardous or unacceptable materials or reject loads that are found to contain hazardous or unacceptable materials. Northern Metals will also accept unprocessed vehicles at its ELV process. The ELV process will remove all fluids, refrigerants, batteries, lead-containing parts, catalytic converters, tires, mercury switches, and shredding hazards from the vehicle prior to shredding.
3. **Shredding.** Scrap that is free of hazardous and unacceptable materials will be loaded onto a conveyor using a crane and conveyed into the shredder building. The shredder will break down the scrap in to small pieces.
4. **Downstream ferrous processing.**
   After shredding, the shredded material will be conveyed to the ferrous process building where the ferrous material will be separated from all other materials (non-ferrous metals, plastics, etc.). Shredded ferrous material will be conveyed to a stockpile and transferred to trucks or railcars for load out.

5. **MRP.** The non-ferrous material will be conveyed to the MRP and further separated into non-ferrous metal streams and waste streams. The waste will be shipped out by trucks to a landfill. The non-ferrous metals will be stored in the MRP and shipped out to buyers by truck.

1.3 Description of the activities allowed by this permit action

This permit action is a state permit for construction and operation of a new facility.

The Minnesota Pollution Control Agency (MPCA) has a combined operating and construction permitting program under Minnesota Rules Chapter 7007, and under Minn. R. 7007.0800. Under that authority, this permit action authorizes construction.

Table 2. Notifications and applications included in this action

Date received	Application/Notification type and description
08/01/2017	State Permit (IND20170001)
04/13/2018	State Permit (IND20170001)- supplemental information

1.4 Facility emissions

Table 3. Total facility potential to emit summary

	PM tpy	PM_{10} tpy	$PM_{2.5}$ tpy	SO_2 tpy	NO_x tpy	CO tpy	CO_2e tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total facility limited potential emissions*	142	36.9	16.9	0.05	8.65	7.27	10,300	13.9	0.74	3.81

*includes insignificant activities

Table 4. Facility classification

Classification	Major	Synthetic minor/area	Minor/Area
New Source Review		X	
Part 70		X	
Part 63		X	

2. Regulatory and/or statutory basis

See Attachment 1 for an analysis of how permit limits work together to avoid various regulatory thresholds discussed below.

2.1 New source review (NSR)

The Permittee has accepted conditions to remain below the NSR major source thresholds. These conditions are operational requirements and minimum control efficiency limits on PM and VOC control devices to maintain the potential PM and VOC emission rate below the major source threshold.

2.2 Part 70 permit program

The Permittee has accepted limits to remain below the Part 70 major source thresholds. These conditions are operational requirements and minimum control efficiency limits on PM, PM_{10}, and $PM_{2.5}$ and VOC control devices to maintain the potential PM, PM_{10}, and $PM_{2.5}$ and VOC emission rate below the major source threshold. The total facility limited PTE of PM is above the major source threshold; however, the majority of those potential emissions are from fugitive sources, which under 40 CFR Section 70.2 and Minn.

R. 7007.0020, subp. 2(B) are not included in determining if a sources is a major stationary source under Part 70.

2.3 New source performance standards (NSPS)

The Permittee has stated that no New Source Performance Standards apply to the proposed operations at this facility.

2.4 National emission standards for hazardous air pollutants (NESHAP)

The facility has accepted limits such that it is an area source under the NESHAP regulations. The Permittee has stated that there are no area source NESHAPs that apply to the proposed operations at this facility.

The Permittee will not be subject to 40 CFR pt. 63, subp. GGGGGG for Primary Nonferrous Metals Areas Sources because the NESHAP applies to owners and operators of primary zinc or beryllium production facilities. Although nonferrous metals will be a product stream of the MRP, these metals will not be produced at Northern Metals Becker and the facility does not meet the definition of primary beryllium production facility or primary zinc production facility under 40 CFR Section 63.11167.

The Permittee is not subject to 40 CFR pt. 63, subp. TTTTTT for Secondary Nonferrous Metals Processing at Area Sources because the proposed facility does not meet the definition of "secondary nonferrous metals processing facility" under 40 CFR Section 63.11472.

2.5 Compliance assurance monitoring (CAM)

The Permittee is not subject to CAM because CAM is not applicable to nonmajor Part 70 sources.

2.6 Environmental review and air emissions risk analysis (AERA)

As part of this project, the Permittee prepared an environmental assessment worksheet (EAW) and an AERA. Northern Metals was required to prepare both of these analyses as part of a 2017 consent decree filed with the Ramsey County District Court that settled claims by the MCPA and City of Minneapolis. Although not otherwise required by law, as part of the consent decree Northern Metals agreed to conduct these analyses in order to adequately address environmental concerns about its relocated operations.

The EAW is public noticed concurrently with the permit. Permit conditions that support analyses described in the EAW or permit conditions that require mitigation or control described by the EAW are cited as findings of the EAW.

2.7 Minnesota State Rules

Portions of the proposed facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0515 Standards of Performance for New Indirect Heating Equipment
- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment

Table 5. Regulatory overview of facility

Subject item*	Applicable regulations	Rationale

Subject item*	Applicable regulations	Rationale
TFAC 1 - Air Quality Total Facility	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps. 1 and 2(B); Minn. Stat. 116.07 subds. 4a & 9	EAW, AERA: Feedstock Control Plan. • The EAW describes the feedstock control plan as a means to ensure that hazardous materials are not shredded • The AERA uses emission rates that assume a feedstock control plan is in place. This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act
	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps. 1-2(B); Minn. Stat. 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7009.0010-7009.0090, Minn. R. 7011.0150	EAW, $PM_{2.5}$/PM_{10} Modeling, Minnesota Rule Preventing Particulate Matter from Becoming Airborne: Fugitive Dust Control Plan. • The EAW describes the fugitive dust control plan as a means to mitigate fugitive dust. • The modeling assumes an enforceable fugitive dust control plan is in place.
	Findings of EAW, Minn. R. ch. 4410; Minn. R. 7030.0010-7030.0080	EAW: Noise Pollution Control. The EAW includes a noise level projection. The Permittee is required to verify this projection through noise testing upon startup. This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act
COMG 1 – Ferrous Building Equipment	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps. 1-2(B); Minn. Stat. 116.07 subds. 4a & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M); Minn. R. 7009.0010-7009.0090; Title I Condition to avoid major source under 40 CFR 52.21(b)(1)(i); To avoid major source under 40 CFR 70.2	Consent Decree, EAW, AERA, $PM_{2.5}$/PM_{10} Modeling, PSD, Part 70: Total Enclosure Conditions. The permit contains conditions to ensure that the ferrous processing building functions as a total enclosure and that all emissions from the ferrous process are vented to control equipment. • The consent decree requires that shredding operation (which includes the ferrous processing) be conducted in a building(s) that is a total enclosure; • The EAW describes a total enclosure combined with particulate control as a means to minimize potential environmental effects (through AERA and modeling demonstration); • The AERA uses emission rates for particulate HAPs from the ferrous process that are based on 100% capture; • The air dispersion modeling for PM_{10} and $PM_{2.5}$ uses emission rates based on 100% capture of particulate emission from the ferrous process; • The Permittee relies on 100% capture combined with particulate control to avoid major source classification under PSD (for PM) and under Part 70 (for PM, PM_{10}, and $PM_{2.5}$).
	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment. The units in COMG 1 are each individually subject to standards of performance because they are industrial process equipment not in operation before July 9, 1969 for which a standard of performance has not been promulgated in a specific rule.

Subject item*	Applicable regulations	Rationale
	Findings of EAW; Minn. R. ch. 4410; Minn. Stat. 116.07 subd. 4a & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M); Minn. R. 7009.0010-7009.0090	EAW, AERA, $PM_{2.5}$/PM_{10} Modeling: Hours of Operation Limit. • The EAW describes AERA and modeling results based on the hours of operation limit; • The AERA uses emission rates based on the hours of operation limit; • The modeling uses emission rates based on the hours of operation limit;
COMG 2 – Metal Recovery Plant (MRP)	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps. 1-2(B); Minn. Stat. 116.07 subds. 4a & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M); Minn. R. 7009.0010-7009.0090; Title I Condition to avoid major source under 40 CFR 52.21(b)(1)(i); To avoid major source under 40 CFR 70.2	Consent Decree, EAW, AERA, $PM_{2.5}$/PM_{10} modeling, PSD, Part 70: Total Enclosure Conditions. • The consent decree requires that shredder residue process operation (MRP) be conducted in a building that is a total enclosure; • The EAW describes a total enclosure combined with particulate control as a means to minimize potential environmental effects (through AERA and modeling demonstration); • The AERA uses emission rates based on 100% capture of emissions from the MRP • The air dispersion modeling for PM_{10} and $PM_{2.5}$ uses emission rates based on 100% capture of emission from the MRP. • The Permittee relies on 100% capture combined with particulate control to avoid major source classification under PSD (for PM) and under Part 70 (for PM, PM_{10}, and $PM_{2.5}$).
	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment. The units in COMG 2 are each individually subject to standards of performance because they are industrial process equipment not in operation before July 9, 1969 for which a standard of performance has not been promulgated in a specific rule.
COMG 3 – Shredder Control Equipment & COMG 4 – Ferrous Building Control Equipment	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps. 1-2(B); Minn. Stat. 116.07 subd 4a & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M); Minn. R. 7009.0010-7009.0090; Title I Condition to avoid major source under 40 CFR 52.21(b)(1)(i); To avoid major source under 40 CFR 70.2	Consent Decree, EAW, AERA, $PM_{2.5}$/PM_{10} modeling, PSD, Part 70: Overall Control Efficiencies Limits for PM, PM_{10}, $PM_{2.5}$, and Particulate HAP. • The consent decree requires that Northern Metals install particulate matter control equipment on the shredder operation (which includes the ferrous processing operation) that collectively achieves the overall control efficiencies listed in the permit for PM, PM_{10}, $PM_{2.5}$; • The EAW describes particulate matter control equipment as a means to mitigate potential environmental effects; • The AERA uses controlled emission rate of particulate HAP; • The PM_{10} and $PM_{2.5}$ air dispersion modeling uses the controlled emission rate of PM_{10} and $PM_{2.5}$; • The facility relies on particulate matter control equipment to remain below the major source thresholds for PSD (for PM) and Part 70 for (PM, PM_{10}, and $PM_{2.5}$).

Subject item*	Applicable regulations	Rationale
COMG 5 – Shredder Building Equipment	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800 subps. 1-2(B); Minn. Stat. Section 116.07, subds. 4 & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M); Title I Condition to avoid major source under 40 CFR 52.21(b)(1)(i); Title I Condition to avoid major source under 40 CFR 63.2; To avoid major source under 40 CFR 70.2	Consent Decree, EAW, AERA, $PM_{2.5}/PM_{10}$ modeling, PSD, Part 70, NESHAPs: Total Enclosure Conditions. • The consent decree requires that shredding operation be conducted in a building that is a total enclosure; • The EAW describes a total enclosure combined with particulate control as a means to minimize potential environmental effects (through AERA and modeling demonstration); • The AERA uses emission rates based on 100% capture of particulate HAPs from the shredding process; • The air dispersion modeling for PM_{10} and $PM_{2.5}$ uses emission rates based on 100% capture of emission from the shredding process; • The Permittee also relies on 100% capture combined with particulate control to avoid major source classification under PSD (for PM) and under Part 70 (for PM, PM_{10}, and $PM_{2.5}$). • The Permittee also relies on 100% capture combined with Volatile HAP control to avoid major source classification under NESHAP program.
	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment. EQUI 2 and 3 are subject to this requirement because they are industrial process equipment not in operation before July 9, 1969 for which a standard of performance has not been promulgated in a specific rule.
	Findings of EAW; Minn. R. ch. 4410; Minn. Stat. 116.07 subd. 4a & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M); Minn. R. 7009.0010-7009.0090	EAW, AERA, $PM_{2.5}/PM_{10}$ Modeling: Hours of Operation Limit. • The EAW describes AERA and modeling results based on the hours of operation limit; • The AERA uses emission rates based on the hours of operation limit; • The modeling uses emission rates based on the hours of operation limit.
STRU 19 – Combined Stack	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps. 1-2(B); Minn. Stat. 116.07 subds. 4a & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M); Minn. R. 7009.0010-7009.0090;); Title I Condition to avoid major source under 40 CFR 52.21(b)(1)(i); To avoid major source under 40 CFR 70.2	EAW, $PM_{2.5}/PM_{10}$ Modeling, PSD, Part 70: PM, PM_{10}, and $PM_{2.5}$ lb/hr Emission Limits. • The EAW describes modeling results that are based on the STRU 19 $PM_{2.5}$ and PM_{10} limits; • The permit limits emissions from STRU 19 to the emission rates used in the PM_{10} and $PM_{2.5}$ modeling demonstration. • The STRU 19 emission limits on PM, PM_{10} and $PM_{2.5}$, in combination with other permit limits, allow the Permittee to avoid major source classification under PSD (for PM) and under Part 70 (for PM, PM_{10} and $PM_{2.5}$).

Subject item*	Applicable regulations	Rationale
	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps. 1 & 2(B); Minn. Stat. 116.07 subds. 4a & 9	EAW, AERA: Mercury lb/yr Emission Limits. • The EAW describes a limited Mercury emission rate of 3 lb/hr. Because STRU 19 is limited to 3 lb/yr the facility does not meet the criteria to be a new mercury emission source as described in the MPCA's December 6, 2012 Guidelines for New and Modified Mercury Air Emissions Sources; • The permit limits emissions from STRU 19 to the emission rates used in the AERA demonstration. This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act
	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800; subp. 1-2 Minn. Stat. 116.07 subds 4a & 9	EAW, AERA: Risk Recalculation. There are no limits on metal HAPs, volatile HAPs, Dioxin/Furans, and PCBs because the AERA uses the controlled, hours operation-limited PTE. However, the Permittee is required to verify the emission rates of these pollutants analyzed in the AERA through performance testing. If the tested emission rates are higher than what was used in the AERA, in order to ensure that estimated potential risks from the facility do not exceed the risk management guidelines applied in the AERA the Permittee shall conduct a risk recalculation. This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act
TREA 1 -Centrifugal Collector - High Efficiency TREAs 2, 3 -- Fabric Filter - Low Temp	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps. 1-2; Minn. Stat. 116.07 subd 4a & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M); Minn. R. 7009.0010-7009.0090; Title I Condition to avoid major source under 40 CFR 52.21(b)(1)(i); To avoid major source under 40 CFR 70.2	Consent Decree, EAW, AERA, $PM_{2.5}$/PM_{10} modeling, PSD, Part 70: Requirements to Operate and Maintain Control Equipment to Control PM, PM_{10}, $PM_{2.5}$, and Particulate HAP Emissions from COMG 5. • The consent decree requires that Northern Metals install particulate matter control equipment on the shredder operation; • The EAW describes particulate matter control is needed to minimize potential environmental effects (through modeling demonstration and AERA); • The AERA uses controlled emission rate of particulate HAP; • The PM_{10} and $PM_{2.5}$ air dispersion modeling uses the controlled emission rate of PM_{10} and $PM_{2.5}$; • The facility requires particulate matter control equipment to remain below the major source thresholds for PSD (for PM) and Part 70 for (PM, PM_{10}, and $PM_{2.5}$).

Subject item*	Applicable regulations	Rationale
TREA 4 -Centrifugal Collector - High Efficiency TREAs 2, 3 – Fabric Filter - Low Temp	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps 1-2; Minn. Stat. 116.07, subd. 4a & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M); Minn. R. 7009.0010-7009.0090; Title I Condition to avoid major source under 40 CFR 52.21(b)(1)(i); To avoid major source under 40 CFR 70.2	Consent Decree, EAW, AERA, $PM_{2.5}$/PM_{10} modeling, PSD, Part 70: Requirements to Operate and Maintain Control Equipment to Control PM, PM_{10}, $PM_{2.5}$, and Particulate HAP Emissions from COMG 1. • The consent decree requires that Northern Metals install particulate matter control equipment on the shredder operation (which includes the ferrous processing operation) • The EAW describes that particulate matter control equipment is needed to mitigate potential environmental effects (through modeling demonstration and AERA); • The AERA uses controlled emission rate of particulate HAP; • The PM_{10} and $PM_{2.5}$ air dispersion modeling uses the controlled emission rate of PM_{10} and $PM_{2.5}$; • The facility relies on particulate matter control equipment to remain below the major source thresholds for PSD (for PM) and Part 70 for (PM, PM_{10}, and $PM_{2.5}$).
TREA 7 - Fabric Filter - Low Temp	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps. 1-2; Minn. Stat. 116.07 subds. 4a & 9; Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M); Minn. R. 7009.0010-7009.0090; Title I Condition to avoid major source under 40 CFR 52.21(b)(1)(i); To avoid major source under 40 CFR 70.2	Consent Decree, EAW, AERA, $PM_{2.5}$/PM_{10} modeling, PSD, Part 70: Requirements to Operate and Maintain Control Equipment to Control PM, PM_{10}, $PM_{2.5}$, and Particulate HAP Emissions from COMG 2. • The consent decree requires that Northern Metals install particulate matter control equipment on the MRP; • The EAW describes that particulate matter control equipment is needed to mitigate potential environmental effects (through modeling demonstration and AERA); • The AERA uses the controlled emission rate particulate HAPs; • The PM_{10} and $PM_{2.5}$ air dispersion modeling uses the controlled emission rate of PM_{10} and $PM_{2.5}$. • The facility relies on particulate matter control equipment to remain below the major source thresholds for PSD (for PM) and Part 70 for (PM, PM_{10}, and $PM_{2.5}$).
TREA 8 – Thermal Oxidizer	Findings of EAW; Minn. R. ch. 4410; Minn. R. 7007.0800, subps. 1-2; Minn. Stat. subds. 4a & 9; Title I Condition to avoid major source under 40 CFR 52.21(b)(1)(i); To avoid major source under 40 CFR 70.2; Title I Condition to avoid major source under 40 CFR 63.2	EAW, AERA, PSD, Part 70, NESHAP: Requirements to Operate and Maintain Control Equipment to Control VOC and Volatile HAPs Emissions from COMG 5. (The permit also requires control of COMG 1, but control of COMG 1 by TREA 8 is not needed to avoid any regulatory thresholds, and all analyses used uncontrolled VOC emissions from COMG 1.) • EAW describes VOC control on the shredder that is needed to minimize the potential for environmental effects (through AERA); • The AERA relied on controlled emission rate of VOCs; • The facility relies on control of VOC emissions from the shredder to remain below the major source thresholds for PSD, Part 70, and the NESHAP program.

Subject item*	Applicable regulations	Rationale
	Minn. R. 7011.0610	Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment Applicable limits based on: 1) Construction after July 9, 1969; 2) The facility is located outside of the Minneapolis-St. Paul Air Quality Control Region; and 3) Total rated heat input of all indirect and direct heating equipment at the facility is less than 250 MMBtu/hr

*Location of the requirement in the permit (e.g., EQUI 1, STRU 2, etc.).

The language 'This is a state-only requirement and is not enforceable by the U.S. Environmental Protection Agency (EPA) Administrator and citizens under the Clean Air Act' refers to permit requirements that are established only under state law and are not established under or required by the federal Clean Air Act. The language is to clarify the distinction between permit conditions that are required by federal law and those that are required only under state law. State law-only requirements are not enforceable by the EPA or by citizens under the federal Clean Air Act, but are fully enforceable by the MPCA and citizens under provisions of state law.

3. Technical information

Feedstock Control Plan

Emissions of hazardous air pollutants and volatile organic compounds from the shredder are dependent on the composition of the feedstock. Northern Metals ensures hazardous materials and volatile materials are not present in its feedstock through the actions required by its Feedstock Control Plan. The Feedstock Control Plan is contained in Appendix C of this permit and is an enforceable part of the permit.

The permit requires the Permittee to update the feedstock control plan to address any new regulations or any new products or scrap steams that might introduce hazardous or unacceptable materials in to the shredding operation.

Total Enclosure Requirements

The consent decree requires that the shredder and associated process equipment and the metal recovery plant activities all be conducted within a total enclosure or building(s) that function as a total enclosure. The permit contains site-specific conditions based off of the requirements of the consent decree to ensure that the buildings that house the shredder, the ferrous process, and the MRP function as a total enclosures.

Permit Flexibility

The permit states that any additions, replacements or changes to particulate emitting units in COMG 1 and COMG 2 are subject to the requirements of COMG 1 and 2 respectively and shall be vented to control equipment and STRU 19 as described in the permit. Therefore, such additions and replacements would not automatically trigger a major amendment solely due to an increase in PM, PM_{10}, or $PM_{2.5}$ emissions because any new, replaced, or modified units are required to be controlled and subject to the PM, PM_{10}, or $PM_{2.5}$ limits of STRU 19. However, these changes would still need to be evaluated for amendment applicability and to see if the changes trigger any new requirements. This approach is reasonable because the types of units that Northern Metals would add to COMG 1 or COMG 2 would be similar to the proposed units in COMG 1 and COMG 2 and therefore compliance with the existing permit conditions would be feasible.

3.1 Calculations of potential to emit (PTE)

Attachment 1 to the TSD contains PTE calculations for the facility. The potential emission rates are based off of emission factors derived from either the control equipment manufacturer's grain loading guarantee, testing conducted at Northern Metals' Minneapolis facility, testing at other shredders in the United States, or EPA's AP-42 Fifth Edition Complication of Emission Factors.

Although the Becker facility will have a different shredder than the Minneapolis facility, the test data from the Minneapolis facility were used to calculate emission factors for some pollutants for the Becker facility because both shredders are totally enclosed, the Becker facility will have particulate control devices with equivalent or better control efficiencies than the Minneapolis facility, and the anticipated feedstock at the Becker facility will be substantially similar to the feedstock at the Minneapolis facility. The calculation method for each set of pollutants and sources is described below.

Particulate Matter from Shredder and Ferrous Process

What is the calculation method?

The pound per hour controlled, limited particulate matter PTE from the shredder and ferrous process were calculated using the fabric filter exhaust grain loading guarantee from the fabric filter manufacturer and the design exhaust flow rate of each process.

The limited annual PTE of the shredder and ferrous process was calculated using the hours of operation limit of 3744 hrs/yr. The uncontrolled PTE for these pollutants was back calculated assuming control efficiencies from the permit that are based of the Control Equipment Rule Minn. R. 7011.0070 and Section V.F. of the Consent Decree.

Example:

$$PM_{\text{shredder}}\left(\frac{\text{lb}}{\text{hr}}\right) = \text{gr loading guarantee}_{\text{fabric filter}}\left(\frac{\text{gr}}{\text{dscf}}\right) * \text{design flow rate}_{\text{shredder}}(\text{DSCFM}) * \text{conversion factor}$$

Why is this calculation method reasonable and conservative?

The calculation conservatively assumes that PM = PM_{10} = $PM_{2.5}$.

The data from particulate matter testing at the Minneapolis facility supports using the manufacturer's rate to calculate both an achievable and reasonably conservative controlled PTE for the Becker facility. Table 6 below compares the total particulate matter (filterable and condensable) grain loading measured during three different test events at the Minneapolis facility to the fabric filter manufacturer's guarantee. With the exception of one test run, the manufacturer's guarantee is more conservative than the tested rates.

The dispersion modeling demonstrates that these emissions rates are protective of the NAAQS and MAAQS for PM_{10} and $PM_{2.5}$.

Table 6. Comparison of Particulate Matter Test Results and Fabric Filter Manufacturer Guarantee

	Total Particulate Matter (gr/dscf)			
	12/01/09 Mpls Test	12/22/09 Mpls Test	12/20/16 Mpls Test	Mfc Guarantee
Run 1	0.00344	0.00143	0.0007	
Run 2	0.00118	0.00167	0.0007	0.00225
Run 3	0.00137	0.00195	0.0014	

These processes, along with the MRP emissions vent to STRU 19. The permit limits pound per hour particulate emission rate based on these calculations. Within 180 days after startup, and periodically thereafter, the Permittee will verify the lb/hr particulate emission rate of STRU 19 through performance testing.

VOC and Volatile HAP from Shredder and Ferrous Process

What is the calculation method?

The VOC and Volatile HAP PTE from the shredder and ferrous process are based on performance tests data. Northern Metals conducted a test in July 2017 on its shredder and ferrous process combined stack to measure total VOC emissions at its Minneapolis facility.

No site-specific data exists for speciation of VOCs or volatile HAPs from the Minneapolis facility, and there are no published emission factors for speciated VOC or volatile HAPs from metal shredding processes. An estimate of VOC speciation was important for the AERA analysis.

In consultation with EPA Region V, the MPCA was able to locate two sets of performance test data from other metal shredders in the United States that have speciated VOC data. One report was for a 2010 performance test at OmniSource Corporation (Omnisource) in Jackson, Michigan, the other was a 2005 performance test at Adams Steel in Anaheim, California. Neither source has control for VOC emissions. The Omnisource test data was used to estimate speciation of VOCs at the Becker facility.

From the Omnisource test, an emission factor for each VOC in the units of lb speciated VOC/lb total VOC (as propane) was developed. To calculate PTE, the emission factor was multiplied by the highest emission rate of VOC measured in the 3-run 2017 performance test at the Northern Metals Minneapolis facility. The results were then scaled by the ratio of the maximum capacity of the proposed Becker shredder to the throughput measured during the Minneapolis performance test. To calculate total VOC, the speciated VOC PTEs were summed.

Example:

$$Toluene_{shredder\ \&\ ferrous} = \frac{lb\ toluene_{Omnisource}}{lb\ total\ VOC_{Omnisource}} * total\ VOC\ \left(\frac{lb}{hr}\right)_{Mpls\ shreder\ \&\ ferrous} * \frac{max\ throughput_{Becker}}{throughput_{Mpls}}$$

Why is this method reasonable and conservative?

The only published emission factor for VOC emissions from scrap shredding operations that the MPCA is aware of is from the Institute of Scrap Recycling Industry's 1996 "Title V Applicability Workbook". This factor is 0.00136 lb VOC/tons material processed. VOC performance test data from across the country, including the test from Northern Metals, show that this factor is a significant underestimation. Therefore, the best data available for calculating total potential VOC emissions is from the Northern Metals Minneapolis VOC test.

There are no published emission factors for speciated VOC from shredding operations or similar processes. Test data from other shredding facilities was the best data available. The Omnisource test was used to estimate VOC speciation because as compared with the Adams Steel test, Omnisource tested for more VOC species and the results produced higher (more conservative) emission factors. Additionally, the Adams Steel facility tested using 80% tin and 20% autos, whereas the feedstock for the Omnisource shredder was 100% autos which is assumed to be worst case for VOC emissions.

Using the Omnisource data a lb/lb VOC emission factor was used rather than a lb/ton processed emission factor because given the Omnisource data, a lb/lb VOC emission factor is more conservative than a lb/ton processed emission factor. Additionally any non-detects from the Omnisource test were assumed to be emitted at the detection limit. Finally, to calculate total VOC, the speciated VOC PTEs were summed. This

approach yields a more conservative value than simply scaling up the 2017 total VOC results from the Minneapolis shredder by the maximum capacity of the proposed shredder.

The emission rate of VOC and volatile HAPs will be verified through performance testing upon startup.

Distribution of VOC and VOC-HAPs between the Shredder and Ferrous Process

What is the calculation method?
The 2017 performance test at Northern Metals' Minneapolis facility measured the combined VOC emission rate from both the shredder and ferrous process. However, because the majority of the VOC emissions are produced by the shredder, the proposed Becker facility will control VOC emissions from the shredder but not from the downstream ferrous processing. Therefore, for the purposes of calculating PTE it is necessary to estimate what portion of total VOC is emitted by the shredder (and controlled) and what portion is emitting by the downstream ferrous process (and not controlled).

The only data that the MPCA is aware of that may address this question is from a test conducted by wTe Recycling, Inc. in Greenfield Massachusetts. The shredding process at this facility has three stages of air classification each with its own exhaust stack. The test measured emissions at each of the three discharge points. A discussion with EPA Region I representatives familiar with the test and facility confirmed that the first discharge point represents the primary shredder. The wTe test measured approximately 95% of the VOC emissions from the primary shredder stack. Northern Metals used this data to approximate the relative amount of VOC emitted from the shredder and ferrous process.

Example:

$$VOC_{shredder} = VOC_{shredder\ \&\ ferrous} * \frac{VOC_{wTe\ shredder}}{VOC_{wTe\ shredder\ \&\ ferrous}}$$

Why is this method reasonable and conservative?
Although it is unknown how well the operation at wTe Recycling approximates the proposed operation at the Becker facility, the MPCA believes it is reasonable to assume that the majority of the VOC emissions are generated in the shredder due to the heat generated by the shredding process. Because the total VOC emissions from the shredder and ferrous process are conservative, even given the uncertainty of the exact percentage of VOCs that are generated in the downstream ferrous process, the uncontrolled portion of the VOCs that is calculated from the ferrous process is a reasonable estimate. The total VOC emission rate will be verified through performance testing required by the permit.

VOC-HAP Control Efficiency

What is the basis of the efficiency?
Control efficiency for VOC and volatile HAPs from the thermal oxidizer is based on the manufacturer's guarantee of 95%.

Why is this efficiency reasonable and conservative?
The MPCA often uses the control efficiencies listed in Minn. R. 7011.0070 as a first check of whether a proposed control efficiency is reasonably achievable because the efficiencies in the rule are conservative for most types of operations and equipment. The rule allows for 97% control efficiency of VOC for thermal oxidizers, but does not provide a volatile HAP control efficiency for a thermal oxidizer.

Table 3.2 of *Design of Thermal Oxidation Systems for Volatile Organic Compounds* by David A. Lewandowski provides guidelines for VOC destruction efficiency as a function of temperature and residence time. The

table assumes that at least 3.0% oxygen concentration is present in the products of combustion and that there is sufficient turbulence. The table indicates that for 95% destruction efficiency of a given compound the temperature of the thermal oxidizer should be 300° F above the compound's auto-ignition temperature. Based on the approximate auto ignition temperatures of the measured volatile HAPs (not including non-detects) in OmniSource's stack test, a minimum temperature limit of 1340°F is needed.

Therefore, if operated according the manufacturer's specifications at a minimum combustion chamber temperature of 1550°F, it is expected that the oxidizer will achieve at least 95% destruction efficiency of volatile HAPs

Table 7. Approximate Auto Ignition Temperature for Select Hazardous Air Pollutants

Pollutant	Approx. Auto Ignition Temp (°F)
n-Hexane	453
Benzene	1040
Trichloroethene	788
4-Methyl-2-pentanone	854
Toluene	986
Ethylbenzene	806
m,p-Xylenes	986
Styrene	914
o-Xylene	865
Cumene	795
Naphthalene	977
Isooctane	837

Mercury Emissions from Shredder and Ferrous Process

What is the calculation method?

Pound per hour mercury emissions from the shredder and ferrous process are based off of performance test data from three test runs in August 2017 at the Minneapolis facility. An emission factor from test was calculated in the pound per ton throughput. The annual emissions of mercury from the shredder, ferrous process, and MRP are based on the permit limit of 3 lb/yr.

Example:

$$Hg_{shredder\ \&\ ferrous}\left(\frac{lb}{hr}\right) = Hg_{Mpls\ shredder\ \&\ ferrous}\left(\frac{lb}{ton}\right) * \max throughput_{Becker}\left(\frac{ton}{hr}\right)$$

Why is this calculation method reasonable and conservative?

The emission factor is based on the average emission rate plus one standard deviation; however, the Permittee will be required to conduct an initial performance test within 180 days after startup to set an emission factor based on site-specific data. Periodically thereafter, the Permittee is required to verify this emission factor through performance testing.

Metal HAPs from Shredder and Ferrous Process

What is the calculation Method?

A controlled emission factor was calculated from performance test data for metal HAPs from two test events of thee runs each in December 2009 and December 2016 at the Minneapolis facility. The highest test run was used to calculate a controlled emission factor in the units of lb/acfm for the shredder and ferrous

process. Because the Becker facility will be equipped with particulate matter control equipment with equivalent or better control efficiency than the Minneapolis shredder, it was assumed that the grain loading is equivalent for both sources. The design air flow for the new shredder plus a safety factor was used to calculate PTE for the new shredder.

The annual PTE was calculated using the hours of operation limit of 3744 hrs/yr. The uncontrolled PTE for these pollutants was back calculated assuming a control efficiencies for PM_{10} based of the Control Equipment Rule Minn. R. 7011.0070

Example:

$$Pb_{shredder}\left(\frac{lb}{hr}\right) = Pb_{Mpls\ shredder\ \&\ ferrous}\left(\frac{gr}{dscf}\right) * dscfm_{shredder} * conversion\ factor * safety\ factor$$

Why is the calculation method reasonable and conservative?

There are no published emission factors for HAPs from scrap shredder processes. Test data was the best data available. Although the Becker facility will have a different shredder than the Minneapolis facility, the test data is reasonable to use for the Becker facility because both shredders and ferrous processes are totally enclosed, the Becker facility will have particulate control devices with equivalent or better control efficiencies as the Minneapolis facility, and the anticipated feedstock at the Becker facility will be substantially similar to the feedstock at the Minneapolis facility. Additionally, the calculations include a safety factor of 1.5 and use the highest single test run from both test events.

PCBs, Dioxin/Furan Emissions from Shredder and Ferrous Process

What is the calculation Method?

PCB and dioxin/furan emissions from the shredder and ferrous process were also based on performance test data from 2009 and 2016, but because these pollutants are volatile compounds rather than particulate compounds one cannot make the assumption that the grain loading rate is equivalent between the proposed source and the tested source. Instead, an emission factor was calculated in the units of lb/ton material shredded. The maximum capacity of the proposed shredder plus a safety factor was used to calculate PTE for the new shredder and ferrous process.

Control efficiency for dioxins and furans from the oxidizer is based off of the manufacturer's guarantee of 50% control efficiency.

Example:

$$PCBs_{shredder\ \&\ ferrous}\left(\frac{lb}{hr}\right) = PCBs_{Mpls\ shredder\ \&\ ferrous}\left(\frac{lb}{ton}\right) * \frac{tons}{hr}_{shredder\ \&\ ferrous}$$

Why is the calculation method reasonable and conservative?

There are no published emission factors for HAPs from shredder processes. Test data was the best data available and the calculations used the highest single test run from both test events.

There is little data available on thermal destruction efficiency of dioxin and furans. The Permittee is required by the permit to verify the emission rate of dioxins and furans through performance testing.

Particulate Matter from Metal Recovery Plant

What is the calculation method?

The units in the metal recovery plant generate emissions from material handling. All emissions from the metal recovery plant are routed to a fabric filter and out the combined stack. As was done for the shredder and ferrous process, the aggregate PM, PM_{10}, and $PM_{2.5}$ emissions from the MRP were calculated using the manufacturer's grain loading guarantee for the fabric filter exhaust and the design flow rate for the MRP exhaust.

The uncontrolled PTE for these pollutants was back calculated assuming control efficiencies based of the Control Equipment Rule Minn. R. 7011.0070 and Section V.F. of the Consent Decree.

Why is this method reasonable and conservative?
To determine if this method was reasonably conservative, the MCPA compared the PTE calculated using the grain loading guarantee to estimates provided by the drop point equation from AP-42 Chapter 13.2.4 for Aggregate Handling and Storage Piles. The grain loading method yielded more conservative emission rates.

Of the published emission factors, the formula in Chapter 13.2.4 most closely approximates the emission generating activities in the MRP. The formula requires a value for mean wind speed and material moisture content. The Permittee conservatively assumed that wind speed indoors was 1.3 mph which is the low end of the range of source conditions defined by the equation. The material moisture content is based off of sampling conducted of the MRP feedstock at the Northern Metals Minneapolis location. The measured moisture contents were in the range of 20-30%; therefore, the Permittee conservatively assumed a moisture content of 15%. The Permittee determined the maximum number of drops that the material could experience in the MRP and assumed that all of the material throughput to the MRP experienced that number of drops. This is a conservative assumption because depending on the size of the material, the material may follow a different path in the MRP with far fewer drop points.

Metal HAP from Metal Recovery Plant, including Mercury

What is the calculation method?
The calculations assume the same ratio of metal HAP to PM_{10} exists in the emissions generated in the MRP as in the emissions generated in the shredder/ferrous process.

The annual emissions for all HAPs from the MRP are based on 8760 hrs/year with the exception of Mercury. The annual emissions of mercury from the shredder, ferrous process, and MRP are based on the permit limit for STRU 19 of 3 lb/yr. The uncontrolled PTE for these pollutants was back calculated assuming a control efficiencies for PM_{10} based of the Control Equipment Rule Minn. R. 7011.0070.

Example:

$$Pb_{MRP}\left(\frac{lb}{hr}\right) = \frac{Pb_{shredder}\left(\frac{lb}{hr}\right)}{PM_{shredder}\left(\frac{lb}{hr}\right)} * PM_{MRP}\left(\frac{lb}{hr}\right)$$

Why is this method reasonable and conservative?
There are no published emission factors for HAPs from MRP processes nor was test data available for the MRP. Using the test data from the shredder and ferrous process was the best data available. The assumption that the ratio of PM_{10} to metal HAP is the same for both the MRP and the shredder/ferrous process is conservative because the relative metallic content of the MRP is much lower than the shredder/ferrous process feedstock. The majority of the metallic content is removed in the ferrous process upstream of the MRP.

VOC, PCB, Dioxin/Furan from Metal Recovery Plant

The calculations assume no emissions of VOC, PCB, or dioxin/furan from the metal recovery plant. This is a reasonable assumption because the processes in the MRP building are material handling operations that operate at ambient temperature.

Per Unit emission from MRP and Ferrous Process

The best data available for the MPCA to calculate emissions from the above processes are based on test data that is aggregated at the stack. And all applicability determination and compliance demonstrations are based on the aggregate emission rate from the shredder, ferrous process, and MRP. However, the ferrous process and MRP are made of up several emission units, mainly material handling and separation units that have the potential to generate emissions. There are no published emission factors for HAPs or VOCs from these types of emission units processing this type of material. The MPCA generally requires PTE to be calculated for each emission unit. In order to calculate PM, PM_{10}, and $PM_{2.5}$ emissions for each unit, the MPCA used AP-42 emission factors for handling and screening of aggregate material. To determine an estimate of VOC emissions from each unit in COMG 1, the MPCA apportioned the total VOC emissions from the ferrous process amongst the units in COMG 1. The MPCA did not perform this calculation for HAPs. The MPCA did not calculate HAPs on a per unit basis because the Permittee is not a major source of HAPs and all applicability determination and compliance demonstrations are based on the aggregate emission rate from the shredder, ferrous process, and MRP.

Paved Road Emissions

Paved road emission calculations used AP-42 Ch. 13.2.1 for Paved Roads, equation 1. The silt loading value required by the equation is based off silt testing at the Northern Metals Minneapolis site on un-watered roads. The highest recorded silt value was used in the equation. This equation is conservative because it assumes no mitigation from precipitation or watering of roads. The fugitive dust control plan required by this permit requires watering and daily sweeping of the roads as well as other best management practices to minimize generation of fugitive dust. The predicted emissions from the equation are also conservative because they assume the maximum number of vehicles on all road segments every hour.

Fugitive Emissions form Waste Fluff Pile and Ferrous Product Pile

Handling of both waste fluff and ferrous product occur outside. Emissions from the material handling associated with these piles is calculated using the drop point equation from AP-42 Section 13.2.4 for Aggregate Handling and Storage Piles. Outdoor winds speeds were calculated from MPCA meteorological data files for St. Cloud, MN. Moisture content of the waste fluff was based on actual moisture testing of the waste fluff piles at the Northern Metals Minneapolis plant. On February 2, 2017, Northern Metals found the moisture content of the waste fluff in the range of 20%-30%. Therefore, a moisture content of 15% is conservatively used as it applies a safety factor to the measurements collected by Northern Metals.

Natural Gas Burning Combustion Equipment (Thermal Oxidizer and Insignificant Activities)

These calculations use AP-42 Section 1.4 for Natural Gas Combustion. Greenhouse gas emission factors from 40 CFR 98 Subpart C.

3.2 Dispersion modeling

Northern Metals performed a source impact analysis using NAAQS-based Significant Impact Level (SIL) modeling for PM_{10}, $PM_{2.5}$, NO_2, SO_2, and CO. The MPCA uses the SIL in non-PSD permitting actions as a de minimus screening value to determine if further modeling analysis is needed. The SIL approach is consistent with how the EPA determines, for new or modified sources of air emissions conducting PSD modeling, if the sources will cause or contribute to a violation of the NAAQS. The SIL approach is also how the MPCA determines for both PSD and non-PSD modeling if a change with cause or contribute to a violation of the NAAQS or MAAQS. The modeled concentrations from the facility's emissions were below all SILs for all pollutants.

Table 8. $PM_{2.5}$, PM_{10}, NO_x, and SO_2 Air Dispersion Modeling Results

Pollutant	Averaging period	SIL (ug/m^3)	Total modeled concentration (ug/m^3)	Percent of SIL (%)
NO_2	1-hr	7.52	1.52	20.2
	Annual	1	3.08×10^{-2}	3.1
SO_2	1-hr	7.86	9.12×10^{-3}	0.12
	3-hr	25	8.51×10^{-3}	0.03
	24-hr	5	3.34×10^{-3}	0.07
	Annual	1	1.80×10^{-4}	0.02
PM_{10}	24-hr	5	2.51	50.1
$PM_{2.5}$	24-hr	1.2	0.82	68.4
	Annual	0.3	6.24×10^{-2}	20.8
CO	1-hr	2000	1.54	0.08
	8-hr	500	8.51×10^{-1}	0.17

Fugitive Dust from Paved Roads

Fugitive dust emissions from paved roads was not included in the modeling analysis consistent with the guidance in the May 16, 2011 MPCA memo titled, "Air Quality Policy on Paved Roads and Fugitive Particulate Matter". The policy memo advises that fugitive road dust need not be included in modeling if the predicted ambient impacts (modeled + background concentrations) equal less than 60% of the applicable PM_{10} and 80% of the applicable $PM_{2.5}$ standard or if the predicted ambient impacts (including background) are less than 95% of the applicable standards and the facility maintains an appropriate and enforceable fugitive dust control plan. The modeled ambient impacts from PM_{10} and $PM_{2.5}$ without taking into account fugitive dust emissions are 48% of the 24-hour PM_{10} NAAQS, 50% of the 24-hour $PM_{2.5}$ NAAQS, and 50% of the annual $PM_{2.5}$ NAAQS. In this case, although not consistent with the policy, the MPCA believes that the facility should operate according to a fugitive dust control plan to ensure that the fugitive emissions are minimized to the greatest extent possible. At the total facility level of the permit there are requirements for the Permittee to maintain and comply with a fugitive emissions control plan (the most current version of the plan is Appendix B to the permit).

Remodeling Requirements

In order to continue to protect ambient standards after a permit is issued, the MPCA may require that future changes to a modeled parameter trigger remodeling or an equivalent or better dispersion analysis. The MPCA evaluates what remodeling requirements should result from a modeling analysis on a case-by-case basis based on the type of modeling conducted, how close the modeled ambient concentration is to the relevant standard, how likely the source is to make changes that would increase the PTE of the pollutant(s) modeled, how well the operating assumptions and emission estimates in the model resemble how the facility operates, etc.

The MPCA has not required remodeling for facilities whose modeled concentrations are below the SIL because the modeled contributions to ambient concentrations are small. The MPCA finds no reason to deviate from this practice in this situation. In addition to modeled concentrations below a de minimus level, the facility is unlikely to add emission sources that would increase the potential emissions of any of the modeled pollutants or make changes that would affect the dispersion characteristics of STRU 19. Therefore

the MPCA has reasonable assurance that the ambient standards will continue to be protected after the permit is issued.

3.3 Air Emissions Risk Analysis

The AERA includes both a quantitative analysis of potential impacts to human health using MPCA's Risk Assessment Screening Spreadsheet ("RASS"), and a qualitative analysis using information from the site and the surrounding community. Based on the results of the AERA the MPCA does not expect the project to adversely affect human health and the environment.

The Permittee used the MPCA's RASS to evaluate the acute toxicity, chronic toxicity, cancer, and non-cancer risks associated with emissions from the proposed facility. The RASS conservatively considers the relative health risk for each pollutant with a health benchmark emitted by the facility. The results of this assessment determine the need for additional evaluation. Both the acute and the chronic risk values are acceptable because they are at or less than the risk thresholds.

The qualitative risk analysis describes the area surrounding the facility site. The facility should not affect day cares and schools located within the 1.5 kilometer radius from the facility. The results of the RASS show that the facility does not need further evaluation for toxicity and cancer risks.

The Permittee also completed the Minnesota Mercury Risk Estimation Method (MMREM) spreadsheet. This spreadsheet calculates the local mercury hazard quotient due to fish contamination from Mercury emissions of a project. The closest fishable waterbody is the Mississippi river. The area of maximum deposition is an area of 3,567 acres of fishable waterbody between St. Cloud dam and Coon Rapids dam on the Mississippi River. There is no expected increase in the ratio of incremental fish Mercury concentration from the Project relative to the existing water quality.

Although not part of the AERA, the MPCA also evaluated existing data on the air quality and background conditions in Becker including statewide modeling results from the MPCA's publicly available "MNrisks" tool to ensure that Becker and the surrounding areas are not uniquely impacted by cumulative air emissions from facilities or roadways in the area. The MNrisks tool shows that the modeled risk for Becker and the surrounding area is similar to surrounding counties and less than the metro area and did not identify any issues for further investigation. Using the MPCA's publicly available "criteria pollutant data explorer" online tool, the MPCA also confirmed that monitored emissions in 2017 at the closest monitors in St. Cloud and St. Michael are all less than 50% of the daily and annual PM2.5 standard and less than 85% of the 8-hour ozone standard.

Risk Recalculation Requirements

As is done with the criteria air dispersion modeling results, the MPCA evaluates the AERA results on a case by case basis to determine what types of changes at the facility may require the Permittee to recalculate risk or remodel toxic air pollutants to ensure that changes after the permit is issued do not have the potential to adversely affect human health.

Similarly some of the factors considered are each addressed below:

- How close is the facility to the applicable risk management guidance levels.
  The AERA demonstrated that for all pathways and endpoints the modeled concentrations are below guidance levels
- The facility setting (e.g. the possibility of surrounding land use changes).
  The proposed location for the Norther Metals Becker site is zoned for industry, and is close to Xcel Energy Sherburne Country Generating Center and Liberty Paper. The area across Highway 10 is well-established commercial property. It is unlikely that there will be changes to the surrounding land use that would affect the outcome of the risk analysis.

- The likelihood that facility modifications would increase the PTE of the modeled pollutant(s) emission or change dispersion characteristics.
  Any new or modified shredder, ferrous, or MRP equipment is required by the permit to vent emissions through control equipment and meet the existing permit limits, so it is unlikely that any modifications would change the dispersion characteristics or modeled emission rates.
- The likelihood that process changes would lead to emissions of new toxic pollutants.
  Potential for new toxic pollutants would come from the introduction of a new or modified feedstock stream. The permit contains conditions that require Northern Metals to evaluate any new product/feedstock streams to ensure they do not introduce new or greater amounts of any hazardous or toxic materials.

Therefore, the MPCA has determined that a risk recalculation shall only be required if it is determined through stack testing that the emission rates used in the AERA for metal air toxics, volatile HAPs, dioxin/furans, and PCBs are lower than the tested rate. It is unlikely that the tested metal HAP rate would exceed the PTE calculations because of the levels of conservatism included in the calculations; however, this recalculation requirement includes an additional layer of protection and conservatism.

3.4 Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considered the following:

- the likelihood of the facility violating the applicable requirements;
- whether add-on controls are necessary to meet the emission limits;
- the variability of emissions over time;
- the type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- the technical and economic feasibility of possible periodic monitoring methods; and
- the kind of monitoring found on similar units elsewhere.

Table 9 summarizes the monitoring requirements.

Table 9. Monitoring

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
TFAC - Air Quality Total Facility	Feedstock Control Plan: feedstock limited by unacceptable and provisionally acceptable materials list [EAW, AERA]	Load and yard inspections, supplier education, supplier certification, employee training, recordkeeping	Upon dropping off loads, Northern Metals requires suppliers to certify that the load does not contain any unacceptable materials, consistent with the Permittee's Feedstock Control and State and Federal law. Northern Metals inspects each load for unacceptable materials upon receipt, when unloaded in the yard, and again when the scrap is loaded to the infeed conveyor. If an inspection finds unacceptable material in a load, the load is rejected and returned to the supplier. Northern Metals provides initial and refresher training for all employees whose job responsibilities include inspecting loads and segregating unacceptable materials. Checklists and education materials are posted in the plant for easy and continuous access by employees. Northern Metals provides all education materials to its suppliers. The Feedstock Control Plan in Appendix C contains additional detail on the monitoring required. Although it is still possible for unacceptable materials to enter the shredder even with the Feedstock Control Plan in place, the actions and monitoring required by the plan ensure that unacceptable materials are minimized to the greatest extent for this type of industry and establishes an accountability structure for both employees and suppliers.
	Fugitive Dust Control Plan: Watering and Sweeping [EAW, Modeling, Minn. R. 7011.0150]	Daily visible emission checks, daily recordkeeping, corrective actions	The Permittee will conduct daily visible emissions checks, sweep roads at least daily, and water roads if visible emissions are observed. The Permittee will regularly water storage piles. The Permittee will maintain records of visible emissions checks, date and time of each dust control measure, weather conditions, equipment maintenance and breakdown, employee training. The practices outlined in the plan are consistent with best management practices for minimizing fugitive dust. These practices combined with daily monitoring are sufficient to ensure that the Permittee prevents avoidable amounts of particulate matter form becoming airborne.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
COMG 1 – Ferrous Building Equipment	Maintain building as a total enclosure [Consent Decree, EAW, AERA, Modeling, Title I Condition to avoid PSD, to avoid Part 70]	Daily inspections, signage, recordkeeping, monthly inspections, corrective actions	The Permittee is required to keep all building openings closed during operation, during cleaning, and for at least 15 minutes after operation or cleaning ceases. The Permittee shall inspect the building prior to operation to ensure that all buildings openings are closed and record the results of the inspection. The Permittee is required to posts signs at all building openings that indicate that they shall be closed during the periods described above. The facility is designed to minimize the need to open doors during operation. Product is either conveyed out of the building through covered conveyor or is stored in the building until it is ready to be shipped out. Therefore, the monitoring in the permit is sufficient to ensure that building openings remained closed during the periods described above.
	Particulate Matter <= 0.30 gr/DSCF Opacity <= 20 percent opacity This limit applies individually to each piece of equipment in COMG 1. [Minn. R. 7011.0715, subp. 1]	Monitoring of control equipment (See TREAs 4, 5, and 6); performance testing of STRU 19	The control equipment controls particulate matter from units in COMG 1. Proper operation and maintenance of the control equipment ensures that the applicable limits are met. The lowest calculated Minn. R. 7011.0715, subp. 1(A) limit for all the units in COMG 1 is 23 lb/hr compared to the STRU 19 limit of 3.41 lb/hr. See analysis for all units in COMG 1 in Attachment 1.
	Hours of operation <= 3,744 hrs/yr 12-mo. rolling sum [EAW, AERA, modeling, to avoid Part 70, Title I Condition to avoid NESHAPs]	Daily records, monthly calculations	The ferrous process is downstream of the shredder and therefore dependent on operation of the shredder. Because hammermill shredders are maintenance intensive and their operation can be dependent on the amount and type of scrap received, they may not operate uniformly throughout the year; therefore a longer averaging period is appropriate. Because the Permittee is required to keep daily records of hours of operation, the Permittee can determine compliance with the annual hours of operation at any point during the month if requested by the MPCA.
COMG 2 – Metal Recovery Plant (MRP)	Maintain building as a total enclosure [consent decree, EAW, AERA, modeling, Title I Condition to avoid PSD, to avoid Part 70]	Daily inspections, signage, recordkeeping, monthly inspections, corrective actions	See explanation under COMG 1.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	Particulate Matter <= 0.30 gr/DSCF Opacity <= 20 percent opacity This limit applies individually to each piece of equipment in COMG 2. [Minn. R. 7011.0715, subp. 1]	Monitoring of control equipment (See TREA 7); performance testing of STRU 19	The control equipment controls particulate matter from units in COMG 2. Proper operation and maintenance of the control equipment ensures that the applicable limits are met. The lowest calculated Minn. R. 7011.0715, subp. 1(A) limit for all the units in COMG 2 is 29.8 lb/hr compared to the STRU 19 limit of 3.41 lb/hr. See analysis for all units in COMG 1 in Attachment 1
COMG 3 - Shredder Control Equipment & COMG 4 – Ferrous Building Control Equipment	Overall control efficiencies: PM ≥ 99% PM_{10} ≥ 93% $PM_{2.5}$ ≥ 93% [Consent Decree, EAW, AERA, modeling, Title I Condition: Avoid PSD, to avoid Part 70]	See Monitoring at TREAs 1-4	The consent decree states that "In any permit issued by the MPCA authorizing operation of a new facility, Northern Metals shall be allowed to demonstrate that it has achieved the required control efficiencies for PM by surrogate parameters (i.e., pressure drop, meter readings) established by the permit, but shall not be precluded from demonstrating that any readings at variance with the required control efficiency parameters were the result of 'clean air flow'." The Permittee demonstrates compliance with the control efficiency requirements of COMG 3 and COMG 4 through the monitoring required at TREA 1-4, which includes monitoring of the surrogate parameter of pressure drop. The permit does not require performance testing of control efficiency, but rather requires performance testing for emissions rate, so the second clause in the excerpt above is not applicable. However, if in the future if Northern Metals were required to conduct performance testing for control efficiency and were not able to show compliance with the control efficiency limits in this permit because the concentration of pollutants at the inlet of the pollution control equipment train is so low ("clean air flow"), the Permittee may make the demonstration that that the clean inlet concentration was the reason for a non-compliant test. The monitoring at TREAs 1-4 is based on the Minnesota Performance Standard for Control Equipment. Monitoring based on the Minnesota Performance Standard for Control Equipment combined with periodic performance testing for the emission rate of STRU 19 is adequate to have a reasonable assurance of compliance.
COMG 5 – Shredder Building Equipment	Maintain building as a total enclosure [Consent Decree, EAW, AERA, modeling, Title I Condition to avoid PSD, Title I Condition to avoid NEHSAP, to avoid Part 70]	Daily inspections, signage, recordkeeping, monthly inspections, corrective actions	See explanation under COMG 1.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
	Particulate Matter <= 0.30 gr/DSCF Opacity <= 20 percent opacity This limit applies individually to each piece of equipment in COMG 1. [Minn. R. 7011.0715, subp. 1(A)]	Monitoring of control equipment (See TREAs 1, 2, and 3); performance testing of STRU 19	The control equipment controls particulate matter from equipment in COMG 5. Proper operation and maintenance of the control equipment ensures that the applicable limits are met. The Minn. R. 7011.0715, subp. 1(A) limit for EQIU 2 is 45.2 lb/hr compared to the STRU 19 limit of 3.41 lb/hr. See analysis in Attachment 1.
	Hours of operation <= 3,744 hrs/yr 12-mo. rolling sum [EAW, AERA, modeling]	Daily recordkeeping, monthly calculations	Because hammermill shredders are maintenance intensive and their operation can be dependent on the amount and type of scrap received, they may not operate uniformly throughout the year; therefore a longer averaging period is appropriate. Because the Permittee is required to keep daily records of hours of operation, the Permittee can determine compliance with the annual hours of operation at any point during the month is requested by the MPCA.
STRU 19 – Combined Stack	PM ≤ 3.41 lb/hr PM_{10} ≤ 3.41 lb/hr $PM_{2.5}$ ≤ 3.41 lb/hr Mercury ≤ 3 lb/yr (12-mo. rolling sum) [EAW, AERA, modeling, Title I Condition to avoid PSD, to avoid Part 70]	Performance testing, monitoring associated with control equipment (see TREAs 1-7), monitoring associated with Feedstock Control Plan (see TFAC); daily recordkeeping and calculation of mercury emission rate	Proper operation and maintenance of the pollution control equipment combined with adherence to the Feedstock control plan ensures that the limits will be met. Periodic performance testing required to verify the emission rates.

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
TREAs 1 & 4 - Centrifugal Collectors - High Efficiency	Pressure drop range per manufacture until range set during initial performance test (see also control efficiency requirements at COMGs 3 & 4) [Consent Decree, EAW, AERA, modeling, Title I Condition: Avoid PSD, to avoid Part 70]	Pressure drop monitoring, Recordkeeping, O & M, inspections, corrective actions, performance testing	Monitoring based on the Minnesota Performance Standard for Control Equipment combined with periodic performance testing of the emission rate of STRU 19 is adequate to have a reasonable assurance of compliance. Approved Replicable Methodology (ARM) or protocol for re-setting the pressure drop: Per MPCA guidance, when the initial control equipment parameter is known or can reasonably be determined upfront AND where the permit includes periodic testing which will re-set the parameter, the permit should contain the limit as well as an ARM or protocol for revising the limit through testing. As long as the Permittee is implementing the ARM as required by the permit, the permit does not need to be reopened to revise the control equipment parameter limit. Every level of permit action (from admin to major) can be used to incorporate revised parameter limits that were approved via an ARM. The establishment or revision of the ARM requires a major amendment process under Minn. R. 7007.1500, likely triggering one or all of: subp. 1(A) (revision to monitoring), 1(B) (case-by-base limit), and 1(C) (used for assuring compliance with a limit taken to avoid an applicable requirement).
TREAs 2 & 3 Fabric Filters	Pressure Drop ≥ 28 in. H_2O column across TREA 2 & 3 until range set during initial performance test (see also control efficiency requirements at COMG 3 & 4) [Consent Decree, EAW, AERA, modeling, Title I Condition: Avoid PSD, to avoid Part 70]	Pressure drop monitoring, Recordkeeping, O&M, inspections, corrective actions, performance testing	Monitoring based on the Minnesota Performance Standard for Control Equipment combined with periodic performance testing of the emission rate of STRU 19 is adequate to have a reasonable assurance of compliance. Visual emissions checks of STRU 19 are not appropriate for this source because the fabric filters are upstream of a thermal oxidizers. Approved Replicable Methodology (ARM) or protocol for re-setting the pressure drop limit: Per MPCA guidance, when the initial control equipment parameter is known or can reasonably be determined upfront AND where the permit includes periodic testing which will re-set the parameter, the permit should contain the limit as well as an ARM or protocol for revising the limit through testing. As long as the Permittee is implementing the ARM as required by the permit, the permit does not need to be reopened to revise the control equipment parameter limit. Every level of permit action (from admin to major) can be used to incorporate revised parameter limits that were approved via an ARM. The establishment or revision of the ARM requires a major amendment process under Minn. R. 7007.1500, likely triggering one or all of: subp. 1(A) (revision to monitoring), 1(B) (case-by-base limit), and 1(C) (used for assuring compliance with a limit taken to avoid an applicable requirement).

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
TREA 7 Fabric Filter	Pressure Drop: 0.1 ≥ ΔP ≤ 6.0 in. H_2O column until range set during initial performance test Overall control efficiencies: PM ≥ 99% PM_{10} ≥ 93% $PM_{2.5}$ ≥ 93% [Consent Decree, EAW, AERA, modeling, Title I Condition: Avoid PSD, to avoid Part 70]	Pressure drop monitoring, visual emissions checks, Recordkeeping, O&M, inspections, corrective actions, performance testing	The consent decree states that "In any permit issued by the MPCA authorizing operation of a new facility, Northern Metals shall be allowed to demonstrate that it has achieved the required control efficiencies for PM by surrogate parameters (i.e., pressure drop, meter readings) established by the permit, but shall not be precluded from demonstrating that any readings at variance with the required control efficiency parameters were the result of 'clean air flow'." The Permittee demonstrates compliance with the control efficiency requirements of TREA 7 through the monitoring required at TREA 7 which includes monitoring of the surrogate parameter of pressure drop. The permit does not require performance testing of control efficiency, but rather requires performance testing for emissions rate, so the second clause in the excerpt above is not applicable. However, if in the future if Northern Metals were required to conduct performance testing for control efficiency and were not able to show compliance with the control efficiency limits in this permit because the concentration of pollutants at the inlet of the pollution control equipment train is so low ("clean air flow"). The Permittee may make the demonstration that that the clean inlet concentration was the reason for non-compliant test. Monitoring based on the Minnesota Performance Standard for Control Equipment combined with periodic performance testing of the emission rate of STRU 19 is adequate to have a reasonable assurance of compliance Visual emissions checks of STRU 19 are not appropriate for this source because the fabric filter is upstream of a thermal oxidizer. Approved Replicable Methodology (ARM) or protocol for re-setting the pressure drop limit: Per MPCA guidance, when the initial control equipment parameter is known or can reasonably be determined upfront AND where the permit includes periodic testing which will re-set the parameter, the permit should contain the limit as well as an ARM or protocol for revising the limit through testing. As long as the Permittee is implementing the ARM as required by the permit, the permit does not need to be reopened to revise the control equipment parameter limit. Every level of permit action (from admin to major) can be used to incorporate revised parameter limits that were approved via an ARM. The establishment or revision of the ARM requires a major amendment process under Minn. R. 7007.1500, likely triggering one or all of: subp. 1(A) (revision to monitoring), 1(B) (case-by-base limit), and 1(C) (used for assuring compliance with a limit taken to avoid an applicable requirement).

Subject Item*	Requirement (basis)	What is the monitoring?	Why is this monitoring adequate?
TREA 8 - Thermal Oxidizer	VOC control efficiency ≥ 95% Volatile HAP control efficiency ≥ 95% PCDD/PCDF ≥ 50% Temp ≥ 1400 deg F [EAW, AERA, Title I Condition to Avoid PSD, To Avoid Part 70, Title I Condition to Avoid NESHAPs]	Temperature monitoring, recordkeeping, O&M, inspections, corrective actions, performance testing	Monitoring based on the Minnesota Performance Standard for Control Equipment combined with periodic performance testing is adequate to have a reasonable assurance of compliance. The Permittee demonstrates compliance with the control efficiency requirements of TREA 8 through the monitoring required at TREA 8 which includes monitoring of the surrogate parameter of temperature. The permit does not require performance testing of control efficiency, but rather requires performance testing for emissions rate. However, if in the future if Northern Metals were required to conduct performance testing for control efficiency and were not able to show compliance with the control efficiency limits in this permit because the concentration of pollutants at the inlet of the pollution control equipment train is so low ("clean air flow"). The Permittee may make the demonstration that that the clean inlet concentration was the reason for non-compliant test. Approved Replicable Methodology (ARM) or protocol for re-setting the temperature limit: Per MPCA guidance, when the initial control equipment parameter is known or can reasonably be determined upfront AND where the permit includes periodic testing which will re-set the parameter, the permit should contain the limit as well as an ARM or protocol for revising the limit through testing. As long as the Permittee is implementing the ARM as required by the permit, the permit does not need to be reopened to revise the control equipment parameter limit. Every level of permit action (from admin to major) can be used to incorporate revised parameter limits that were approved via an ARM. The establishment or revision of the ARM requires a major amendment process under Minn. R. 7007.1500, likely triggering one or all of: subp. 1(A) (revision to monitoring), 1(B) (case-by-base limit), and 1(C) (used for assuring compliance with a limit taken to avoid an applicable requirement).
	Particulate Matter <= 0.30 gr/DSCF Opacity <= 20 percent opacity [Minn. R. 7011.0610]	None	This unit burns natural gas or propane only; therefore, the likelihood of violating either of the emission limits is very small. The Permittee can demonstrate that these units will continue to operate such that emissions are well below the emission limits by only burning natural gas.

*Location of the requirement in the permit (e.g., EQUI 1, STRU 2, etc.).

3.5 Insignificant activities

Northern Metals Recycling - Becker has several operations which are classified as insignificant activities under the MPCA's permitting rules. These are listed in Appendix A to the permit.

The permit is required to include periodic monitoring for all emissions units, including insignificant activities, per EPA guidance. The insignificant activities at this Facility are only subject to general applicable requirements. Using the criteria outlined earlier in this TSD, the following table documents the justification why no additional periodic monitoring is necessary for the current insignificant activities. See Attachment 1 of this TSD for PTE information for the insignificant activities.

Table 10. Insignificant activities

Insignificant activity	General applicable emission limit	Discussion
Nonhazardous air pollutant VOC storage tanks with total capacity not more than 10,000 gallons and a vapor pressure of not more than 1.0 psia at 60 degrees Fahrenheit (Minn. R. 7007.1300, subp. 3(E)(2))	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715) Permanent submerged fill pipe (Minn. R. 7011.1505, subp. 3(B), two 5,500 gallon oil/water mix tanks)	The Permittee proposes the following tanks: two 5,500 gallon and one 1,000 gallon oil/water mix tanks One 2,600 process water tank One 250 gallon 50% ethylene glycol tank One 1,580 gallon 0.2% soda ash solution tank One 490 gallon antifreeze tank. None of the tanks are subject to NSPS Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction or Modification Commenced After July 23, 1984. The standard applies to storage vessels that store volatile organic liquid with a capacity greater than or equal to 75 m^3 (19,800 gallons). Although many of the tanks at the facility will store volatile organic liquids, none have a capacity equal to or greater than 19,800 gallons. There are no Minnesota standards of performance for storage vessels with a capacity less than 2,000 gallons for which construction commences on or after June 11, 1973 (Minn. R. 7011.1505, subp. 3(A)). Additionally, the process water tank is not a petroleum liquid and therefore is not subject to the standard. These tanks are subject to the Minn. R. 7011.0715, Standards of Performance for Post-1969 Industrial Process Equipment. Because these tanks do not emit particulate matter, it is unlikely that they could violate the applicable requirements. The two 5,500 oil/water mix tanks are subject to Minn. R. 7011.1505. There are no applicable emissions standards for these tanks, but they're required to install a permanent submerged fill pipe.
Brazing, soldering or welding equipment (Minn. R. 7007.1300, subp. 3(H)(3))	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)	The Permittee has welding equipment for maintenance. For these units, based on EPA published emission factors, it Is highly unlikely that they could violate applicable requirements

Insignificant activity	General applicable emission limit	Discussion
Cleaning operations: alkaline/phosphate cleaners and associated cleaners (Minn. R. 7007.1300, subp. 3(H)(7))	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0715)	The Permittee has one 30 gallon parts washer For this unit, because it does not generate particulate matter, it Is highly unlikely that they could violate applicable requirements.
Individual units with PTE less than 1) 2000 lb/yr PM, PM_{10}, $PM_{2.5}$, NO_x, VOC, and ozone and 2) 4000 lb/yr CO, and 3) 1000 tpy of CO_2e (Minn. R. 7007.1300 subp. 3(I))	PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0610) PM <= 0.40 lb/MMBtu Opacity <= 20% (Minn. R. 7011.0515) PM, variable depending on airflow Opacity <= 20% (Minn. R. 7011.0610)	The Permittee proposes the following units: 0.38 MMBtu/hr natural gas fired boiler Five 64,000 Btu/hr natural gas fired rooftop heaters Four 173,250 Btu/hr natural gas fired space heaters 750,000 and 395,000 Btu/hr natural gas fired evaporators Infeed conveyor, stacking conveyor, and 2 shredded clip conveyors All the combustion units burn natural gas, therefore based on EPA published emission factors it is highly unlikely that these units would violate the applicable standards. The Permittee can ensure compliance with the applicable standards by only burning natural gas in these units. The boiler is not subject to NSPS Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units because it is less than the applicability threshold of 10 MMBtu/hr. The boiler is not subject to 40 CFR pt. 63, subp. JJJJJJ for Industrial, Commercial, and Institutional Boilers at Area Sources because it is a natural gas-fired and natural gas boilers are not subject to the standard. The infeed conveyor moves large unshredded material into the shredder building, therefore minimal particulate matter is expected from this piece of equipment. Northern Metals receives clips (flat sheet metal free of any foreign elements) which are stored, processed, and shredded separately from other ferrous material. Therefore, the shredder clip is expected to be clean and therefore generate minimal particulate matter when conveyed. The stacking conveyor moves shredder ferrous product to the ferrous pile. The ferrous produced is fairly large (about 4-5 inches in diameter) and has gone through a cleaning process inside the ferrous building, so minimal particulate matter is expected when conveyed; however, the MPCA characterized the drop point from the conveyor to the ferrous product pile as FUGI 142 and conservatively estimated emissions from this source. These emissions are included in the PTE calculations and were evaluated in the modeling and AERA.

3.6 Permit organization

The only item that deviates from MPCA Tempo Guidance is the listing of certain applicable requirements at the group level even though they apply at the individual unit. Specifically: the Industrial Process Equipment Rule (IPER) is listed at COMG 1, COMG 2, and COMG 3. In general, limits that apply to individual pieces of

equipment should be tracked at the unit level and should not be listed at a group. The main reason is if there were noncompliance with a limit by one unit within the group, the computer system would say the whole group was out of compliance. For this case, the ferrous processing equipment in COMG 1, the metal recovery plant equipment in COMG 2, and the shredder building equipment in COMG 5 are contained in buildings that are required to function as a total enclosure. All particulate emissions in the buildings are required to vent to particulate matter control devices that vent out a single stack. Particulate matter emissions are measured at the stack. It would be nearly impossible to determine if a single unit in either COMG 1, 2, or 5 was in violation of IPER. If the Permittee operates and maintains the control equipment according to the permit and maintains the buildings as total enclosures according to the permit it is highly unlikely that the units could violate IPER. Therefore, it is also highly unlikely that the MPCA would need to track noncompliance with this limit at the individual unit level so they permit team decided that a group was an acceptable way to include these requirements.

3.7 Comments received

Comment Period: April 16, 2018- May 18, 2018
EPA Review Period: April 16, 2018- May 18, 2018

The EAW was co-noticed with the permit. The MPCA received seven comment letters during the comment period and EPA review period on either the air permit, the EAW, or both documents. Six of the comment letters were from citizens and one comment letter was from EPA. The comments and MPCA responses are contained in Attachment 4 to the TSD. Although many of the comments included in the letters pertain to the EAW and not the air permit, the MPCA included the response to all comments in Attachment 4.

During the public comment period the MPCA also received additional information from the Permittee based on a refined facility design that resulted in changes to the permit discussed below.

Changes to the permit after public comment.

1) Pollution Control Train: The draft permit placed on public required that both the shredder and ferrous process (COMG 1 and COMG 5) vent to a cyclone and two fabric filters in series; however, the permit allowed for flexibility in the final design of the facility to allow these processes to either vent to two separate pollution control trains of a cyclone and two fabric filters, a single pollution control chain, or a combination of pollution control trains as long as all equipment in COMG 1 and 5 is controlled by a train of 1 cyclone and two fabric filters in series and meets all the requirements of the permit. Whether there is one pollution control train or multiple pollution control chains would not have affected the potential or actual emissions from the facility, only the sizing of the pollution control equipment.

   During the public notice period Northern Metals finalized its pollution control equipment design. Therefore, the permit reflects the proposed design of the facility in which the shredder and ferrous process each vent to their own cyclones (TREAs 1 and 4 respectively) and then vent to the same train of two fabric filters in series (TREAs 2 and 3) and a thermal oxidizer (TREA 8). The permit no longer allows for the flexibility to vent to multiple control equipment trains. The actual emissions of the facility have decreased because the draft permit assumed no control of VOCs from the ferrous building. The permit now requires that the ferrous building emissions are routed to TREA 8; however, PTE calculations were not updated and still reflect no control of VOC from the units in COMG 1.

   This change removed permit flexibility therefore the permit does not need to be re-noticed.

2) Changes to units in COMG 1 and COMG 2: The permit states that any additions, replacements or changes to particulate emitting units in COMG 1 and COMG 2 are subject to the requirements of COMG 1 and 2 respectively and shall be vented to control equipment and STRU 19 as described in the permit. Therefore, such additions and replacements would not automatically trigger a major amendment solely

due to an increase in PM, PM_{10}, or $PM_{2.5}$ emissions because any new, replaced, or modified units are required to be controlled and subject to the PM, PM_{10}, or $PM_{2.5}$ limits of STRU 19. However, these changes would still need to be evaluated for amendment applicability and to see if the changes trigger any new requirements. This approach is reasonable because the types of units that Northern Metals would add to COMG 1 or COMG 2 would be similar to the proposed units in COMG 1 and COMG 2 and therefore compliance with the existing permit conditions would be feasible.

During the public notice period Northern Metals refined the design of its ferrous process and metal recovery plant process (COMG 1 and COMG 2). Changes were made to the process design that are allowed under the flexibility language described above and the changes do not change the limited PTE of the facility and do not trigger any amendments. After the permit is issued, the Permittee would normally keep records on site of these changes and the associated applicability determination and submit that information to the MPCA annually. However, in this case because the MPCA was aware of these changes and additions prior to permit issuance, the MPCA decided to incorporate them into the permit.

This change does not require the permit to be re-noticed because it is a change allowed by the flexibility provisions of the permit that does not require a permit amendment.

Additionally, the Permittee now intends to install a smaller, 350 ton per hour shredder. All analysis and PTE calculations that were based on the shredder throughput used the original proposal of a 400 ton per hour shredder. No calculations or analyses have been updated since basing them off 400 tons per hour is more conservative. Appendix F of the permit reflects the proposed 350 ton per hour capacity.

4. Permit fee assessment

This permit action is the issuance of an individual state permit based on an application received August 1, 2017 and supplemented on April 13, 2018. Application fees apply under Minn. R. 7002.0019. The permit action includes a modeling review, limits to remain below the PSD major source thresholds, limits to remain below the Part 70 major source threshold, and limits to remain below Part 63 major source threshold, which are all chargeable activities under Minn. R. 7002.0019. The project also involves an EAW, but because the project doesn't fall into a mandatory EAW category, no points are assessed for the EAW review. The AERA was considered part of the EAW so it was not included as a chargeable activity. Attachment 3 to this TSD contains the MPCA's assessment of Application and Additional Points used to determine the permit application fee for this permit action.

5. Conclusion

Based on the information provided by Northern Metals Recycling - Becker the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 14100076-101 and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff members on permit team: Kelsey Suddard (permit engineer)
Sarah Sevcik (peer reviewer)
Joe Handtmann (permit writing assistant)
Laurie O'Brien (administrative support)
Brent Rohne (enforcement team member)
Marc Severin (compliance team member)
Helen Waquiu (air dispersion modeler)
Monika Vadali (air risk assessor)
Kevin Kain (environmental review project manager)

TEMPO360 Activities: State Permit (IND20170001)

Attachments:

1. PTE calculation spreadsheets
2. Subject item inventory and facility requirements
3. Points Calculator
4. Response to Comments on Northern Metals Recycling – Becker Environmental Assessment Worksheet and Draft Air Emissions Permit

Attachment 1. PTE calculation spreadsheets

Northern Metals - Becker, MN
Total Facility Emissions

Potential to Emit Summary - Criteria Pollutants

Tempo ID	Unit Description	Limited Emissions (lb/hr)											Limited Emissions (tpy)										
		PM	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC[3]	CO_2e	Lead	Maximum Single HAP[3,4]	Total HAP[3,5]	PM	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC[3]	CO_2e	Lead	Maximum Single HAP[3,4]	Total HAP[3,5]
COMG5	Shredder	1.58	1.58	1.58	1.73	1.45	0.01	3.70	2,060.93	1.16E-03	0.19	1.10	3.28	3.28	3.28	7.56	6.35	0.05	7.16	9,026.86	2.20E-03	0.36	2.14
COMG1	Downstream Ferrous	0.39	0.39	0.39	-	-	-	3.58	-	3.08E-04	0.20	0.88	0.72	0.72	0.72	-	-	-	6.69	-	5.76E-04	0.38	1.65
COMG2	MRP [1]	1.45	1.45	1.45	-	-	-	-	-	1.07E-06	-	1.31E-05	6.34	6.34	6.34	-	-	-	-	-	4.67E-06	-	5.73E-05
STRU19	Shredder / Downstream Ferrous / MRP Stack	3.41	3.41	3.41	1.73	1.45	0.01	7.28	2,060.93	1.47E-03	0.40	1.98	10.34	10.34	10.34	7.56	6.35	0.05	13.86	9,026.86	2.78E-03	0.74	3.78
FUG1140	Truck Traffic - Paved Roads	32.31	6.46	1.59	-	-	-	-	-	-	-	-	130.86	26.17	6.42	-	-	-	-	-	-	-	-
FUG1141	Waste Fluff Handling	0.04	0.02	2.97E-03	-	-	-	-	-	-	-	1.53E-04	0.18	0.09	0.01	-	-	-	-	-	-	-	6.69E-04
FUG1142	Outdoor Ferrous Pile	0.09	0.04	6.22E-03	-	-	-	-	-	-	-	-	0.38	0.18	0.03	-	-	-	-	-	-	-	-
-	Insignificant Activities[2]	0.02	0.02	0.02	0.25	0.21	1.50E-03	0.01	297.66	-	8.47E-06	4.71E-03	0.08	0.08	0.08	1.09	0.92	6.55E-03	0.06	1,303.76	-	3.71E-05	0.02
Total		**35.87**	**9.95**	**5.02**	**1.97**	**1.66**	**0.01**	**7.29**	**2,358.59**	**1.47E-03**	**0.40**	**1.98**	**141.84**	**36.86**	**16.89**	**8.65**	**7.27**	**0.05**	**13.92**	**10,330.62**	**2.78E-03**	**0.74**	**3.81**
Part 70 Major Source Threshold		--	--	--	--	--	--	--	--	--	--	--	N/A	100	100	100	100	100	100	100,000	10	10	25
Exceeds Threshold?		--	--	--	--	--	--	--	--	--	--	--	--	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
State Permit Threshold		--	--	--	--	--	--	--	--	--	--	--	100	25	N/A	N/A	N/A	50	100	N/A	0.5	N/A	N/A
Exceeds Threshold?		--	--	--	--	--	--	--	--	--	--	--	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO

1. MRP is the nonferrous/metal recovery plant.
2. Conservatively included insignificant activity totals in facility-wide total emissions when comparing to permit thresholds.
3. Hardcoded values for VOC and HAP emissions calculated in separate spreadsheet also included with this submittal.
4. Maximum single HAP is toluene. The majority of toluene emissions are based on OmniSource data and are not included in the "Potential to Emit Summary - HAP" table below.
5. Total HAP for COMG1, COMG2, COMG3, and FUG1141 includes HAP emissions calculated from OmniSource data that is not included in the "Potential to Emit Summary - HAP" table below.

Potential to Emit Summary - Criteria Pollutants

Tempo ID	Unit Description	Uncontrolled, Unlimited Emissions (lb/hr)											Uncontrolled, Unlimited Emissions (tpy)										
		PM	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC	CO_2e	Lead	Maximum Single HAP	Total HAP	PM	PM_{10}	$PM_{2.5}$	NO_x	CO	SO_2	VOC	CO_2e	Lead	Maximum Single HAP	Total HAP
COMG5	Shredder	144.77	20.79	20.79	1.73	1.45	0.01	68.25	2,060.93	0.02	3.86	17.09	634.11	91.08	91.08	7.56	6.35	0.05	298.95	9,026.86	0.07	16.90	74.84
COMG1	Ferrous Sorting	38.57	5.51	5.51	-	-	-	3.58	-	4.39E-03	0.20	0.93	168.94	24.13	24.13	-	-	-	15.66	-	0.02	0.89	4.06
COMG2	MRP	144.64	20.66	20.66	-	-	-	-	-	1.52E-05	-	1.87E-04	633.54	90.51	90.51	-	-	-	-	-	6.67E-05	-	8.19E-04
STRU19	Shredder / Downstream Ferrous / MRP Stack	327.99	46.97	46.97	1.73	1.45	0.01	71.83	2,060.93	0.02	4.06	18.02	1,436.59	205.72	205.72	7.56	6.35	0.05	314.61	9,026.86	0.09	17.79	78.91
FUG1140	Truck Traffic - Paved Roads	32.31	6.46	1.59	-	-	-	-	-	-	-	-	130.86	26.17	6.42	-	-	-	-	-	-	-	-
FUG1141	Waste Fluff Handling	0.04	0.02	2.97E-03	-	-	-	-	-	-	-	1.53E-04	0.18	0.09	0.01	-	-	-	-	-	-	-	6.69E-04
FUG1142	Outdoor Ferrous Pile	0.09	0.04	6.22E-03	-	-	-	-	-	-	-	-	0.38	0.18	0.03	-	-	-	-	-	-	-	-
-	Insignificant Activities	0.02	0.02	0.02	0.25	0.21	1.50E-03	0.01	297.66	-	3.71E-05	0.02	0.08	0.08	0.08	1.09	0.92	6.55E-03	0.06	1,303.76	-	3.71E-05	0.02
Total		**360.45**	**53.51**	**48.58**	**1.97**	**1.66**	**0.01**	**71.84**	**2,358.59**	**0.02**	**4.06**	**18.04**	**1,568.09**	**232.24**	**212.27**	**8.65**	**7.27**	**0.05**	**314.67**	**10,330.62**	**0.09**	**17.79**	**78.93**

Northern Metals - Becker, MN
Total Facility Emissions

Potential to Emit Summary - HAP

	Limited Emissions (lb/hr)									Uncontrolled, Unlimited Emissions (lb/hr)								
	COMG 5	COMG1	COMG2	STRU19	FUGI140	FUGI141	FUGI142			COMG 5	COMG1	COMG2	STRU19	FUGI140	FUGI141	FUGI142		
Pollutant	Shredder	Downstream Ferrous	MRP	Shredder / Downstream Ferrous / MRP Stack	Truck Traffic - Paved Roads	Waste Fluff Handling	Outdoor Ferrous Pile	Insignificant Activities	Total	Shredder	Downstream Ferrous	MRP	Shredder / Downstream Ferrous / MRP Stack	Truck Traffic - Paved Roads	Waste Fluff Handling	Outdoor Ferrous Pile	Insignificant Activities	Total
2-Methylnaphthalene	-	-	-	-	-	-	-	5.98E-08	5.98E-08	-	-	-	-	-	-	-	5.98E-08	5.98E-08
3-Methylchloranthrene	-	-	-	-	-	-	-	4.49E-09	4.49E-09	-	-	-	-	-	-	-	4.49E-09	4.49E-09
7,12-Dimethylbenz(a)anthracene	-	-	-	-	-	-	-	3.99E-08	3.99E-08	-	-	-	-	-	-	-	3.99E-08	3.99E-08
Acenaphthene	-	-	-	-	-	-	-	4.49E-09	4.49E-09	-	-	-	-	-	-	-	4.49E-09	4.49E-09
Acenaphthylene	-	-	-	-	-	-	-	4.49E-09	4.49E-09	-	-	-	-	-	-	-	4.49E-09	4.49E-09
Anthracene	-	-	-	-	-	-	-	5.98E-09	5.98E-09	-	-	-	-	-	-	-	5.98E-09	5.98E-09
Benz(a)anthracene	-	-	-	-	-	-	-	4.49E-09	4.49E-09	-	-	-	-	-	-	-	4.49E-09	4.49E-09
Benzene	-	-	-	-	-	-	-	5.23E-06	5.23E-06	-	-	-	-	-	-	-	5.23E-06	5.23E-06
Benzo(a)pyrene	-	-	-	-	-	-	-	2.99E-09	2.99E-09	-	-	-	-	-	-	-	2.99E-09	2.99E-09
Benzo(b)fluoranthene	-	-	-	-	-	-	-	4.49E-09	4.49E-09	-	-	-	-	-	-	-	4.49E-09	4.49E-09
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	2.99E-09	2.99E-09	-	-	-	-	-	-	-	2.99E-09	2.99E-09
Benzo(k)fluoranthene	-	-	-	-	-	-	-	4.49E-09	4.49E-09	-	-	-	-	-	-	-	4.49E-09	4.49E-09
Chrysene	-	-	-	-	-	-	-	4.49E-09	4.49E-09	-	-	-	-	-	-	-	4.49E-09	4.49E-09
Dibenzo(a,h)anthracene	-	-	-	-	-	-	-	2.99E-09	2.99E-09	-	-	-	-	-	-	-	2.99E-09	2.99E-09
Dichlorobenzene	-	-	-	-	-	-	-	2.99E-06	2.99E-06	-	-	-	-	-	-	-	2.99E-06	2.99E-06
Fluoranthene	-	-	-	-	-	-	-	7.48E-09	7.48E-09	-	-	-	-	-	-	-	7.48E-09	7.48E-09
Fluorene	-	-	-	-	-	-	-	6.98E-09	6.98E-09	-	-	-	-	-	-	-	6.98E-09	6.98E-09
Formaldehyde	-	-	-	-	-	-	-	1.87E-04	1.87E-04	-	-	-	-	-	-	-	1.87E-04	1.87E-04
Hexane	-	-	-	-	-	-	-	4.49E-03	4.49E-03	-	-	-	-	-	-	-	4.49E-03	4.49E-03
Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	4.49E-09	4.49E-09	-	-	-	-	-	-	-	4.49E-09	4.49E-09
Naphthalene	-	-	-	-	-	-	-	1.52E-06	1.52E-06	-	-	-	-	-	-	-	1.52E-06	1.52E-06
Phenanthrene	-	-	-	-	-	-	-	4.24E-08	4.24E-08	-	-	-	-	-	-	-	4.24E-08	4.24E-08
Pyrene	-	-	-	-	-	-	-	1.25E-08	1.25E-08	-	-	-	-	-	-	-	1.25E-08	1.25E-08
Toluene	-	-	-	-	-	-	-	8.47E-06	8.47E-06	-	-	-	-	-	-	-	8.47E-06	8.47E-06
POM	-	-	-	-	-	-	-	2.29E-07	2.29E-07	-	-	-	-	-	-	-	2.29E-07	2.29E-07
Antimony	2.56E-04	6.83E-05	2.37E-07	3.25E-04	-	3.48E-06	-	-	3.28E-04	3.66E-03	9.75E-04	3.38E-06	4.64E-03	-	3.48E-06	-	-	4.64E-03
Arsenic	9.79E-04	2.60E-04	9.01E-07	1.24E-03	-	1.32E-05	-	4.98E-07	1.25E-03	0.01	3.71E-03	1.29E-05	0.02	-	1.32E-05	-	4.98E-07	0.02
Beryllium	7.02E-05	1.87E-05	6.47E-08	8.89E-05	-	9.50E-07	-	2.99E-08	8.99E-05	1.00E-03	2.67E-04	9.24E-07	1.27E-03	-	9.50E-07	-	2.99E-08	1.27E-03
Cadmium	7.40E-04	1.92E-04	6.66E-07	9.32E-04	-	9.78E-06	-	2.74E-06	9.45E-04	0.01	2.75E-03	9.52E-06	0.01	-	9.78E-06	-	2.74E-06	0.01
Chromium (hexavalent)	3.00E-04	8.01E-05	2.78E-07	3.81E-04	-	-	-	-	3.81E-04	4.29E-03	1.14E-03	3.97E-06	5.44E-03	-	-	-	-	5.44E-03
Chromium (total)	9.47E-04	2.46E-04	8.53E-07	1.19E-03	-	-	-	3.49E-06	1.20E-03	0.01	3.52E-03	1.22E-05	0.02	-	-	-	3.49E-06	0.02
Cobalt	1.17E-04	3.08E-05	1.07E-07	1.48E-04	-	1.57E-06	-	2.09E-07	1.49E-04	1.65E-03	4.39E-04	1.52E-06	2.09E-03	-	1.57E-06	-	2.09E-07	2.09E-03
Dioxins/Furans (total TEQ)	3.27E-09	3.45E-10	-	3.62E-09	-	-	-	-	3.62E-09	6.55E-09	3.45E-10	-	6.89E-09	-	-	-	-	6.89E-09
Lead	1.16E-03	3.08E-04	1.07E-06	1.47E-03	-	-	-	-	1.47E-03	0.02	4.39E-03	1.52E-05	0.02	-	-	-	-	0.02
Manganese	2.43E-03	6.46E-04	2.24E-06	3.08E-03	-	3.29E-05	-	9.47E-07	3.11E-03	0.03	9.23E-03	3.20E-05	0.04	-	3.29E-05	-	9.47E-07	0.04
Mercury	1.26E-03	6.60E-05	7.73E-07	1.33E-03	-	-	-	6.48E-07	1.33E-03	0.02	9.43E-04	1.10E-05	0.02	-	-	-	6.48E-07	0.02
Nickel	4.88E-03	1.29E-03	4.48E-06	6.18E-03	-	6.58E-05	-	5.23E-06	6.25E-03	0.07	0.02	6.40E-05	0.09	-	6.58E-05	-	5.23E-06	0.09
PCBs (total)	0.01	1.47E-03	-	0.02	-	-	-	-	0.02	0.03	1.47E-03	-	0.03	-	-	-	-	0.03
Selenium	1.85E-03	4.92E-04	1.71E-06	2.34E-03	-	2.51E-05	-	5.98E-08	2.36E-03	0.03	7.03E-03	2.44E-05	0.03	-	2.51E-05	-	5.98E-08	0.03
Maximum Individual	-	-	-	-	-	-	-	-	-	0.07	0.02	6.40E-05	0.09	-	6.58E-05	-	4.49E-03	0.09
Total	0.03	5.08E-03	1.31E-05	0.03	-	1.53E-04	-	4.71E-03	0.04	0.24	0.05	1.87E-04	0.29	-	1.53E-04	-	4.71E-03	0.29

Northern Metals - Becker, MN
Total Facility Emissions
Potential to Emit Summary - HAP

	Limited Emissions (tpy)									Uncontrolled, Unlimited Emissions (tpy)								
	COMG 5	COMG1	COMG2	STRU19	FUGI140	FUGI141	FUGI142			COMG 5	COMG1	COMG2	STRU19	FUGI140	FUGI141	FUGI142		
Pollutant	Shredder	Downstream Ferrous	MRP	Shredder / Downstream Ferrous / MRP Stack	Truck Traffic - Paved Roads	Waste Fluff Handling	Outdoor Ferrous Pile	Insignificant Activities	Total	Shredder	Downstream Ferrous	MRP	Shredder / Downstream Ferrous / MRP Stack	Truck Traffic - Paved Roads	Waste Fluff Handling	Outdoor Ferrous Pile	Insignificant Activities	Total
2-Methylnaphthalene	-	-	-	-	-	-	-	2.62E-07	2.62E-07	-	-	-	-	-	-	-	2.62E-07	2.62E-07
3-Methylchloranthrene	-	-	-	-	-	-	-	1.96E-08	1.96E-08	-	-	-	-	-	-	-	1.96E-08	1.96E-08
7,12-Dimethylbenz(a)anthracene	-	-	-	-	-	-	-	1.75E-07	1.75E-07	-	-	-	-	-	-	-	1.75E-07	1.75E-07
Acenaphthene	-	-	-	-	-	-	-	1.96E-08	1.96E-08	-	-	-	-	-	-	-	1.96E-08	1.96E-08
Acenaphthylene	-	-	-	-	-	-	-	1.96E-08	1.96E-08	-	-	-	-	-	-	-	1.96E-08	1.96E-08
Anthracene	-	-	-	-	-	-	-	2.62E-08	2.62E-08	-	-	-	-	-	-	-	2.62E-08	2.62E-08
Benz(a)anthracene	-	-	-	-	-	-	-	1.96E-08	1.96E-08	-	-	-	-	-	-	-	1.96E-08	1.96E-08
Benzene	-	-	-	-	-	-	-	2.29E-05	2.29E-05	-	-	-	-	-	-	-	2.29E-05	2.29E-05
Benzo(a)pyrene	-	-	-	-	-	-	-	1.31E-08	1.31E-08	-	-	-	-	-	-	-	1.31E-08	1.31E-08
Benzo(b)fluoranthene	-	-	-	-	-	-	-	1.96E-08	1.96E-08	-	-	-	-	-	-	-	1.96E-08	1.96E-08
Benzo(g,h,i)perylene	-	-	-	-	-	-	-	1.31E-08	1.31E-08	-	-	-	-	-	-	-	1.31E-08	1.31E-08
Benzo(k)fluoranthene	-	-	-	-	-	-	-	1.96E-08	1.96E-08	-	-	-	-	-	-	-	1.96E-08	1.96E-08
Chrysene	-	-	-	-	-	-	-	1.96E-08	1.96E-08	-	-	-	-	-	-	-	1.96E-08	1.96E-08
Dibenzo(a,h)anthracene	-	-	-	-	-	-	-	1.31E-08	1.31E-08	-	-	-	-	-	-	-	1.31E-08	1.31E-08
Dichlorobenzene	-	-	-	-	-	-	-	1.31E-05	1.31E-05	-	-	-	-	-	-	-	1.31E-05	1.31E-05
Fluoranthene	-	-	-	-	-	-	-	3.27E-08	3.27E-08	-	-	-	-	-	-	-	3.27E-08	3.27E-08
Fluorene	-	-	-	-	-	-	-	3.06E-08	3.06E-08	-	-	-	-	-	-	-	3.06E-08	3.06E-08
Formaldehyde	-	-	-	-	-	-	-	8.19E-04	8.19E-04	-	-	-	-	-	-	-	8.19E-04	8.19E-04
Hexane	-	-	-	-	-	-	-	0.02	0.02	-	-	-	-	-	-	-	0.02	0.02
Indeno(1,2,3-cd)pyrene	-	-	-	-	-	-	-	1.96E-08	1.96E-08	-	-	-	-	-	-	-	1.96E-08	1.96E-08
Naphthalene	-	-	-	-	-	-	-	6.66E-06	6.66E-06	-	-	-	-	-	-	-	6.66E-06	6.66E-06
Phenanthrene	-	-	-	-	-	-	-	1.86E-07	1.86E-07	-	-	-	-	-	-	-	1.86E-07	1.86E-07
Pyrene	-	-	-	-	-	-	-	5.46E-08	5.46E-08	-	-	-	-	-	-	-	5.46E-08	5.46E-08
Toluene	-	-	-	-	-	-	-	3.71E-05	3.71E-05	-	-	-	-	-	-	-	3.71E-05	3.71E-05
POM	-	-	-	-	-	-	-	9.63E-07	9.63E-07	-	-	-	-	-	-	-	9.63E-07	9.63E-07
Antimony	4.79E-04	1.28E-04	1.04E-06	6.08E-04	-	1.52E-05	-	-	6.23E-04	0.02	4.27E-03	1.48E-05	0.02	-	1.52E-05	-	-	0.02
Arsenic	1.84E-03	4.87E-04	3.95E-06	2.33E-03	-	5.80E-05	-	2.18E-06	2.39E-03	0.06	0.02	5.64E-05	0.08	-	5.80E-05	-	2.18E-06	0.08
Beryllium	1.32E-04	3.49E-05	2.83E-07	1.67E-04	-	4.16E-06	-	1.31E-07	1.71E-04	4.38E-03	1.17E-03	4.05E-06	5.55E-03	-	4.16E-06	-	1.31E-07	5.55E-03
Cadmium	1.43E-03	3.60E-04	2.92E-06	1.79E-03	-	4.29E-05	-	1.20E-05	1.85E-03	0.05	0.01	4.17E-05	0.06	-	4.29E-05	-	1.20E-05	0.06
Chromium (hexavalent)	5.62E-04	1.50E-04	1.22E-06	7.13E-04	-	-	-	-	7.13E-04	0.02	5.01E-03	1.74E-05	0.02	-	-	-	-	0.02
Chromium (total)	1.83E-03	4.61E-04	3.74E-06	2.30E-03	-	-	-	1.53E-05	2.31E-03	0.06	0.02	5.34E-05	0.07	-	-	-	1.53E-05	0.07
Cobalt	2.22E-04	5.76E-05	4.67E-07	2.80E-04	-	6.86E-06	-	9.17E-07	2.88E-04	7.22E-03	1.92E-03	6.67E-06	9.15E-03	-	6.86E-06	-	9.17E-07	9.16E-03
Dioxins/Furans (total TEQ)	6.13E-09	6.45E-10	-	6.77E-09	-	-	-	-	6.77E-09	2.87E-08	1.51E-09	-	3.02E-08	-	-	-	-	3.02E-08
Lead	2.20E-03	5.76E-04	4.67E-06	2.78E-03	-	-	-	-	2.78E-03	0.07	0.02	6.67E-05	0.09	-	-	-	-	0.09
Manganese	4.56E-03	1.21E-03	9.81E-06	5.78E-03	-	1.44E-04	-	4.15E-06	5.93E-03	0.15	0.04	1.40E-04	0.19	-	1.44E-04	-	4.15E-06	0.19
Mercury	1.43E-03	7.43E-05	3.39E-06	1.51E-03	-	-	-	2.84E-06	1.51E-03	0.08	4.13E-03	4.84E-05	0.08	-	-	-	2.84E-06	0.08
Nickel	9.23E-03	2.42E-03	1.96E-05	0.01	-	2.88E-04	-	2.29E-05	0.01	0.30	0.08	2.80E-04	0.38	-	2.88E-04	-	2.29E-05	0.38
PCBs (total)	0.03	2.74E-03	-	0.03	-	-	-	-	0.03	0.12	6.42E-03	-	0.13	-	-	-	-	0.13
Selenium	3.46E-03	9.21E-04	7.47E-06	4.38E-03	-	1.10E-04	-	2.62E-07	4.49E-03	0.12	0.03	1.07E-04	0.15	-	1.10E-04	-	2.62E-07	0.15
Maximum Individual	-	-	-	-	-	-	-	-	0.03	0.30	0.08	2.80E-04	0.38	-	2.88E-04	-	0.02	0.38
Total	0.05	9.47E-03	5.73E-05	0.06	-	6.69E-04	-	0.02	0.08	1.03	0.23	8.19E-04	1.27	-	6.69E-04	-	0.02	1.29

Northern Metals - Becker, MN
Evaluaton of Regulatory Thresholds

Tempo ID	Unit Description	Uncontrolled, Unlimited PTE (tpy)									
		PM[1]	PM_{10}[2]	$PM_{2.5}$[2]	NO_x	CO	SO_2	VOC[1]	CO_2e	Max Single HAP	Total HAP[3]
COMG5	Shredder	634.11	91.08	91.08	7.56	6.35	3.04E-03	298.95	9,026.86	16.90	74.84
COMG1	Ferrous Sorting	168.94	24.13	24.13	-	-	-	15.66	-	0.89	3.83
COMG2	MRP	633.54	90.51	90.51	-	-	-	-	-	-	-
STRU19	Shredder / Downstream Ferrous / MRP Stack	1,436.59	205.72	205.72	7.56	6.35	3.04E-03	314.61	9,026.86	17.79	78.67
FUGI1	Truck Traffic - Paved Roads	130.86	26.17	6.42	-	-	-	-	-	-	-
FUGI2	Waste Fluff Handling	0.18	0.09	0.01	-	-	-	-	-	-	-
FUGI3	Outdoor Ferrous Pile	0.38	0.18	0.03	-	-	-	-	-	-	-
-	Insignificant Activities	0.08	0.08	0.08	1.09	0.92	6.55E-03	0.06	1,303.76	3.71E-05	0.02
Total		**1,568.09**	**232.24**	**212.27**	**8.65**	**7.27**	**9.59E-03**	**314.67**	**10,330.62**	**17.79**	**78.70**

note that STRU 19 is the sum of COMG1, COMG 2, and COMG 5
1. Above Part 70 and PSD major source thresholds
2. Above Part 70 major source thresholds
3. Above Part 70 and Part 63 major source thresholds

STRU 19 PM, PM10, and PM2.5 Limits; TREA 1-4 & 7 Limits; Total Enclosure Requirements

PM, PM10, and PM2.5 from STRU 19 is limited to 3.14 lb/hr. COMG 5 (shredder), COMG 1 (ferrous processing equipment), and COMG 2 (MRP) all vent to STRU 19. The Permittee meets this limit by operating and maintaining control equipment TREA 1-7 and maintaining the shredder building, the ferrous processing building, and the MRP as total enclosures. TREAs 1-4 and 7 controls PM, PM10, PM2.5, and particulate HAP from COMG 5, COMG1, and COMG2. The limits at STRU 19 limit the PM PTE below both Part 70 and PSD thresholds and the PM10 and PM2.5 PTE below the Part 70 thresholds as shown in the table below. (Although the PM PTE is above 100 tpy, the majority of that is from fugitive emissions, which is not counted towards determining major source status for this source cetegory.) Therefore the STRU 19 limit on PM is cited as a limit to avoid both PSD and Part 70 and the STRU 19 limits on PM10 and PM2.5 are cited as limits to avoid Part 70. Conditions to operate control equipment and maintain the building as a total enclosure are cited as limtis to avoid both PSD and Part 70, but individual control efficiency requirements for PM10 and PM2.5 are cited to avoid part 70, but not PSD. TREAs 1-4 and 7 control particulate HAP from from EQUI2, COMG1, and COMG2; however, the uncontrolled particulate HAP from these units is already well below the Part 63 major source threshold. The majority of HAPs are volatile HAPs from the shredder. So, as the table shows below, even taking into account particulate HAP control from TREAs 1-4 and 7 the individual and total HAP PTE are well above the Part 63 major source thresholds. Therefore, the requirements of TREAs 1-4 and 7 are not cited as limits to avoid pt. 63.

Horus of Operation Limits

COMG 1 and COMG 5 are also subject to an annual hours of operation limits that further limit the annual PTE of facility; however, these hours of operation limits are not needed to keep PM, PM10, or PM2.5 emissions below any regulatory thresholds nor would the limit on its own limit the PTE below regulatory thresholds. The hours of operation limit is included in the permit to ensure that the chronic risk estimates from the AERA are well below the guidance levels. The PM10 and PM2.5 annual emission rates used in the dispersion modeling analysis use an emission rate based off of the hours of operation limit. Therefore, the basis of the hours of operation limit is cited as modeling, AERA, and EAW. The table below does not reflect the hours of operation limits

Northern Metals - Becker, MN
Evaluaton of Regulatory Thresholds

PTE taking into account STRU 19 limits, TREAa 1-4 and 7, and Total Enclosure requirements (tpy)

Tempo ID	Unit Description	PM	PM_{10}	$PM_{2.5}$	Max Single HAP	Total HAP
COMG 5	Shredder	7.48	7.48	7.48	16.90	73.94
COMG1	Ferrous Sorting	1.69	1.69	1.69	0.89	3.85
COMG2	MRP	6.34	6.34	6.34	-	0.00
STRU19	Shredder / Downstream Ferrous / MRP Stack	15.51	15.51	15.51	17.79	77.79
FUGI140	Truck Traffic - Paved Roads	130.86	26.17	6.42	-	-
FUGI141	Waste Fluff Handling	0.18	0.09	0.01	-	-
FUGI142	Outdoor Ferrous Pile	0.38	0.18	0.03	-	-
-	Insignificant Activities	0.08	0.08	0.08	0.00	0.02
Total		**147.01**	**42.03**	**22.06**	**17.79**	**77.81**

TREA 8 Limits and Total Enclosure Requirements

In order to limit the VOC PTE below both PSD and Part 70 thresholds, the Permittee relies on control of VOC emissions from the shredder (TREA 8). In order to limit HAP PTE below the Part 70 and Part 63 major soruce thresolds, the Permittee relies on contorl of volatile HAP emissions from the shredder (TREA 8). COMG 5 and COMG 1 are also subject to an annual hours of operation limit that further limits the annual PTE of facility; however, this hours of operation limit is not needed to keep VOC or HAP emissions below the PSD, Part 70, or Part 63 major source thesholds. Therefore the hours of operation lmit is not cited as a limit to avoid any regulatory program. Therefore, the requirement to operate control equipment and maintain the building as a total enclsoure is only cited as a limit to avoid Part 63 for the conditions associated with the shredder.

PTE taking into account control from thermal oxidizer only (tpy)

Tempo ID	Unit Description	VOC	Max Single HAP	Total HAP
COMG 5	Shredder	31.36	0.85	4.81
COMG1	Ferrous Sorting	15.68	0.89	3.85
COMG2	MRP	-	-	0.00
STRU19	Shredder / Downstream Ferrous / MRP Stack	47.04	1.74	8.67
FUGI140	Truck Traffic - Paved Roads	-	-	-
FUGI141	Waste Fluff Handling	-	-	-
FUGI142	Outdoor Ferrous Pile	-	-	-
-	Insignificant Activities	0.06	0.00	0.02
Total		**47.10**	**1.74**	**8.69**

Northern Metals - Becker, MN
Tempo IDs

COMG ID	STRU ID	TREA ID	EQUI/FUGI ID	Description
COMG 5	STRU19	TREA1 TREA2 TREA3 TREA8	EQUI2	SHREDDER
			EQUI3	UMO
COMG 1	STRU19	TREA4 TREA2 TREA3 TREA8	EQUI3	UMO
			EQUI4	Poker Picker
			EQUI5	Magstand
			EQUI6	Z-BOX
			EQUI12	FEC001
			EQUI13	FEC002
			EQUI14	FEC003
			EQUI15	FEC004
			EQUI16	FEC005
			EQUI17	FEC006
			EQUI18	FEC007
			EQUI19	FEC008
			EQUI20	FEC009
			EQUI23	FEC010
			EQUI25	FEC014
			EQUI91	Magstand
			EQUI105	FEC015
			EQUI106	FEC016
			EQUI107	FEC017
			EQUI108	FEC018
			EQUI109	FEC019
			EQUI110	FEC020
			EQUI111	FEC021

Northern Metals - Becker, MN
Tempo IDs

COMG ID	STRU ID	TREA ID	EQUI/FUGI ID	Description
COMG2	STRU19	TREA7	EQUI26	CREEP FEEDER
			EQUI27	TUMBLEBACK
			EQUI28	SCREEN #1
			EQUI29	Trommel
			EQUI32	SMB #1
			EQUI34	SMB #2
			EQUI37	ECS #3
			EQUI38	FEEDER #2
			EQUI39	Finder #1
			EQUI40	Sifter #1
			EQUI43	ECS #4
			EQUI44	Finder #2
			EQUI46	FE Separator #2
			EQUI49	FINDER #3
			EQUI50	Sifter #3
			EQUI51	FE Separator #3
			EQUI52	Feeder #4
			EQUI53	ECS #5
			EQUI55	Sifter #4
			EQUI56	FE Separator #4
			EQUI59	NFC001
			EQUI60	NFC002
			EQUI61	NFC003
			EQUI62	NFC004
			EQUI63	NFC005
			EQUI64	NFC006
			EQUI65	NFC007
			EQUI66	NFC008
			EQUI67	NFC009
			EQUI68	NFC010
			EQUI69	NFC011
			EQUI70	NFC012
			EQUI71	NFC013
			EQUI72	NFC014
			EQUI73	NFC015
			EQUI74	NFC016
			EQUI75	NFC017
			EQUI76	NFC018
			EQUI77	NFC019
			EQUI78	NFC020
			EQUI79	NFC021
			EQUI80	NFC022
			EQUI81	NFC023
			EQUI82	NFC024
			EQUI83	NFC025
			EQUI84	NFC026
			EQUI85	NFC027
			EQUI86	NFC028
			EQUI87	NFC029
			EQUI88	NFC030
			EQUI89	NCF031
			EQUI90	NCF032
			EQUI92	Screen #2
			EQUI93	ECS #1
			EQUI94	FE Separator #1
			EQUI95	Sifter #2
			EQUI96	ECS #5
			EQUI97	Finder #4
			EQUI98	ECS #7
			EQUI99	ECS #2
			EQUI100	Screen #3
			EQUI101	Feeder #1
			EQUI102	Feeder#3
			EQUI103	Feeder#8
			EQUI104	Feeder #5
			EQUI105	FEC015
			EQUI112	NFC033
			EQUI113	NFC034
			EQUI114	NFC035

Northern Metals - Becker, MN
Tempo IDs

COMG ID	STRU ID	TREA ID	EQUI/FUGI ID	Description
			EQUI115	NFC036
			EQUI116	NFC037
			EQUI117	NFC038
			EQUI118	NFC039
			EQUI119	NFC040
			EQUI120	Feeder #6
			EQUI121	Feeder #7
			EQUI122	Finder #5
			EQUI123	Finder #6
			EQUI124	Sensor #1
			EQUI125	NFC041
-	-	-	FUGI140	Truck Traffic - Paved Roads
-	-	-	FUGI141	Waste Fluff Handling
-	-	-	FUGI142	Outdoor Ferrous Pile

Northern Metals - Becker, MN

Inputs

Unit	Throughput [1]	
Shredder	400	ton/hour
	75,000	ton/month
MRP	50	ton/hour

1. MRP throughput per phone conversation between Scott Helberg, Northern Metals, and Angie Wanger, Trinity, on June 23, 2017. Monthly shredder throughput discussed with Northern Metals on January 26, 2018. The monthly throughput is an estimate of acutal throughput where as the hourly throughputs represent maximum capacity.

Northern Metals - Becker, MN
COMG 5 - Shredder Emissions

Shredder Inputs

Input	Value	Units
Hourly throughput	400	tph
Exhaust Flow Rate	75,000	dscfm
Fabric Filter Exhaust Grain Loading [1]	0.00225	gr/dscf

1. Fabric filter exhaust grain loading per manufacturer guarantee.

Pollutant	Combined Control Efficiency [1,2]
PM	99%
PM_{10}	93%
$PM_{2.5}$	93%
HAP-Metal	93%
PCB and Dioxin/Furan	50%

1. Emissions from the equipment within the Shredder building are routed to four control devices in series (TREA1, TREA2, TREA3, and TREA8). Emissions from these devices are routed to STRU19.

The three particulate matter control devices (TREA1, TREA2, TREA3) have a combined control efficiency equal or better than 99% for PM, 93% for PM_{10}, and 93% for $PM_{2.5}$. Combined control efficiency required to be met according to the Section V.F. of the Consent Decree between the Minnesota Pollution Control Agency (MPCA) and Northern Metals, which was signed on March 15, 2017 (Court File Number 62-CV-15-3827). HAP-Metal assumed to be equivalent to $PM_{2.5}$.

2. PCB and dioxin/furan control efficiency per manufacturer guarantee.

Emission Calculations [1]

Pollutant	CAS #	HAP (Y/N)	Limited Emissions [2,3,4]		Uncontrolled, Unlimited Emissions [5]	
			(lb/hr)	(tpy)	(lb/hr)	(tpy)
Aluminum	7429-90-5	N	6.41E-03	0.01	0.09	0.40
Antimony	7440-36-0	Y	2.56E-04	4.79E-04	3.66E-03	0.02
Arsenic	7440-38-2	Y	9.79E-04	1.84E-03	0.01	0.06
Beryllium	7440-41-7	Y	7.02E-05	1.32E-04	1.00E-03	4.38E-03
Cadmium	7440-43-9	Y	7.40E-04	1.43E-03	0.01	0.05
Chromium (hexavalent)	18540-29-9	Y	3.00E-04	5.62E-04	4.29E-03	0.02
Chromium (total)	7440-47-3	Y	9.47E-04	1.83E-03	0.01	0.06
Cobalt	7440-48-4	Y	1.17E-04	2.22E-04	1.65E-03	7.22E-03
Copper	7440-50-8	N	3.04E-03	5.72E-03	0.04	0.19
Dioxins/Furans (total TEQ)	Various	Y	3.27E-09	6.13E-09	6.55E-09	2.87E-08
Lead	7439-92-1	Y	1.16E-03	2.20E-03	0.02	0.07
Manganese	7439-96-5	Y	2.43E-03	4.56E-03	0.03	0.15
Mercury	7439-97-6	Y	1.26E-03	1.43E-03	0.02	0.08
Nickel	7440-02-0	Y	4.88E-03	9.23E-03	0.07	0.30
PCBs (total)	Various	Y	0.01	0.03	0.03	0.12
Selenium	7782-49-2	Y	1.85E-03	3.46E-03	0.03	0.12
PM	-	N	1.58	3.28	144.77	634.11
PM_{10} [6]	-	N	1.58	3.28	20.79	91.08
$PM_{2.5}$ [6]	-	N	1.58	3.28	20.79	91.08
Max Individual HAP		-	0.01	0.03	0.07	0.30
Total HAP [7]		-	0.03	0.05	0.24	1.03

1. Emissions emitted from stack used by the shredder control equipment. This includes emissions from natural gas combustion in the RTO. Limited annual emissions from shredder estimated based on 3,744 hours/year for all pollutants except for mercury, which is based on a permit limit of 3 lb/yr. Annual emissions from RTO based on 8,760 hours/year.

2. Emission factors for metals calculated from compliance stack test performed at the Minneapolis plant with similar operations on the following dates:
a. 12/1-4/2009 and 12/22/2009
b. 6/22-23/2010 and 6/29/2010
c. 12/21-22/2016
d. 8/1/2017
A safety factor of 1.5 was applied to HAP emissions, except mercury. Mercury emission factors were based on the average value of the 2017 stack test results, with an added safety factor of 0.973 standard deviations. See narrative for further discussion on how stack test results are utilized for Becker.

3. PM emissions estimated based on fabric filter outlet concentration of 0.00225 gr/dscf guarantee per manufacturer. This grain loading does not include particulate from natural gas combustion in the RTO, which is added to the emission rate based AP-42 calculations below.

4. 95% of mercury, PCB, and dioxin/furan emissions from the shredder are routed through COMG1, the remaining 5% of emissions exhaust through COMG3. Manufacturer guarantee of 50% for PCBs and dioxin/furans in the RTO. See narrative for further details.

5. Uncontrolled emissions backcalculated from controlled emissions using combined control efficiencies.

6. It is assumed that PM = PM_{10} = $PM_{2.5}$.

7. Chromium (hexavalent) is included in Chromium (total), so it is not double counted in the Total HAP.

Northern Metals - Becker, MN
COMG 5 - Shredder Emissions

TREA 8 RTO Combustion Emissions [1]

Pollutant	Emission Factor [2,3] (lb/MMscf)	Emissions [4,5]	
		(lb/hr)	(tpy)
NOx	100	1.73E+00	7.56
CO	84	1.45E+00	6.35
PM	7.6	1.31E-01	0.57
PM_{10}	7.6	1.31E-01	0.57
$PM_{2.5}$	7.6	1.31E-01	0.57
SO_2	0.6	1.04E-02	0.05
CO_2	119,317	2.06E+03	9017.54
CH_4	2.25	3.88E-02	0.17
N_2O	0.22	3.88E-03	0.02
CO_{2e}	-	2.06E+03	9026.86
Arsenic	2.00E-04	3.45E-06	1.51E-05
Beryllium	1.20E-05	2.07E-07	9.07E-07
Cadmium	1.10E-03	1.90E-05	8.31E-05
Chromium	1.40E-03	2.42E-05	1.06E-04
Cobalt	8.40E-05	1.45E-06	6.35E-06
Copper	8.50E-04	1.47E-05	6.42E-05
Lead	5.00E-04	8.63E-06	3.78E-05
Manganese	3.80E-04	6.56E-06	2.87E-05
Mercury	2.60E-04	4.49E-06	1.96E-05
Nickel	2.10E-03	3.62E-05	1.59E-04
Selenium	2.40E-05	4.14E-07	1.81E-06

1. Emission of VOC and speciated VOC compounds for natural gas combustion in the RTO are calculated separately.

2. Emission factors from AP 42 Ch 1.4 Tables 1.4-1, 1.4-2, and 1.4-4.

3. CO_2, CH_4, N_2O emission factors from 40 CFR 98 Subpart C, Table C-1 and C-2.

4. Emissions based on RTO firing rate of 17.6 MMBtu/hr and an HHV of 1,020 MMBtu/MMscf. Annual emissions were calculated based on 8,760 hours of operation per year.

5. CO_{2e} emissions calculated using global warming potentials listed in 40 CFR 98 Subpart A, Table A-1.

Northern Metals - Becker, MN
COMG 1 - Ferrous Processing

Downstream Ferrous Inputs

Input	Value	Units
Hourly throughput	400	tph
Exhaust Flow Rate	20,000	dscfm
Fabric Filter Exhaust Grain Loading [1]	0.00225	gr/dscf

1. Fabric filter exhaust grain loading per manufacturer guarantee.

Pollutant	Combined Control Efficiency [1]
PM	99%
PM_{10}	93%
$PM_{2.5}$	93%
HAP-Metal	93%

1. Emissions from the equipment within the Ferrous building are routed to three particulate control devices in series (TREA4, TREA2, and TREA3). All emissions from these devices are routed to STRU19.

These three control devices have a combined control efficiency equal or better than 99% for PM, 93% for PM_{10}, and 93% for $PM_{2.5}$. Combined control efficiency required to be met according to the Section V.F. of the Consent Decree between the Minnesota Pollution Control Agency (MPCA) and Northern Metals, which was signed on March 15, 2017 (Court File Number 62-CV-15-3827). HAP-Metal assumed to be equivalent to $PM_{2.5}$.

Emission Calculations [1]

Pollutant	CAS #	HAP (Y/N)	Limited Emissions [2,3,4]		Uncontrolled, Unlimited Emissions [5]	
			(lb/hr)	(tpy)	(lb/hr)	(tpy)
Aluminum	7429-90-5	N	1.71E-03	3.20E-03	0.02	0.11
Antimony	7440-36-0	Y	6.83E-05	1.28E-04	9.75E-04	4.27E-03
Arsenic	7440-38-2	Y	2.60E-04	4.87E-04	3.71E-03	0.02
Beryllium	7440-41-7	Y	1.87E-05	3.49E-05	2.67E-04	1.17E-03
Cadmium	7440-43-9	Y	1.92E-04	3.60E-04	2.75E-03	0.01
Chromium (hexavalent)	18540-29-9	Y	8.01E-05	1.50E-04	1.14E-03	5.01E-03
Chromium (total)	7440-47-3	Y	2.46E-04	4.61E-04	3.52E-03	0.02
Cobalt	7440-48-4	Y	3.08E-05	5.76E-05	4.39E-04	1.92E-03
Copper	7440-50-8	N	8.06E-04	1.51E-03	0.01	0.05
Dioxins/Furans (total TEQ)	Various	Y	3.45E-10	6.45E-10	3.45E-10	1.51E-09
Lead	7439-92-1	Y	3.08E-04	5.76E-04	4.39E-03	0.02
Manganese	7439-96-5	Y	6.46E-04	1.21E-03	9.23E-03	0.04
Mercury	7439-97-6	Y	6.60E-05	7.43E-05	9.43E-04	4.13E-03
Nickel	7440-02-0	Y	1.29E-03	2.42E-03	0.02	0.08
PCBs (total)	Various	Y	1.47E-03	2.74E-03	1.47E-03	6.42E-03
Selenium	7782-49-2	Y	4.92E-04	9.21E-04	7.03E-03	0.03
PM	-	N	0.39	0.72	38.57	168.94
PM_{10} [6]	-	N	0.39	0.72	5.51	24.13
$PM_{2.5}$ [6]	-	N	0.39	0.72	5.51	24.13
Max Individual HAP		-	1.47E-03	2.74E-03	0.02	0.08
Total HAP [7]		-	5.08E-03	9.47E-03	0.05	0.23

1. Emissions from stack used by the ferrous processing control equipment. Annual emissions from ferrous processing estimated based on 3,744 hours/year for all pollutants except for mercury, which is based on a 3 lb/yr limit.

2. Emission factors for metals calculated from compliance stack test performed at the Minneapolis plant with similar operations on the following dates:
a. 12/1-4/2009 and 12/22/2009
b. 6/22-23/2010 and 6/29/2010
c. 12/21-22/2016
d. 8/1/2017
A safety factor of 1.5 was applied to HAP emissions, except mercury. Mercury emission factors were based on the average value of the 2017 stack test results, with an added safety factor of 0.973 standard deviations. See narrative for further discussion on how stack test results are utilized for Becker.

3. PM emissions estimated based on fabric filter outlet concentration of 0.00225 gr/dscf guarantee per manufacturer.
4. 5% of mercury, PCB, and dioxin/furan emissions are exhausted through COMG3. See narrative for further details.
5. Uncontrolled emissions backcalculated from controlled emissions using combined control efficiencies.
6. It is assumed that PM = PM_{10} = $PM_{2.5}$.
7. Chromium (hexavalent) is included in Chromium (total), so it is not double counted in the Total HAP.

Northern Metals - Becker, MN
COMG 2 - MRP

MRP Inputs

Input	Value	Units
Hourly throughput	50	tph
Exhaust Flow Rate	75,000	dscfm
Fabric Filter Exhaust Grain Loading [1]	0.00225	gr/dscf

1. Fabric filter exhaust grain loading per manufacturer guarantee.

Pollutant	Control Efficiency Fabric Filter [1] (%)
PM	99%
PM_{10}	93%
$PM_{2.5}$	93%
HAP-Metal	93%

1. Control efficiencies required to be met according to the Section V.F. of the Consent Decree between the Minnesota Pollution Control Agency (MPCA) and Northern Metals, which was signed on March 15, 2017 (Court File Number 62-CV-15-3827). HAP-Metal assumed to be equivalent to $PM_{2.5}$.

Drop Point Equation Emission Factors

Equation Parameter [1]	Pollutant Parameter		
	PM	PM_{10}	$PM_{2.5}$
k	0.74	0.35	0.05
U_{indoor} [2] (mph)	1.3		
M [4] (%)	15	15	15
E_{indoor} (lb/ton)	2.45E-05	1.16E-05	1.75E-06

1. Drop point equation parameters (AP-42 Chapter 13.2.4, Equation 1 (11/06)):
k = particle size multiplier (dimensionless)
U = mean wind speed (mph)
M = material moisture content (%)
E = emission factor (lb/ton)

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

2. Indoor wind speeds are conservatively estimated to be 1.3 mph which is with the range of 1.3-15 mph as defined by AP-42, Section 13.4.2.

3. Outdoor winds speeds calculated from model-ready, meteorological data files pre-processed by the MPCA and available on their website for St. Cloud, MN: https://www.pca.state.mn.us/air/meteorological-data.

4. On February 1, 2017, Kelsey Suddard (MPCA) approved the use of a moisture content representative of actual moisture testing of the ASR piles at the Northern Metals Minneapolis plant for use in another Northern Metals MRP emissions calculations. On February 2, 2017, Northern Metals found the moisture content of the ASR in the range of 20%-30%. Therefore, a moisture content of 15% is conservatively used as it applies a safety factor to the measurements collected by Northern Metals.

Material Handling Emission Calculations

MRP Material Handling Operations - Worst Case Path	Drop Point Count [1]	% of Input Throughput [2]	Uncontrolled Emissions						Limited Emissions					
			PM		PM_{10}		$PM_{2.5}$		PM		PM_{10}		$PM_{2.5}$	
			(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
Inside	22	100%	0.03	0.12	0.01	0.06	1.93E-03	8.45E-03	2.69E-04	1.18E-03	8.91E-04	3.90E-03	1.35E-04	5.91E-04
Outside	-	-	See FUGI2 Calculations											
Total	22		0.03	0.12	0.01	0.06	1.93E-03	8.45E-03	2.69E-04	1.18E-03	8.91E-04	3.90E-03	1.35E-04	5.91E-04

1. The pathway with the most drop points was determined using the MRP layout provided by Wendt to Trinity by email on June 23, 2017. See Worst Case Pathway table below for list of equipment in worst case pathway.
2. It is conservatively assumed that all material will travel through the pathway with the most drop points.

Northern Metals - Becker, MN
COMG 2 - MRP
Material Handling Emission Calculations - Metals

Pollutant	CAS #	HAP (Y/N)	Limited Emissions [1,2]		Uncontrolled, Unlimited Emissions [1]	
			(lb/hr)	(tpy)	(lb/hr)	(tpy)
Aluminum	7429-90-5	N	5.93E-06	2.60E-05	8.47E-05	3.71E-04
Antimony	7440-36-0	Y	2.37E-07	1.04E-06	3.38E-06	1.48E-05
Arsenic	7440-38-2	Y	9.01E-07	3.95E-06	1.29E-05	5.64E-05
Beryllium	7440-41-7	Y	6.47E-08	2.83E-07	9.24E-07	4.05E-06
Cadmium	7440-43-9	Y	6.66E-07	2.92E-06	9.52E-06	4.17E-05
Chromium (hexavalent)	18540-29-9	Y	2.78E-07	1.22E-06	3.97E-06	1.74E-05
Chromium (total)	7440-47-3	Y	8.53E-07	3.74E-06	1.22E-05	5.34E-05
Cobalt	7440-48-4	Y	1.07E-07	4.67E-07	1.52E-06	6.67E-06
Copper	7440-50-8	N	2.79E-06	1.22E-05	3.99E-05	1.75E-04
Dioxins/Furans (total TEQ)	Various	Y	-	-	-	-
Lead	7439-92-1	Y	1.07E-06	4.67E-06	1.52E-05	6.67E-05
Manganese	7439-96-5	Y	2.24E-06	9.81E-06	3.20E-05	1.40E-04
Mercury	7439-97-6	Y	7.73E-07	3.39E-06	1.10E-05	4.84E-05
Nickel	7440-02-0	Y	4.48E-06	1.96E-05	6.40E-05	2.80E-04
PCBs (total)	Various	Y	-	-	-	-
Selenium	7782-49-2	Y	1.71E-06	7.47E-06	2.44E-05	1.07E-04
PM	-	Y	1.446	6.34	144.64	633.54
PM10	-	Y	1.446	6.34	20.66	90.51
PM2.5	-	Y	1.446	6.34	20.66	90.51
Max Individual HAP		-	4.48E-06	1.96E-05	6.40E-05	2.80E-04
Total HAP [3]		-	1.31E-05	5.73E-05	1.87E-04	8.19E-04

1. Conservatively extrapolated emission factors for HAPs for the MRP utilizing the controlled, stack tested emission results for the shredder stack at the Northern Metals Minneapolis plant and the ratio of the PM_{10} emission factors for the MRP (based on PM_{10} drop point calculations above) and shredder. A safety factor of 1.5 was applied to HAP emissions. No dioxin/furan are expected from MRP and waste fluff processes. See application narrative for further discussion.

2. PM, PM_{10}, and $PM_{2.5}$ emission rates for modeling are based on the same methodology as the shredder and ferrous buildings. This methodology results in conservative estimates for PM, PM_{10}, and $PM_{2.5}$ emissions compared to the estimates provided by the drop point calculations. The PM_{10} emissions based on the drop point calculations are still used for determining metal HAP emissions.
3. Chromium (hexavalent) is included in Chromium (total), so it is not double counted in the Total HAP.

Worst Case Pathway

EQUI ID	Description	Number of Drops
-	Stockpile (loading)	1
-	Stockpile (unloading)	1
-	Front End Loader	1
EQUI26	CREEP FEEDER	1
EQUI27	TUMBLEBACK	1
EQUI28	SCREEN #1	1
EQUI62	NFC004	1
EQUI63	NFC005	1
EQUI35	SCREEN #2	1
EQUI68	NFC010	1
EQUI69	NFC011	1
EQUI43	SIFTER #2	1
EQUI44	FE SEPARATOR #3	1
EQUI70	NFC012	1
EQUI45	FEEDER #5	1
EQUI46	ECS #3	1
EQUI47	FINDER #5 & FINDER #6	1
EQUI71	NFC013	1
EQUI67	NFC009	1
EQUI41	FEEDER #4	1
EQUI42	FINDER #5	1
EQUI78	NFC020	1
Total		22

Northern Metals - Becker, MN
FUGI 140 - Paved Roads

AP-42 Ch. 13.2.1 Paved Roads (1/11), Equation (1) - Hourly Emissions

$$E = [k(sL)^{0.91} * (W)^{1.02}]$$

E =Particulate emission factor (lb/VMT)
k =Particle size multiplier for particle size range (lb/VMT)
sL 6.69 =Road surface silt loading (g/m^2)
W =Average weight (tons) of the vehicles traveling the road

AP-42 Ch. 13.2.1 Paved Roads (1/11), Equation (2) - Annual Emissions

$$E = [k(sL)^{0.91} * (W)^{1.02}]\left(1 - \frac{P}{4N}\right)$$

E =Particulate emission factor (lb/VMT)
k =Particle size multiplier for particle size range (lb/VMT)
sL 6.69 =Road surface silt loading (g/m^2)
W =Average weight (tons) of the vehicles traveling the road
P 110 =Number of days with at least 0.01 in of precipitation. Only utilized for annual emission estimates.
N 365 =Number of days in the averaging period

Paved Road Emissions - Summary

Emissions (lb/hr)			Emissions (tpy)		
PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
32.31	6.46	1.59	130.86	26.17	6.42

Paved Road Emission Calculations - Shredder Truck Route

Number of Trucks per Day [1]	Shredder Truck Route Distance [2] (mi)	Average Vehicle Weight [1] (W) (tons)	Road Surface Silt Loading [3] (sL) (g/m^2)	Particle Size Multiplier (k) (lb/VMT)			Emission Factor (Hourly) (E) (lb/VMT)			Emission Factor (Annual) (E) (lb/VMT)			Emissions (lb/hr)			Emissions (tpy)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
109	0.99	29.5	6.69	0.011	0.0022	0.00054	1.96	0.39	0.10	1.81	0.36	0.09	8.84	1.77	0.43	35.81	7.16	1.76

1. Twenty percent of the shredded ferrous produced is estimated to be shipped by truck (confirmed 3/23/2018). Number of trucks laoded per day estimated based on a truck load capacity of 42,000 lbs and 300 tons per hour of ferrous material loaded into trucks. Truck weights are the average of full and empty weights (80,000 lbs and 38,000 lbs, respectively). An additional 40 trucks are added to this route for the loadouts of clip, MRP containers, and waste.
2. Estimated from Proposed Site Plan received 3/22/2018.
3. Based on silt sampling of paved roads completed at Minneapolis facility on 8/15/2017. The silt sample used in the emission calculations is the highest from the sampling conducted and is expected to be conservative due to dry road conditions.

Paved Road Emission Calculations - Material Receiving Area Truck Route

Number of Vehicles per Day [1]	Receiving Area Truck Route Distance [2] (mi)	Average Vehicle Weight [1] (W) (tons)	Road Surface Silt Loading [3] (sL) (g/m^2)	Particle Size Multiplier (k) (lb/VMT)			Emission Factor (Hourly) (E) (lb/VMT)			Emission Factor (Annual) (E) (lb/VMT)			Emissions (lb/hr)			Emissions (tpy)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
265	0.75	29.5	6.69	0.011	0.0022	0.00054	1.96	0.39	0.10	1.81	0.36	0.09	16.23	3.25	0.80	65.74	13.15	3.23

1. Provided during phone call with Northern Metals on 6/13/2017 (reconfirmed 3/21/2018). Truck weights are the average of full and empty weights (80,000 lbs and 38,000 lbs, respectively).
2. Estimated from Proposed Site Plan received 3/22/2018.
3. Based on silt sampling of paved roads completed at Minneapolis facility on 8/15/2017. The silt sample used in the emission calculations is the highest from the sampling conducted and is expected to be conservative due to dry road conditions.

Northern Metals - Becker, MN
FUGI 140 - Paved Roads

Paved Road Emission Calculations - Community Receiving Area Route

Number of Vehicles per Day [1]	Shredder Truck Route Distance [2] (mi)	Average Vehicle Weight [1] (W) (tons)	Road Surface Silt Loading [3] (sL) (g/m^2)	Particle Size Multiplier (k) (lb/VMT)			Emission Factor (Hourly) (E) (lb/VMT)			Emission Factor (Annual) (E) (lb/VMT)			Emissions (lb/hr)			Emissions (tpy)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
60	0.23	2	6.69	0.011	0.0022	0.00054	0.13	0.03	6.17E-03	0.12	0.02	5.71E-03	0.07	0.01	3.51E-03	0.29	0.06	0.01

1. Provided during phone call with Northern Metals on 6/28/2017 (reconfirmed 3/21/2018). Average consumer vehicle weight assumed to be 2 tons.
2. Estimated from Proposed Site Plan received 3/22/2018.
3. Based on silt sampling of paved roads completed at Minneapolis facility on 8/15/2017. The silt sample used in the emission calculations is the highest from the sampling conducted and is expected to be conservative due to dry road conditions.

Paved Road Emission Calculations - Trucks to Commodities Stockpile

Number of Vehicles per Day [1]	Shredder Truck Route Distance [2] (mi)	Average Vehicle Weight [1] (W) (tons)	Road Surface Silt Loading [3] (sL) (g/m^2)	Particle Size Multiplier (k) (lb/VMT)			Emission Factor (Hourly) (E) (lb/VMT)			Emission Factor (Annual) (E) (lb/VMT)			Emissions (lb/hr)			Emissions (tpy)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
5	0.06	29.5	6.69	0.011	0.0022	0.00054	1.96	0.39	0.10	1.81	0.36	0.09	0.02	4.71E-03	1.16E-03	0.10	0.02	4.68E-03

1. Provided during phone call with Northern Metals on 6/28/2017 (reconfirmed 3/21/2018). Truck weights are the average of full and empty weights (80,000 lbs and 38,000 lbs, respectively).
2. Estimated from Proposed Site Plan received 3/22/2018.
3. Based on silt sampling of paved roads completed at Minneapolis facility on 8/15/2017. The silt sample used in the emission calculations is the highest from the sampling conducted and is expected to be conservative due to dry road conditions.

Paved Road Emission Calculations - Trucks to Shredded Clips Storage Loadout

Number of Vehicles per Day [1]	Shredder Truck Route Distance [2] (mi)	Average Vehicle Weight [1] (W) (tons)	Road Surface Silt Loading [3] (sL) (g/m^2)	Particle Size Multiplier (k) (lb/VMT)			Emission Factor (Hourly) (E) (lb/VMT)			Emission Factor (Annual) (E) (lb/VMT)			Emissions (lb/hr)			Emissions (tpy)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
15	0.02	29.5	6.69	0.011	0.0022	0.00054	1.96	0.39	0.10	1.81	0.36	0.09	0.03	6.03E-03	1.48E-03	0.12	0.02	5.99E-03

1. Provided during phone call with Northern Metals on 6/28/2017 (reconfirmed 3/21/2018). Truck weight the average of full and empty weights (80,000 lbs and 38,000 lbs, respectively).
2. Estimated from Proposed Site Plan received 3/22/2018.
3. Based on silt sampling of paved roads completed at Minneapolis facility on 8/15/2017. The silt sample used in the emission calculations is the highest from the sampling conducted and is expected to be conservative due to dry road conditions.

Paved Road Emission Calculations - Trucks to MRP Container Loadout

Number of Vehicles per Day [1]	Shredder Truck Route Distance [2] (mi)	Average Vehicle Weight [1] (W) (tons)	Road Surface Silt Loading [3] (sL) (g/m^2)	Particle Size Multiplier (k) (lb/VMT)			Emission Factor (Hourly) (E) (lb/VMT)			Emission Factor (Annual) (E) (lb/VMT)			Emissions (lb/hr)			Emissions (tpy)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
5	0.02	29.5	6.69	0.011	0.0022	0.00054	1.96	0.39	0.10	1.81	0.36	0.09	0.01	2.01E-03	4.93E-04	0.04	8.13E-03	2.00E-03

1. Provided during phone call with Northern Metals on 6/28/2017 (reconfirmed 3/21/2018). Truck weights are the average of full and empty weights (80,000 lbs and 38,000 lbs, respectively).
2. Estimated from Proposed Site Plan received 3/22/2018.
3. Based on silt sampling of paved roads completed at Minneapolis facility on 8/15/2017. The silt sample used in the emission calculations is the highest from the sampling conducted and is expected to be conservative due to dry road conditions.

Paved Road Emission Calculations - Trucks to Waste Loadout

Number of Vehicles per Day [1]	Shredder Truck Route Distance [2] (mi)	Average Vehicle Weight [1] (W) (tons)	Road Surface Silt Loading [3] (sL) (g/m^2)	Particle Size Multiplier (k) (lb/VMT)			Emission Factor (Hourly) (E) (lb/VMT)			Emission Factor (Annual) (E) (lb/VMT)			Emissions (lb/hr)			Emissions (tpy)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
20	0.07	29.5	6.69	0.011	0.0022	0.00054	1.96	0.39	0.10	1.81	0.36	0.09	0.11	0.02	5.46E-03	0.45	0.09	0.02

1. Provided during phone call with Northern Metals on 6/28/2017 (reconfirmed 3/21/2018). Truck weights are the average of full and empty weights (80,000 lbs and 38,000 lbs, respectively).
2. Estimated from Proposed Site Plan received 3/22/2018.
3. Based on silt sampling of paved roads completed at Minneapolis facility on 8/15/2017. The silt sample used in the emission calculations is the highest from the sampling conducted and is expected to be conservative due to dry road conditions.

Paved Road Emission Calculations - Front End Loader Transfer to Commodities Storage Piles

Number of Vehicles per Day [1]	Distance Traveled Between Stockpiles [2] (mi)	Average Vehicle Weight [1] (W) (tons)	Road Surface Silt Loading [3] (sL) (g/m^2)	Particle Size Multiplier (k) (lb/VMT)			Emission Factor (Hourly) (E) (lb/VMT)			Emission Factor (Annual) (E) (lb/VMT)			Emissions (lb/hr)			Emissions (tpy)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
6	0.19	43.25	6.69	0.011	0.0022	0.00054	2.89	0.58	0.14	2.67	0.53	0.13	0.13	0.03	6.59E-03	0.54	0.11	0.03

1. Provided during phone call with Northern Metals on 6/28/2017 (reconfirmed 3/21/2018). Number of trips by the loader per day estimated based on a bucket load capacity of 7,000 lbs and a conservative estimate of 20 tons per day of transferred commodities. Vehicle weights are calculated based on the average of the full and empty weights (90,000 lbs and 83,000 lbs, respectively).
2. Estimated from Proposed Site Plan received 3/22/2018.
3. Based on silt sampling of paved roads completed at Minneapolis facility on 8/15/2017. The silt sample used in the emission calculations is the highest from the sampling conducted and is expected to be conservative due to dry road conditions.

Paved Road Emission Calculations - Front End Loader Transfer Ferrous to Rail Loadout

Northern Metals - Becker, MN
FUGI 140 - Paved Roads

Number of Vehicles per Day [1]	Distance Traveled Between Stockpiles [2] (mi)	Average Vehicle Weight [1] (W) (tons)	Road Surface Silt Loading [3] (sL) (g/m^2)	Particle Size Multiplier (k) (lb/VMT)			Emission Factor (Hourly) (E) (lb/VMT)			Emission Factor (Annual) (E) (lb/VMT)			Emissions (lb/hr)			Emissions (tpy)		
				PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
1646	0.03	43.25	6.69	0.011	0.0022	0.00054	2.89	0.58	0.14	2.67	0.53	0.13	6.76	1.35	0.33	27.39	5.48	1.34

1. Eighty perecent of the shredded ferrous produced is estimated to be shipped by rail (confirmed 3/23/2018). Number of trips by the loader per day estimated based on a bucket load capacity of 7,000 lbs and 300 tons per hour of ferrous material loaded into railcars. Vehicle weights are calculated based on the average of the full and empty weights (90,000 lbs and 83,000 lbs, respectively).
2. Estimated from Proposed Site Plan received 3/22/2018.
3. Based on silt sampling of paved roads completed at Minneapolis facility on 8/15/2017. The silt sample used in the emission calculations is the highest from the sampling conducted and is expected to be conservative due to dry road conditions.

Paved Road Emission Calculations - Employee & Delivery/Vendor Traffic

Number of Vehicles per Day [1]			Office Parking Lot Route Distance [2] (mi)	Employee Parking Lot Route Distance [2] (mi)	Maintenance Parking Lot Route Distance [2] (mi)	Average Vehicle Weight [1] (W) (tons)	Surface Silt Loading [3] (sL) (g/m^2)	Particle Size Multiplier (k) (lb/VMT)			Emission Factor (Hourly) (E) (lb/VMT)			Emission Factor (Annual) (E) (lb/VMT)			Emissions (lb/hr)			Emissions (tpy)		
Office Parking	Employee Parking	Maintenance Parking						PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
30	30	55	0.03	0.04	0.29	2	6.69	0.011	0.0022	0.00054	0.13	0.03	6.17E-03	0.12	0.02	5.71E-03	0.09	0.02	4.65E-03	0.38	0.08	0.02

1. Provided during phone call with Northern Metals on 6/13/2017 (reconfirmed 3/21/2018). Average consumer vehicle weight assumed to be 2 tons. An additional 5 vehicles per day travel to the maintenance building for vendor services/deliveries.
2. Estimated from Proposed Site Plan received 3/22/2018.
3. Based on silt sampling of paved roads completed at Minneapolis facility on 8/15/2017. The silt sample used in the emission calculations is the highest from the sampling conducted and is expected to be conservative due to dry road conditions.

Northern Metals - Becker, MN
FUGI 141 - Waste Fluff

MRP Inputs

Input	Value	Units
Hourly throughput	50	tph

Drop Point Equation Emission Factors

Equation Parameter [1]	Pollutant Parameter		
	PM	PM_{10}	$PM_{2.5}$
k	0.74	0.35	0.05
$U_{outdoor}$ [2] (mph)	8.40		
M [3] (%)	15	15	15
$E_{outdoor}$ (lb/ton)	2.77E-04	1.31E-04	1.98E-05

1. Drop point equation parameters (AP-42 Chapter 13.2.4, Equation 1 (11/06)):
k = particle size multiplier (dimensionless)
U = mean wind speed (mph)
M = material moisture content (%)
E = emission factor (lb/ton)

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

2. Outdoor winds speeds calculated from model-ready, meteorological data files pre-processed by the MPCA and available on their website for St. Cloud, MN: https://www.pca.state.mn.us/air/meteorological-data.

3. On February 1, 2017, Kelsey Suddard (MPCA) approved the use of a moisture content representative of actual moisture testing of the ASR piles at the Northern Metals Minneapolis plant for use in another Northern Metals MRP emissions calculations. On February 2, 2017, Northern Metals found the moisture content of the ASR in the range of 20%-30%. Therefore, a moisture content of 15% is conservatively used as it applies a safety factor to the measurements collected by Northern Metals.

Material Handling Emission Calculations

Drop Point Count [1]	% of Input Throughput	Uncontrolled Emissions					
		PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
		(lb/hr)	(lb/hr)	(lb/hr)	(tpy)	(tpy)	(tpy)
3	100%	0.0415	0.0196	0.00297	0.18	0.09	0.01

1. These drop points are located outside but contained within three walls and a roof and comprise of waste fluff dropping onto pile, loader picking up material from pile, and loader dropping material into a truck.

Emission Calculations

Pollutant	CAS #	HAP (Y/N)	Uncontrolled Emissions [1]	
			(lb/hr)	(tpy)
Aluminum	7429-90-5	N	8.71E-05	3.81E-04
Antimony	7440-36-0	Y	3.48E-06	1.52E-05
Arsenic	7440-38-2	Y	1.32E-05	5.80E-05
Beryllium	7440-41-7	Y	9.50E-07	4.16E-06
Cadmium	7440-43-9	Y	9.78E-06	4.29E-05
Chromium (hexavalent) [2]	18540-29-9	Y	-	-
Chromium (total) [2]	7440-47-3	Y	-	-
Cobalt	7440-48-4	Y	1.57E-06	6.86E-06
Copper	7440-50-8	N	4.10E-05	1.80E-04
Dioxins/Furans (total TEQ)	Various	Y	-	-
Lead [2]	7439-92-1	Y	-	-
Manganese	7439-96-5	Y	3.29E-05	1.44E-04
Mercury [2]	7439-97-6	Y	-	-
Nickel	7440-02-0	Y	6.58E-05	2.88E-04
PCBs (total) [2]	Various	Y	-	-
Selenium	7782-49-2	Y	2.51E-05	1.10E-04
Max Individual HAP		-	6.58E-05	2.88E-04
Total HAP		-	1.53E-04	6.69E-04

1. Extrapolated emission factors for HAPs for the MRP utilizing the controlled, stack tested emission results for the shredder stack at the Northern Metals Minneapolis plant and the ratio of the PM_{10} emission factors for the MRP and shredder. No dioxin/furan are expected from MRP and waste fluff processes. See application narrative for further discussion.

2. Samples of automotive shredder residue were tested on 3/2/15, 6/1/15, 8/31/15, 11/30/15, amd 2/29/16. In each of these tests, lead, chromium, mercury, and PCB concentrations were below their respective non-detect level. As such, Northern Metals assumes these pollutants will not be present in the waste fluff pile.

Northern Metals - Becker, MN
FUGI 142 - Outdoor Pile

Input	Value	Units
Hourly throughput	300	tph

Drop Point Equation Emission Factors

Equation Parameter [1]	Pollutant Parameter		
	PM	PM_{10}	$PM_{2.5}$
k	0.74	0.35	0.05
$U_{outdoor}$ [2] (mph)	8.40		
M [3] (%)	5.4	5.4	5.4
$E_{outdoor}$ (lb/ton)	1.16E-03	5.47E-04	8.29E-05

1. Drop point equation parameters (AP-42 Chapter 13.2.4, Equation 1 (11/06)):
k = particle size multiplier (dimensionless)
U = mean wind speed (mph)
M = material moisture content (%)
E = emission factor (lb/ton)

$$E = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

2. Outdoor winds speeds calculated from model-ready, meteorological data files pre-processed by the MPCA and available on their website for St. Cloud, MN: https://www.pca.state.mn.us/air/meteorological-data.

3. Moisture percentage was assumed to be that the mean of Slag for Iron and Steel production in Table 13.2.4-1 of AP 42 Ch 12.3.4

Material Handling Emission Calculations

Drop Point Count [1]	% of Input Throughput	Emissions [2]					
		PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
		(lb/hr)	(lb/hr)	(lb/hr)	(tpy)	(tpy)	(tpy)
1	100%	0.0868	0.0410	0.00622	0.38	0.18	0.03

1. The drop point is located outside and comprise of ferrous material dropping onto pile.
2. PM emissions are controlled by a Z-Box located within the ferrous building that strips dust off the ferrous material prior to transporting to the piles. Control is considered to be 75%.

Northern Metals - Becker, MN
Insignificant Activities

Annual Operating Hours: [1]	8,760	hr/yr
Natural Gas Heat Content: [2]	1,020	Btu/scf

1. Conservatively assume 8,760 operating hours a year.
2. Natural gas heat content per AP-42 Section 1.4 (7/98).

Insignificant Activities

Unit Description [1]	Quantity	Heat Input (Btu/hr)
Natural Gas Fired Boiler	1	384,000
Natural Gas Fired Rooftop Heaters	5	64,000
Natural Gas Fired Space Heaters	4	173,250
Evaporator #1	1	750,000
Evaporator #2	1	395,000

1. Predicted insignificant units for the Becker Faciltiy based on units provided in Northern Metals Minneaplis Permit no. 05300480-003.

Summary - Insignificant Activity Emissions

Pollutant	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)	Included in RASS?	Exclude from RASS per AERA guidance?	Not an identified contaminant in RASS?
NO_x	0.25	1.09	Y		
CO	0.21	0.92	Y		
$PM/PM_{10}/PM_{2.5}$ (total)	0.02	0.08			Y
SO_2	1.50E-03	6.55E-03	Y		
VOC	0.01	0.06			Y
CO_2	297.36	1,302.42			Y
N_2O	5.60E-04	2.45E-03			Y
CH_4	5.60E-03	0.02			Y
Total CO_2e	297.66	1,303.76			Y
2-Methylnaphthalene	5.98E-08	2.62E-07			Y
3-Methylchloranthrene	4.49E-09	1.96E-08		Y	
7,12-Dimethylbenz(a)anthracene	3.99E-08	1.75E-07		Y	
Acenaphthene	4.49E-09	1.96E-08		Y	
Acenaphthylene	4.49E-09	1.96E-08		Y	
Anthracene	5.98E-09	2.62E-08		Y	
Benz(a)anthracene	4.49E-09	1.96E-08		Y	
Benzene	5.23E-06	2.29E-05	Y		
Benzo(a)pyrene	2.99E-09	1.31E-08		Y	
Benzo(b)fluoranthene	4.49E-09	1.96E-08		Y	
Benzo(g,h,i)perylene	2.99E-09	1.31E-08		Y	
Benzo(k)fluoranthene	4.49E-09	1.96E-08		Y	
Chrysene	4.49E-09	1.96E-08		Y	
Dibenzo(a,h)anthracene	2.99E-09	1.31E-08		Y	
Dichlorobenzene	2.99E-06	1.31E-05	Y		
Fluoranthene	7.48E-09	3.27E-08	Y		
Fluorene	6.98E-09	3.06E-08			Y
Formaldehyde	1.87E-04	8.19E-04	Y		
Hexane	4.49E-03	0.02	Y		
Indeno(1,2,3-cd)pyrene	4.49E-09	1.96E-08		Y	
Naphthalene	1.52E-06	6.66E-06	Y		
Phenanthrene	4.24E-08	1.86E-07	Y		
Pyrene	1.25E-08	5.46E-08			Y
Toluene	8.47E-06	3.71E-05	Y		
POM	2.20E-07	9.63E-07	Y		
Arsenic	4.98E-07	2.18E-06	Y		
Beryllium	2.99E-08	1.31E-07		Y	
Cadmium	2.74E-06	1.20E-05	Y		
Chromium (total)	3.49E-06	1.53E-05	Y		
Cobalt	2.09E-07	9.17E-07	Y		
Manganese	9.47E-07	4.15E-06	Y		
Mercury	6.48E-07	2.84E-06	Y		
Nickel	5.23E-06	2.29E-05	Y		
Selenium	5.98E-08	2.62E-07		Y	
Max Individual HAP	4.49E-03	0.02			
Total HAP	4.71E-03	0.02			

Summary - Non-HAP Emissions Included in RASS

Pollutant	Emission Factor Natural Gas [1] (lb/MMscf)	Aggregated Max Hourly Emissions (lb/hr)	Aggregated Max Annual Emissions (tpy)
Pentane	2.6	6.48E-03	2.84E-02
Copper	8.50E-04	2.12E-06	9.28E-06

1. Emission factors per AP-42 Section 1.4 (7/98), Table 1.4-3 for pentane and Table 1.4-4 for copper.

Northern Metals - Becker, MN
Insignificant Activities

IA001 - Natural Gas Fired Boiler Emissions

Pollutant	Emission Factor[1] (lb/MMscf)	Max Hourly Emissions (lb/hr)	Max Annual Emissions (lb/yr)	Insignificant Threshold[2] (lb/yr)	Exceed?
NO_x	100	0.04	329.8	2,000	NO
CO	84	0.03	277.0	4,000	NO
$PM/PM_{10}/PM_{2.5}$ (total)	7.6	2.86E-03	25.06	2,000	NO
SO_2	0.6	2.26E-04	1.98	2,000	NO
VOC	5.5	2.07E-03	18.14	2,000	NO

1. Emission factors for NO_x and CO per AP-42 Section 1.4 (7/98), Table 1.4-1, for uncontrolled units with less than 100 MMBtu/hr capacity. Emission factors for other pollutants per AP-42 Section 1.4 (7/98), Table 1.4-2.
2. Insignificant threshold as found in Minn R. 7007.1300(3)(I).

IA001 - Natural Gas Fired Boiler Greenhouse Emissions

Pollutant	Emission Factors[1] (lb/MMBtu)	Global Warming Potential[2]	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)	Insignificant Threshold[3] (tpy)	Exceed?
CO_2	117	1	44.9	196.7		
N_2O	2.20E-04	298	8.47E-05	3.71E-04		
CH_4	2.20E-03	25	8.47E-04	3.71E-03		
Total CO_2e			45.0	196.9	1,000	NO

1. Emission factors per 40 CFR Part 98 (11/2013) Subpart C, Table C-1 & C-2.
2. Global warming potentials from 40 CFR Part 98 (11/2013) Subpart A, Table A-1.
3. Insignificant threshold as found in Minn R. 7007.1300(3)(I).

IA001 - Natural Gas Fired Boiler HAP Emissions

Pollutant	Emission Factor Natural Gas [1] (lb/MMscf)	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)
2-Methylnaphthalene	2.40E-05	9.04E-09	3.96E-08
3-Methylchloranthrene	1.80E-06	6.78E-10	2.97E-09
7,12-Dimethylbenz(a)anthracene	1.60E-05	6.02E-09	2.64E-08
Acenaphthene	1.80E-06	6.78E-10	2.97E-09
Acenaphthylene	1.80E-06	6.78E-10	2.97E-09
Anthracene	2.40E-06	9.04E-10	3.96E-09
Benz(a)anthracene	1.80E-06	6.78E-10	2.97E-09
Benzene	2.10E-03	7.91E-07	3.46E-06
Benzo(a)pyrene	1.20E-06	4.52E-10	1.98E-09
Benzo(b)fluoranthene	1.80E-06	6.78E-10	2.97E-09
Benzo(g,h,i)perylene	1.20E-06	4.52E-10	1.98E-09
Benzo(k)fluoranthene	1.80E-06	6.78E-10	2.97E-09
Chrysene	1.80E-06	6.78E-10	2.97E-09
Dibenzo(a,h)anthracene	1.20E-06	4.52E-10	1.98E-09
Dichlorobenzene	1.20E-03	4.52E-07	1.98E-06
Fluoranthene	3.00E-06	1.13E-09	4.95E-09
Fluorene	2.80E-06	1.05E-09	4.62E-09
Formaldehyde	7.50E-02	2.82E-05	1.24E-04
Hexane	1.80E+00	6.78E-04	2.97E-03
Indeno(1,2,3-cd)pyrene	1.80E-06	6.78E-10	2.97E-09
Naphthalene	6.10E-04	2.30E-07	1.01E-06
Phenanthrene	1.70E-05	6.40E-09	2.80E-08
Pyrene	5.00E-06	1.88E-09	8.24E-09
Toluene	3.40E-03	1.28E-06	5.61E-06
POM	8.82E-05	3.32E-08	1.45E-07
Arsenic	2.00E-04	7.53E-08	3.30E-07
Beryllium	1.20E-05	4.52E-09	1.98E-08
Cadmium	1.10E-03	4.14E-07	1.81E-06
Chromium (total)	1.40E-03	5.27E-07	2.31E-06
Cobalt	8.40E-05	3.16E-08	1.39E-07
Manganese	3.80E-04	1.43E-07	6.27E-07
Mercury	2.60E-04	9.79E-08	4.29E-07
Nickel	2.10E-03	7.91E-07	3.46E-06
Selenium	2.40E-05	9.04E-09	3.96E-08
Max Individual HAP	-	6.78E-04	2.97E-03
Total HAP	-	7.11E-04	3.11E-03

1. Emission Factors from AP 42 Ch 1.4 Table 1.4-3 and Table 1.4-4.

Northern Metals - Becker, MN
Insignificant Activities
IA002 - IA006 - Natural Gas Fired Rooftop Heaters Emissions

Pollutant	Emission Factor[1] (lb/MMscf)	Max Hourly Emissions (lb/hr)	Max Annual Emissions (lb/yr)	Insignificant Threshold[2] (lb/yr)	Exceed?
NO_x	100	0.01	55.0	2,000	NO
CO	84	0.01	46.2	4,000	NO
$PM/PM_{10}/PM_{2.5}$ (total)	7.6	4.77E-04	4.18	2,000	NO
SO_2	0.6	3.76E-05	0.33	2,000	NO
VOC	5.5	3.45E-04	3.02	2,000	NO

1. Emission factors for NO_x and CO per AP-42 Section 1.4 (7/98), Table 1.4-1, for uncontrolled units with less than 100 MMBtu/hr
2. Insignificant threshold as found in Minn R. 7007.1300(3)(I).

IA002 - IA006 - Natural Gas Fired Rooftop Heaters Greenhouse Emissions

Pollutant	Emission Factors[1] (lb/MMBtu)	Global Warming Potential[2]	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)	Insignificant Threshold[3] (tpy)	Exceed?
CO_2	117	1	7.5	32.8		
N_2O	2.20E-04	298	1.41E-05	6.18E-05		
CH_4	2.20E-03	25	1.41E-04	6.18E-04		
Total CO_2e			7.5	32.8	1,000	NO

1. Emission factors per 40 CFR Part 98 (11/2013) Subpart C, Table C-1 & C-2.
2. Global warming potentials from 40 CFR Part 98 (11/2013) Subpart A, Table A-1.
3. Insignificant threshold as found in Minn R. 7007.1300(3)(I).

IA002 - IA006 - Natural Gas Fired Rooftop Heaters HAP Emissions

Pollutant	Emission Factor Natural Gas [1] (lb/MMscf)	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)
2-Methylnaphthalene	2.40E-05	1.51E-09	6.60E-09
3-Methylchloranthrene	1.80E-06	1.13E-10	4.95E-10
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.00E-09	4.40E-09
Acenaphthene	1.80E-06	1.13E-10	4.95E-10
Acenaphthylene	1.80E-06	1.13E-10	4.95E-10
Anthracene	2.40E-06	1.51E-10	6.60E-10
Benz(a)anthracene	1.80E-06	1.13E-10	4.95E-10
Benzene	2.10E-03	1.32E-07	5.77E-07
Benzo(a)pyrene	1.20E-06	7.53E-11	3.30E-10
Benzo(b)fluoranthene	1.80E-06	1.13E-10	4.95E-10
Benzo(g,h,i)perylene	1.20E-06	7.53E-11	3.30E-10
Benzo(k)fluoranthene	1.80E-06	1.13E-10	4.95E-10
Chrysene	1.80E-06	1.13E-10	4.95E-10
Dibenzo(a,h)anthracene	1.20E-06	7.53E-11	3.30E-10
Dichlorobenzene	1.20E-03	7.53E-08	3.30E-07
Fluoranthene	3.00E-06	1.88E-10	8.24E-10
Fluorene	2.80E-06	1.76E-10	7.70E-10
Formaldehyde	7.50E-02	4.71E-06	2.06E-05
Hexane	1.80E+00	1.13E-04	4.95E-04
Indeno(1,2,3-cd)pyrene	1.80E-06	1.13E-10	4.95E-10
Naphthalene	6.10E-04	3.83E-08	1.68E-07
Phenanthrene	1.70E-05	1.07E-09	4.67E-09
Pyrene	5.00E-06	3.14E-10	1.37E-09
Toluene	3.40E-03	2.13E-07	9.34E-07
POM	8.82E-05	5.53E-09	2.42E-08
Arsenic	2.00E-04	1.25E-08	5.50E-08
Beryllium	1.20E-05	7.53E-10	3.30E-09
Cadmium	1.10E-03	6.90E-08	3.02E-07
Chromium (total)	1.40E-03	8.78E-08	3.85E-07
Cobalt	8.40E-05	5.27E-09	2.31E-08
Manganese	3.80E-04	2.38E-08	1.04E-07
Mercury	2.60E-04	1.63E-08	7.15E-08
Nickel	2.10E-03	1.32E-07	5.77E-07
Selenium	2.40E-05	1.51E-09	6.60E-09
Max Individual HAP	-	1.13E-04	4.95E-04
Total HAP	-	1.18E-04	5.19E-04

1. Emission Factors from AP 42 Ch 1.4 Table 1.4-3 and Table 1.4-4.

Northern Metals - Becker, MN
Insignificant Activities
IA007 - IA010 - Natural Gas Fired Space Heaters Emissions

Pollutant	Emission Factor[1] (lb/MMscf)	Max Hourly Emissions (lb/hr)	Max Annual Emissions (lb/yr)	Insignificant Threshold[2] (lb/yr)	Exceed?
NO_x	100	0.02	148.8	2,000	NO
CO	84	0.01	125.0	4,000	NO
$PM/PM_{10}/PM_{2.5}$ (total)	7.6	1.29E-03	11.31	2,000	NO
SO_2	0.6	1.02E-04	0.89	2,000	NO
VOC	5.5	9.34E-04	8.18	2,000	NO

1. Emission factors for NO_x and CO per AP-42 Section 1.4 (7/98), Table 1.4-1, for uncontrolled units with less than 100 MMBtu/hr
2. Insignificant threshold as found in Minn R. 7007.1300(3)(I).

IA007 - IA010 - Natural Gas Fired Space Heaters Greenhouse Emissions

Pollutant	Emission Factors[1] (lb/MMBtu)	Global Warming Potential[2]	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)	Insignificant Threshold[3] (tpy)	Exceed?
CO_2	117	1	20.3	88.8		
N_2O	2.20E-04	298	3.82E-05	1.67E-04		
CH_4	2.20E-03	25	3.82E-04	1.67E-03		
Total CO_2e			20.3	88.9	1,000	NO

1. Emission factors per 40 CFR Part 98 (11/2013) Subpart C, Table C-1 & C-2.
2. Global warming potentials from 40 CFR Part 98 (11/2013) Subpart A, Table A-1.
3. Insignificant threshold as found in Minn R. 7007.1300(3)(I).

IA007 - IA010 - Natural Gas Fired Space Heaters HAP Emissions

Pollutant	Emission Factor Natural Gas [1] (lb/MMscf)	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)
2-Methylnaphthalene	2.40E-05	4.08E-09	1.79E-08
3-Methylchloranthrene	1.80E-06	3.06E-10	1.34E-09
7,12-Dimethylbenz(a)anthracene	1.60E-05	2.72E-09	1.19E-08
Acenaphthene	1.80E-06	3.06E-10	1.34E-09
Acenaphthylene	1.80E-06	3.06E-10	1.34E-09
Anthracene	2.40E-06	4.08E-10	1.79E-09
Benz(a)anthracene	1.80E-06	3.06E-10	1.34E-09
Benzene	2.10E-03	3.57E-07	1.56E-06
Benzo(a)pyrene	1.20E-06	2.04E-10	8.93E-10
Benzo(b)fluoranthene	1.80E-06	3.06E-10	1.34E-09
Benzo(g,h,i)perylene	1.20E-06	2.04E-10	8.93E-10
Benzo(k)fluoranthene	1.80E-06	3.06E-10	1.34E-09
Chrysene	1.80E-06	3.06E-10	1.34E-09
Dibenzo(a,h)anthracene	1.20E-06	2.04E-10	8.93E-10
Dichlorobenzene	1.20E-03	2.04E-07	8.93E-07
Fluoranthene	3.00E-06	5.10E-10	2.23E-09
Fluorene	2.80E-06	4.76E-10	2.08E-09
Formaldehyde	7.50E-02	1.27E-05	5.58E-05
Hexane	1.80E+00	3.06E-04	1.34E-03
Indeno(1,2,3-cd)pyrene	1.80E-06	3.06E-10	1.34E-09
Naphthalene	6.10E-04	1.04E-07	4.54E-07
Phenanthrene	1.70E-05	2.89E-09	1.26E-08
Pyrene	5.00E-06	8.49E-10	3.72E-09
Toluene	3.40E-03	5.78E-07	2.53E-06
POM	8.82E-05	1.50E-08	6.56E-08
Arsenic	2.00E-04	3.40E-08	1.49E-07
Beryllium	1.20E-05	2.04E-09	8.93E-09
Cadmium	1.10E-03	1.87E-07	8.18E-07
Chromium (total)	1.40E-03	2.38E-07	1.04E-06
Cobalt	8.40E-05	1.43E-08	6.25E-08
Manganese	3.80E-04	6.45E-08	2.83E-07
Mercury	2.60E-04	4.42E-08	1.93E-07
Nickel	2.10E-03	3.57E-07	1.56E-06
Selenium	2.40E-05	4.08E-09	1.79E-08
Max Individual HAP	-	3.06E-04	1.34E-03
Total HAP	-	3.21E-04	1.40E-03

1. Emission Factors from AP 42 Ch 1.4 Table 1.4-3 and Table 1.4-4.

Northern Metals - Becker, MN
Insignificant Activities
IA011 - Evaporator #1 Emissions

Pollutant	Emission Factor[1] (lb/MMscf)	Max Hourly Emissions (lb/hr)	Max Annual Emissions (lb/yr)	Insignificant Threshold[2] (lb/yr)	Exceed?
NO_x	100	0.07	644.1	2,000	NO
CO	84	0.06	541.1	4,000	NO
$PM/PM_{10}/PM_{2.5}$ (total)	7.6	5.59E-03	48.95	2,000	NO
SO_2	0.6	4.41E-04	3.86	2,000	NO
VOC	5.5	4.04E-03	35.43	2,000	NO

1. Emission factors for NO_x and CO per AP-42 Section 1.4 (7/98), Table 1.4-1, for uncontrolled units with less than 100 MMBtu/hr
2. Insignificant threshold as found in Minn R. 7007.1300(3)(I).

IA011 - Evaporator #1 Greenhouse Emissions

Pollutant	Emission Factors[1] (lb/MMBtu)	Global Warming Potential[2]	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)	Insignificant Threshold[3] (tpy)	Exceed?
CO_2	117	1	87.7	384.3		
N_2O	2.20E-04	298	1.65E-04	7.24E-04		
CH_4	2.20E-03	25	1.65E-03	7.24E-03		
Total CO_2e			87.8	384.7	1,000	NO

1. Emission factors per 40 CFR Part 98 (11/2013) Subpart C, Table C-1 & C-2.
2. Global warming potentials from 40 CFR Part 98 (11/2013) Subpart A, Table A-1.
3. Insignificant threshold as found in Minn R. 7007.1300(3)(I).

IA011 - Evaporator #1 HAP Emissions

Pollutant	Emission Factor Natural Gas [1] (lb/MMscf)	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)
2-Methylnaphthalene	2.40E-05	1.76E-08	7.73E-08
3-Methylchloranthrene	1.80E-06	1.32E-09	5.80E-09
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.18E-08	5.15E-08
Acenaphthene	1.80E-06	1.32E-09	5.80E-09
Acenaphthylene	1.80E-06	1.32E-09	5.80E-09
Anthracene	2.40E-06	1.76E-09	7.73E-09
Benz(a)anthracene	1.80E-06	1.32E-09	5.80E-09
Benzene	2.10E-03	1.54E-06	6.76E-06
Benzo(a)pyrene	1.20E-06	8.82E-10	3.86E-09
Benzo(b)fluoranthene	1.80E-06	1.32E-09	5.80E-09
Benzo(g,h,i)perylene	1.20E-06	8.82E-10	3.86E-09
Benzo(k)fluoranthene	1.80E-06	1.32E-09	5.80E-09
Chrysene	1.80E-06	1.32E-09	5.80E-09
Dibenzo(a,h)anthracene	1.20E-06	8.82E-10	3.86E-09
Dichlorobenzene	1.20E-03	8.82E-07	3.86E-06
Fluoranthene	3.00E-06	2.21E-09	9.66E-09
Fluorene	2.80E-06	2.06E-09	9.02E-09
Formaldehyde	7.50E-02	5.51E-05	2.42E-04
Hexane	1.80E+00	1.32E-03	5.80E-03
Indeno(1,2,3-cd)pyrene	1.80E-06	1.32E-09	5.80E-09
Naphthalene	6.10E-04	4.49E-07	1.96E-06
Phenanthrene	1.70E-05	1.25E-08	5.48E-08
Pyrene	5.00E-06	3.68E-09	1.61E-08
Toluene	3.40E-03	2.50E-06	1.10E-05
POM	8.82E-05	6.49E-08	2.84E-07
Arsenic	2.00E-04	1.47E-07	6.44E-07
Beryllium	1.20E-05	8.82E-09	3.86E-08
Cadmium	1.10E-03	8.09E-07	3.54E-06
Chromium (total)	1.40E-03	1.03E-06	4.51E-06
Cobalt	8.40E-05	6.18E-08	2.71E-07
Manganese	3.80E-04	2.79E-07	1.22E-06
Mercury	2.60E-04	1.91E-07	8.37E-07
Nickel	2.10E-03	1.54E-06	6.76E-06
Selenium	2.40E-05	1.76E-08	7.73E-08
Max Individual HAP	-	1.32E-03	5.80E-03
Total HAP	-	1.39E-03	6.08E-03

1. Emission Factors from AP 42 Ch 1.4 Table 1.4-3 and Table 1.4-4.

Northern Metals - Becker, MN
Insignificant Activities
IA011 - Evaporator #2 Emissions

Pollutant	Emission Factor[1] (lb/MMscf)	Max Hourly Emissions (lb/hr)	Max Annual Emissions (lb/yr)	Insignificant Threshold[2] (lb/yr)	Exceed?
NO_x	100	0.04	339.2	2,000	NO
CO	84	0.03	285.0	4,000	NO
$PM/PM_{10}/PM_{2.5}$ (total)	7.6	2.94E-03	25.78	2,000	NO
SO_2	0.6	2.32E-04	2.04	2,000	NO
VOC	5.5	2.13E-03	18.66	2,000	NO

1. Emission factors for NO_x and CO per AP-42 Section 1.4 (7/98), Table 1.4-1, for uncontrolled units with less than 100 MMBtu/hr
2. Insignificant threshold as found in Minn R. 7007.1300(3)(I).

IA011 - Evaporator #2 Greenhouse Emissions

Pollutant	Emission Factors[1] (lb/MMBtu)	Global Warming Potential[2]	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)	Insignificant Threshold[3] (tpy)	Exceed?
CO_2	117	1	46.2	202.4		
N_2O	2.20E-04	298	8.71E-05	3.81E-04		
CH_4	2.20E-03	25	8.71E-04	3.81E-03		
Total CO_2e			46.3	202.6	1,000	NO

1. Emission factors per 40 CFR Part 98 (11/2013) Subpart C, Table C-1 & C-2.
2. Global warming potentials from 40 CFR Part 98 (11/2013) Subpart A, Table A-1.
3. Insignificant threshold as found in Minn R. 7007.1300(3)(I).

IA011 - Evaporator #2 HAP Emissions

Pollutant	Emission Factor Natural Gas [1] (lb/MMscf)	Max Hourly Emissions (lb/hr)	Max Annual Emissions (tpy)
2-Methylnaphthalene	2.40E-05	9.29E-09	4.07E-08
3-Methylchloranthrene	1.80E-06	6.97E-10	3.05E-09
7,12-Dimethylbenz(a)anthracene	1.60E-05	6.20E-09	2.71E-08
Acenaphthene	1.80E-06	6.97E-10	3.05E-09
Acenaphthylene	1.80E-06	6.97E-10	3.05E-09
Anthracene	2.40E-06	9.29E-10	4.07E-09
Benz(a)anthracene	1.80E-06	6.97E-10	3.05E-09
Benzene	2.10E-03	8.13E-07	3.56E-06
Benzo(a)pyrene	1.20E-06	4.65E-10	2.04E-09
Benzo(b)fluoranthene	1.80E-06	6.97E-10	3.05E-09
Benzo(g,h,i)perylene	1.20E-06	4.65E-10	2.04E-09
Benzo(k)fluoranthene	1.80E-06	6.97E-10	3.05E-09
Chrysene	1.80E-06	6.97E-10	3.05E-09
Dibenzo(a,h)anthracene	1.20E-06	4.65E-10	2.04E-09
Dichlorobenzene	1.20E-03	4.65E-07	2.04E-06
Fluoranthene	3.00E-06	1.16E-09	5.09E-09
Fluorene	2.80E-06	1.08E-09	4.75E-09
Formaldehyde	7.50E-02	2.90E-05	1.27E-04
Hexane	1.80E+00	6.97E-04	3.05E-03
Indeno(1,2,3-cd)pyrene	1.80E-06	6.97E-10	3.05E-09
Naphthalene	6.10E-04	2.36E-07	1.03E-06
Phenanthrene	1.70E-05	6.58E-09	2.88E-08
Pyrene	5.00E-06	1.94E-09	8.48E-09
Toluene	3.40E-03	1.32E-06	5.77E-06
POM	8.82E-05	3.42E-08	1.50E-07
Arsenic	2.00E-04	7.75E-08	3.39E-07
Beryllium	1.20E-05	4.65E-09	2.04E-08
Cadmium	1.10E-03	4.26E-07	1.87E-06
Chromium (total)	1.40E-03	5.42E-07	2.37E-06
Cobalt	8.40E-05	3.25E-08	1.42E-07
Manganese	3.80E-04	1.47E-07	6.45E-07
Mercury	2.60E-04	1.01E-07	4.41E-07
Nickel	2.10E-03	8.13E-07	3.56E-06
Selenium	2.40E-05	9.29E-09	4.07E-08
Max Individual HAP	-	6.97E-04	3.05E-03
Total HAP	-	7.31E-04	3.20E-03

1. Emission Factors from AP 42 Ch 1.4 Table 1.4-3 and Table 1.4-4.

Northern Metals - Becker, MN
Tanks

Tank Inventory

Area	Contents	Capacity (gal)	Insignificant Activity Rule	Required to be listed (Y/N)
Fueling Station	#2 Diesel	490	Minn. 7007.1300 subp. 2.E.(3)	N
	Unleaded Gasoline	500	Minn. 7007.1300 Subp. 2.E.(4)	N
North Warehouse Maintenance Area	Motor Oil	250	Minn. 7007.1300 subp. 2.E.(2)	N
	Motor Oil	250	Minn. 7007.1300 subp. 2.E.(2)	N
	Hydraulic Oil	250	Minn. 7007.1300 subp. 2.E.(2)	N
	Motor Oil	250	Minn. 7007.1300 subp. 2.E.(2)	N
	Motor Oil	250	Minn. 7007.1300 subp. 2.E.(2)	N
	Used Oil	265	Minn. 7007.1300 subp. 2.E.(2)	N
	Parts Washing Solution	30	Minn. 7007.1300 subp. 3(H)(7)	Y
	Hydraulic Oil, Lubricating Oil, Motor Oil	55 each	Minn. 7007.1300 subp. 2.E.(2)	N
Steel Turnings / Borings Pad	Oil/Water Mix	5,500	Minn. 7007.1300 subp. 3.E.(2)	Y
	Oil/Water Mix	5,500	Minn. 7007.1300 subp. 3.E.(2)	Y
	Oil/Water Mix	1,000	Minn. 7007.1300 subp. 3.E.(2)	Y
South Warehouse Building and Evaporator System	Process Water	2,600	Minn. 7007.1300 subp. 3.E.(2)	Y
	Hydraulic Oil	275	Minn. 7007.1300 subp. 2.E.(2)	N
	Hydraulic Oil	300	Minn. 7007.1300 subp. 2.E.(2)	N
	Used Oil	960	Minn. 7007.1300 subp. 2.E.(2)	N
	Oily Water	500	Minn. 7007.1300 subp. 2.E.(2)	N
	Hydraulic Oil, Lubricating Oil, Motor Oil	55 each	Minn. 7007.1300 subp. 2.E.(2)	N
Shredder Building	Mineral Oil	1,750	Minn. 7007.1300 subp. 2.E.(2)	N
	Mineral Oil	465	Minn. 7007.1300 subp. 2.E.(2)	N
	Mineral Oil	300	Minn. 7007.1300 subp. 2.E.(2)	N
	Hydraulic Oil	200	Minn. 7007.1300 subp. 2.E.(2)	N
	Hydraulic Oil	60	Minn. 7007.1300 subp. 2.E.(2)	N
	Hydraulic Oil	100	Minn. 7007.1300 subp. 2.E.(2)	N
	Hydraulic Oil	100	Minn. 7007.1300 subp. 2.E.(2)	N
	Ethylene Glycol 50%	250	Minn. 7007.1300 subp. 3.E.(2)	Y
	0.2% Soda Ash Solution	1,580	Minn. 7007.1300 subp. 3.E.(2)	Y
ELV	Gasoline	490	Minn. 7007.1300 Subp. 2.E.(4)	N
	Gasoline	490	Minn. 7007.1300 Subp. 2.E.(4)	N
	Oil	490	Minn. 7007.1300 subp. 2.E.(2)	N
	Antifreeze	490	Minn. 7007.1300 subp. 3.E.(2)	Y

Northern Metals - Becker, MN
Mercury Speciation

Mercury Speciation [1,2]

Hg(0)	Hg(II)	Hg-p
80%	10%	10%

1. Mercury speciation per *Emission Inventory and Emissions Processing for the Clean Air Mercury Rule (CAMR)* , U.S. EPA, March 2005. Speciation for SCC code 31401101 is used for the Northern Metals facility. Document provided by Ed Swain of MPCA via email on December 6, 2017.
2. Hg(0) -elemental mercury, Hg(II) - reactive gas, Hg-p - particle bound.

Mercury Emissions

Tempo ID	Emissions (tpy) [1]				Emissions (lb/yr)				Emissions (lb/hr)			
	Hg(0)	Hg(II)	Hg-p	Total	Hg(0)	Hg(II)	Hg-p	Total	Hg(0)	Hg(II)	Hg-p	Total
COMG1	1.14E-03	1.43E-04	1.43E-04	1.43E-03	2.29	0.29	0.29	2.86	1.01E-03	1.26E-04	1.26E-04	1.26E-03
COMG3	5.94E-05	7.43E-06	7.43E-06	7.43E-05	0.12	0.01	0.01	0.15	5.28E-05	6.60E-06	6.60E-06	6.60E-05
COMG2	2.71E-06	3.39E-07	3.39E-07	3.39E-06	0.01	0.00	0.00	0.01	6.18E-07	7.73E-08	7.73E-08	7.73E-07
STRU19 [2]	1.21E-03	1.51E-04	1.51E-04	1.51E-03	2.41	0.30	0.30	3.02	1.06E-03	1.33E-04	1.33E-04	1.33E-03
IA	2.27E-06	2.84E-07	2.84E-07	2.84E-06	4.54E-03	5.68E-04	5.68E-04	5.68E-03	5.18E-07	6.48E-08	6.48E-08	6.48E-07

1. Mercury emissions calculated based on stack test results which reflect total mercury. Elemental, reactive, and particle bound mercury are calculated using speciation of 80%, 10%, 10%, respectively, as described above.
2. STRU19 emissions consist of the sum of COMG1, COMG2, and COMG3 emissions.

Northern Metals - Becker, MN
Comparison to Minn. R. 7011.0715 Limits

EQUI ID	Max Design Capacity (ton/hr)	Process Weight Rate (lb/hr)	Emission Rate - Process Weight Rate (lb/hr)	Gas Volume (dscfm)	Concentration (gr/dscf)	Emission Rate - Grain Loading (lb/hr)	Less Stringent	Maximum Emission Rate (lb/hr)
EQUI1	400	800,000	45.15				Process Rate	45.15
EQUI2	400	800,000	45.15	75,000	0.046	29.80	Process Rate	45.15
EQUI3	400	800,000	45.15	75,000	0.046	29.80	Process Rate	45.15
EQUI4	400	800,000	45.15	20,000	0.071	12.20	Process Rate	45.15
EQUI5	300	600,000	43.12	20,000	0.071	12.20	Process Rate	43.12
EQUI6	300	600,000	43.12	20,000	0.071	12.20	Process Rate	43.12
EQUI7	150	300,000	38.59	20,000	0.071	12.20	Process Rate	38.59
EQUI8	150	300,000	38.59	20,000	0.071	12.20	Process Rate	38.59
EQUI9	150	300,000	38.59	20,000	0.071	12.20	Process Rate	38.59
EQUI10	150	300,000	38.59	20,000	0.071	12.20	Process Rate	38.59
EQUI11	75	150,000	34.54	20,000	0.071	12.20	Process Rate	34.54
EQUI12	400	800,000	45.15	20,000	0.071	12.20	Process Rate	45.15
EQUI13	400	800,000	45.15	20,000	0.071	12.20	Process Rate	45.15
EQUI14	300	600,000	43.12	20,000	0.071	12.20	Process Rate	43.12
EQUI15	100	200,000	36.17	20,000	0.071	12.20	Process Rate	36.17
EQUI16	100	200,000	36.17	20,000	0.071	12.20	Process Rate	36.17
EQUI17	100	200,000	36.17	20,000	0.071	12.20	Process Rate	36.17
EQUI18	100	200,000	36.17	20,000	0.071	12.20	Process Rate	36.17
EQUI19	300	600,000	43.12	20,000	0.071	12.20	Process Rate	43.12
EQUI20	300	600,000	43.12				Process Rate	43.12
EQUI21	300	600,000	43.12				Process Rate	43.12
EQUI22	300	600,000	43.12				Process Rate	43.12
EQUI23	20	40,000	23.00	20,000	0.071	12.20	Process Rate	23.00
EQUI24	100	200,000	36.17	20,000	0.071	12.20	Process Rate	36.17
EQUI25	100	200,000	36.17	20,000	0.071	12.20	Process Rate	36.17
EQUI26	45	90,000	31.83	75,000	0.046	29.80	Process Rate	31.83
EQUI27	45	90,000	31.83	75,000	0.046	29.80	Process Rate	31.83
EQUI28	45	90,000	31.83	75,000	0.046	29.80	Process Rate	31.83
EQUI29	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI30	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI31	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI32	6	12,000	10.90	75,000	0.046	29.80	Grain Loading	29.80
EQUI33	2	4,000	5.52	75,000	0.046	29.80	Grain Loading	29.80
EQUI34	2	4,000	5.52	75,000	0.046	29.80	Grain Loading	29.80
EQUI35	25	50,000	26.41	75,000	0.046	29.80	Grain Loading	29.80
EQUI36	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI37	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI38	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI39	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI40	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI41	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI42	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80

Northern Metals - Becker, MN
Comparison to Minn. R. 7011.0715 Limits

EQUI ID	Max Design Capacity (ton/hr)	Process Weight Rate (lb/hr)	Emission Rate - Process Weight Rate (lb/hr)	Gas Volume (dscfm)	Concentration (gr/dscf)	Emission Rate - Grain Loading (lb/hr)	Less Stringent	Maximum Emission Rate (lb/hr)
EQUI43	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI44	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI45	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI46	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI47	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI48	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI49	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI50	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI51	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI52	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI53	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI54	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI55	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI56	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI57	2	4,000	5.52	75,000	0.046	29.80	Grain Loading	29.80
EQUI58	2	4,000	5.52	75,000	0.046	29.80	Grain Loading	29.80
EQUI59	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI60	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI61	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI62	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI63	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI64	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI65	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI66	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI67	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI68	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI69	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI70	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI71	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI72	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI73	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI74	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI75	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI76	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI77	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI78	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI79	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI80	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI81	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI82	5	10,000	9.74	75,000	0.046	29.80	Grain Loading	29.80
EQUI83	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI84	30	60,000	29.57	75,000	0.046	29.80	Grain Loading	29.80
EQUI85	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI86	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI87	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI88	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI89	10	20,000	14.97	75,000	0.046	29.80	Grain Loading	29.80
EQUI90	40	80,000	31.23	75,000	0.046	29.80	Process Rate	31.23

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:

SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description	
Northern Metals Recycling - Becker	ACTV1	Null All IAs	
	AISI215865	Null Null	
	COMG1	Null Ferrous Building Equipment	
	COMG2	Null Metal Recovery Plant	
	COMG3	Null Shredder Control Equipment	
	COMG4	Null Control Equipment for Ferrous Building Equipment	
	COMG5	Null Shredder Building Equipment	
	EQUI2	Null Shredder	
	EQUI3	Null UMO	
	EQUI4	Null Poker Picker	
	EQUI5	Null Magstand	
	EQUI6	Null Z-Box	

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description	
Northern Metals Recycling - Becker	EQUI12	Null FEC001	
	EQUI13	Null FEC002	
	EQUI14	Null FEC003	
	EQUI15	Null FEC004	
	EQUI16	Null FEC005	
	EQUI17	Null FEC006	
	EQUI18	Null FEC007	
	EQUI19	Null FEC008	
	EQUI20	Null FEC009	
	EQUI23	Null FEC010	
	EQUI24	Null FEC011	
	EQUI25	Null FEC014	

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description
Northern Metals Recycling - Becker	EQUI26	Null Creep Feeder
	EQUI27	Null Tumbleback
	EQUI28	Null Screen #1
	EQUI29	Null Trommel
	EQUI32	Null SMB #1
	EQUI34	Null SMB #2
	EQUI37	Null ECS #3
	EQUI38	Null Feeder #2
	EQUI39	Null Finder #1
	EQUI40	Null Sifter #1
	EQUI43	Null ECS #4
	EQUI44	Null Finder #2

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description
Northern Metals Recycling - Becker	EQUI46	Null FE Separator #2
	EQUI49	Null Finder #3
	EQUI50	Null Sifter #3
	EQUI51	Null FE Separator #3
	EQUI52	Null Feeder #4
	EQUI53	Null ECS #6
	EQUI55	Null Sifter #4
	EQUI56	Null FE Separator #4
	EQUI59	Null NFC001
	EQUI60	Null NFC002
	EQUI61	Null NFC003
	EQUI62	Null NFC004

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description	
Northern Metals Recycling - Becker	EQUI63	Null NFC005	
	EQUI64	Null NFC006	
	EQUI65	Null NFC007	
	EQUI66	Null NFC008	
	EQUI67	Null NFC009	
	EQUI68	Null NFC010	
	EQUI69	Null NFC011	
	EQUI70	Null NFC012	
	EQUI71	Null NFC013	
	EQUI72	Null NFC014	
	EQUI73	Null NFC015	
	EQUI74	Null NFC016	

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description	
Northern Metals Recycling - Becker	EQUI75	Null NFC017	
	EQUI76	Null NFC018	
	EQUI77	Null NFC019	
	EQUI78	Null NFC020	
	EQUI79	Null NFC021	
	EQUI80	Null NFC022	
	EQUI81	Null NFC023	
	EQUI82	Null NFC024	
	EQUI83	Null NFC025	
	EQUI84	Null NFC026	
	EQUI85	Null NFC027	
	EQUI86	Null NFC028	

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description	
Northern Metals Recycling - Becker	EQUI87	Null NFC029	
	EQUI88	Null NFC030	
	EQUI89	Null NFC031	
	EQUI90	Null NFC032	
	EQUI91	Null Magstand	
	EQUI92	Null Screen #2	
	EQUI93	Null ECS #1	
	EQUI94	Null FE Separator #1	
	EQUI95	Null Sifter #2	
	EQUI96	Null ECS #5	
	EQUI97	Null Finder #4	
	EQUI98	Null ECS #7	

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description	
Northern Metals Recycling - Becker	EQUI99	Null ECS #2	
	EQUI100	Null Screen #3	
	EQUI101	Null Feeder #1	
	EQUI102	Null Feeder #3	
	EQUI103	Null Feeder #8	
	EQUI104	Null Feeder #5	
	EQUI105	Null FEC015	
	EQUI106	Null FEC016	
	EQUI107	Null FEC017	
	EQUI108	Null FEC018	
	EQUI109	Null FEC019	
	EQUI110	Null FEC020	

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description	
Northern Metals Recycling - Becker	EQUI111	Null FEC021	
	EQUI112	Null NFC033	
	EQUI113	Null NFC034	
	EQUI114	Null NFC035	
	EQUI115	Null NFC036	
	EQUI116	Null NFC037	
	EQUI117	Null NFC038	
	EQUI118	Null NFC039	
	EQUI119	Null NFC040	
	EQUI120	Null Feeder #6	
	EQUI121	Null Feeder #7	
	EQUI122	Null Finder #5	

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description
Northern Metals Recycling - Becker	EQUI123	Null Finder #6
	EQUI124	Null Sensor #1
	EQUI125	Null NFC041
	FUGI140	Null Truck Traffic - Paved Roads
	FUGI141	Null Waste Fluff Handling
	FUGI142	Null Ferrous Product Handling
	STRU5	Null Motor Control and Operator Facility
	STRU6	Null Shredder Building
	STRU7	Null Shredder Control Equipment Building
	STRU8	Null Employee Locker Room
	STRU10	Null MRP Building
	STRU11	Null MRP Baghouse Building

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description
Northern Metals Recycling - Becker	STRU12	Null Waste Fluff Storage
	STRU13	Null Office Building
	STRU14	Null Shredded Clips Storage
	STRU16	Null Ferrous Building
	STRU17	Null Feeder Yard Building
	STRU18	Null End of Vehicle Life Building
	STRU19	Null Combined Stack
	STRU20	Null Shredder Control Equipment Building - Downstream Ferrous
	STRU21	Null Shredder Maintenance Building
	STRU22	Null Maintenance Building
	TFAC1	Null Null
	TREA1	Null Cyclone - Shredder

List of SIs

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: None
SI Type: All

Agency Interest Name	Subject Item ID	SI Designation and Description
Northern Metals Recycling - Becker	TREA2	Null Fabric Filter - Shredder
	TREA3	Null Fabric Filter - Shredder
	TREA4	Null Cyclone - Cascade Cleaning
	TREA7	Null Fabric Filter - MRP
	TREA8	Null Thermal Oxidizer

AISI Conventional Site

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: Agency Interest
SI Type: Conventional Site

Subject Item ID	Within 50 miles of these borders	Program Description	Sub Program Description	Sub Program Start Date	Sub Program End Date	SIC / NAICS
AISI215865	Null	Null	New Source Review - Synthetic Minor	8/25/2017	Null	4214 - Local Trucking With ..
						5015 - Motor Vehicle Parts,..
						5093 - Scrap and Waste Ma..
			Part 63 Synthetic Area	11/29/2017	Null	4214 - Local Trucking With ..
						5015 - Motor Vehicle Parts,..
						5093 - Scrap and Waste Ma..
			Part 70 Synthetic Minor	8/25/2017	Null	4214 - Local Trucking With ..
						5015 - Motor Vehicle Parts,..
						5093 - Scrap and Waste Ma..

Insignificant air emissions activity

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: IND20170001 (State Permit)

Details for:
SI Category: Activity
SI Type: Insignificant Air Emissions Activity

Agency Interest Na..	Activity ID	Subject Ite..	Subject Item Type Description	Subject Item ID	SI Designation and Description	Status Desc..	Sub Attribute Description	
Northern Metals Recycling - Becker	IND20170001	Activity	Insignificant Air Emissions Activity	ACTV1	Null All IAs	Active/ Existing	Minn. R. 7007.1300, subp. 3(E)(2)	
							Minn. R. 7007.1300, subp. 3(H)(3)	
							Minn. R. 7007.1300, subp. 3(I)	

Component Group (Members)

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Component Group
SI Type: Air Component Group

Agency Interest Name	Subject Item ID	SI Designation and Description	Group Member ID (padded)
Northern Metals Recycling - Becker	COMG1	Null Ferrous Building Equipment	EQUI3
			EQUI4
			EQUI5
			EQUI6
			EQUI12
			EQUI13
			EQUI14
			EQUI15
			EQUI16
			EQUI17
			EQUI18
			EQUI19
			EQUI20
			EQUI23
			EQUI25

Component Group (Members)

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Component Group
SI Type: Air Component Group

Agency Interest Name	Subject Item ID	SI Designation and Description	Group Member ID (padded)
Northern Metals Recycling - Becker	COMG1	Null Ferrous Building Equipment	EQUI91
			EQUI105
			EQUI106
			EQUI107
			EQUI108
			EQUI109
			EQUI110
			EQUI111
	COMG2	Null Metal Recovery Plant	EQUI26
			EQUI27
			EQUI28
			EQUI29
			EQUI32
			EQUI34
			EQUI37

Component Group (Members)

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Component Group
SI Type: Air Component Group

Agency Interest Name	Subject Item ID	SI Designation and Description	Group Member ID (padded)
Northern Metals Recycling - Becker	COMG2	Null Metal Recovery Plant	EQUI38
			EQUI39
			EQUI40
			EQUI43
			EQUI44
			EQUI46
			EQUI49
			EQUI50
			EQUI51
			EQUI52
			EQUI53
			EQUI55
			EQUI56
			EQUI59
			EQUI60

Component Group (Members)

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Component Group
SI Type: Air Component Group

Agency Interest Name	Subject Item ID	SI Designation and Description	Group Member ID (padded)
Northern Metals Recycling - Becker	COMG2	Null Metal Recovery Plant	EQUI61
			EQUI62
			EQUI63
			EQUI64
			EQUI65
			EQUI66
			EQUI67
			EQUI68
			EQUI69
			EQUI70
			EQUI71
			EQUI72
			EQUI73
			EQUI74
			EQUI75

Component Group (Members)

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Component Group
SI Type: Air Component Group

Agency Interest Name	Subject Item ID	SI Designation and Description	Group Member ID (padded)
Northern Metals Recycling - Becker	COMG2	Null Metal Recovery Plant	EQUI76
			EQUI77
			EQUI78
			EQUI79
			EQUI80
			EQUI81
			EQUI82
			EQUI83
			EQUI84
			EQUI85
			EQUI86
			EQUI87
			EQUI88
			EQUI89
			EQUI90

Component Group (Members)

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Component Group
SI Type: Air Component Group

Agency Interest Name	Subject Item ID	SI Designation and Description	Group Member ID (padded)
Northern Metals Recycling - Becker	COMG2	Null Metal Recovery Plant	EQUI92
			EQUI93
			EQUI94
			EQUI95
			EQUI96
			EQUI97
			EQUI98
			EQUI99
			EQUI100
			EQUI101
			EQUI102
			EQUI103
			EQUI104
			EQUI105
			EQUI112

Component Group (Members)

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Component Group
SI Type: Air Component Group

Agency Interest Name	Subject Item ID	SI Designation and Description	Group Member ID (padded)
Northern Metals Recycling - Becker	COMG2	Null Metal Recovery Plant	EQUI113
			EQUI114
			EQUI115
			EQUI116
			EQUI117
			EQUI118
			EQUI119
			EQUI120
			EQUI121
			EQUI122
			EQUI123
			EQUI124
			EQUI125
	COMG3	Null Shredder Control Equipment	TREA1
			TREA2

Component Group (Members)

Agency Interest: Northern Metals Recycling - Becker
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Component Group
SI Type: Air Component Group

Agency Interest Name	Subject Item ID	SI Designation and Description	Group Member ID (padded)
Northern Metals Recycling - Becker	COMG3	Null Shredder Control Equipment	TREA3
	COMG4	Null Control Equipment for Ferrous Building Equipment	TREA2
			TREA3
			TREA4
	COMG5	Null Shredder Building Equipment	EQUI2
			EQUI3

PTE by subject item

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	Subject Item Designation	Subject Item Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	Antimony compounds	6.83e-05	0.00427	0.000128	
					Arsenic compounds	0.00026	0.02	0.000487	
					Beryllium	1.87e-05	0.00117	3.49e-05	
					Cadmium compounds	0.000192	0.01	0.00036	
					Chromium compounds	0.000249	0.02	0.000461	
					Cobalt compounds	3.08e-05	0.00192	5.76e-05	
					Copper	0.000806	0.05	0.00151	
					HAPs - Total	0.88	4.06	1.65	
					Lead	0.000308	0.02	0.000576	
					Manganese compounds	0.000646	0.04	0.00121	
					Mercury	6.5e-05	0.00413	7.43e-05	
					Nickel compounds	0.00129	0.08	0.00242	
					Particulate Matter	0.39	168.94	0.72	
					PCBs (Polychlorinated biphenyls)	0.00147	0.00642	0.00274	
					PM < 2.5 micron	0.39	24.13	0.72	
					PM < 10 micron	0.39	24.13	0.72	
					Selenium compounds	0.000492	0.03	0.000921	
					Total PCDD/PCDF	3.45e-10	1.51e-09	6.45e-10	
					Volatile Organic Compounds	3.58	15.66	6.69	
		COMG2	Null	Metal Recovery Plant	Antimony compounds	2.37e-07	1.48e-05	1.04e-06	
					Arsenic compounds	9.01e-07	5.64e-05	3.95e-06	
					Beryllium	6.47e-08	4.05e-06	2.83e-07	
					Cadmium compounds	6.66e-07	4.17e-05	2.92e-06	
					Chromium compounds	8.53e-07	5.34e-05	3.74e-06	
					Cobalt compounds	1.07e-07	6.67e-06	4.67e-07	
					Copper	2.79e-06	0.000175	1.22e-05	
					HAPs - Total	1.31e-05	5.73e-05	0.000819	
					Lead	1.07e-06	6.67e-05	4.67e-06	
					Manganese compounds	2.24e-06	0.00014	9.81e-06	
					Mercury	7.73e-07	4.84e-05	3.39e-06	
					Nickel compounds	4.48e-06	0.00028	1.96e-05	
					Particulate Matter	1.446	633.54	6.34	
					PM < 2.5 micron	1.446	90.51	6.34	
					PM < 10 micron	1.446	90.51	6.34	
					Selenium compounds	1.71e-06	0.000107	7.47e-06	
Equipment	Shredding Equipment	EQUI2	Null	Shredder	Antimony compounds	0.000256	0.02	0.000479	
					Arsenic compounds	0.000979	0.06	0.00184	
					Beryllium	7.02e-05	0.00438	0.000132	
					Cadmium compounds	0.00074	0.05	0.00143	
					Chromium compounds	0.000947	0.06	0.00183	
					Cobalt compounds	0.000117	0.00722	0.000222	
					Copper	0.00304	0.19	0.00572	
					HAPs - Total	1.1	74.84	2.14	
					Lead	0.00116	0.07	0.0022	
					Manganese compounds	0.00243	0.15	0.00456	
					Mercury	0.00126	0.08	0.00143	
					Nickel compounds	0.00488	0.3	0.00923	
					Particulate Matter	1.45	633.54	2.71	
					PCBs (Polychlorinated biphenyls)	0.01	0.12	0.03	
					PM < 2.5 micron	1.45	90.51	2.71	
					PM < 10 micron	1.45	90.51	2.71	
					Selenium compounds	0.00185	0.12	0.00346	
					Total PCDD/PCDF	3.27e-09	2.87e-08	6.13e-09	
					Volatile Organic Compounds	3.61	298.53	6.74	
Fugitive	Material Handling/ Transfer/Storage	FUGI141	Null	Waste Fluff Handling	Antimony compounds	3.48e-06	1.52e-05	1.52e-05	
					Arsenic compounds	1.32e-05	5.8e-05	5.8e-05	
					Beryllium	9.5e-07	4.16e-06	4.16e-06	
					Cadmium compounds	9.78e-06	4.29e-05	4.29e-05	
					Cobalt compounds	1.57e-06	6.86e-06	6.86e-06	
					Copper	1.57e-06	6.86e-06	6.86e-06	
					HAPs - Total	0.000153	0.000669	0.000669	
					Manganese compounds	3.29e-05	0.000144	0.000144	
					Nickel compounds	6.58e-05	0.000288	0.000288	
					Particulate Matter	0.0415	0.18	0.18	
					PM < 2.5 micron	0.00297	0.01	0.01	
					PM < 10 micron	0.0196	0.09	0.09	
					Selenium compounds	2.51e-05	0.00011	0.00011	
		FUGI142	Null	Ferrous Product Handling	Particulate Matter	0.0868	0.38	0.38	
					PM < 2.5 micron	0.00622	0.03	0.03	
					PM < 10 micron	0.041	0.18	0.18	
	Paved Road	FUGI140	Null	Truck Traffic - Paved	Particulate Matter	32.31	130.86	130.86	

PTE by subject item

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	Subject Item Designation	Subject Item Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Fugitive	Paved Road	FUGI140	Null	Truck Traffic - Paved Roads	PM < 2.5 micron	1.59	6.42	6.42	
					PM < 10 micron	6.46	26.17	26.17	
Structure	Stack/Vent	STRU19	Null	Combined Stack	1,1-Dichloroethane	0.00377	0.0724	0.00706	
					1,1,2-Trichloroethane	0.00382	0.0734	0.00716	
					1,1,2,2-Tetrachloroethane	0.00378	0.0726	0.00708	
					1,2-Dibromo-3-chloropropane	0.00387	0.0743	0.00725	
					1,2-Dichloroethane	0.00377	0.0724	0.00706	
					1,2-Dichloropropane	0.0037	0.0711	0.00693	
					1,2,4-Trichlorobenzene	0.00371	0.0713	0.00695	
					1,2,4-Trimethylbenzene	0.137	2.63	0.257	
					1,3-Butadiene	0.00377	0.0723	0.00705	
					1,3-Dichloropropene	0.00375	0.072	0.00702	
					1,4-Dichlorobenzene (para-)	0.00376	0.0722	0.00704	
					1,4-Dioxane (p-Dioxane)	0.00379	0.0727	0.00709	
					2-Methylnaphthalene	4.14e-07	1.81e-06	1.81e-06	
					3-Methylcholanthrene	3.11e-08	1.36e-07	1.36e-07	
					7,12-Dimethylbenz[a]anthracene	2.76e-07	1.21e-06	1.21e-06	
					Acenaphthene	3.11e-08	1.36e-07	1.36e-07	
					Acenaphthylene	3.11e-08	1.36e-07	1.36e-07	
					Acetonitrile	0.00374	0.0718	0.007	
					Acrolein	0.00373	0.0716	0.00698	
					Acrylonitrile	0.00375	0.072	0.00702	
					Anthracene	4.14e-08	1.81e-07	1.81e-07	
					Benzene	0.096	1.84	0.18	
					Benzo(a)anthracene	3.11e-08	1.36e-07	1.36e-07	
					Benzo(b)fluoranthene	3.11e-08	1.36e-07	1.36e-07	
					Benzo(ghi)perylene	2.07e-08	9.07e-08	9.07e-08	
					Benzo(k)fluoranthene	3.11e-08	1.36e-07	1.36e-07	
					Benzo[a]pyrene	2.07e-08	9.07e-08	9.07e-08	
					Bromomethane (Methyl bromide)	0.00379	0.0728	0.0071	
					Carbon disulfide	0.00374	0.0718	0.007	
					Carbon tetrachloride	0.00378	0.0726	0.00707	
					Chlorobenzene (Monochlorobenzene)	0.0038	0.073	0.00712	
					Chloroethane	0.00376	0.0723	0.00705	
					Chloroform	0.00379	0.0727	0.00709	
					Chloromethane	0.00377	0.0724	0.00706	
					Chloromethylbenzene	0.00376	0.0721	0.00703	
					Chloroprene (Chlorobutadiene)	0.00376	0.0722	0.00704	
					Chrysene	3.11e-08	1.36e-07	1.36e-07	
					Cumene (Isopropylbenzene)	0.00849	0.163	0.0159	
					Dibenz[a,h]anthracene	2.07e-08	9.07e-08	9.07e-08	
					Ethyl acrylate	0.0204	0.392	0.0382	
					Ethylbenzene	0.0874	1.68	0.164	
					Fluoranthene	5.18e-08	2.27e-07	2.27e-07	
					Fluorene	4.83e-08	2.12e-07	2.12e-07	
					Formaldehyde	0.00129	0.00567	0.00567	
					Hexachlorobutadiene	0.00374	0.0718	0.007	
					Hexane	0.225	3.86	0.499	
					Hydrochloric acid	0.208	0.388	0.388	
					Indeno(1,2,3-cd)pyrene	3.11e-08	1.36e-07	1.36e-07	
					Methyl methacrylate	0.00748	0.144	0.014	
					Methyl-tert-butylether	0.00379	0.0728	0.00709	
					Naphthalene	0.00828	0.159	0.0155	
					Phenanthrene	2.93e-07	1.28e-06	1.28e-06	
					Polycyclic organic matter	6.52e-07	2.86e-06	2.86e-06	
					Pyrene	8.63e-08	3.78e-07	3.78e-07	
					Styrene	0.0685	1.32	0.128	
					Toluene	0.396	7.61	0.742	
					Trichloroethylene (TCE)	0.0269	0.516	0.0504	
					Vinyl acetate (Acetic acid)	0.0379	0.728	0.0709	
					Vinyl chloride (chloroethene)	0.00377	0.0725	0.00707	
Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	Arsenic compounds	3.45e-06	1.51e-05	1.51e-05	
					Beryllium	2.07e-07	9.07e-07	9.07e-07	
					Cadmium compounds	1.9e-05	8.31e-05	8.31e-05	
					Carbon Dioxide	2,060	9,017.54	9,017.54	
					Carbon Dioxide Equivalent	2,060	9,026.86	9,026.86	
					Carbon Monoxide	1.45	6.35	6.35	
					Chromium compounds	2.42e-05	0.000106	0.000106	
					Cobalt compounds	1.45e-06	6.35e-06	6.35e-06	
					Copper	1.47e-05	6.42e-05	6.42e-05	
					Lead	8.63e-06	3.78e-05	3.78e-05	

PTE by subject item

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	Subject Item Designation	Subject Item Description	Pollutant	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	Manganese compounds	6.56e-06	2.87e-05	2.87e-05	
					Mercury	4.49e-06	1.96e-05	1.96e-05	
					Methane	0.0388	0.17	0.17	
					Nickel compounds	3.62e-05	0.000159	0.000159	
					Nitrogen Oxides	1.73	7.56	7.56	
					Nitrous Oxide	0.00388	0.02	0.02	
					Particulate Matter	0.131	0.57	0.57	
					PM < 2.5 micron	0.131	0.57	0.57	
					PM < 10 micron	0.131	0.57	0.57	
					Sulfur Dioxide	0.0104	0.05	0.05	
					Volatile Organic Compounds	0.0949	0.416	0.416	

PTE by pollutant

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Pollutant	Subject Item Category Description	Subject Item Type Description	Subject Item ID	Subject Item Designation	Subject Item Description	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
1,1-Dichloroethane	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00377	0.0724	0.00706	
1,1,2-Trichloroethane	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00382	0.0734	0.00716	
1,1,2,2-Tetrachloroethane	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00378	0.0726	0.00708	
1,2-Dibromo-3-chloroprop..	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00387	0.0743	0.00725	
1,2-Dichloroethane	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00377	0.0724	0.00706	
1,2-Dichloropropane	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.0037	0.0711	0.00693	
1,2,4-Trichlorobenzene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00371	0.0713	0.00695	
1,2,4-Trimethylbenzene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.137	2.63	0.257	
1,3-Butadiene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00377	0.0723	0.00705	
1,3-Dichloropropene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00375	0.072	0.00702	
1,4-Dichlorobenzene (par..	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00376	0.0722	0.00704	
1,4-Dioxane (p-Dioxane)	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00379	0.0727	0.00709	
2-Methylnaphthalene	Structure	Stack/Vent	STRU19	Null	Combined Stack	4.14e-07	1.81e-06	1.81e-06	
3-Methylcholanthrene	Structure	Stack/Vent	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
7,12-Dimethylbenz[a]ant..	Structure	Stack/Vent	STRU19	Null	Combined Stack	2.76e-07	1.21e-06	1.21e-06	
Acenaphthene	Structure	Stack/Vent	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
Acenaphthylene	Structure	Stack/Vent	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
Acetonitrile	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00374	0.0718	0.007	
Acrolein	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00373	0.0716	0.00698	
Acrylonitrile	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00375	0.072	0.00702	
Anthracene	Structure	Stack/Vent	STRU19	Null	Combined Stack	4.14e-08	1.81e-07	1.81e-07	
Antimony compounds	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	6.83e-05	0.00427	0.000128	
			COMG2	Null	Metal Recovery Plant	2.37e-07	1.48e-05	1.04e-06	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.000256	0.02	0.000479	
	Fugitive	Material Handling/Transfer/Stora..	FUGI141	Null	Waste Fluff Handling	3.48e-06	1.52e-05	1.52e-05	
Arsenic compounds	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.00026	0.02	0.000487	
			COMG2	Null	Metal Recovery Plant	9.01e-07	5.64e-05	3.95e-06	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.000979	0.06	0.00184	
	Fugitive	Material Handling/Transfer/Stora..	FUGI141	Null	Waste Fluff Handling	1.32e-05	5.8e-05	5.8e-05	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	3.45e-06	1.51e-05	1.51e-05	
Benzene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.096	1.84	0.18	
Benzo(a)anthracene	Structure	Stack/Vent	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
Benzo(b)fluoranthene	Structure	Stack/Vent	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
Benzo(ghi)perylene	Structure	Stack/Vent	STRU19	Null	Combined Stack	2.07e-08	9.07e-08	9.07e-08	
Benzo(k)fluoranthene	Structure	Stack/Vent	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
Benzo[a]pyrene	Structure	Stack/Vent	STRU19	Null	Combined Stack	2.07e-08	9.07e-08	9.07e-08	
Beryllium	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	1.87e-05	0.00117	3.49e-05	
			COMG2	Null	Metal Recovery Plant	6.47e-08	4.05e-06	2.83e-07	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	7.02e-05	0.00438	0.000132	
	Fugitive	Material Handling/Transfer/Stora..	FUGI141	Null	Waste Fluff Handling	9.5e-07	4.16e-06	4.16e-06	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	2.07e-07	9.07e-07	9.07e-07	
Bromomethane (Methyl b..	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00379	0.0728	0.0071	
Cadmium compounds	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.000192	0.01	0.00036	
			COMG2	Null	Metal Recovery Plant	6.66e-07	4.17e-05	2.92e-06	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.00074	0.05	0.00143	
	Fugitive	Material Handling/Transfer/Stora..	FUGI141	Null	Waste Fluff Handling	9.78e-06	4.29e-05	4.29e-05	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	1.9e-05	8.31e-05	8.31e-05	
Carbon Dioxide	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	2.060	9,017.54	9,017.54	
Carbon Dioxide Equivalent	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	2.060	9,026.86	9,026.86	
Carbon disulfide	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00374	0.0718	0.007	
Carbon Monoxide	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	1.45	6.35	6.35	
Carbon tetrachloride	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00378	0.0726	0.00707	
Chlorobenzene (Monochlo..	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.0038	0.073	0.00712	
Chloroethane	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00376	0.0723	0.00705	
Chloroform	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00379	0.0727	0.00709	
Chloromethane	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00377	0.0724	0.00706	
Chloromethylbenzene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00376	0.0721	0.00703	
Chloroprene (Chlorobutad..	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00376	0.0722	0.00704	
Chromium compounds	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.000249	0.02	0.000461	
			COMG2	Null	Metal Recovery Plant	8.53e-07	5.34e-05	3.74e-06	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.000947	0.06	0.00183	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	2.42e-05	0.000106	0.000106	
Chrysene	Structure	Stack/Vent	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
Cobalt compounds	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	3.08e-05	0.00192	5.76e-05	
			COMG2	Null	Metal Recovery Plant	1.07e-07	6.67e-06	4.67e-07	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.000117	0.00722	0.000222	
	Fugitive	Material Handling/Transfer/Stora..	FUGI141	Null	Waste Fluff Handling	1.57e-06	6.86e-06	6.86e-06	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	1.45e-06	6.35e-06	6.35e-06	
Copper	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.000806	0.05	0.00151	
			COMG2	Null	Metal Recovery Plant	2.79e-06	0.000175	1.22e-05	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.00304	0.19	0.00572	
	Fugitive	Material Handling/Transfer/Stora..	FUGI141	Null	Waste Fluff Handling	1.57e-06	6.86e-06	6.86e-06	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	1.47e-05	6.42e-05	6.42e-05	
Cumene (Isopropylbenzen..	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00849	0.163	0.0159	
Dibenz[a,h]anthracene	Structure	Stack/Vent	STRU19	Null	Combined Stack	2.07e-08	9.07e-08	9.07e-08	
Ethyl acrylate	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.0204	0.392	0.0382	
Ethylbenzene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.0874	1.68	0.164	
Fluoranthene	Structure	Stack/Vent	STRU19	Null	Combined Stack	5.18e-08	2.27e-07	2.27e-07	
Fluorene	Structure	Stack/Vent	STRU19	Null	Combined Stack	4.83e-08	2.12e-07	2.12e-07	
Formaldehyde	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00129	0.00567	0.00567	
HAPs - Total	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.88	4.06	1.65	
			COMG2	Null	Metal Recovery Plant	1.31e-05	5.73e-05	0.000819	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	1.1	74.84	2.14	
	Fugitive	Material Handling/Transfer/Stora..	FUGI141	Null	Waste Fluff Handling	0.000153	0.000669	0.000669	

PTE by pollutant

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Pollutant	Subject Item Category Description	Subject Item Type Description	Subject Item ID	Subject Item Designation	Subject Item Description	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Hexachlorobutadiene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00374	0.0718	0.007	
Hexane	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.225	3.86	0.499	
Hydrochloric acid	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.208	0.388	0.388	
Indeno(1,2,3-cd)pyrene	Structure	Stack/Vent	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
Lead	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.000308	0.02	0.000576	
			COMG2	Null	Metal Recovery Plant	1.07e-06	6.67e-05	4.67e-06	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.00116	0.07	0.0022	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	8.63e-06	3.78e-05	3.78e-05	
Manganese compounds	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.000646	0.04	0.00121	
			COMG2	Null	Metal Recovery Plant	2.24e-06	0.00014	9.81e-06	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.00243	0.15	0.00456	
	Fugitive	Material Handling/Transfer/Stora...	FUGI141	Null	Waste Fluff Handling	3.29e-05	0.000144	0.000144	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	6.56e-06	2.87e-05	2.87e-05	
Mercury	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	6.6e-05	0.00413	7.43e-05	
			COMG2	Null	Metal Recovery Plant	7.73e-07	4.84e-05	3.39e-06	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.00126	0.08	0.00143	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	4.49e-06	1.96e-05	1.96e-05	
Methane	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	0.0388	0.17	0.17	
Methyl methacrylate	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00748	0.144	0.014	
Methyl-tert-butylether	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00379	0.0728	0.00709	
Naphthalene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00828	0.159	0.0155	
Nickel compounds	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.00129	0.08	0.00242	
			COMG2	Null	Metal Recovery Plant	4.48e-06	0.00028	1.96e-05	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.00488	0.3	0.00923	
	Fugitive	Material Handling/Transfer/Stora...	FUGI141	Null	Waste Fluff Handling	6.58e-05	0.000288	0.000288	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	3.62e-05	0.000159	0.000159	
Nitrogen Oxides	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	1.73	7.56	7.56	
Nitrous Oxide	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	0.00388	0.02	0.02	
Particulate Matter	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.39	168.94	0.72	
			COMG2	Null	Metal Recovery Plant	1.446	633.54	6.34	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	1.45	633.54	2.71	
	Fugitive	Material Handling/Transfer/Storage	FUGI141	Null	Waste Fluff Handling	0.0415	0.18	0.18	
			FUGI142	Null	Ferrous Product Handling	0.0868	0.38	0.38	
		Paved Road	FUGI140	Null	Truck Traffic - Paved Roads	32.31	130.86	130.86	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	0.131	0.57	0.57	
PCBs (Polychlorinated biphenyls)	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.00147	0.00642	0.00274	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.01	0.12	0.03	
Phenanthrene	Structure	Stack/Vent	STRU19	Null	Combined Stack	2.93e-07	1.28e-06	1.28e-06	
PM < 2.5 micron	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.39	24.13	0.72	
			COMG2	Null	Metal Recovery Plant	1.446	90.51	6.34	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	1.45	90.51	2.71	
	Fugitive	Material Handling/Transfer/Storage	FUGI141	Null	Waste Fluff Handling	0.00297	0.01	0.01	
			FUGI142	Null	Ferrous Product Handling	0.00622	0.03	0.03	
		Paved Road	FUGI140	Null	Truck Traffic - Paved Roads	1.59	6.42	6.42	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	0.131	0.57	0.57	
PM < 10 micron	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.39	24.13	0.72	
			COMG2	Null	Metal Recovery Plant	1.446	90.51	6.34	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	1.45	90.51	2.71	
	Fugitive	Material Handling/Transfer/Storage	FUGI141	Null	Waste Fluff Handling	0.0196	0.09	0.09	
			FUGI142	Null	Ferrous Product Handling	0.041	0.18	0.18	
		Paved Road	FUGI140	Null	Truck Traffic - Paved Roads	6.46	26.17	26.17	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	0.131	0.57	0.57	
Polycyclic organic matter	Structure	Stack/Vent	STRU19	Null	Combined Stack	6.52e-07	2.86e-06	2.86e-06	
Pyrene	Structure	Stack/Vent	STRU19	Null	Combined Stack	8.63e-08	3.78e-07	3.78e-07	
Selenium compounds	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	0.000492	0.03	0.000921	
			COMG2	Null	Metal Recovery Plant	1.71e-06	0.000107	7.47e-06	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	0.00185	0.12	0.00346	
	Fugitive	Material Handling/Transfer/Stora...	FUGI141	Null	Waste Fluff Handling	2.51e-05	0.00011	0.00011	
Styrene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.0685	1.32	0.128	
Sulfur Dioxide	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	0.0104	0.05	0.05	
Toluene	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.396	7.61	0.742	
Total PCDD/PCDF	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	3.45e-10	1.51e-09	6.45e-10	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	3.27e-09	2.87e-08	6.13e-09	
Trichloroethylene (TCE)	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.0269	0.516	0.0504	
Vinyl acetate (Acetic acid)	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.0379	0.728	0.0709	
Vinyl chloride (chloroethe...	Structure	Stack/Vent	STRU19	Null	Combined Stack	0.00377	0.0725	0.00707	
Volatile Organic Compounds	Component Group	Air Component Group	COMG1	Null	Ferrous Building Equipment	3.58	15.66	6.69	
	Equipment	Shredding Equipment	EQUI2	Null	Shredder	3.61	298.53	6.74	
	Treatment	131-Thermal Oxidizer	TREA8	Null	Thermal Oxidizer	0.0949	0.416	0.416	

Total PTE by pollutant

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: None
SI Type: None

Pollutant	Subject Item ID	Subject Item Designation	Subject Item Description	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
1,1-Dichloroethane	STRU19	Null	Combined Stack	0.00377	0.0724	0.00706	
	Total			**0.00377**	**0.0724**	**0.00706**	
1,1,2-Trichloroethane	STRU19	Null	Combined Stack	0.00382	0.0734	0.00716	
	Total			**0.00382**	**0.0734**	**0.00716**	
1,1,2,2-Tetrachloroethane	STRU19	Null	Combined Stack	0.00378	0.0726	0.00708	
	Total			**0.00378**	**0.0726**	**0.00708**	
1,2-Dibromo-3-chloroprop..	STRU19	Null	Combined Stack	0.00387	0.0743	0.00725	
	Total			**0.00387**	**0.0743**	**0.00725**	
1,2-Dichloroethane	STRU19	Null	Combined Stack	0.00377	0.0724	0.00706	
	Total			**0.00377**	**0.0724**	**0.00706**	
1,2-Dichloropropane	STRU19	Null	Combined Stack	0.0037	0.0711	0.00693	
	Total			**0.0037**	**0.0711**	**0.00693**	
1,2,4-Trichlorobenzene	STRU19	Null	Combined Stack	0.00371	0.0713	0.00695	
	Total			**0.00371**	**0.0713**	**0.00695**	
1,2,4-Trimethylbenzene	STRU19	Null	Combined Stack	0.137	2.63	0.257	
	Total			**0.137**	**2.63**	**0.257**	
1,3-Butadiene	STRU19	Null	Combined Stack	0.00377	0.0723	0.00705	
	Total			**0.00377**	**0.0723**	**0.00705**	
1,3-Dichloropropene	STRU19	Null	Combined Stack	0.00375	0.072	0.00702	
	Total			**0.00375**	**0.072**	**0.00702**	
1,4-Dichlorobenzene (para-)	STRU19	Null	Combined Stack	0.00376	0.0722	0.00704	
	Total			**0.00376**	**0.0722**	**0.00704**	
1,4-Dioxane (p-Dioxane)	STRU19	Null	Combined Stack	0.00379	0.0727	0.00709	
	Total			**0.00379**	**0.0727**	**0.00709**	
2-Methylnaphthalene	STRU19	Null	Combined Stack	4.14e-07	1.81e-06	1.81e-06	
	Total			**4.14e-07**	**1.81e-06**	**1.81e-06**	
3-Methylcholanthrene	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
	Total			**3.11e-08**	**1.36e-07**	**1.36e-07**	
7,12-Dimethylbenz[a]ant..	STRU19	Null	Combined Stack	2.76e-07	1.21e-06	1.21e-06	
	Total			**2.76e-07**	**1.21e-06**	**1.21e-06**	
Acenaphthene	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
	Total			**3.11e-08**	**1.36e-07**	**1.36e-07**	
Acenaphthylene	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
	Total			**3.11e-08**	**1.36e-07**	**1.36e-07**	
Acetonitrile	STRU19	Null	Combined Stack	0.00374	0.0718	0.007	
	Total			**0.00374**	**0.0718**	**0.007**	
Acrolein	STRU19	Null	Combined Stack	0.00373	0.0716	0.00698	
	Total			**0.00373**	**0.0716**	**0.00698**	
Acrylonitrile	STRU19	Null	Combined Stack	0.00375	0.072	0.00702	
	Total			**0.00375**	**0.072**	**0.00702**	
Anthracene	STRU19	Null	Combined Stack	4.14e-08	1.81e-07	1.81e-07	
	Total			**4.14e-08**	**1.81e-07**	**1.81e-07**	
Antimony compounds	COMG1	Null	Ferrous Building Equipment	6.83e-05	0.00427	0.000128	
	COMG2	Null	Metal Recovery Plant	2.37e-07	1.48e-05	1.04e-06	
	EQUI2	Null	Shredder	0.000256	0.02	0.000479	
	FUGI141	Null	Waste Fluff Handling	3.48e-06	1.52e-05	1.52e-05	
	Total			**0.000328017**	**0.0243**	**0.00062324**	
Arsenic compounds	COMG1	Null	Ferrous Building Equipment	0.00026	0.02	0.000487	
	COMG2	Null	Metal Recovery Plant	9.01e-07	5.64e-05	3.95e-06	
	EQUI2	Null	Shredder	0.000979	0.06	0.00184	
	FUGI141	Null	Waste Fluff Handling	1.32e-05	5.8e-05	5.8e-05	
	TREA8	Null	Thermal Oxidizer	3.45e-06	1.51e-05	1.51e-05	
	Total			**0.001256551**	**0.0801295**	**0.00240405**	
Benzene	STRU19	Null	Combined Stack	0.096	1.84	0.18	
	Total			**0.096**	**1.84**	**0.18**	
Benzo(a)anthracene	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
	Total			**3.11e-08**	**1.36e-07**	**1.36e-07**	
Benzo(b)fluoranthene	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
	Total			**3.11e-08**	**1.36e-07**	**1.36e-07**	
Benzo(ghi)perylene	STRU19	Null	Combined Stack	2.07e-08	9.07e-08	9.07e-08	
	Total			**2.07e-08**	**9.07e-08**	**9.07e-08**	
Benzo(k)fluoranthene	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
	Total			**3.11e-08**	**1.36e-07**	**1.36e-07**	
Benzo[a]pyrene	STRU19	Null	Combined Stack	2.07e-08	9.07e-08	9.07e-08	
	Total			**2.07e-08**	**9.07e-08**	**9.07e-08**	
Beryllium	COMG1	Null	Ferrous Building Equipment	1.87e-05	0.00117	3.49e-05	
	COMG2	Null	Metal Recovery Plant	6.47e-08	4.05e-06	2.83e-07	
	EQUI2	Null	Shredder	7.02e-05	0.00438	0.000132	
	FUGI141	Null	Waste Fluff Handling	9.5e-07	4.16e-06	4.16e-06	
	TREA8	Null	Thermal Oxidizer	2.07e-07	9.07e-07	9.07e-07	
	Total			**9.01217e-05**	**0.005559117**	**0.00017225**	
Bromomethane (Methyl bromide)	STRU19	Null	Combined Stack	0.00379	0.0728	0.0071	
	Total			**0.00379**	**0.0728**	**0.0071**	
Cadmium compounds	COMG1	Null	Ferrous Building Equipment	0.000192	0.01	0.00036	

Total PTE by pollutant

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: None
SI Type: None

Pollutant	Subject Item ID	Subject Item Designation	Subject Item Description	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Cadmium compounds	COMG2	Null	Metal Recovery Plant	6.66e-07	4.17e-05	2.92e-06	
	EQUI2	Null	Shredder	0.00074	0.05	0.00143	
	FUGI141	Null	Waste Fluff Handling	9.78e-06	4.29e-05	4.29e-05	
	TREA8	Null	Thermal Oxidizer	1.9e-05	8.31e-05	8.31e-05	
	Total			**0.000961446**	**0.0601677**	**0.00191892**	
Carbon Dioxide	TREA8	Null	Thermal Oxidizer	2,060	9,017.54	9,017.54	
	Total			**2,060**	**9,017.54**	**9,017.54**	
Carbon Dioxide Equivalent	TREA8	Null	Thermal Oxidizer	2,060	9,026.86	9,026.86	
	Total			**2,060**	**9,026.86**	**9,026.86**	
Carbon disulfide	STRU19	Null	Combined Stack	0.00374	0.0718	0.007	
	Total			**0.00374**	**0.0718**	**0.007**	
Carbon Monoxide	TREA8	Null	Thermal Oxidizer	1.45	6.35	6.35	
	Total			**1.45**	**6.35**	**6.35**	
Carbon tetrachloride	STRU19	Null	Combined Stack	0.00378	0.0726	0.00707	
	Total			**0.00378**	**0.0726**	**0.00707**	
Chlorobenzene (Monochlorobenzene)	STRU19	Null	Combined Stack	0.0038	0.073	0.00712	
	Total			**0.0038**	**0.073**	**0.00712**	
Chloroethane	STRU19	Null	Combined Stack	0.00376	0.0723	0.00705	
	Total			**0.00376**	**0.0723**	**0.00705**	
Chloroform	STRU19	Null	Combined Stack	0.00379	0.0727	0.00709	
	Total			**0.00379**	**0.0727**	**0.00709**	
Chloromethane	STRU19	Null	Combined Stack	0.00377	0.0724	0.00706	
	Total			**0.00377**	**0.0724**	**0.00706**	
Chloromethylbenzene	STRU19	Null	Combined Stack	0.00376	0.0721	0.00703	
	Total			**0.00376**	**0.0721**	**0.00703**	
Chloroprene (Chlorobutadiene)	STRU19	Null	Combined Stack	0.00376	0.0722	0.00704	
	Total			**0.00376**	**0.0722**	**0.00704**	
Chromium compounds	COMG1	Null	Ferrous Building Equipment	0.000249	0.02	0.000461	
	COMG2	Null	Metal Recovery Plant	8.53e-07	5.34e-05	3.74e-06	
	EQUI2	Null	Shredder	0.000947	0.06	0.00183	
	TREA8	Null	Thermal Oxidizer	2.42e-05	0.000106	0.000106	
	Total			**0.001221053**	**0.0801594**	**0.00240074**	
Chrysene	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
	Total			**3.11e-08**	**1.36e-07**	**1.36e-07**	
Cobalt compounds	COMG1	Null	Ferrous Building Equipment	3.08e-05	0.00192	5.76e-05	
	COMG2	Null	Metal Recovery Plant	1.07e-07	6.67e-06	4.67e-07	
	EQUI2	Null	Shredder	0.000117	0.00722	0.000222	
	FUGI141	Null	Waste Fluff Handling	1.57e-06	6.86e-06	6.86e-06	
	TREA8	Null	Thermal Oxidizer	1.45e-06	6.35e-06	6.35e-06	
	Total			**0.000150927**	**0.00915988**	**0.000293277**	
Copper	COMG1	Null	Ferrous Building Equipment	0.000806	0.05	0.00151	
	COMG2	Null	Metal Recovery Plant	2.79e-06	0.000175	1.22e-05	
	EQUI2	Null	Shredder	0.00304	0.19	0.00572	
	FUGI141	Null	Waste Fluff Handling	1.57e-06	6.86e-06	6.86e-06	
	TREA8	Null	Thermal Oxidizer	1.47e-05	6.42e-05	6.42e-05	
	Total			**0.00386506**	**0.24024606**	**0.00731326**	
Cumene (Isopropylbenzene)	STRU19	Null	Combined Stack	0.00849	0.163	0.0159	
	Total			**0.00849**	**0.163**	**0.0159**	
Dibenz[a,h]anthracene	STRU19	Null	Combined Stack	2.07e-08	9.07e-08	9.07e-08	
	Total			**2.07e-08**	**9.07e-08**	**9.07e-08**	
Ethyl acrylate	STRU19	Null	Combined Stack	0.0204	0.392	0.0382	
	Total			**0.0204**	**0.392**	**0.0382**	
Ethylbenzene	STRU19	Null	Combined Stack	0.0874	1.68	0.164	
	Total			**0.0874**	**1.68**	**0.164**	
Fluoranthene	STRU19	Null	Combined Stack	5.18e-08	2.27e-07	2.27e-07	
	Total			**5.18e-08**	**2.27e-07**	**2.27e-07**	
Fluorene	STRU19	Null	Combined Stack	4.83e-08	2.12e-07	2.12e-07	
	Total			**4.83e-08**	**2.12e-07**	**2.12e-07**	
Formaldehyde	STRU19	Null	Combined Stack	0.00129	0.00567	0.00567	
	Total			**0.00129**	**0.00567**	**0.00567**	
HAPs - Total	COMG1	Null	Ferrous Building Equipment	0.88	4.06	1.65	
	COMG2	Null	Metal Recovery Plant	1.31e-05	5.73e-05	0.000819	
	EQUI2	Null	Shredder	1.1	74.84	2.14	
	FUGI141	Null	Waste Fluff Handling	0.000153	0.000669	0.000669	
	Total			**1.9801661**	**78.9007263**	**3.791488**	
Hexachlorobutadiene	STRU19	Null	Combined Stack	0.00374	0.0718	0.007	
	Total			**0.00374**	**0.0718**	**0.007**	
Hexane	STRU19	Null	Combined Stack	0.225	3.86	0.499	
	Total			**0.225**	**3.86**	**0.499**	
Hydrochloric acid	STRU19	Null	Combined Stack	0.208	0.388	0.388	
	Total			**0.208**	**0.388**	**0.388**	
Indeno(1,2,3-cd)pyrene	STRU19	Null	Combined Stack	3.11e-08	1.36e-07	1.36e-07	
	Total			**3.11e-08**	**1.36e-07**	**1.36e-07**	
Lead	COMG1	Null	Ferrous Building Equipment	0.000308	0.02	0.000576	

Total PTE by pollutant

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: None
SI Type: None

Pollutant	Subject Item ID	Subject Item Designation	Subject Item Description	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Lead	COMG2	Null	Metal Recovery Plant	1.07e-06	6.67e-05	4.67e-06	
	EQUI2	Null	Shredder	0.00116	0.07	0.0022	
	TREA8	Null	Thermal Oxidizer	8.63e-06	3.78e-05	3.78e-05	
	Total			**0.0014777**	**0.0901045**	**0.00281847**	
Manganese compounds	COMG1	Null	Ferrous Building Equipment	0.000646	0.04	0.00121	
	COMG2	Null	Metal Recovery Plant	2.24e-06	0.00014	9.81e-06	
	EQUI2	Null	Shredder	0.00243	0.15	0.00456	
	FUGI141	Null	Waste Fluff Handling	3.29e-05	0.000144	0.000144	
	TREA8	Null	Thermal Oxidizer	6.56e-06	2.87e-05	2.87e-05	
	Total			**0.0031177**	**0.1903127**	**0.00595251**	
Mercury	COMG1	Null	Ferrous Building Equipment	6.6e-05	0.00413	7.43e-05	
	COMG2	Null	Metal Recovery Plant	7.73e-07	4.84e-05	3.39e-06	
	EQUI2	Null	Shredder	0.00126	0.08	0.00143	
	TREA8	Null	Thermal Oxidizer	4.49e-06	1.96e-05	1.96e-05	
	Total			**0.001331263**	**0.084198**	**0.00152729**	
Methane	TREA8	Null	Thermal Oxidizer	0.0388	0.17	0.17	
	Total			**0.0388**	**0.17**	**0.17**	
Methyl methacrylate	STRU19	Null	Combined Stack	0.00748	0.144	0.014	
	Total			**0.00748**	**0.144**	**0.014**	
Methyl-tert-butylether	STRU19	Null	Combined Stack	0.00379	0.0728	0.00709	
	Total			**0.00379**	**0.0728**	**0.00709**	
Naphthalene	STRU19	Null	Combined Stack	0.00828	0.159	0.0155	
	Total			**0.00828**	**0.159**	**0.0155**	
Nickel compounds	COMG1	Null	Ferrous Building Equipment	0.00129	0.08	0.00242	
	COMG2	Null	Metal Recovery Plant	4.48e-06	0.00028	1.96e-05	
	EQUI2	Null	Shredder	0.00488	0.3	0.00923	
	FUGI141	Null	Waste Fluff Handling	6.58e-05	0.000288	0.000288	
	TREA8	Null	Thermal Oxidizer	3.62e-05	0.000159	0.000159	
	Total			**0.00627648**	**0.380727**	**0.0121166**	
Nitrogen Oxides	TREA8	Null	Thermal Oxidizer	1.73	7.56	7.56	
	Total			**1.73**	**7.56**	**7.56**	
Nitrous Oxide	TREA8	Null	Thermal Oxidizer	0.00388	0.02	0.02	
	Total			**0.00388**	**0.02**	**0.02**	
Particulate Matter	COMG1	Null	Ferrous Building Equipment	0.39	168.94	0.72	
	COMG2	Null	Metal Recovery Plant	1.446	633.54	6.34	
	EQUI2	Null	Shredder	1.45	633.54	2.71	
	FUGI140	Null	Truck Traffic - Paved Roads	32.31	130.86	130.86	
	FUGI141	Null	Waste Fluff Handling	0.0415	0.18	0.18	
	FUGI142	Null	Ferrous Product Handling	0.0868	0.38	0.38	
	TREA8	Null	Thermal Oxidizer	0.131	0.57	0.57	
	Total			**35.8553**	**1,568.01**	**141.76**	
PCBs (Polychlorinated biphenyls)	COMG1	Null	Ferrous Building Equipment	0.00147	0.00642	0.00274	
	EQUI2	Null	Shredder	0.01	0.12	0.03	
	Total			**0.01147**	**0.12642**	**0.03274**	
Phenanthrene	STRU19	Null	Combined Stack	2.93e-07	1.28e-06	1.28e-06	
	Total			**2.93e-07**	**1.28e-06**	**1.28e-06**	
PM < 2.5 micron	COMG1	Null	Ferrous Building Equipment	0.39	24.13	0.72	
	COMG2	Null	Metal Recovery Plant	1.446	90.51	6.34	
	EQUI2	Null	Shredder	1.45	90.51	2.71	
	FUGI140	Null	Truck Traffic - Paved Roads	1.59	6.42	6.42	
	FUGI141	Null	Waste Fluff Handling	0.00297	0.01	0.01	
	FUGI142	Null	Ferrous Product Handling	0.00622	0.03	0.03	
	TREA8	Null	Thermal Oxidizer	0.131	0.57	0.57	
	Total			**5.01619**	**212.18**	**16.8**	
PM < 10 micron	COMG1	Null	Ferrous Building Equipment	0.39	24.13	0.72	
	COMG2	Null	Metal Recovery Plant	1.446	90.51	6.34	
	EQUI2	Null	Shredder	1.45	90.51	2.71	
	FUGI140	Null	Truck Traffic - Paved Roads	6.46	26.17	26.17	
	FUGI141	Null	Waste Fluff Handling	0.0196	0.09	0.09	
	FUGI142	Null	Ferrous Product Handling	0.041	0.18	0.18	
	TREA8	Null	Thermal Oxidizer	0.131	0.57	0.57	
	Total			**9.9376**	**232.16**	**36.78**	
Polycyclic organic matter	STRU19	Null	Combined Stack	6.52e-07	2.86e-06	2.86e-06	
	Total			**6.52e-07**	**2.86e-06**	**2.86e-06**	
Pyrene	STRU19	Null	Combined Stack	8.63e-08	3.78e-07	3.78e-07	
	Total			**8.63e-08**	**3.78e-07**	**3.78e-07**	
Selenium compounds	COMG1	Null	Ferrous Building Equipment	0.000492	0.03	0.000921	
	COMG2	Null	Metal Recovery Plant	1.71e-06	0.000107	7.47e-06	
	EQUI2	Null	Shredder	0.00185	0.12	0.00346	
	FUGI141	Null	Waste Fluff Handling	2.51e-05	0.00011	0.00011	
	Total			**0.00236881**	**0.150217**	**0.00449847**	
Styrene	STRU19	Null	Combined Stack	0.0685	1.32	0.128	
	Total			**0.0685**	**1.32**	**0.128**	
Sulfur Dioxide	TREA8	Null	Thermal Oxidizer	0.0104	0.05	0.05	

Total PTE by pollutant

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: None
SI Type: None

Pollutant	Subject Item ID	Subject Item Designation	Subject Item Description	Potential (lbs/hr)	Unrestricted Potential (tons/yr)	Potential Limited (tons/yr)	Actual Emissions (tons/yr)
Sulfur Dioxide	Total			0.0104	0.05	0.05	
Toluene	STRU19	Null	Combined Stack	0.396	7.61	0.742	
	Total			0.396	7.61	0.742	
Total PCDD/PCDF	COMG1	Null	Ferrous Building Equipment	3.45e-10	1.51e-09	6.45e-10	
	EQUI2	Null	Shredder	3.27e-09	2.87e-08	6.13e-09	
	Total			3.615e-09	3.021e-08	6.775e-09	
Trichloroethylene (TCE)	STRU19	Null	Combined Stack	0.0269	0.516	0.0504	
	Total			0.0269	0.516	0.0504	
Vinyl acetate (Acetic acid)	STRU19	Null	Combined Stack	0.0379	0.728	0.0709	
	Total			0.0379	0.728	0.0709	
Vinyl chloride (chloroethene)	STRU19	Null	Combined Stack	0.00377	0.0725	0.00707	
	Total			0.00377	0.0725	0.00707	
Volatile Organic Compounds	COMG1	Null	Ferrous Building Equipment	3.58	15.66	6.69	
	EQUI2	Null	Shredder	3.61	298.53	6.74	
	TREA8	Null	Thermal Oxidizer	0.0949	0.416	0.416	
	Total			7.2849	314.606	13.846	

SI - SI relationships

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	SI Designation and Description	Relationship	Related Subject Item ID	% Flow	Related Subject Item Type Description	Related Subject Item Designation	Start Date (Related Subject Item)	End Date (Related Subject Item)
Equipment	Conveyor	EQUI3	Null UMO	is controlled by	TREA1	Null	007-Centrifugal Collector - High Efficiency	Null	4/11/2018	Null
					TREA2	Null	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	4/11/2018	Null
					TREA3	Null	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	4/11/2018	Null
					TREA8	Null	131-Thermal Oxidizer	Null	4/11/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI12	Null FEC001	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI13	Null FEC002	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI14	Null FEC003	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI15	Null FEC004	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI16	Null FEC005	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI17	Null FEC006	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null

SI - SI relationships

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	SI Designation and Description	Relationship	Related Subject Item ID	% Flow	Related Subject Item Type Description	Related Subject Item Designation	Start Date (Related Subject Item)	End Date (Related Subject Item)
Equipment	Conveyor	EQUI17	Null FEC006	is controlled by	TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI18	Null FEC007	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI19	Null FEC008	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI23	Null FEC010	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI24	Null FEC011	is controlled by	TREA1	100	007-Centrifugal Collector - High Efficiency	Null	5/25/2018	Null
					TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI25	Null FEC014	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI26	Null Creep Feeder	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI27	Null Tumbleback	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null

SI - SI relationships

Agency Interest: None
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Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	SI Designation and Description	Relationship	Related Subject Item ID	% Flow	Related Subject Item Type Description	Related Subject Item Designation	Start Date (Related Subject Item)	End Date (Related Subject Item)
Equipment	Conveyor	EQUI27	Null Tumbleback	sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI38	Null Feeder #2	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI52	Null Feeder #4	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI59	Null NFC001	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI60	Null NFC002	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI61	Null NFC003	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI62	Null NFC004	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI63	Null NFC005	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI64	Null NFC006	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI65	Null NFC007	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI66	Null NFC008	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI67	Null NFC009	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI68	Null NFC010	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI69	Null NFC011	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI70	Null NFC012	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI71	Null NFC013	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI72	Null NFC014	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null

SI - SI relationships

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	SI Designation and Description	Relationship	Related Subject Item ID	% Flow	Related Subject Item Type Description	Related Subject Item Designation	Start Date (Related Subject Item)	End Date (Related Subject Item)
Equipment	Conveyor	EQUI72	Null NFC014	sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI73	Null NFC015	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI74	Null NFC016	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI75	Null NFC017	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI76	Null NFC018	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI77	Null NFC019	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI78	Null NFC020	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI79	Null NFC021	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI80	Null NFC022	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI81	Null NFC023	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI82	Null NFC024	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI83	Null NFC025	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI84	Null NFC026	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI85	Null NFC027	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI86	Null NFC028	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI87	Null NFC029	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI88	Null NFC030	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null

SI - SI relationships

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	SI Designation and Description	Relationship	Related Subject Item ID	% Flow	Related Subject Item Type Description	Related Subject Item Designation	Start Date (Related Subject Item)	End Date (Related Subject Item)
Equipment	Conveyor	EQUI88	Null NFC030	sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI89	Null NFC031	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI90	Null NFC032	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI96	Null ECS #5	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI101	Null Feeder #1	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI102	Null Feeder #3	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI103	Null Feeder #8	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI104	Null Feeder #5	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI105	Null FEC015	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI106	Null FEC016	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI107	Null FEC017	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI108	Null FEC018	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null

SI - SI relationships

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	SI Designation and Description	Relationship	Related Subject Item ID	% Flow	Related Subject Item Type Description	Related Subject Item Designation	Start Date (Related Subject Item)	End Date (Related Subject Item)
Equipment	Conveyor	EQUI108	Null FEC018	is controlled by	TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI109	Null FEC019	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI110	Null FEC020	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI111	Null FEC021	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI112	Null NFC033	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI113	Null NFC034	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI114	Null NFC035	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI115	Null NFC036	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI116	Null NFC037	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI117	Null NFC038	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI118	Null NFC039	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null

SI - SI relationships

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	SI Designation and Description	Relationship	Related Subject Item ID	% Flow	Related Subject Item Type Description	Related Subject Item Designation	Start Date (Related Subject Item)	End Date (Related Subject Item)
Equipment	Conveyor	EQUI119	Null NFC040	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI120	Null Feeder #6	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI121	Null Feeder #7	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI125	Null NFC041	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	6/8/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	6/8/2018	Null
	Screens	EQUI28	Null Screen #1	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI92	Null Screen #2	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI100	Null Screen #3	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
	Separation Equipment	EQUI4	Null Poker Picker	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI5	Null Magstand	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI6	Null Z-Box	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	5/25/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	5/25/2018	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI29	Null Trommel	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI32	Null SMB #1	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null

SI - SI relationships

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	SI Designation and Description	Relationship	Related Subject Item ID	% Flow	Related Subject Item Type Description	Related Subject Item Designation	Start Date (Related Subject Item)	End Date (Related Subject Item)
Equipment	Separation Equipment	EQUI32	Null SMB #1	sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI34	Null SMB #2	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI37	Null ECS #3	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI39	Null Finder #1	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI40	Null Sifter #1	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI43	Null ECS #4	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI44	Null Finder #2	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI46	Null FE Separator #2	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI49	Null Finder #3	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI50	Null Sifter #3	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI51	Null FE Separator #3	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI53	Null ECS #6	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI55	Null Sifter #4	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI56	Null FE Separator #4	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI91	Null Magstand	is controlled by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	6/1/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	6/1/2018	Null
					TREA4	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI93	Null ECS #1	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null

SI - SI relationships

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: All
SI Type: All

Subject Item Category Description	Subject Item Type Description	Subject Item ID	SI Designation and Description	Relationship	Related Subject Item ID	% Flow	Related Subject Item Type Description	Related Subject Item Designation	Start Date (Related Subject Item)	End Date (Related Subject Item)
Equipment	Separation Equipment	EQUI93	Null ECS #1	sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI94	Null FE Separator #1	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI95	Null Sifter #2	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI97	Null Finder #4	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI98	Null ECS #7	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI99	Null ECS #2	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI122	Null Finder #5	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI123	Null Finder #6	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
		EQUI124	Null Sensor #1	is controlled by	TREA7	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
	Shredding Equipment	EQUI2	Null Shredder	is controlled by	TREA1	100	007-Centrifugal Collector - High Efficiency	Null	8/29/2017	Null
					TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	11/29/2017	Null
				sends to	STRU19	100	Stack/Vent	Null	2/7/2018	Null
Treatment	007-Centrifugal Collector - High Efficiency	TREA1	Null Cyclone - Shredder	is controlled in series by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	8/29/2017	Null
					TREA8	100	131-Thermal Oxidizer	Null	3/28/2018	Null
		TREA4	Null Cyclone - Cascade Cleaning	is controlled in series by	TREA2	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	6/8/2018	Null
					TREA3	100	018-Fabric Filter - Low Temp, T<180 Degrees F	Null	6/8/2018	Null

Emission Units 1

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: None
SI Type: Conveyor, Screens, Separation Equipment and 1 more

Subject Item Type Description	Subject Item ID	SI Designation and Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units (numerator)	Max Design Capacity Units (denominator)	Material	Construction Start Date	Operation Start Date	Modification Date	Subject to CSAPR?	Electric Generating Capacity (MW)
Conveyor	EQUI3	Null UMO	Wendt	TBD	350	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI12	Null FEC001	Wendt	TBD	350	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI13	Null FEC002	Wendt	TBD	350	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI14	Null FEC003	Wendt	TBD	350	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI15	Null FEC004	Wendt	TBD	150	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI16	Null FEC005	Wendt	TBD	150	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI17	Null FEC006	Wendt	TBD	100	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI18	Null FEC007	Wendt	TBD	100	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI19	Null FEC008	Wendt	TBD	100	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI20	Null FEC009	Wendt	TBD	100	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI23	Null FEC010	Wendt	TBD	300	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI24	Null FEC011	Wendt	TBD	300	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI25	Null FEC014	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI26	Null Creep Feeder	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI27	Null Tumbleback	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI38	Null Feeder #2	BPS	TBD	2.5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI52	Null Feeder #4	BPS	TBD	7	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI59	Null NFC001	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI60	Null NFC002	Wendt	TBD	70	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI61	Null NFC003	Wendt	TBD	70	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI62	Null NFC004	Wendt	TBD	63	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI63	Null NFC005	Wendt	TBD	63	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI64	Null NFC006	Wendt	TBD	34	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI65	Null NFC007	Wendt	TBD	34	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI66	Null NFC008	Wendt	TBD	34	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI67	Null NFC009	Wendt	TBD	18	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI68	Null NFC010	Wendt	TBD	17	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI69	Null NFC011	Wendt	TBD	17	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI70	Null NFC012	Wendt	TBD	3	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI71	Null NFC013	Wendt	TBD	10	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI72	Null NFC014	Wendt	TBD	10	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI73	Null NFC015	Wendt	TBD	6	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI74	Null NFC016	Wendt	TBD	10	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI75	Null NFC017	Wendt	TBD	10	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI76	Null NFC018	Wendt	TBD	6	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI77	Null NFC019	Wendt	TBD	10	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI78	Null NFC020	Wendt	TBD	7	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI79	Null NFC021	Wendt	TBD	8	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI80	Null NFC022	Wendt	TBD	6	tons	hours	Metal	Null	Null	Null	Null	Null

Emission Units 1

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: None
SI Type: Conveyor, Screens, Separation Equipment and 1 more

Subject Item Type Description	Subject Item ID	SI Designation and Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units (numerator)	Max Design Capacity Units (denominator)	Material	Construction Start Date	Operation Start Date	Modification Date	Subject to CSAPR?	Electric Generating Capacity (MW)
Conveyor	EQU81	Null NFC023	Wendt	TBD	4	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU82	Null NFC024	Wendt	TBD	4	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU83	Null NFC025	Wendt	TBD	1.5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU84	Null NFC026	Wendt	TBD	3.5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU85	Null NFC027	Wendt	TBD	0.2	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU86	Null NFC028	Wendt	TBD	10.5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU87	Null NFC029	Wendt	TBD	1.5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU88	Null NFC030	Wendt	TBD	0.75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU89	Null NFC031	Wendt	TBD	1.75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU90	Null NFC032	Wendt	TBD	0.5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU96	Null ECS #5	STEINERT	TBD	6	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU101	Null Feeder #1	BPS	TBD	3	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU102	Null Feeder #3	JOEST	TBD	6	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU103	Null Feeder #8	JOEST	TBD	6	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU104	Null Feeder #5	JOEST	TBD	6	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU105	Null FEC015	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU106	Null FEC016	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU107	Null FEC017	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU108	Null FEC018	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU109	Null FEC019	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU110	Null FEC020	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU111	Null FEC021	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU112	Null NFC033	Wendt	TBD	5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU113	Null NFC034	Wendt	TBD	3.75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU114	Null NFC035	Wendt	TBD	8	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU115	Null NFC036	Wendt	TBD	21	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU116	Null NFC037	Wendt	TBD	29	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU117	Null NFC038	Wendt	TBD	40	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU118	Null NFC039	Wendt	TBD	45	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU119	Null NFC040	Wendt	TBD	56	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU120	Null Feeder #6	JOEST	TBD	4	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU121	Null Feeder #7	JOEST	TBD	5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU125	Null NFC041	Wendt	TBD	56	tons	hours	Metal	Null	Null	Null	Null	Null
Screens	EQU28	Null Screen #1	Wendt	TBD	75	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU92	Null Screen #2	AEI	TBD	63	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU100	Null Screen #3	AEI	TBD	34	tons	hours	Metal	Null	Null	Null	Null	Null
Separation Equipment	EQU4	Null Poker Picker	Wendt	TBD	350	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU5	Null Magstand	Wendt	TBD	350	tons	hours	Metal	Null	Null	Null	Null	Null
	EQU6	Null Z-Box	Wendt	TBD	300	tons	hours	Metal	Null	Null	Null	Null	Null

Emission Units 1

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: None
SI Type: Conveyor, Screens, Separation Equipment and 1 more

Subject Item Type Description	Subject Item ID	SI Designation and Description	Manufacturer	Model	Max Design Capacity	Max Design Capacity Units (numerator)	Max Design Capacity Units (denominator)	Material	Construction Start Date	Operation Start Date	Modification Date	Subject to CSAPR?	Electric Generating Capacity (MW)
Separation Equipment	EQUI29	Null Trommel	Wendt	TBD	71	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI32	Null SMB #1	MTB	TBD	18	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI34	Null SMB #2	MTB	TBD	17	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI37	Null ECS #3	MTB	TBD	3	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI39	Null Finder #1	Wendt	TBD	2.5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI40	Null Sifter #1	JOEST	TBD	10	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI43	Null ECS #4	STEINERT	TBD	6	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI44	Null Finder #2	Wendt	TBD	3	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI46	Null FE Separator #2	Wendt	TBD	7	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI49	Null Finder #3	Wendt	TBD	3	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI50	Null Sifter #3	JOEST	TBD	10	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI51	Null FE Separator #3	Wendt	TBD	7	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI53	Null ECS #6	STEINERT	TBD	7	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI55	Null Sifter #4	JOEST	TBD	8	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI56	Null FE Separator #4	Wendt	TBD	6	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI91	Null Magstand	Wendt	TBD	150	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI93	Null ECS #1	MTB	TBD	5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI94	Null FE Separator #1	Wendt	TBD	7	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI95	Null Sifter #2	JOEST	TBD	10	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI97	Null Finder #4	Wendt	TBD	3.5	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI98	Null ECS #7	MTB	TBD	6	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI99	Null ECS #2	MTB	TBD	7	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI122	Null Finder #5	Wendt	TBD	4	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI123	Null Finder #6	Wendt	TBD	4	tons	hours	Metal	Null	Null	Null	Null	Null
	EQUI124	Null Sensor #1	SGM	TBD	5	tons	hours	Metal	Null	Null	Null	Null	Null
Shredding Equipment	EQUI2	Null Shredder	Wendt	TBD	350	tons	hours	Metal	Null	Null	Null	Null	Null

Fugitive Sources

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Fugitive
SI Type: Material Handling/Transfer/Storage & Paved Road

Subject Item Type Description	Subject Item ID	SI Designation and Description	Install Year	Pollutants Emitted
Material Handling/ Transfer/Storage	FUGI141	Null Waste Fluff Handling	2018	Particulate Matter
				PM < 2.5 micron
				PM < 10 micron
	FUGI142	Null Ferrous Product Handling	2018	Particulate Matter
				PM < 2.5 micron
				PM < 10 micron
Paved Road	FUGI140	Null Truck Traffic - Paved Roads	2018	Particulate Matter
				PM < 2.5 micron
				PM < 10 micron

Buildings, General

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Structure
SI Type: Building

Subject Item Type Description	Subject Item ID	SI Designation and Description	Height	Units (height)	Length	Units (length)	Width	Units (width)
Building	STRU5	Null Motor Control and Operator Facility	20	feet	93	feet	29.5	feet
	STRU6	Null Shredder Building	70	feet	93	feet	68	feet
	STRU7	Null Shredder Control Equipment Building	20	feet	160	feet	50	feet
	STRU8	Null Employee Locker Room	22	feet	55	feet	50	feet
	STRU10	Null MRP Building	45	feet	418	feet	355	feet
	STRU11	Null MRP Baghouse Building	40	feet	62	feet	23	feet
	STRU12	Null Waste Fluff Storage	40	feet	103	feet	88	feet
	STRU13	Null Office Building	32	feet	100	feet	50	feet
	STRU14	Null Shredded Clips Storage	40	feet	80	feet	100	feet
	STRU16	Null Ferrous Building	45	feet	250	feet	98	feet
	STRU17	Null Feeder Yard Building	25	feet	100	feet	75	feet
	STRU18	Null End of Vehicle Life Building	25	feet	100	feet	150	feet
	STRU20	Null Shredder Control Equipment Building - ..	20	feet	80	feet	50	feet
	STRU21	Null Shredder Maintenance Building	25	feet	100	feet	100	feet
	STRU22	Null Maintenance Building	25	feet	100	feet	100	feet

Stack/Vent, General

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Structure
SI Type: Stack/Vent

Subject Item Type Description	Subject Item ID	SI Designation and Description	Stack Height (feet)	Stack Diameter (feet)	Stack Length (feet)	Stack Width (feet)	Stack Flow Rate (cubic ft/min)	Discharge Temperature (°F)	Flow Rate/Temp Information Source	Discharge Direction	
Stack/Vent	STRU19	Null Combined Stack	160	8.3	Null	Null	181086.5	94	Manufacturer	Upwards with no cap on stack/vent	

Collectors-Cyclones, General

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Treatment
SI Type: 007-Centrifugal Collector - High Efficiency

Subject Item Type Description	Subject Item ID	SI Designation and Description	Manufacturer	Model	Installation Start Date	Pollutant Controlled	Capture Efficiency (%)	Destruction Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Cyclone Minimum Pressure Drop (in. of ..	Cyclone Maximum Pressure Drop (in. of ..	
007-Centrifugal Collector - High Efficiency	TREA1	Null Cyclone - Shredder	TBD	TBD	Null	HAPs - Metal	100	78	No	Null	Other	Null	Null	
						Particulate Matter	100	90	No	Null	Other	Null	Null	
						PM < 2.5 micron	100	78	No	Null	Other	Null	Null	
						PM < 10 micron	100	78	No	Null	Other	Null	Null	
	TREA4	Null Cyclone - Cascade Cleaning	TBD	TBD	Null	HAPs - Metal	100	78	No	Null	Other	Null	Null	
						Particulate Matter	100	90	No	Null	Other	Null	Null	
						PM < 2.5 micron	100	78	No	Null	Other	Null	Null	
						PM < 10 micron	100	78	No	Null	Other	Null	Null	

Fabric Filters, General

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Treatment
SI Type: 018-Fabric Filter - Low Temp, T<180 Degrees F

Subject Item Type Description	Subject Item ID	SI Designation and Description	Manufacturer	Model	Installation Start Date	Pollutant Controlled	Capture Efficiency (%)	Destruction Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Fabric Filter Minimum Pressure Drop (in. of ..	Fabric Filter Maximum Pressure Drop (in. of ..	Bag leak detector in use?	
018-Fabric Filter - Low Temp, T<180 Degrees F	TREA2	Null Fabric Filter - Shredder	TBD	TBD	Null	HAPs - Metal	100	93	No	Null	Other	28	Null	No	
						Particulate Matter	100	99	No	Null	Other	28	Null	No	
						PM < 2.5 micron	100	93	No	Null	Other	28	Null	No	
						PM < 10 micron	100	93	No	Null	Other	28	Null	No	
	TREA3	Null Fabric Filter - Shredder	TBD	TBD	Null	HAPs - Metal	100	93	No	Null	Other	28	Null	No	
						Particulate Matter	100	99	No	Null	Other	28	Null	No	
						PM < 2.5 micron	100	93	No	Null	Other	28	Null	No	
						PM < 10 micron	100	93	No	Null	Other	28	Null	No	
	TREA7	Null Fabric Filter - MRP	TBD	TBD	Null	HAPs - Metal	100	93	No	Null	Other	0.1	6	No	
						Particulate Matter	100	99	No	Null	Other	0.1	6	No	
						PM < 2.5 micron	100	93	No	Null	Other	0.1	6	No	
						PM < 10 micron	100	93	No	Null	Other	0.1	6	No	

Direct Flame Afterburners, General

Agency Interest: None
Agency Interest ID: 215865
Activity: None (State Permit)

Details for:
SI Category: Treatment
SI Type: 131-Thermal Oxidizer

Subject Item ID	SI Designation and Description	Manufacturer	Model	Installation Start Date	Pollutant Controlled	Capture Efficiency (%)	Destruction Collect Efficiency (%)	Subject to CAM?	Large or Other PSEU?	Efficiency Basis	Thermal Oxidation Burner Capacity (MMBTU/hr)	Thermal Oxidation Inlet Temperature (°F)	Thermal Oxidation Minimum Combustio...	Thermal Oxidation Outlet Temperatur...	Thermal Oxidation Residence Time (secon...	
131-Thermal Oxidizer, TREAB	Null Thermal Oxidizer	TBD	TBD	Null	HAPs - Volatile	100	95	No	Null	Mfr/Vendor data	17.6	70	1550	144	0.3	
					Total PCDD/PCDF	100	50	No	Null	Mfr/Vendor data	17.6	70	1550	144	0.3	
					Volatile Organic Compounds	100	95	No	Null	Mfr/Vendor data	17.6	70	1550	144	0.3	

Subject Item ID	Sequence Number	Requirement
TFAC 1	3	The Permittee shall follow the requirements and recordkeeping in the Feedstock Control Plan contained in Appendix C of the permit. The Permittee shall update the Feedstock Control Plan to address any of the following: 1. new regulations that affect the control of feedstock; 2. the removal or segregation of hazardous material(s) from new scrap stream(s); 3. initial and periodic employee training for identification and removal or segregation of hazardous material(s) from new scrap stream(s); or 4. supplier education on new regulations or restrictions on new scrap streams. New scrap streams are scrap streams that contain either 1. new products not identified in the Permittee's current Feedstock Control Plan and that contain hazardous materials or 2. existing products that may or may not be identified in the Permittee's current Feedstock Control Plan and to which a change in product design has added hazardous materials to the product. Hazardous Materials are electronic waste, refrigerants, all items identified in Appendix A to the Feedstock Control Plan "Unacceptable Materials List", and any material that becomes unacceptable or hazardous due to a change in regulations.
		The Permittee shall update the Feedstock Control Plan and, as applicable, all written materials for training of employees, for reference by employees, and for education of suppliers prior to accepting any new scrap streams or prior to the effective date of any new regulation that affects the control of feedstock. The Permittee shall train applicable employees on identification and removal or segregation of hazardous material(s) from new scrap streams prior to accepting new scrap streams. An updated Feedstock Control Plan that addresses new regulations or new scrap streams as described above and does not change existing Feedstock Control Plan requirements supersedes the Feedstock Control Plan in Appendix C of this permit. If the Permittee wishes to revise any of the Feedstock Control Plan requirements in effect upon issuance of the permit, the Permittee shall apply for a permit amendment as applicable. The Permittee shall maintain the current version of the Feedstock Control Plan on-site. The Permittee shall retain the records required by the Feedstock Control Plan on-site for a period of 5 years from the creation of the record. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subp. 2(B), Minn. R. 7007.0800, subp. 4, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
TFAC 1	4	The Permittee shall conduct a performance test to measure noise due 180 calendar days after startup of EQUI 2. The performance test shall measure noise to determine compliance with the noise standards in Minn. R. 7030.0040 and shall be conducted in accordance with the requirements of Minn. R. 7030.0060. During daytime measurements, the Permittee shall operate EQUI 2, the equipment in COMG 1, and the equipment COMG 2 simultaneously and, to the greatest extent practicable, conduct loading, unloading, and material transfer operations in the yard. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Minn. R. 7030.0010-7030.0080]
TFAC 1	1240	Permit Appendices: This permit contains appendices as listed in the permit Table of Contents. The Permittee shall comply with all requirements contained in Appendices: Appendix A: Insignificant Activities and General Applicable Requirements Appendix B: Fugitive Dust Control Plan Appendix C: Feedstock Control Plan Appendix D: Criteria Air Dispersion Modeling Parameters (included for reference only as described elsewhere in this permit.) Appendix E: Air Toxics Modeling Parameters (included for reference only as described elsewhere in this permit.) Appendix F: list of SIs that the Permittee is authorized to construct and operate under permit 14100079-101. [Minn. R. 7007.0800, subp. 2]

Subject Item ID	Sequence Number	Requirement
TFAC 1	1260	PERMIT SHIELD: Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements. This permit shall not alter or affect the liability of the Permittee for any violation of applicable requirements prior to or at the time of permit issuance. [Minn. R. 7007.1800, (A)(2)]
TFAC 1	1280	Comply with Fugitive Emission Control Plan: The Permittee shall follow the actions and recordkeeping specified in the fugitive dust control plan in Appendix B of this permit. If the Commissioner determines the Permittee is out of compliance with Minn. R. 7011.0150 or the fugitive control plan, then the Permittee may be required to amend the control plan and/or to install and operate particulate matter ambient monitors as requested by the Commissioner. [Findings of EAW, 2018, Minn. R. 7007.0100, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. 7009.0020, Minn. R. 7011.0150, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]
TFAC 1	1390	Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted. [Minn. R. 7011.0020]
TFAC 1	1400	Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated. [Minn. R. 7007.0800, subp. 16(J), Minn. R. 7007.0800, subp. 2]
TFAC 1	1410	Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 16(J)]
TFAC 1	1420	Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate. [Minn. R. 7019.1000, subp. 4]
TFAC 1	1430	Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150. [Minn. R. 7011.0150]
TFAC 1	1440	Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Minn. R. 7030.0010-7030.0080]
TFAC 1	1450	Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A). [Minn. R. 7007.0800, subp. 9(A)]
TFAC 1	1460	The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16. [Minn. R. 7007.0800, subp. 16]
TFAC 1	1470	Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in this permit. [Minn. R. ch. 7017]
TFAC 1	1480	Performance Test Notifications and Submittals: Performance Test Notification and Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test The Notification, Test Plan, and Test Report must be submitted in a format specified by the commissioner. [Minn. R. 7017.2017, Minn. R. 7017.2030, subps. 1-4, Minn. R. 7017.2035, subps. 1-2]

Subject Item ID	Sequence Number	Requirement
TFAC 1	1490	Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025, subp. 3]
TFAC 1	1500	Monitoring Equipment Calibration - The Permittee shall either: 1. Calibrate or replace required monitoring equipment every 12 months; or 2. Calibrate at the frequency stated in the manufacturer's specifications. For each monitor, the Permittee shall maintain a record of all calibrations, including the date conducted, and any corrective action that resulted. The Permittee shall include the calibration frequencies, procedures, and manufacturer's specifications (if applicable) in the Operations and Maintenance Plan. Any requirements applying to continuous emission monitors are listed separately in this permit. [Minn. R. 7007.0800, subp. 4(D)]
TFAC 1	1510	Operation of Monitoring Equipment: Unless noted elsewhere in this permit, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system. [Minn. R. 7007.0800, subp. 4(D)]
TFAC 1	1620	Recordkeeping: Retain all records at the stationary source, unless otherwise specified within this permit, for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A). [Minn. R. 7007.0800, subp. 5(C)]
TFAC 1	1630	Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes. [Minn. R. 7007.0800, subp. 5(B)]
TFAC 1	1640	If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. For non-expiring permits, these records shall be kept for a period of five years from the date that the change was made. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the stationary source or office of the stationary source for all other years. The records may be maintained in either electronic or paper format. [Minn. R. 7007.1200, subp. 4]
TFAC 1	1650	Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over. [Minn. R. 7019.1000, subp. 3]
TFAC 1	1660	Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over. [Minn. R. 7019.1000, subp. 2]
TFAC 1	1670	Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment. [Minn. R. 7019.1000, subp. 1]

Subject Item ID	Sequence Number	Requirement
TFAC 1	1680	Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. [Minn. R. 7019.1000, subp. 1]
TFAC 1	1690	The Permittee shall submit a semiannual deviations report : Due semiannually, by the 30th of January and July. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. Submit this on form DRF-2 (Deviation Reporting Form). If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(A)(2)]
TFAC 1	1710	Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed. Upon adoption of a new or amended federal applicable requirement, and if there are 3 or more years remaining in the permit term, the Permittee shall file an application for an amendment within nine months of promulgation of the applicable requirement, pursuant to Minn. R. 7007.0400, subp. 3. [Minn. R. 7007.0400, subp. 3, Minn. R. 7007.1150 - 7007.1500]
TFAC 1	1720	Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H). Performance testing deadlines from the General Provisions of 40 CFR pt. 60 and pt. 63 are examples of deadlines for which the MPCA does not have authority to grant extensions and therefore do not meet the requirements of Minn. R. 7007.1400, subp. 1(H). [Minn. R. 7007.1400, subp. 1(H)]
TFAC 1	1740	The Permittee shall submit a compliance certification : Due annually, by the 31st of January (for the previous calendar year). Submit this on form CR-04 (Annual Compliance Certification Report). This report covers all deviations experienced during the calendar year. If no deviations have occurred, submit the signed report certifying that there were no deviations. [Minn. R. 7007.0800, subp. 6(C)]
TFAC 1	1750	Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. Submit in a format specified by the Commissioner. [Minn. R. 7019.3000-7019.3100]
TFAC 1	1760	Emission Fees: due 30 days after receipt of an MPCA bill. [Minn. R. 7002.0005-7002.0095]
TFAC 1	1890	Modeled Parameters for PM10, PM2.5, CO, NOx, SO2, and Air Toxics: The parameters used in PM10, PM2.5, CO, NOx, and SO2 SIL modeling are listed in Appendix D of this permit. The parameters used in the air toxics modeling are listed in Appendix E. The parameters describe the operation of the facility at maximum permitted capacity. The purpose of listing the parameters in the appendix is to provide a benchmark for future changes. [Minn. R. 7007.0100, subp. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
TFAC 1	4090	This permit establishes limits on the facility to keep it a minor source under the New Source Review and NESHAP standards. The Permittee cannot make any change at the source that would make the source a major source under the New Source Review and NESHAP programs until a permit amendment has been issued. This includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments. [Title I Condition: Avoid major modification under 40 CFR 52.21(b)(2) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000]
TFAC 1	4100	The Permittee shall submit an annual report by the 31st of January. The report shall describe the changes made at the Facility during the previous calendar year using the latest MPCA application forms. The report shall include information for any new or replaced Subject Items. The report shall be submitted with the annual Compliance Certification required by this permit. [Minn. R. 7007.0800, subp. 2]

Subject Item ID	Sequence Number	Requirement
TFAC 1	4110	Equipment Labeling: The Permittee shall permanently affix a unique number to each emissions unit for tracking purposes. The numbers shall correlate the unit to the appropriate Subject Item numbers used in this permit. The number can be affixed by placard, stencil, or other means. The number shall be maintained so that it is readable and visible at all times from a safe distance. If equipment is added, it shall be given a new unique number; numbers from replaced or removed equipment shall not be reused. [Minn. R. 7007.0800, subp. 2]
TFAC 1	4120	Equipment Inventory: The Permittee shall maintain a written list of all emissions units and control equipment on site. The Permittee shall update the list to include any replaced, modified, or new equipment prior to making the change. The list shall correlate the units to the Subject Item numbers used in this permit and shall include the data on GI-04, GI-05B, GI-05C, and GI-05F. The date of construction shall be the date the change was made for replaced, modified, or new equipment. [Minn. R. 7007.0800, subp. 2]
TFAC 1	4121	The Permittee is authorized to construct and operate all SIs listed and defined in Appendix F of the permit. The Permittee shall commence construction within 18 months of permit issuance. The units shall meet the requirements of this permit. [Minn. R. 7007.0800, subp. 2]
TFAC 1	4122	The Permittee shall submit a notification of the date construction began : Due 30 calendar days after Date of Construction Start. [Minn. R. 7007.0800, subp. 2, Minn. R. 7007.0800, subp. 5]
COMG 1	3680	Opacity <= 20 percent opacity. This limit applies individually to each piece of equipment in COMG 1. [Minn. R. 7011.0715, subp. 1(B)]
COMG 1	3690	Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each piece of equipment in COMG 1. [Minn. R. 7011.0715, subp. 1(A)]
COMG 1	3830	The Permittee shall limit the ferrous building (COMG 1) operating Hours <= 3744 hours per year 12-month rolling sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. Until the Permittee has 12 months of data the hours of operation limit for each month is described below. P = 3744/12*n P = The hours of operation limit for month n n = number of months in operation. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
COMG 1	3840	Daily Recordkeeping. On each day of operation, the Permittee shall record and maintain a record of the hours of operation of the ferrous building (COMG 1). This shall be based on written or electronic logs. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
COMG 1	3850	Monthly Recordkeeping. By the 15th of the month, the Permittee shall calculate and record the following: 1) The total hours of operation for the previous calendar month using the daily records; and 2) The 12-month rolling sum hours of operation for the previous 12-month period by summing the monthly hours of operation for the previous 12 months. If the Permittee has less than 12 months of data, the Permittee shall sum the monthly hours of operation for all previous months of operation. [Minn. R. 7007.0800, subps. 4-5]
COMG 1	19650	The Permittee shall vent emissions from each piece of equipment in COMG 1 to control equipment in series meeting the requirements of TREAs 2, 3, 4, and 8 and COMG 4 and that vents to STRU 19 whenever any piece of equipment in COMG 1 operates. Equipment in COMG 1 includes each new, modified, or replaced pieces of equipment added to COMG 1. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Subject Item ID	Sequence Number	Requirement
COMG 1	19651	The Permittee shall vent emissions from cleaning of the ferrous building and cleaning of the ferrous building equipment to control equipment in series meeting the requirements of TREAs 2, 3, 4, and 8 and COMG 4 and that vents to STRU 19. The Permittee is not required to vent to control equipment when cleaning the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 1	19652	The Permittee shall maintain the ferrous building as a total enclosure, as described below, during operation of any piece of equipment in COMG 1, during cleaning of the ferrous building, and for at least 15 minutes after operation or cleaning ceases unless and emergency requires the ferrous building to be opened. For the ferrous building to qualify as a total enclosure the following conditions must be met: 1) The openings for conveyor EQUI 23 (conveyor from the ferrous building to the ferrous pile), EQUI 3 (conveyor to the ferrous building from the shredder building), and EQUI 105 (conveyor from the ferrous building to the metal recovery plant) shall be covered by a plastic strip curtains or a similar barrier; 2) all other openings in the ferrous building shall either be closed or vented to control equipment in series meeting the requirements of TREAs 2, 3, 4, 8 and GOMG 4 as described in this permit; and 3) EQUI 3 (conveyor from the shredder building to the ferrous building) and EQUI 105 (conveyor from the ferrous building to the metal recovery plant) shall be covered. If the Permittee replaces EQUIs 3, 23, or 105, the replacement conveyor shall comply with the requirements above for the conveyor it replaces. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 1	19653	On each operating day, prior to start up of any equipment in COMG 1, the Permittee shall inspect all openings in the ferrous building not vented to control equipment or leading to or from conveyors to ensure that they are closed. The Permittee shall maintain records of each inspection. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 1	19654	The Permittee shall posts signs at all openings of the ferrous building that are not vented to control equipment of leading to or from a conveyor indicating that except during emergencies, openings must be closed during operation, cleaning, and at least 15 minutes after cleaning or operation ceases. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4]
COMG 1	19655	If a building opening must be opened during operation or cleaning for an event such as an emergency, the Permittee shall maintain a record of the cause of the event, its duration, and any corrective action taken. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
COMG 1	19656	On a monthly basis, the Permittee shall inspect the doors, windows, or other barriers on the outside of the ferrous building for damage which would result in particulate emissions escaping the building. The Permittee shall repair the damage as soon as possible, but no later than two weeks after identification. The Permittee shall maintain records of the monthly inspections, and if repair is required, a record of the type of repair needed, the schedule for completion of such repair, and the date that the repair was started and completed. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]

Subject Item ID	Sequence Number	Requirement
COMG 1	19657	If the Permittee replaces any existing particulate-emitting ferrous processing equipment in the ferrous building (COMG 1), adds new particulate-emitting ferrous processing equipment to COMG 1, or modifies the existing equipment in COMG 1, such equipment is subject to all of the requirements of COMG 1. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9 , Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 2	3680	Opacity <= 20 percent opacity. This limit applies individually to each piece of equipment in COMG 2. [Minn. R. 7011.0715, subp. 1(B)]
COMG 2	3690	Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each piece of equipment in COMG 2. [Minn. R. 7011.0715, subp. 1(A)]
COMG 2	19650	The Permittee shall vent emissions from each piece of equipment in COMG 2 to control equipment meeting the requirements of TREA 7 that vents to STRU 19 whenever any piece of equipment in COMG 2 operates. Equipment in COMG 2 includes each new, modified, or replaced piece of equipment added to COMG 2. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 2	19651	The Permittee shall vent emissions from cleaning of the MRP and the MRP equipment to control equipment meeting the requirements of TREA 7 and that vents to STRU 19. The Permittee is not required to vent emissions from cleaning control equipment to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 2	19652	The Permittee shall maintain the metal recovery plant building as a total enclosure, as described below, during operation of any equipment in COMG 2, during cleaning of the metal recovery plant building, and for at least 15 minutes after operation or cleaning ceases unless there is an emergency that requires the metal recovery plant building to be opened. For the metal recovery plant to qualify as a total enclosure the following conditions must be met: 1) the openings for EQUI 125 (conveyor from the metal recovery plant to the waste fluff pile) and EQUI 105 (conveyor to the metal recovery plant from the ferrous building) shall be covered with plastic strip curtains or a similar barrier; 2) any other openings in the metal recovery plant building shall be either closed or vented to control equipment meeting the requirements of TREA 7; 3) the EQUI 105 (conveyor from the ferrous building to the metal recovery plant building) must be covered. If the Permittee replaces EQUIs 105 or 125 the replacement conveyor shall comply with the requirements above for the conveyor it replaces. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Subject Item ID	Sequence Number	Requirement
COMG 2	19653	Each operating day, prior to start up of any equipment in COMG 2, the Permittee shall inspect all openings in the metal recovery plant building not vented to control equipment or that lead to or from a conveyor to ensure that they are closed. The Permittee shall maintain records of each inspection. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 2	19654	The Permittee shall post signs at all openings of the metal recovery plant building that are not vented to control equipment or that lead to or from a conveyor indicating that with the exception of emergencies, openings must be closed during operation, cleaning, and at least 15 minutes after cleaning or operation ceases. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4]
COMG 2	19655	If a metal recovery plant building opening must be opened during operation or cleaning for an event such as an emergency, the Permittee shall maintain a record of the cause of the event and its duration and any corrective actions taken. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
COMG 2	19656	On a monthly basis, the Permittee shall inspect, the doors, windows, or other barriers on the outside of the metal recovery plant building for damage which would result in particulate emissions escaping the building. The Permittee shall repair the damage as soon as possible, but no later than two weeks after identification. The Permittee shall maintain records of the monthly inspections, and if repair is required, a record of the type of repair needed, the schedule for completion of such repair, and the date the repair was started and completed. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
COMG 2	19657	If the Permittee replaces any existing particulate-emitting metal processing plant equipment in the metal recovery plant (COMG 2), adds new particulate-emitting metal processing plant equipment to COMG 2, or modifies the existing equipment in COMG 2, such equipment is subject to all of the requirements of COMG 2. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i), To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 3	17615	The Permittee shall operate and maintain the control equipment in COMG 3 such that it achieves an overall control efficiency for HAPs - Metal >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of a cyclone and two fabric filters in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREA 1, 2, and 3. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
COMG 3	18480	The Permittee shall operate and maintain control equipment in COMG 3 such that it achieves an overall control efficiency for Particulate Matter >= 99 percent control efficiency (100 percent capture efficiency and 99 percent collection efficiency). This is the overall control efficiency of the pollution control train of a cyclone and two fabric filters in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREA 1, 2, and 3. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 3	18490	The Permittee shall operate and maintain control equipment in COMG 3 such that it achieves an overall control efficiency for PM < 10 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of a cyclone and two fabric filters in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREA 1, 2, and 3. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Subject Item ID	Sequence Number	Requirement
COMG 3	18500	The Permittee shall operate and maintain control equipment in COMG 3 such that it achieves an overall control efficiency for PM < 2.5 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of a cyclone and two fabric filters in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREA 1, 2, and 3. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 4	17615	The Permittee shall operate and maintain the control equipment in COMG 4 such that it achieves an overall control efficiency for HAPs - Metal >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of any combination of a cyclone and two fabric filters in COMG 4 in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREAs 2, 3, and 4. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
COMG 4	18480	The Permittee shall operate and maintain control equipment in COMG 4 such that it achieves an overall control efficiency for Particulate Matter >= 99 percent control efficiency (100 percent capture efficiency and 99 percent collection efficiency). This is the overall control efficiency of the pollution control train of any combination of a cyclone and two fabric filters in COMG 4 in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREAs 2, 3, and 4. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 4	18490	The Permittee shall operate and maintain control equipment in COMG 4 such that it achieves an overall control efficiency for PM < 10 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of any combination of a cyclone and two fabric filters in COMG 4 in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREAs 2, 3, and 4. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 4	18500	The Permittee shall operate and maintain control equipment in COMG 4 such that it achieves an overall control efficiency for PM < 2.5 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). This is the overall control efficiency of the pollution control train of any combination of a cyclone and two fabric filters in COMG 4 in series. The Permittee shall demonstrate compliance with this requirement through the requirements at TREAs 2, 3, and 4. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 5	9	Opacity <= 20 percent opacity This limit applies individually to each piece of equipment in COMG 5. [Minn. R. 7011.0715, subp. 1(B)]
COMG 5	3680	Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This limit applies individually to each piece of equipment in COMG 5. [Minn. R. 7011.0715, subp. 1(A)]
COMG 5	3690	Process Throughput: The Permittee shall maintain daily records of the total shredder throughput. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1&2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]

Subject Item ID	Sequence Number	Requirement
COMG 5	3830	The Permittee shall limit the shredder building (COMG 5) operating Hours <= 3744 hours per year 12-month rolling sum to be calculated by the 15th day of each month for the previous 12-month period as described later in this permit. Until the Permittee has 12 months of data the hours of operation limit for each month is described below. P = 3744/12*n P = the hours of operation limit for month n n = number of months in operation. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
COMG 5	3840	Daily Recordkeeping. On each day of operation, the Permittee shall record and maintain a record of the hours of operation of the shredder building (COMG 5). This shall be based on written or electronic logs. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
COMG 5	3850	Monthly Recordkeeping. By the 15th of the month, the Permittee shall calculate and record the following: 1) The total hours of operation for the previous calendar month using the daily records; and 2) The 12-month rolling sum hours of operation for the previous 12-month period by summing the monthly hours of operation for the previous 12 months. If the Permittee has less than 12 months of data, the Permittee shall sum the monthly hours of operation for all previous months of operation. [Minn. R. 7007.0800, subps. 4-5]
COMG 5	19650	The Permittee shall vent emissions from each piece of equipment in COMG 5 to control equipment in series meeting the requirements of TREA 1, 2, 3, and 8 and COMG 3 that vents to STRU 19 whenever any piece of equipment in COMG 5 operates. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 5	19651	The Permittee shall vent emissions from cleaning of the shredder and shredder building to control equipment meeting the requirements of TREAs 1, 2, 3, and 8 and COMG 3 and that vents to STRU 19. The Permittee is not required to vent emissions from cleaning of the control equipment to control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 63.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 5	19652	The Permittee shall maintain the shredder building as a total enclosure, as described below, during operation of any equipment in COMG 5, during cleaning of the shredder building, and for at least 15 minutes after operation or cleaning ceases unless there is an emergency that requires the building to be opened. For the shredder building to qualify as a total enclosure the following conditions must be met: 1) the openings in the shredder building from the infeed conveyor and EQUI 3 (conveyor from the shredder building to the ferrous building) shall be covered by plastic strip curtains or a similar barrier; 2) all other openings in the shredder building shall be either closed or vented to control equipment in series meeting the requirements of TREAs 1, 2, 3, and 8 and COMG 3; and 3) EQUI 3 (conveyor from the shredder building to the ferrous building) shall be covered. If the Permittee replaces EQUI 3, the replacement conveyor shall comply with the requirements above for the conveyor it replaces. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Subject Item ID	Sequence Number	Requirement
COMG 5	19653	Each operating day, prior to start up of EQUI 2, the Permittee shall inspect all openings of the shredder building not vented to control equipment or leading to or from a conveyor to ensure that they are closed. The Permittee shall maintain records of each inspection. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 5	19654	The Permittee shall post signs at all openings of the shredder building that are not vented to control equipment or leading to or from a conveyor indicating that except during emergencies, openings must be closed during operation, cleaning, and at least 15 minutes after cleaning or operation ceases. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4]
COMG 5	19655	If a building opening must be opened during operation, cleaning, for an event such as an emergency, the Permittee shall maintain a record of the cause of the event, its duration, and any corrective action taken. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
COMG 5	19656	On a monthly basis, the Permittee shall inspect the doors, windows, or other barriers on the outside of the shredder building for damage which would result in particulate emissions escaping the building. The Permittee shall repair the damage as soon as possible, but no later than two weeks after identification. The Permittee shall maintain records of the monthly inspections, and if repair is required, a record of the type of repair needed, the schedule for completion of such repair and date the repair is started and completed. [Minn. R. 7007.0800, subp. 2(A), Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
COMG 5	19657	If the Permittee replaces or modifies shredder building equipment the equipment is subject to all of the requirements of COMG 5. A permit amendment will still be needed regardless of the emissions increase if the change will be subject to a new applicable requirement or requires revisions to the limits or monitoring and recordkeeping in this permit. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9 , Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
COMG 5	20321	The Permittee shall submit a notification of the actual date of initial startup : Due 30 calendar days after Initial Startup Date of EQUI 2. [Minn. R. 7007.0800, subp. 2, Minn. R. 7007.0800, subp. 6]
STRU 19	1	The Permittee shall limit emission of Particulate Matter <= 3.41 pounds per hour from STRU 19. [Findings of EAW, 2018, Minn. R. 7007.0800, subp. 1, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 9, Minn. Stat. 116.07, subd.4a, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 19	2	The Permittee shall limit emissions of PM < 10 micron <= 3.41 pounds per hour from STRU 19. [Findings of EAW, 2018, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subp. 1, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 19	3	The Permittee shall limit emissions of PM < 2.5 micron <= 3.41 pounds per hour from STRU 19. [Findings of EAW, 2018, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subp. 1, Minn. R. 7007.0800, subp. 2(A), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 19	8	The Permittee shall limit emissions of Mercury <= 3 pounds per year 12-month rolling sum from STRU 19 to be calculated by the 15th of the month for the previous 12-month period as described later in this permit. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps.1&2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]

Subject Item ID	Sequence Number	Requirement
STRU 19	10	Mercury: Monthly Recordkeeping. By the 15th of the month the Permittee shall calculate and record the following: 1) The total shredder throughput for the previous month using the throughput records required at COMG 5, in tons; 2) The mercury emissions from STRU 19 for the previous month using the formula specified below; and 3) The 12-month rolling sum mercury emissions from STRU 19 for the previous 12-month period by summing the monthly mercury emissions data for the previous 12 months. [Minn. R. 7007.0800, subp. 4-5]
STRU 19	11	Mercury: Monthly Calculation. The Permittee shall calculate mercury emissions using the following equation Ehg = EFhg x A where: Ehg = mercury emissions in lb/month EFhg = mercury emission factor calculated as described below in lb/ton throughput A = total shredder throughput in tons/month. [Minn. R. 7007.0800, subps. 4-5]

STRU 19	12	Mercury: Emission Factor.
		Within 15 days after receipt of a Notice of Compliance from the MPCA for a mercury performance test, the Permittee shall calculate a mercury emission factor based on the performance test results. The emission factor shall be calculated as follows:
		EFhg = [sum(E1 + E2 + E3...En)/n] / [sum(A1 + A2 + A3...An)/n]
		where:
		EFhg = mercury emission factor in lb/ton throughput
		E# = mercury emission rate from test run # in lb/hr
		A# = throughput from test run # in tons/hr
		n = total number of test runs
		
		Where the mercury emission rate for a test run is below the method detection limit, the method detection limit shall be used in the emission factor calculation. The Permittee shall begin using the new emission factor in the first monthly mercury emissions calculation that is required after the emission factor is calculated and until a new emission factor is calculated based on the next performance test and the requirements of this permit. Until the first emission factor is calculated based on the initial mercury performance test required by this permit the Permittee shall use an emission factor of 0.00000329 lb/ton. [Minn. R. 7007.subps. 4-5]

STRU 19	13	PM < 10 micron: The Permittee shall conduct an initial performance test due 180 calendar days after the initial startup date of EQUI 2 to measure PM <10 micron emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. [Findings of EAW, 2018, Minn. R. 7007.0100, subps. 7(A), 7(L) & 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 19	14	PM < 2.5 micron: The Permittee shall conduct an initial performance test due 180 calendar days after the initial startup date of EQUI 2 to measure PM <2.5 micron emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 201A and 202, or other method approved by MPCA in the performance test plan approval. [Findings of EAW, 2018, Minn. R. 4410, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. Stat. 116.07, subds.4a&9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 19	15	Particulate Matter: Particulate Matter: The Permittee shall conduct an initial performance test due 180 calendar days after the initial startup date of EQUI 2 to measure particulate matter emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Methods 5 and 202, or other method approved by MPCA in the performance test plan approval. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Subject Item ID	Sequence Number	Requirement
STRU 19	16	PM < 10 micron: The Permittee shall submit a test frequency plan for PM10: Due 60 calendar days after Initial Performance Test Date for PM10 emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA. [Findings of EAW, 2018, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7019.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 19	17	PM < 2.5 micron: The Permittee shall submit a test frequency plan for PM2.5: Due 60 calendar days after Initial Performance Test Date for PM2.5 emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA. [Findings of EAW, 2018, Minn. R. 7007.0100, subps. 7(A), 7(L), & 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 19	18	Particulate Matter: The Permittee shall submit a test frequency plan for Particulate Matter: Due 60 calendar days after Initial Performance Test Date for PM emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12-month, 36-month, or 60-month intervals, or as applicable, shall be required upon written approval of the MPCA. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.116, 07(subds.4a&9), Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 19	19	Volatile Organic Compounds: The Permittee shall conduct an initial performance test due 180 calendar days after initial startup date of EQUI 2 to measure VOC emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 25A, or other method approved by the MPCA in the performance test plan approval. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
STRU 19	20	HAPs - Volatile: The Permittee shall conduct an initial performance test due 180 calendar days after startup of EQUI 2 to verify volatile HAP emissions from STRU 19. Volatile HAPs for the purpose of this requirement include: Chloromethane, vinyl chloride, 1,3-butadiene, bromomethane, chloroethane, acetonitrile, acrolein, acrylonitrile, 1,1-dichloroethene, 3-Chloro-1-propene, Carbon disulfide, 1,1-Dichloroethane, Methyl t-Butyl ether, Vinyl acetate, n-Hexane, Chloroform, 1,2-Dichloroethane, benzene, carbon tetrachloride, 1-2-dichloropropane, Trichloroethene 1,4-Dioxane, Methyl methacrylate, 4-Methyl-2-pentanone, 1,1,2-Trichloroethane, Toluene, 1,2-Dibromoethane, Chlorobenzene, Ethylbenzene, m,p-Xylenes, Bromoform, Styrene, o-Xylene, 1,1,2,2-Tetrachloroethane, Cumene, Benzyl chloride, 1,4-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, Naphthalene, Hexachlorobutadiene, and Isooctane. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA reference Method 18, or other method approved by MPCA in the performance test plan approval.
		If the tested emissions rates of any of the volatile HAPs listed above are greater than those listed in Appendix E the Permittee shall conduct a risk recalculation. The Permittee shall use the 2018 Northern Metals Becker Air Emissions Risk Analysis (AERA) report as a template for recalculating and submitting the risk estimates, for updating the qualitative description of the risks (e.g. land use and exposure assumptions), and comparing the recalculated risk estimates for all pollutants emitted from the facility to the risk management guidelines used in the 2018 Northern Metals Becker AERA report. Updated toxicological values, emission estimates, and risk assessment guidance should be incorporated when appropriate. The Permittee shall submit the report to the MPCA for approval. If the recalculated risk estimates for the facility exceed the risk management guidelines used in the 2018 Northern Metals Becker AERA, the MPCA may require the Permittee to either refine its assessment or apply for a permit amendment to modify its permit. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Subject Item ID	Sequence Number	Requirement
STRU 19	23	Total PCDD/PCDF: The Permittee shall conduct an initial performance test due 180 calendar days after startup of EQUI 2 to measure total Polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (PCDD/PCDF) emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA reference Method 23, or other method approved by MPCA in the performance test plan approval. If the tested emissions rates of any PCDD/PCDF is greater than the emission rates listed in Appendix E the Permittee shall conduct a risk recalculation. The Permittee shall use the 2018 Northern Metals Becker Air Emissions Risk Analysis (AERA) report as a template for recalculating and submitting the risk estimates, for updating the qualitative description of the risks (e.g. land use and exposure assumptions), and comparing the recalculated risk estimates for all pollutants emitted from the facility to the risk management guidelines used in the 2018 Northern Metals Becker AERA report. Updated toxicological values, emission estimates, and risk assessment guidance should be incorporated when appropriate. The Permittee shall submit the report to the MPCA for approval. If the recalculated risk estimates for the facility exceed the risk management guidelines used in the 2018 Northern Metals Becker AERA, the MPCA may require the Permittee to either refine its assessment or apply for a permit amendment to modify its permit. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]
STRU 19	25	Polychlorinated biphenyls (PCBs): The Permittee shall conduct an initial performance test due 180 calendar days after startup of EQUI 2 to measure PCBs emissions from STRU 19. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA reference Method 23, or other method approved by MPCA in the performance test plan approval. If the tested emissions rates of PCBs is greater than the emission rates listed in Appendix E the Permittee shall conduct a risk recalculation. The Permittee shall use the 2018 Northern Metals Becker Air Emissions Risk Analysis (AERA) report as a template for recalculating and submitting the risk estimates, for updating the qualitative description of the risks (e.g. land use and exposure assumptions), and comparing the recalculated risk estimates for all pollutants emitted from the facility to the risk management guidelines used in the 2018 Northern Metals Becker AERA report. Updated toxicological values, emission estimates, and risk assessment guidance should be incorporated when appropriate. The Permittee shall submit the report to the MPCA for approval. If the recalculated risk estimates for the facility exceed the risk management guidelines used in the 2018 Northern Metals Becker AERA, the MPCA may require the Permittee to either refine its assessment or apply for a permit amendment to modify its permit. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]
STRU 19	27	Mercury: The Permittee shall conduct an initial performance test due 180 calendar days after startup of EQUI 2 to measure Mercury emissions from STRU 19. The performance test shall consist of a minimum of 12 hours of testing to be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA reference Method 29, or other method approved by MPCA in the performance test plan approval. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]

Subject Item ID	Sequence Number	Requirement
STRU 19	28	Mercury: The Permittee shall conduct a performance test 24 months after the initial performance test date to verify the emission factor of mercury in lb/ton throughput. After the initial 24 months following the initial performance test date, the Permittee shall conduct a performance test every 60 months. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA Reference Method 29, or other method approved by MPCA in the performance test plan approval. Testing conducted during the 60 days prior to the performance test due date will not reset the test due date for future testing as required by this permit or within a Notice of Compliance letter. Testing conducted more than two months prior to the performance test due date satisfies this test due date requirement but will reset future performance test due dates based on the performance test date. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7017.2020, subp. 1, Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]
STRU 19	29	HAPs - Metal: The Permittee shall conduct an initial performance test due 180 calendar days after startup of EQUI 2 to verify metal HAP emissions rates from STRU 19. Metal HAPs include: Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Lead, Manganese, Nickel, and Selenium. Testing of Mercury required separately. The performance test shall be conducted at worst-case conditions as defined at Minn. R. 7017.2025, subp. 2, using EPA reference Method 29, or other method approved by MPCA in the performance test plan approval. If the tested emissions rates of any of the metal HAPs listed above are greater than those listed in Appendix E the Permittee shall conduct a risk recalculation. The Permittee shall use the 2018 Northern Metals Becker Air Emissions Risk Analysis (AERA) report as a template for recalculating and submitting the risk estimates, for updating the qualitative description of the risks (e.g. land use and exposure assumptions), and comparing the recalculated risk estimates for all pollutants emitted from the facility to the risk management guidelines used in the 2018 Northern Metals Becker AERA report. Updated toxicological values, emission estimates, and risk assessment guidance should be incorporated when appropriate. The Permittee shall submit the report to the MPCA for approval. If the recalculated risk estimates for the facility exceed the risk management guidelines used in the 2018 Northern Metals Becker AERA, the MPCA may require the Permittee to either refine its assessment or apply for a permit amendment to modify its permit. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subds.4a&9]
STRU 19	30	If the Permittee determines, prior to submitting the performance test plan for a performance test required by this permit, that the total airflow through STRU 19 due to simultaneous operation of the units in COMG 1, 2, and 5 would cause the detection limit of the required test method to be above a permit limit or an emission rate listed in Appendix E for a given pollutant, the Permittee may, subject to the approval of the MPCA, not operate the equipment in COMG 2 or route airflow from the MRP building to STRU 19 during the test. This condition is only applicable to performance testing for pollutants not emitted by the MRP which include dioxin/furan, PCBs, mercury, and VOCs. This approach must be approved by the MPCA in a test plan required by Minn. R. 7017.2030, subp. 2. [Minn. R. 7007.0800, subp. 2(A)]

Subject Item ID	Sequence Number	Requirement
TREA 1	1	The Permittee shall vent emissions from equipment in COMG 5 to control equipment meeting the requirements of TREA 1 whenever the equipment in COMG 5 operates. The Permittee shall operate and maintain control equipment meeting the requirements of TREA 1 at all times that any emissions are vented to the control equipment, which includes 1) during operation of equipment in COMG 5, 2) for at least 15 minutes after the equipment in COMG 5 cease operation, 3) during cleaning of the shredder building, and 4) for at least 15 minutes after cleaning of the shredder building ceases. The Permittee shall document periods of non-operation of TREA 1 when emissions are required to vent to control equipment meeting the requirements TREA 1 as described above. When cleaning control equipment, the Permittee is not required to operate fans that supply air to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 1	2	If the Permittee replaces TREA 1, the replacement control, in combination with the COMG 3 control equipment in series, must meet or exceed the control efficiency requirements of COMG 3 as well as comply with all other requirements of TREA 1. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 1	17615	Once each day during operation, while material is being processed in the shredder, the Permittee shall record the pressure drop across the cyclone. The record shall include the date and time of the pressure drop reading and whether or not the observed pressure drop was within the range specified in this permit. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009-0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 1	18600	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored cyclone is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 1	18610	The Permittee shall operate and maintain the cyclone in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 1	18620	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the cyclone or any of its components are found during the inspection to need repair. Corrective action shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the cyclone. The Permittee shall keep a record of the type and date of any corrective action taken for each control device. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2, Minn. R. 7007.0800, subps. 4-5]

Subject Item ID	Sequence Number	Requirement
TREA 1	18631	The Permittee shall maintain the pressure drop across the control equipment according to the manufacturer's specifications until a new range is set pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test required by this permit for PM, PM10, and PM2.5 and as described below. Upon receipt of the Notice of Compliance letter from the MPCA that approves the test results, the Permittee shall maintain the pressure drop according to the range established during the initial performance test, unless a new range is during a subsequent performance test pursuant to Minn. R. 7017.2025, subp. 3. If the recorded pressure drop is outside the required range, the emissions during that time shall be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range shall be reported as a deviation. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7((A)), Minn. R. 7007.0100, subp. 7((L)), Minn. R. 7007.0100, subp. 7((M)), Minn. R. 7007.0800, subp. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and MInn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 1	18632	Protocol for Re-Setting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM, PM10, and PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be re-set, the re-set shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee shall calculate the average pressure drop based on the average exhibited over all three or more, if applicable, compliant test runs. Downtime of 15 minutes or more is not to be included as operating time.
		The established Pressure Drop Range Limit shall be re-set as follows: - if the 3-hr average pressure drop recorded during the test is within the established range, it shall not be re-set and the established values remain the Pressure Drop Range Limit; or - if the 3-hr average pressure drop is outside the range specified above, the range limit shall be re-set based upon the minimum and maximum pressure drop values exhibited during the performance test. The new minimum value for the range limit shall be half the lowest recorded reading and the new maximum value for the range limit shall be two times the highest recorded value. Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2025, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 1	18633	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Pressure Drop Range Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
TREA 1	18634	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Subject Item ID	Sequence Number	Requirement
TREA 2	3	The Permittee shall vent emissions from equipment in COMG 1 and COMG 5 to control equipment meeting the requirements of TREA 2 whenever the equipment in COMG 1 or COMG 5 operates. The Permittee shall operate and maintain control equipment meeting the requirements of TREA 2 at all times that any emissions are vented to the control equipment, which includes 1) during operation of equipment in COMG 1 or COMG 5, 2) for at least 15 minutes after the equipment in COMG 1 and COMG 5 cease operation, 3) during cleaning of the shredder building or ferrous building, and 4) for at least 15 minutes after cleaning of the shredder building and ferrous building ceases. The Permittee shall document periods of non-operation of TREA 2 when emissions are required to vent to control equipment meeting the requirements TREA 2 as described above. When cleaning control equipment, the Permittee is not required to operate fans that supply air to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 2	17610	If the Permittee replaces TREA 2, the replacement control, in combination with the COMG 3 and COMG 4 control equipment in series, must meet or exceed the control efficiency requirements of COMG 3 and COMG 4 respectively as well as comply with all other requirements of TREA 2. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 2	18510	The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 2	18530	Pressure Drop: Once each day of operation, while processing material in the shredder, the Permittee shall record the pressure drop across the fabric filter. The record shall include the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 2	18550	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 2	18560	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 2	18570	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]

Subject Item ID	Sequence Number	Requirement
TREA 2	18610	Pressure Drop >= 28 inches of water column until a new range is set pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test required by this permit PM, PM10, and PM2.5 and as described below. Upon receipt of the Notice of Compliance letter from the MPCA that approves the test results, the Permittee shall maintain the pressure drop according to the range established during the initial performance test, unless a new range is during a subsequent performance test pursuant to Minn. R. 7017.2025, subp. 3. If the recorded pressure drop is outside the required range, the emissions during that time shall be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range shall be reported as a deviation. This is the pressure drop across both TREA 2 and 3 combined. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7((A)), Minn. R. 7007.0100, subp. 7((L)), Minn. R. 7007.0100, subp. 7((M)), Minn. R. 7007.0800, subp. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and MInn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 2	18620	Protocol for Re-Setting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM, PM10, and PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be re-set, the re-set shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee shall calculate the average pressure drop based on the average exhibited over all three or more, if applicable, compliant test runs. Downtime of 15 minutes or more is not to be included as operating time.
		The established Pressure Drop Range Limit shall be re-set as follows: - if the 3-hr average pressure drop recorded during the test is within the established range, it shall not be re-set and the established values remain the Pressure Drop Range Limit; or - if the 3-hr average pressure drop is outside the range specified above, the range limit shall be re-set based upon the minimum and maximum pressure drop values exhibited during the performance test. The new minimum value for the range limit shall be half the lowest recorded reading and the new maximum value for the range limit shall be two times the highest recorded value. Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2025, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 2	18630	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Pressure Drop Range Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
TREA 2	18634	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Subject Item ID	Sequence Number	Requirement
TREA 3	3	The Permittee shall vent emissions from equipment in COMG 1 and COMG 5 to control equipment meeting the requirements of TREA 3 whenever the equipment in COMG 1 or COMG 5 operates. The Permittee shall operate and maintain control equipment meeting the requirements of TREA 3 at all times that any emissions are vented to the control equipment, which includes 1) during operation of equipment in COMG 1 or COMG 5, 2) for at least 15 minutes after the equipment in COMG 1 and COMG 5 cease operation, 3) during cleaning of the shredder building or ferrous building, and 4) for at least 15 minutes after cleaning of the shredder building and ferrous building ceases. The Permittee shall document periods of non-operation of TREA 3 when emissions are required to vent to control equipment meeting the requirements TREA 3 as described above. When cleaning control equipment, the Permittee is not required to operate fans that supply air to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 3	17610	If the Permittee replaces TREA 3, the replacement control, in combination with the COMG 3 and COMG 4 control equipment in series, must meet or exceed the control efficiency requirements of COMG 3 and COMG 4 respectively as well as comply with all other requirements of TREA 3. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 3	18510	The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 3	18530	Pressure Drop: Once each day of operation, while processing material in the shredder, the Permittee shall record the pressure drop across the fabric filter. The record shall include the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 3	18550	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 3	18560	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 3	18570	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]

Subject Item ID	Sequence Number	Requirement
TREA 3	18610	Pressure Drop >= 28 inches of water column until a new range is set pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test required by this permit for PM, PM10, and PM2.5 and as described below. Upon receipt of the Notice of Compliance letter from the MPCA that approves the test results, the Permittee shall maintain the pressure drop according to the range established during the initial performance test, unless a new range is during a subsequent performance test pursuant to Minn. R. 7017.2025, subp. 3. If the recorded pressure drop is outside the required range, the emissions during that time shall be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range shall be reported as a deviation. This is the pressure drop across both TREA 2 and 3 combined. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7((A)), Minn. R. 7007.0100, subp. 7((L)), Minn. R. 7007.0100, subp. 7((M)), Minn. R. 7007.0800, subp. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and MInn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 3	18620	Protocol for Re-Setting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM, PM10, and PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be re-set, the re-set shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee shall calculate the average pressure drop based on the average exhibited over all three or more, if applicable, compliant test runs. Downtime of 15 minutes or more is not to be included as operating time.
		The established Pressure Drop Range Limit shall be re-set as follows: - if the 3-hr average pressure drop recorded during the test is within the established range, it shall not be re-set and the established values remain the Pressure Drop Range Limit; or - if the 3-hr average pressure drop is outside the range specified above, the range limit shall be re-set based upon the minimum and maximum pressure drop values exhibited during the performance test. The new minimum value for the range limit shall be half the lowest recorded reading and the new maximum value for the range limit shall be two times the highest recorded value. Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2025, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 3	18630	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Pressure Drop Range Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
TREA 3	18634	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Subject Item ID	Sequence Number	Requirement
TREA 4	1	The Permittee shall vent emissions from all equipment in COMG 1 to control equipment meeting the requirements of TREA 4 whenever equipment in COMG 1 operates. The Permittee shall operate and maintain control equipment meeting the requirements of TREA 4 at all times that any emissions are vented to control equipment meeting the requirements of TREA 4, which includes 1) during operation of equipment in COMG 1, 2) for at least 15 minutes after all equipment in COMG 1 ceases operation, 3) during cleaning of the ferrous building, and 4) for at least 15 minutes after cleaning of the ferrous building ceases. The Permittee shall document periods of non-operation of control equipment meeting the requirements of TREA 4 when emissions are required to vent to the control equipment as described above. When cleaning control equipment, the Permittee is not required to operate fans that supply air to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 4	2	If the Permittee replaces TREA 4, the replacement control, in combination with the other COMG 4 control equipment in series, must meet or exceed the control efficiency requirements of COMG 4 as well as comply with all other requirements of TREA 4. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, 2018, Minn. R. 4410, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 4	17615	Once each day during operation, while material is being processed in the ferrous building, the Permittee shall record the pressure drop across the cyclone. The record shall include the date and time of the pressure drop reading and whether or not the observed pressure drop was within the range specified in this permit. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009-0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 4	18600	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored cyclone is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 4	18610	The Permittee shall operate and maintain the cyclone in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 4	18620	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the cyclone or any of its components are found during the inspection to need repair. Corrective action shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the cyclone. The Permittee shall keep a record of the type and date of any corrective action taken for each control device. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 2, Minn. R. 7007.0800, subps. 4-5]

Subject Item ID	Sequence Number	Requirement
TREA 4	18631	The Permittee shall maintain the pressure drop across the control equipment according to the manufacturer's specifications until a new range is set pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test required by this permit for PM, PM10, and PM2.5 and as described below. Upon receipt of the Notice of Compliance letter from the MPCA that approves the test results, the Permittee shall maintain the pressure drop according to the range established during the initial performance test, unless a new range is during a subsequent performance test pursuant to Minn. R. 7017.2025, subp. 3. If the recorded pressure drop is outside the required range, the emissions during that time shall be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range shall be reported as a deviation. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7((A)), Minn. R. 7007.0100, subp. 7((L)), Minn. R. 7007.0100, subp. 7((M)), Minn. R. 7007.0800, subp. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and MInn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 4	18632	Protocol for Re-Setting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM, PM10, and PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be re-set, the re-set shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee shall calculate the average pressure drop based on the average exhibited over all three or more, if applicable, compliant test runs. Downtime of 15 minutes or more is not to be included as operating time.
		The established Pressure Drop Range Limit shall be re-set as follows: - if the 3-hr average pressure drop recorded during the test is within the established range, it shall not be re-set and the established values remain the Pressure Drop Range Limit; or - if the 3-hr average pressure drop is outside the range specified above, the range limit shall be re-set based upon the minimum and maximum pressure drop values exhibited during the performance test. The new minimum value for the range limit shall be half the lowest recorded reading and the new maximum value for the range limit shall be two times the highest recorded value. Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2025, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 4	18633	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Pressure Drop Range Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
TREA 4	18634	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Subject Item ID	Sequence Number	Requirement
TREA 7	3	The Permittee shall vent emissions from the equipment in COMG 2 to TREA 7 whenever the equipment in COMG 2 operates. The Permittee shall operate and maintain TREA 7 at all times that any emissions are vented to TREA 7, which includes 1) during operation of the equipment in COMG 2, 2) for at least 15 minutes after the equipment in COMG 2 ceases operation, 3) during cleaning of the metal recovery plant building, and 4) for at least 15 minutes after cleaning of the metal recovery plant building ceases. The Permittee shall document periods of non-operation of TREA 7 when emissions are required to vent to TREA 7 as described above. When cleaning control equipment, the Permittee is not required to operate fans that supply air to the control equipment. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 7	17610	If the Permittee replaces TREA 7, the replacement control must meet or exceed the control efficiency requirements of TREA 7 as well as comply with all other requirements of TREA 7. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 7	17615	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for HAPs - Metal >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency) This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
TREA 7	18480	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Particulate Matter >= 99 percent control efficiency (100 percent capture efficiency and 99 percent collection efficiency). [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 7	18490	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 10 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 7	18500	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for PM < 2.5 micron >= 93 percent control efficiency (100 percent capture efficiency and 93 percent collection efficiency). [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 7	18510	The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 7	18530	Pressure Drop: Once each day of operation, while material is being processed in the MRP, the Permittee shall record the pressure drop across the fabric filter. The record shall include the time and date of each pressure drop reading and whether or not the recorded pressure drop was within the range specified in this permit. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Subject Item ID	Sequence Number	Requirement
TREA 7	18550	Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 7	18560	Monitoring Equipment: The Permittee shall install and maintain the necessary monitoring equipment for measuring and recording pressure drop as required by this permit. The monitoring equipment must be installed, in use, and properly maintained when the monitored fabric filter is in operation. [Minn. R. 7007.0800, subp. 4]
TREA 7	18570	Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 7	18610	Pressure Drop >= 0.1 and <= 6.0 inches of water column until a new range is set pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test required by this permit for PM, PM10, and PM2.5 and as described below. Upon receipt of the Notice of Compliance letter from the MPCA that approves the test results, the Permittee shall maintain the pressure drop according to the range established during the initial performance test, unless a new range is during a subsequent performance test pursuant to Minn. R. 7017.2025, subp. 3. If the recorded pressure drop is outside the required range, the emissions during that time shall be considered uncontrolled until the pressure drop is once again within the required range. The period of time for which the pressure drop is considered out of range shall be reported as a deviation. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7((A)), Minn. R. 7007.0100, subp. 7((L)), Minn. R. 7007.0100, subp. 7((M)), Minn. R. 7007.0800, subp. 1-2, Minn. R. 7009.0010-7009.0090, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(2)(i) and MInn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 7	18620	Protocol for Re-Setting the Pressure Drop Range Limit: The Permittee shall conduct performance testing to measure the PM, PM10, and PM2.5 emission rate as required elsewhere in this permit. If the established Pressure Drop Range Limit is to be re-set, the re-set shall be based on the pressure drop values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the pressure drop. The Permittee shall calculate the average pressure drop based on the average exhibited over all three or more, if applicable, compliant test runs. Downtime of 15 minutes or more is not to be included as operating time.
		The established Pressure Drop Range Limit shall be re-set as follows: - if the 3-hr average pressure drop recorded during the test is within the established range, it shall not be re-set and the established values remain the Pressure Drop Range Limit; or - if the 3-hr average pressure drop is outside the range specified above, the range limit shall be re-set based upon the minimum and maximum pressure drop values exhibited during the performance test. The new minimum value for the range limit shall be half the lowest recorded reading and the new maximum value for the range limit shall be two times the highest recorded value. Ongoing compliance with the Pressure Drop Range Limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Pressure Drop Range Limit shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, 2018, Minn. R. 7007.0100, subp. 7(A), Minn. R. 7007.0100, subp. 7(L), Minn. R. 7007.0100, subp. 7(M), Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7009.0010-7009.0090, Minn. R. 7017.2025, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 7	18630	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Pressure Drop Range Limit required by this permit. [Minn. R. 7007.1500, subp. 1]

Subject Item ID	Sequence Number	Requirement
TREA 7	18634	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]
TREA 8	3450	Opacity <= 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. [Minn. R. 7011.0610, subp. 1(A)(2)]
TREA 8	3460	Particulate Matter <= 0.30 grains per dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. [Minn. R. 7011.0610, subp. 1(A)(1)]
TREA 8	17610	The Permittee shall vent emissions from equipment in COMG 1 and COMG 5 to TREA 8 whenever equipment in COMG 1 or COMG 5 operates, and operate and maintain TREA 8 at all times that any emissions are vented to TREA 8. The Permittee shall document periods of non-operation of the control equipment TREA 8 whenever equipment in COMG 1 or COMG 5 is operating. [Findings of EAW, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 8	17615	If the Permittee replaces TREA 8, the replacement control must meet or exceed the control efficiency requirements of TREA 8 as well as comply with all other requirements of TREA 8. Prior to making such a change, the Permittee shall apply for and obtain the appropriate permit amendment, as applicable. If no amendment is needed for the replacement, the Permittee shall submit an electronic notice to the Agency using Form CR-05. The notice must be received by the Agency seven working days prior to the commencement/start of replacement. [Findings of EAW, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 8	18490	The Permittee shall operate and maintain control equipment such that it achieves a control efficiency for Total PCDD/PCDF >= 50 percent control efficiency (100 percent capture efficiency and 50 percent collection efficiency) This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9]
TREA 8	18730	The Permittee shall operate and maintain control equipment such that it achieves an overall control efficiency for, Volatile Organic Compounds >= 95 percent control efficiency. [Findings of EAW, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 8	18740	The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for, HAPs - Volatile >= 95 percent control efficiency. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 8	18740	The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff. [Minn. R. 7007.0800, subp. 14]
TREA 8	18760	Temperature Monitoring: The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than the greater of +/- 0.75 percent of the temperature being measured or +/- 4.5 degrees Fahrenheit. The recording device shall also calculate the three-hour rolling average combustion chamber temperature. Recorded values outside the range specified in this permit are considered Deviations as defined by Minn. R. 7007.0100, subp. 8a. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Subject Item ID	Sequence Number	Requirement
TREA 8	18770	Daily Monitoring: The Permittee shall physically verify the operation of the temperature recording device at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of the daily verifications. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. 7007.0800, subps. 4-5, Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 8	18770	Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. [Minn. R. 7007.0800, subps. 4-5]
TREA 8	18790	Annual Calibration: The Permittee shall calibrate the temperature monitor at least once every 12 months and shall maintain a written record of the calibration and any action resulting from the calibration. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 8	18790	The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings and calculated three hour rolling average temperatures for the combustion chamber. [Minn. R. 7007.0800, subps. 4-5, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 8	18800	Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment internal and external system components, including but not limited to the refractory, heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 8	18810	Annual Inspection: At least once per calendar year, the Permittee shall conduct an internal inspection of the control device that includes all operating systems of the control device. The Permittee shall maintain a written record of the inspection and any action resulting from the inspection. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 8	18830	Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken. [Minn. R. 7007.0800, subp. 14, Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5]
TREA 8	18870	Temperature >= 1550 degrees Fahrenheit 3-hour rolling average at the combustion chamber outlet (Minimum Temperature Limit), unless a new limit is set pursuant to Minn. R. 7017.2025, subp. 3, as detailed below. If the recorded 3-hour rolling average temperature is below the Minimum Temperature Limit, the VOC and volatile HAP emitted during that time shall be considered uncontrolled until the average temperature is above the Minimum Temperature Limit. This shall be reported as a deviation. [Findings of EAW, 2018, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]

Subject Item ID	Sequence Number	Requirement
TREA 8	18880	Protocol for Re-Setting the Minimum Temperature Limit: The Permittee shall conduct performance testing to measure the VOC and volatile HAP destruction efficiency as required elsewhere in this permit. If the Minimum Temperature Limit is to be re-set, the re-set shall be based on the average temperature values recorded during the most recent MPCA-approved performance test where compliance was demonstrated. During the performance test, the Permittee must continuously monitor the temperature in the combustion chamber The Permittee shall calculate the average temperature from the combustion chamber by reducing the temperature data to an average temperature based on the average exhibited over all three compliant test runs. Downtime of 15 minutes or more is not to be included as operating time. The Minimum Temperature Limit shall be re-set as follows: - if the 3-hour average temperature recorded during the test is within 25 deg F of the limit, it shall not be re-set and the established Minimum Temperature Limit remains unchanged; or - if the 3-hour average temperature is more than 25 deg F greater or less than the established limit, it shall be re-set as the average temperature of the performance test. Ongoing compliance with the temperature limit will be determined using the same data acquisition and reduction as was used during the performance test. The new Minimum Temperature Limit determined using this Protocol shall be effective upon receipt of the Notice of Compliance letter that approves the test results and shall be incorporated into the permit when the permit is next amended. [Findings of EAW, Minn. R. 7007.0800, subps. 1-2(B), Minn. R. ch. 4410, Minn. Stat. 116.07, subd. 4a, Minn. Stat. 116.07, subd. 9, Title I Condition: Avoid major source under 40 CFR 52.21(b)(1)(i) and Minn. R. 7007.3000, Title I Condition: Avoid major source under 40 CFR 63.2, To avoid major source under 40 CFR 70.2 & Minn. R. 7007.0200]
TREA 8	18880	The Permittee must apply for and obtain a major permit amendment if the Permittee wishes to deviate from the Protocol for Re-setting the Minimum Temperature Limit required by this permit. [Minn. R. 7007.1500, subp. 1]
TREA 8	18890	Notwithstanding the Protocol detailed above, the MPCA reserves the right to set operational limits and requirements as allowed under Minn. R. 7017.2025. If the MPCA sets limits, the new limits shall be implemented upon receipt of the Notice of Compliance letter that notifies the Permittee of preliminary approval. The limits set according to Minn. R. 7017.2025 are final upon issuance of a permit amendment incorporating the change. [Minn. R. 7017.2025]

Attachment 3. Points Calculator

Points Calculator

1) AI ID No.:		Total Points	95
2) Facility Name:	Northern Metals Becker		
3) Small business? y/n?	N		
4) Air Project Tracking Numbers (including all	5903		
5) Date of each Application Received:	08/01/2017		
6) Final Permit No.	Kelsey Suddard		
7) Permit Staff			

Application Type	Air Project Tracking No.	Tempo Activity ID	Qty.	Points	Total Points	Total Additionl Cost	Details
Administrative Amendment				1	0	$ -	
Minor Amendment				4	0	$ -	
Applicability Request				10	0	$ -	
Moderate Amendment				15	0	$ -	
Major Amendment				25	0	$ -	
Individual State Permit (not reissuance)	5903	IND20170001	1	50	50	$ 14,250.00	
Individual Part 70 Permit (not reissuance)				75	0	$ -	
Additional Points							
Modeling Review	5903	IND20170001	1	15	15	$ 4,275.00	
BACT Review				15	0	$ -	
LAER Review				15	0	$ -	
CAA section 110(a)(2)(D)(i)(I) Review (i.e., Transport Rule/CAIR/CSAPR)				10	0	$ -	
Part 75 CEM analysis				10	0	$ -	
NSPS Review				10	0	$ -	
NESHAP Review				10	0	$ -	
Case-by-case MACT Review				20	0	$ -	
Netting				10	0	$ -	
Limits to remain below threshold	5903	IND20170001	3	10	30	$ 8,550.00	Pt. 70, PSD, Pt. 63
Plantwide Applicability Limit (PAL)				20	0	$ -	
AERA review				15	0	$ -	no points assessed b
Variance request under 7000.7000				35	0	$ -	
Confidentiality request under 7000.1300				2	0	$ -	
EAW review					0		no points assessed b
Part 4410.4300, subparts 18, item A; and 29				15	0	$ -	
Part 4410.4300, subparts 8, items A & B; 10, items A to C; 16, items A & D; 17, items A to C & E to G; and 18, items B & C				35	0	$ -	
Part 4410.4300, subparts 4; 5 items A & B; 13; 15; 16, items B & C; and 17 item D				70	0	$ -	
			Add'l Points		45		

NOTES:

(DQ Points)

Attachment 4.

Response to Comments on Northern Metals Recycling - Becker Environmental Assessment Worksheet and Draft Air Emissions Permit

Terms

NM – Northern Metals, LLC

Project – An enclosed scrap Metal Shredder (Shredder), an enclosed ferrous process, an enclosed Metal Recovery Plant (MRP), an End of life Vehicle (ELV) process, and a Community Recycling Center (CRC).

Project site – The proposed complex comprising approximately 55 acre for buildings, lawn/landscaping and stormwater ponds located at 13196 Hancock Street SE, Becker, Minnesota.

1. Comments by, Lonny Seeley. Letter received April 27, 2018.

Comment 1-1: The commenter stated concerns about the impact to County Road 8 from the expected increase in traffic once the Facility is operating.

Response: The Project will result in an increase in traffic on local roads including County Road 8. When the Project is operating at full capacity, NM expects 549 vehicles per day will visit the Project site. Incoming and outgoing traffic will access the Project site from access roads from different directions. Traffic is spread out on local roads, including County Road 8.

Highway 10 is the primary route to the Project site. The annual average daily traffic (AADT) count on Highway 10 at Hancock Street is 17,700 per the Minnesota Department of Transportation (MnDOT) traffic data website. While specific information from MnDOT is not available for Hancock Street, as noted above, the AADT count for the traffic count location closest to the Highway 10 and Hancock Street intersection is 17,700 vehicles per day. Based on the proposed 549 vehicles per day entering or exiting the site per day and the AADT values, NM expects the Project to show a 1% increase in traffic.

Trucks will be in proper operating condition, properly licensed, properly muffled, and will meet road weight restriction on area roads.

Comment 1-2: The commenter stated concerns about the ability of the new Facility to control air emissions given the trouble at the existing facility in Minneapolis.

Response: Please see response to Comment 1-3, 2-22, 2-29, 3-8, 5-6.

Comment 1-3: Commenter asks that the MPCA ensure that there are a sufficient number of air quality monitors placed on site at different locations. The commenter requests that they be installed before the plant starts operation to get base-level readings prior to operations beginning so that if the pollution increases above standards after operation begins, NM can't say that the pollution is from another location. The commenter suggests that if the cost of the monitors is too high, then NM should be required to pay for the monitors as part of their permit.

Response: The MPCA generally requires facility-specific air monitoring in cases where a facility has not demonstrated compliance with air quality dispersion modeling because air quality dispersion modeling is the standard means by which to predict whether a facility's emissions will cause or contribute to a violation of the ambient air quality standards. As described in Section 3.2 of the Technical Support Document for the Air Emissions Permit and Question 16a of the EAW, NM was able to demonstrate through air quality dispersion modeling that the potential emissions from its proposed facility will not cause or contribute to a violation of the ambient air quality standards.

Air quality dispersion modeling is a computer simulation that predicts the worst-case concentration of pollution around a facility. In this case, the model was used to predict the worst-case concentration of particulate matter less than ten microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), carbon monoxide (CO), sulfur dioxide (SO_2) and Nitrogen dioxide (NO_2) from the facility in a 100 by 100 kilometer grid around the Project site. The model takes into account the local meteorology including temperature, wind direction and wind speeds as well as the topography and the effect of nearby buildings. The model is conservative in that it assumes that the facility is operating all its equipment at maximum capacity, 24 hours per day, 365 days per year. This is a gross overestimate of operations because the facility will only operate about 9-10 hours per day on weekdays and only as needed on weekends, and usually not at maximum capacity. The modeling provides reasonable assurance that the facility will not cause or contribute to a violation of the ambient air quality standards.

Additionally, the MPCA was deliberate in requiring that the facility be built such that: 1) all processing operations occur inside buildings that are total enclosures (buildings that keep doors and windows shut during operation) and 2) that all processing emissions are routed to control equipment. This design ensures that emissions from these processes are minimized. Emissions from material handling operations that occur outside are minimized since material is directly conveyed in covered conveyor between buildings and directly conveyed into storage sheds. Nonferrous metal product is stored inside the metal recovery building. Material handling operations that do occur outside such as handling of ferrous product must be managed according to a fugitive dust control plan. The MPCA considers a fugitive dust control plan a standard and effective means of regulating fugitive emissions through air emissions permits.

These design, operating, and monitoring requirements provide assurance that the facility will not cause or contribute to a violation of ambient air quality standards. Table 9 of the Technical Support Document for the Air Emissions Permit includes a summary of the monitoring required by the permit and why the monitoring, coupled with the air quality dispersion modeling, is adequate (and hence ambient air monitoring is not required) to ensure compliance with the applicable air quality regulations and permit requirements.

2. Comments by: Carolyn Fowler. Letter received May 10, 2018.

Comment 2-1: The commenter stated concerns that just recently the U.S. Environmental Protection Agency (EPA) has drastically lowered its original limits for human safety for a product they have long known of as it was for Lake Elmo and several other metro lakes this year. The commenter asked if this will be the case with NM that what is currently acceptable levels of emissions today will be found to be unsafe years later after the damage has been done. Is it possible there are tolerance changes on the horizon?

Response: Concerns for changing water quality and air emission standards or human health risk based guidelines are addressed through the ISW permit and air permit.

General Industrial Stormwater Permit

The Project operates under the MPCA general Industrial Stormwater (ISW) Permit. NM will have to comply with more stringent health risk benchmark values if the next ISW Permit requires that, but the benchmarks could also remain the same as they are now. They will reapply for ISW Permit coverage 180 days prior to expiration and operate under the old ISW Permit until the ISW Permit is reissued. They would then need to meet all standards set forth in Sector N, if it is changed. The current ISW Permit expires April 5, 2020. Sector N is for scrap recycling and waste recycling facilities and has standards for sector specific benchmark monitoring values for: Total Suspended Solids, Chemical Oxygen Demand, Aluminum, Total (as Al), Copper, Total (asCu), Iron Total, (as Fe), Lead, Total (as Pb), Zinc, Total (as Zn) and pH. NM monitors for these parameters during a discharge event.

Air Permit

The MPCA is required to evaluate projects based on current standards. The MPCA is interpreting the term "tolerance level" to mean the National Ambient Air Quality Standards (NAAQS), Minnesota Ambient Air Quality Standards (MAAQS), and inhalation health benchmarks developed by the Minnesota Department of Health (MDH) or - if MDH has not developed an inhalation health benchmark - those developed by the EPA or California EPA.

The federal NAAQS are enforceable concentration standards set in rule for six "criteria pollutants" in outdoor air (CO, lead, NO_2, ozone, SO_2 and particle pollution). The state MAAQs cover these criteria pollutants and also add a standard for hydrogen sulfide. These standards are designed to protect human health and welfare. The Clean Air Act requires that the EPA periodically review the NAAQS to determine if they are sufficiently protective. It is possible that the ambient air quality standards could change in the future. If the standards change, Permittees are required to comply with the new standards; not the standards that were in effect when the permit was issued. If standards tighten, the MPCA must do an assessment of the entire state to ensure that it meets the new standards. However, because the modeled impacts from the Project are below the "significant impact levels" (SILs), which are levels of ambient impact below which the EPA considers a source to have an insignificant effect on ambient air quality, it is unlikely that the Project would cause or contribute to a violation of the ambient air quality standards, even if the standards were revised.

Inhalation health benchmarks are not rules; they are guideline values for air toxics, which are all other air pollutants that are not "criteria pollutants." These benchmarks are developed from scientific studies. They are used to estimate potential cancer and non-cancer human health risk, based on short term and long term exposures. The risk assessment screening process is meant to be conservative regarding the types and amounts of pollutants generated, the matter of pollutant dispersion in the surrounding environment, and their potential impact on human health. Risks are estimated for worst-case scenarios and then compared to the health benchmarks. For the Project, the risk assessment assumes processes/operations are running at maximum capacity 24 hours per day. In reality, this is a gross overestimation of the actual operation of the equipment, and hence the potential risks estimated from the analysis are conservative.

When health benchmarks change, since they are not in rule, a Permittee is not required to comply with the new values when they change; however, if NM is required to recalculate its risk based on a change in emissions as required in Section 6 of the permit, the risk recalculation will use the updated health

benchmarks in effect at the time the recalculation is done.

Comment 2-2: The commenter stated concerns regarding Combined Pollution from Multiple Contributors. Was the combination of pollutants accounted for in the modeling that was done for the Project? i.e., coal plant emissions, landfill, diesel truck exhaust, pesticide use on fields, and NM dust (HAP) emissions.

Response: The EPA has recommended a process for evaluating potential impacts from a new facility in an area that has a background level of air pollution from other industrial facilities, mobile sources, etc., but meets ambient air quality standards, which is the case in Sherburne County. As described in Section 3.2 of the Technical Support Document for the Air Emissions Permit, this approach is consistent with how the MPCA evaluates whether a change at a facility, or a new facility, will cause or contribute to a violation of the ambient air quality standards.

The MPCA used this process for the NM air quality dispersion modeling to evaluate whether the worst-case air emissions from NM (operations/processes running 24 hours per day, 365 days a year at maximum capacity) would cause or contribute to a violation of the ambient air quality standards. The first step in this process is a source impact analysis, which uses air quality dispersion modeling to compare the modeled impacts from worst-case air emissions from the Project to SILs. SILs are levels of ambient impact below which the EPA considers a source to have an insignificant effect on ambient air quality. The SILs are 5% or less of the ambient standards, depending on the standard. In this case, the modeled impacts from NM were well below the SILs. The source impact analysis determines whether additional air quality analysis, a cumulative impact analysis (which includes in the model background levels or air pollution and emissions from nearby facilities), is needed. Because the modeled impacts from NM were below the SILs, under this process, the modeling is complete and a cumulative impact analysis is not required to evaluate whether the worst-case air emissions from NM, in the context of existing air pollution sources, will cause or contribute to a violation of the ambient air quality requirements.

Further, the air emissions risk analysis (AERA) is a standardized screening process used by the MPCA to assess risk to human health from air emissions from a facility. Contributions to potential risks from surrounding background sources are not considered; however, the AERA assesses various exposure routes including inhalation and ingestion of homegrown vegetables, beef, chicken, and eggs. Additionally, the AERA also evaluates the combined potential effect of all pollutants emitted by the Project with the same health effect. The risk assessment screening process used for NM is meant to be conservative and risks are estimated for worst-case scenarios and for processes running at maximum capacity 24 hours per day. In reality, this is a gross overestimation of the actual operation of the equipment, and hence the potential risks estimated from the analysis are also much lower.

Last, as part of the permitting process, the MPCA also evaluated existing data on the air quality and background conditions in the city of Becker, including statewide modeling results from the MPCA's publicly available "MNrisks" tool, to ensure that the City and the surrounding areas are not uniquely impacted by cumulative air emissions from facilities or roadways in the area, including emissions from Xcel Energy Sherburne County and Highway 10. This analysis showed that Becker and the surrounding area is not uniquely impacted by cumulative air emissions. Using the MPCA's publicly available "criteria pollutant data explorer" online tool, the MPCA also confirmed that monitored emissions in 2017 at the closest monitors in St. Cloud and St. Michael are all less than 50% of the daily and annual PM2.5 standard and less than 85% of the 8-hour ozone standard.

Comment 2-3: The commenter stated that there is very often a prevailing wind that can go on for days such that topsoil is greatly moved and up in the air for hours/days. The Minnesota Department of Natural Resources has the approximate poundage of topsoil that is dropped into our lake from the area fields every year. The commenter stated that the "surface dust" is well documented and that all the top soil ends up far from where it began, including our lakes and rivers, beyond a mile from where the dust began. The commenter stated concerns whether water trucks and water cannons be effective at holding dust down during this type of windy conditions.

Response: Water trucks and cannons are one of the methods NM uses to minimize dust. Watering is not 100% effective at controlling dust, but it is a best management practice for minimizing fugitive dust and is a piece of the overall scheme to minimize dust from the Project. The EPA has created equations that estimate dust emissions based on both wind speed and moisture content of material. Calculations of emissions from fugitive dust for the Project use these equations. The MPCA did not assume that watering eliminates emissions and in many cases, to be conservative, the MPCA assumed no effect from the watering, and the emissions were still within regulatory thresholds. These calculations are in Attachment 1 to the Technical Support Document for the Air Emissions Permit.

The air permit requires that NM comply with a fugitive dust control plan, which the MPCA considers a standard and effective means of regulating fugitive emissions through air emissions permits. NMs' fugitive dust control plan also requires that the Project site is paved, the paved areas are swept daily (unless freezing conditions or rain), any spills in material handling operations are cleaned promptly, and that employees are trained in best management practices. The plan also requires monitoring of conditions and triggers corrective actions. The fugitive dust control plan is Appendix B to the Air Emissions Permit. The permit also requires that the majority of the dust-generating processes and activities occur indoors.

Comment 2-4: The commenter stated that 80% of Sherburne County's area ranks at a high or very high hydro-geologic sensitivity (see Sherburne County Local Water Management Plan" - 2018-2022). Which means pollutants have a serious potential of reaching the groundwater and the deep aquifer(s). Several wells are within the project's zone and those wells are at 20 feet - not so deep for pollution to seep down into. Sixty eight percent of Sherburne County's aquifers are considered vulnerable because of the makeup of our soil around here.

Response: NM will locate all product and equipment traffic on impervious paved surfaces to provide impervious containment. All stormwater collected on these paved and curbed surfaces will drain to stormwater ponds lined with impermeable liners. These ponds retain stormwater allowing potential pollutants to settle out before discharged off site.

In addition, NM will comply with various permits and plans such as the Stormwater Pollution Prevention Plan, Spill Prevention, Containment, and Countermeasure Plan, and Feedstock Control Plan in order to prevent spills and accidental releases as well as address containment and cleanup to minimize impacts to soil and groundwater.

Stormwater control system includes the following:

- Pavement
- Concrete curb and gutter

- Underground storm sewer piping
- Shallow ditches/swales
- Lined stormwater ponds
- Developed areas with runoff directed away from the Project site (outside of production area).
- Potentially a truck fill station (pump and fill pipe) to fill site water truck

NM Project site grading plan places the majority of buildings in the middle of the Project site, which is the high point, so runoff flows away from the buildings. On the north side of the Project site, runoff flows directly into the stormwater pond. On the south side of the Project site, runoff flows to a perimeter curb and gutter and is then directed to the lined stormwater pond on the south. At the Project site perimeter, the pavement is raised to prevent runoff from leaving the Project site or curb and gutter is utilized to direct to the stormwater ponds.

The stormwater ponds are designed to contain the 100-year, 24-hour storm event without overtopping. The ponds empty offsite by opening a slide gate or pumping.

NM intends to use water from the stormwater ponds located throughout the Project site for much of the other water needed for the Project. During periods of dry weather when recycled stormwater is insufficient to meet the operational needs, NM will use city water.

The Becker city engineer has indicated the City's water supply is sufficient to meet all water demand needs for Project operations. The City will extend new water mains to serve the Project site. NM will pay the Water Access Charge (WAC) fees to the City based on the anticipated volume of water consumed.

Comment 2-5: The commenter states that NM plans to use stormwater for a water source and when necessary, city water. The commenter asked where the city of Becker gets their water. The commenter asked because she was told and hasn't been able to verify as yet, that the deep-water aquifer for that area is about 10 feet below where it needs to be. If that is where Becker's water comes from and NM uses the City's water, would this become a problem?

Response: The Becker City's Drinking Water Report states that the city utilizes "5 wells ranging from 50 to 61 feet deep that draw water from the Quaternary Water Table and Quaternary Buried Artesian Aquifers." The City pumps approximately 192 million gallons of water annually. NM is proposing to use 3.7% of that. The City has adequate additional capacity to supply the water to the Project.

Comment 2-6: The commenter stated concerns that the "wellhead protection area" is supposedly just 500 feet outside of the 1-mile limit that was set for this project. It feels like this is too close for comfort and ought to be reconsidered given the makeup of the soils.

Response: Wellhead protection areas are areas where there is potential susceptibility to impacts to municipal water supplies. The Project site is located over a mile from the wellhead protection area as noted and designed to minimize the potential for groundwater impacts as noted in the response to Comment 2-4. Further, the Project site is located hydrogeologically downgradient to the city of Becker water supply wells, which further reduces potential impacts to municipal wells.

Comment 2-7: The commenter stated concerns that per the "Sherburne County Local Water Management Plan" not all of Sherburne County has its 10 areas totaling 19,348 acres that

require wellhead protection planning completed. What if those areas, once completed, are within the radius of this project?
Response: The agency which is responsible for the development of the Sherburne County Local Water Management Plan (2014) is the Sherburne Soil and Water Conservation District (Sherburne SWCD). Dan Cibulka, Water Resource Specialist for the Sherburne SWCD, indicated that the referenced Plan is a strategic planning document. He indicated that the Plan identifies the various wellhead protection areas, but the Sherburne SWCD does not manage these areas. The local jurisdictions responsible for municipal water supplies will identify any new areas for wellhead protection in the future. The city of Becker has identified the wellhead protection area of the city wells, and NM is outside that protection area.

Comment 2-8: The commenter points out that Sherburne County is dominated by very high pollution sensitivity due to the presence of sand and gravel over much of the surface of the county.

Response: NM used the Natural Resources Conservation Service Web Soil Survey to assess existing soil resources within the Project area. Based on the Soil Survey for Sherburne County, the following soil is within the Project area: The soil is Hubbard-Mosford complex (D62A) described as a loamy sand or a sandy loam. The soil onsite is somewhat excessively drained to excessively drained.

The Project area is located within soils that have not been previously disturbed except by historical farming activities. The soil characteristics for the Project area provide a high to very high-saturated hydraulic conductivity, and are susceptible to wind and rill or sheet erosion. The topography of the Project area is generally flat.

Construction of the Project will result in the disturbance of existing ground cover resulting in the potential for erosion. NM will obtain coverage under MPCA's general National Pollutant Discharge Elimination System (NPDES/SDS) Construction Stormwater (CSW) Permit and implement Project site best management practices for erosion prevention and sediment control. The CSW Permit also require the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP requires the utilization of temporary soil stabilization techniques and erosion prevention and sediment control requirements during construction. NM will permanently stabilize disturbed soils after project construction using vegetation or will return the land to agricultural production. Please see response to Comment 2-4.

Comment 2-9: The commenter states that the "Sherburne County Comprehensive Land Use Plan" - 2010-2030 states that both the Mississippi and the Elk Rivers are impaired already as determined by the MPCA. Should they be pushed further with the serious possibility of emissions from this project? The commenter stated that another serious look should be given to possible impacts to the Mississippi River and Elk River because of the serious winds in the area. If a problem is discovered, then our schools, agriculture, businesses, and nursing homes would also be at risk.

Response: The Proposer completed the Minnesota Mercury Risk Estimation Method (MMREM) spreadsheet. This spreadsheet calculates the local mercury hazard quotient due to fish contamination from mercury emissions of a project. The Project will emit less than 3 lb/yr of mercury. The closest fishable waterbody is the Mississippi river. The area of maximum deposition is an area of 3,567 acres of fishable waterbody between St. Cloud dam and Coon Rapids dam on the Mississippi River. The MMREM analysis indicates that there is no expected increase in the ratio of incremental fish mercury concentration from the Project relative to the existing water quality.

Comment 2-10: The commenter stated concerns that the Facility might be in a flood plain.
Response: The Federal Emergency Management Administration (FEMA) is responsible for the preparation of flood insurance rate maps that designate the flood risk for properties. The MPCA verified the Project Site is not located in a flood plain.

Comment 2-11: The commenter stated concerns regarding watering of paved roads and asks where does the runoff flow?

Response: Water from the watering of paved roads on the Project site collects in the lined stormwater ponds. Please see response to Comment 2-4.

Comment 2-12: The commenter states that the EAW indicated that NM is intending to send much of their waste to the Vonco Landfill. Has anyone checked how quickly, given the numbers provided by NM and the numbers provided in the "Sherburne County Comprehensive Land Use Plan" 2010-2030, that Vonco will no longer be able to handle any more of their fill? Then what happens if another location is not found and stockpiles grow and storage of these stockpiles goes on and on? It happens - currently, we have nuclear waste being stored on-site at the nuclear plant in Monticello because no one will accept it.

Response: NM identified the Vonco II Landfill as the disposal facility it will use for shredder fluff and industrial solid waste, filter media, and sweeping waste. According to Vonco II's 2017 Landfill Annual Report, the landfill has approximately 11 million cubic yards of industrial waste disposal capacity and approximately 4 million cubic yards of demolition waste capacity. NM is not required by the MPCA to use the Vonco Landfill for disposal of waste generated at the Project. However, if the Vonco landfill closes, NM may choose another means to properly dispose of their waste, be it a properly permitted waste facility or other waste management method.

Comment 2-13a: The commenter stated concerns NM will process approximately 6,656,000 tons of recycled metal per year and that means a great deal of HAPs (see EAW - page 26 and 27). "The AERMOD predicted no exceedances of the SIL for any of the modeled pollutants: therefore a dispersion modeling analyses was not required."

The commenter does not see included in Table 8 on page 27, the impact levels for the VOC's, Lead, PM, and CO2e which are seen on Table 7. Where is the AERMOD's comment on these serious HAPs? Did this get missed, and if so, please explain.

Response: 2-13a: Air quality dispersion modeling was conducted for PM_{10}, $PM_{2.5}$, SO_2, CO, and NO_2. To clarify, the statement quoted from the EAW should have read "The AERMOD predicted no exceedances of the SIL for any of the modeled pollutants, therefore a **cumulative** dispersion modeling analysis was not required." The MPCA followed the process outlined by the EPA and described in Response 2-2 above for conducting a source impact analysis through air dispersion modeling. The results of the source impact analyses for PM_{10}, $PM_{2.5}$, SO_2, CO, and NO_2 were evaluated against the SIL. Because the modeled concentrations were below the SIL, no further analysis is required.

There are no ambient air quality standards for VOCs or HAPs, with the exception of Lead. These pollutants were evaluated through the AERA process, which evaluates estimated concentrations against health benchmark values and the Lead ambient air quality standard. Worst-case potential emissions from HAPs were evaluated in the AERA. Based on the results of the AERA, the MPCA does not expect the

Project to affect human health and the environment. The EAW did not contain a table that compares the predicted concentration of these pollutants to their respective health benchmarks. This is because the AERA uses all the pollutant concentrations and respective health benchmarks to evaluate the overall risk from all pollutants combined and risks are calculated based on different health end points. The AERA section of the EAW summarizes those results, which are evaluated for acute toxicity, chronic toxicity, cancer, and non-cancer risks and based on many different ways that a person can be exposed, including inhalation and ingestion of homegrown vegetables, beef, chicken, and eggs. Risk estimates were below both pollutant-specific health benchmarks and combined facility risk guidelines. Table 9 of the EAW lists all the pollutants that went into that risk calculation. CO_2e emissions were not evaluated through air quality dispersion modeling or the AERA because there is not an ambient air quality standard or health benchmark for CO_2e emissions.

Comment 2-13b: The commenter stated concerns that according to the EAW, it seems clear that NM knows they cannot possibly contain all the HAPs or ground pollutants, but are making an effort to do what can be done with new technologies. That said, I have read that one small sweetener packet filled with lead instead of sugar, spread out onto a football field would still be toxic to a child or fetus who might come into contact with a bit of that lead. In other words "zero" tolerance period.

Response 2-13b: Both the permitting rules and risk assessment guidelines upon which we evaluate a project have standards or benchmarks for lead. The health benchmarks for lead used in the AERA comes from EPA and California EPA. The EPA standards for lead are designed to provide health protection for at-risk groups, including children, and protect the aquatic and terrestrial ecosystems. The Project evaluated against these standards and benchmarks, and the results of the analyses were below the standards and health benchmarks.

Comment 2-14: The commenter asked if NM will use torches to cut steel or use a blast furnace, if so, fumes would be a concern for airborne pollutions.

Response: NM will not use a blast furnace. NM will use minimal torching at the Becker site on occasional pieces of scrap (e.g., if scrap is caught in the infeed conveyor or wrapped around the feed rollers, will be torched to remove it) or for maintenance activities. NM will do no production torching and will not have a full or part time torch crew at the Project site. Brazing, soldering, and welding equipment is listed in Appendix A of the permit because these activities are considered insignificant activities under Minn. R. 7007.1300, subpart 3(H)(3). Activities designated under this subpart generally have minimal emissions and regulatory requirements. AERA guidance indicates that emissions from insignificant activities need not be included in the risk screening if the activity emits air toxics that are also emitted by sources already included in the emission inventory, and the contribution from the individual insignificant activity is less than 1% of the total emission inventory for all air toxic emissions. Emissions from maintenance activities described above were not included because they met this criterion.

Comment 2-15: The commenter stated concerns that noise pollution has been documented with metal recycling plants but again, in the EAW, it was determined not to be a problem outside the 1-mile project zone. There are neighboring businesses within that zone and I have to believe they will have a problem with the noise. What was measured was the "fan" for the scrapper. What of the noise of dumping, moving and adjusting steal? What of the diesel truck noise? Equipment machinery noise? The explosions that are inevitable? Put them together, all running at the same time, then what is the noise level?

Response: Studies of the physics of noise have shown that in a setting with multiple sources of noise, the predominant source of noise drives the overall noise profile. Predictive models bear out this phenomenon. In its analysis of noise from the Project, NM predicted the fans serving the combined stack to be the predominant source of noise of the Project. Furthermore, NM analysis relied on actual sound level measurements taken at the Minneapolis facility during typical operation. These measurements were inclusive of all sounds emanating from the Facility over the time of the testing, and expected to include many of the noise sources described by the commenter. In this way, the prediction of noise from the Project considers both the predominant source of noise as well as other contributing noise sources. Overall, the noise analysis conducted by NM showed that the Project was in compliance with state standards.

Comment 2-16: The commenter points out that a sound protection wall was not proposed and wondered if it would be a good idea not just for the noise but also for the wind.

Response: A noise barrier has not been proposed for the Project. The noise study conducted for the Project, and the dust control measures required in the MPCA Permit, show there is no need for a noise barrier.

Comment 2-17: The commenter stated concerns about odors from the Facility. It was mentioned somewhere in the EAW that NM feels odor will not be a concern and will be handled same as they do at their Minneapolis location. In watching a Fox 9 report - May 15, 2017 - the reporter mentioned the odor of the air. So how they handle it in Minneapolis may not be a good way.

Response: NM expects odors from operations at the Project to be minimal based on the operations at the current Minneapolis site. NM will install a state-of-the-art Regenerative Thermal Oxidizer (RTO) to control air emissions including odors that may occur from the shredding process. An RTO is not present at the Minneapolis facility. Odors from the Project to be minimal, and nuisance conditions are not expected.

Comment 2-18: The commenters stated NM will have a 165 foot stack - is this the stack's height? If so, using the coal burning plant as an example, then most certainly the pollutants will reach far beyond the 1-mile project zone and may not even settle back down within the "city" of Becker. Becker coal dust has reached Canada and beyond. Perhaps this is where the HAPS go unnoticed by the people doing the calculating because the stack takes the pollutants up higher where they fall beyond the Becker community and into/onto other neighborhoods.

Response: The height of the stack is 160 feet, and pollution will disperse beyond a 1-mile radius. The air dispersion modeling evaluated impacts for a 100 kilometer by 100 kilometer (approximately 62 mile by 62 mile) grid around the facility at 17,502 discrete receptors within that grid. Generally speaking as distance from the facility increases, the concentration of air pollutants at the ground level from the facility decreases. The MPCA looks at the highest concentration predicted over all 17,502 receptors and compares that value to its respective ambient air quality standard or health benchmark. The concentrations at all receptors are below the applicable federal and state standards and benchmarks.

For reference, the table below summarizes the highest significant impact level concentrations and the distance from the Project site fence line where the concentrations estimated in the model; all other modeled concentrations in the 100 kilometer by 100 kilometer grid surrounding the Project are below these levels.

Pollutant	Averaging Period	Modeled Impact -High First High ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)	Percent of SIL (%)	Percent of NAAQS/MAAQS (%)	Distance and direction from facility fence line (meters/cardinal direction)
PM_{10}	24-hour	2.50512	5	50.1	1.67	0 (on facility fence line) / West
$PM_{2.5}$	24-hour	0.82080	1.2	68.4	2.34	207 / West
	Annual	0.06239	0.3	20.8	0.52	157 / Southeast
NO_2	1-hour	1.51646	7.52	20.2	0.81	108 / West
	Annual	0.03076	1	3.1	0.03	203 / Southeast
SO_2	1-hour	0.00912	7.86	0.12	0.005	108 / West
	3-hour	0.00851	25	0.03	0.0007	109 / West
	24-hour	0.00334	5	0.07	0.0009	202 / Southeast
	Annual	0.00018	1	0.02	0.0002	270 / Southeast
CO	1-hour	1.53381	2000	0.08	0.004	357 / Southeast
	8-hour	0.85049	500	0.17	0.008	108 / West

Comment 2-19: Commenter points out that in the May 15, 2017, Fox 9 report, Sara Kilgriff of the MPCA, said "MPCA has had difficulties with Northern Metal from the get go." This is of concern because it might imply that they are not willing to do what is necessary or do what is right or at the very least, resistant to what is needed. It implies they do not respect the rules and regulations nor their neighbors and their health.

Response: Please see response to Comments 1-2, 2-29, 3-8, and 5-6.

Comment 2-20: The commenter asked how many MPUC violations has NM had over the years in Minneapolis? The state? What were they? How serious were they? Cost to NM?

Response: Based on MPCA records, the Minneapolis facility had the following past violations.

Enforcement Action	**Date**	**Violations**	**Penalty**
Consent Decree	2/28/2017	Causing/contributing to Total Suspended Particulate exceedances; Failure to evaluate and properly permit new processes/equipment prior to making a modification; Not meeting total enclosure control efficiencies; Certifying in permit application that Control; Equipment was a total enclosure; Responding to MPCA with False/Misleading information	$1,026,667 Penalty + interest
			$160,000 Past monitoring Costs
			$10,000 MPCA Court Costs
			$500,000 MPCA Attorney Fees
			$300,000 Ongoing Monitoring Costs
			$600,000 City of Minneapolis for mitigation projects in N/NE Minneapolis
			Total $2,596,667
Letter of Warning	3/16/2010	Not submitting 2007 Annual Compliance Certification and Semiannual deviation Reports	No penalty associated with a warning letter

Stipulation Agreement	8/13/2010	Failed Total Particulate Matter Performance test (2x); Failed Particulate Matter less than 10 microns Performance Test (2x); Failed Mercury performance test (1x)	Total $15,000

Comment 2-21: The commenter asked what monitors are in use around Becker, Big Lake, Clear Lake currently - if any?

Response: The closest ambient air monitors are in St. Cloud at 1321 Michigan Ave SE, St. Michael at 101 Central Ave W, and East Bethel at 2660 Fawn Lake Drive NE.

Comment 2-22: The commenter asked, how can Becker and neighboring communities be given assurances of extensive oversight of the NM plant? Penalties for infractions? Superfund created and enforced? What can we expect for protection from the air pollution that, new technology or not, is still very real?

Response: The MPCA gives extra scrutiny to facilities with a history of non-compliance or for which there is public concern.

Various types of inspections, stack emission testing and monitoring are required to ensure compliance with state and federal rules and the MPCA air emission permit.

The MPCA will periodically conduct unannounced inspections of the Project, including an inspection after the Project begins operating. As part of the inspection, the inspector reviews records that the Permittee is required to keep to ensure that it is meeting the requirements of its permit. These records include, but are not limited to, assessments of control equipment and operating conditions, calculation of emission rates, control equipment performance parameters, composition and monitoring of the feedstock, visible emissions checks, dust mitigation measures, employee training, etc.

The MPCA will also review all annual reports submitted by NM to ensure compliance with state and federal standards and permitting limits.

NM is also required to self-report discovery of non-compliance with operating requirements and permit limits.

The MPCA will respond to all citizen complaints.

NM is also required to have a third party conduct stack emissions testing after startup and periodically thereafter. The MPCA will review and approve both the stack test plan in advance of the testing and the results of subsequent testing.

The MPCA will initiate an enforcement action if it finds the facility to be in violation of the permit. The enforcement action will require that NM correct the violation and it may include a penalty depending on the type of violation.

Comment 2-23: The commenter stated, if this project goes forward, I truly believe the community needs

to be far more engaged (see publication "California Environmental Health Tracking Program"). Personally, I would feel more confident having the community and neighboring communities helping to monitor air/water/soil as the monitoring would be real time, transparent to the communities, equitable - building trust.

Response: Thank you for your observation and the MPCA encourages involvement in your community and neighborhoods.

Comment 2-24: The commenter stated concerns regarding cracks that always show up in cement, how will they keep contaminants from seeping into the groundwater through those cracks?

Response: The concrete floors are expected to be 8-inches to 9-inches thick, seal coated to add durability. If cracks should appear, NM will seal them. The floors will have a 1% slope so water will flow to floor drains and not pool on the floor or seep into cracks. Please see response to Comment 2-4.

Comment 2-25: The commenter asked who performed the noise calculations for the Facility.

Response: The noise analysis included in the EAW includes calculations from Industrial Environmental Consultants and Trinity Consultants.

Comment 2-26: The commenter asked who calculated the stormwater runoff rates, and where does it flow. If the liners are punctured, what happens to the water in the ponds and how are the ponds monitored?

Response: SEH calculated the stormwater runoff for the site. All stormwater from the plant area goes to the stormwater ponds. These ponds hold the volume of the 1 in 100-year 24-hour storm event (6.66 inches). Water flows to the ponds via surface flow on impervious paved surfaces. The stormwater is retained in the ponds and reused for site watering or discharged off site. If a pond liner is punctured, the pond level is lowered and the liner repaired. The pond is monitored both visually by plant employees and via the level controls of the pump station.

Comment 2-27: The commenter stated concerns that with the winds in this area no watering down will hold the fluff from not drying and blowing out of the three-sided containment area. Does the fluff have iron or other metals in it?

Response: The fluff could have a small portion of metallic content, including iron. A conservative calculation of the metallic portion of the fluff, specifically any metals that are HAPs, was estimated from test data from the NM facility in North Minneapolis. Emissions from fluff handling were included in the air quality dispersion modeling and the AERA. Regarding wind concerns, also see response to Comments 2-13a, 2-13b, 3-2, 4-18.

Comment 2-28: The commenter stated concerns that airborne lead will be an issue for area residents, especially the children.

Response: Both the permitting rules and risk assessment guidelines upon which we evaluate a project have standards or benchmarks for lead. The health benchmark for lead used in the AERA comes from EPA and California EPA. The EPA standards for lead designed to provide health protection for at-risk groups, including children, and protect the aquatic and terrestrial ecosystems. The Project was

evaluated against these standards and benchmarks. The results of the analyses are below the standards and benchmarks.

Comment 2-29: The commenter asked how frequently external monitoring is done for the Project.

Response: At any given time, there are tens of thousands of facilities and projects that affect Minnesota's environment; therefore environmental regulations and state environmental programs are set up to ensure compliance based on a combination of monitoring and self-reporting by the Permittee and oversight by the MPCA. The Permittee is responsible for daily monitoring of the facility and the MPCA will provide the following oversight:

The MPCA will periodically conduct unannounced inspections of the Project, including an inspection after the Project begins operating. The MPCA has a risk-based strategy for determining frequency of inspections that is dependent on many factors including the compliance history of the Permittee. The MPCA also conducts inspections as a result of complaints. As part of the inspection, the inspector reviews records that NM is required to keep to ensure that it is meeting the requirements of its permit. These records include, but are not limited to, assessments of control equipment and operating conditions, calculation of emission rates, control equipment performance parameters, composition and monitoring of the feedstock, visible emissions checks, dust mitigation measures, employee training, etc. The MPCA will also review all reports and self-reporting required by the permit. These reports and their frequency are:

- Semiannual deviations reports (submitted in July and January of every year) identify any deviations from requirements of the air permit.
- Annual compliance certifications (January of every year) identify any deviations from permit requirements and certifies compliance with all other requirements of a permit.
- Annual emission inventory reports (April every year) identify what was emitted at the facility on an annual basis.
- Annual report (January of every year) - identify any changes made at the facility that did not require a permit amendment.
- Performance test report (due 45 days after each performance test) contain stack emissions test results.
- A report of any violation or issue that could pose a threat to human health or the environment as soon as it is discovered.

Per standard practice, the MPCA will follow up on all citizen complaints.

NM is required to have a third party conduct stack emissions testing after startup and periodically thereafter (every 1, 3, or 5 years depending on how close the initial test is to the emission limit). This is a reasonable frequency because periodic stack tests provide supplemental assurance that the equipment continues to operate properly and that the emissions limits are met. The permit requires monitoring of other surrogate parameters on a daily basis to ensure that emission limits are met.
The MPCA will initiate an enforcement action if it finds the Project to be in violation of the permit or an emission limit. The enforcement action will require that NM correct the violation, and it may include a penalty depending on the type of violation. Please see response to Comment 2-22.

3. <u>Comments by: Lee Frisvold. Letter received May 15, 2018.</u>

Comment 3-1: The commenter stated concerns about the ability of NM to control runoff from the holding area at the Facility. The commenter asks what safeguards are in place to protect spills at the Facility and long public roadways when collected runoff and other collected liquids are transferred to tanker trucks and shipped out for treatment or disposal.

Response: Please see response to Comment 2-4.

Comment 3-2: The commenter asks if the conveyer belts controlling the waste hazards that become fugitive as they run from building to building on the outside environment, will the cannons and sprayers on the belt cause the dust to travel before it's saturated? With the winds that can blow in Becker daily (over 30 mph and higher at times) what's being contemplated about the high winds due to the big fields from the farmers in the area of the proposed site. Particulates are still moving without visual dust being seen-by the naked eye. If the company is being responsible are there going to be any monitors to verify compliance that measure the air quality for toxins that are known to cause cancer like hexavalent chromium, lead, or others like arsenic and beryllium to the residents of Becker and the employees that work at the facility?

Response: The conveyors that convey material between buildings are covered. Water cannons and sprayers suppress dust and are used on the conveyor that conveys the final ferrous product out of the building. The ferrous product that comes out of the shredder is fairly large (about 4-5 inches in diameter) and has gone through a cleaning process inside of the ferrous building. The air quality dispersion modeling includes a conservative estimate of the amount of dust generated from this pile. The air quality dispersion modeling uses 2012-2016 data from the St. Cloud Regional Airport meteorological surface station that includes prevailing wind data. The air quality dispersion modeling and AERA results show that the emissions from the Project will not cause or contribute to a violation of the ambient air quality standards or exceed health benchmarks.

NM is not required to directly monitor emissions rate out of the stack on a continuous basis or monitor ambient concentration at the property boundary on a continuous basis. Instead, NM monitors "surrogate" parameters on a daily basis and conducts periodic stack testing. It is standard practice for the MPCA to require this type of monitoring as a surrogate for direct measurement of emission rates, and it is a sufficient and well-established way of ensuring that control equipment is functioning properly and thus that a facility is meeting its emissions limits.

For process emissions and material handling emission that occur inside, the permit requires the use of well-understood control technologies, and the permit establishes key operating parameters that are good indications of control equipment performance. In this case, the surrogate parameters are pressure drop across the fabric filters and cyclones and temperature of the thermal oxidizer. These key operating parameters are monitored during the stack test to set an acceptable range for the parameters. These parameters are then maintained within the range established in the stack test and monitored on a daily basis. Monitoring of these parameters combined with requirements for proper operation and maintenance of the control equipment, periodic inspections of the control equipment, monitoring to ensure the building is enclosed during operations, as well as the inspections and monitoring required by the feedstock control plan provide reasonable assurance that the emissions limits are being met at all times. Periodic stack tests, and direct measurement of pollutants by a third party from the stack tested under worst case conditions for emissions generation, provide supplemental assurance that the equipment continues to operate properly and that the emissions limits are met.

For material handling operations occurring outside, there are emissions associated with material handling operations or "fugitive dust." The permit estimates potential emissions from these sources, and these emissions are within what is allowed by air quality regulations for this source. Checking for visible emissions is one way to ensure that fugitive dust is minimized; it does not ensure that there are no dust emissions. The permit requires NM to take other measures to minimize dust based on best practices for minimizing fugitive emissions such as sweeping and watering roads, watering piles, minimizing exposure to wind by storing material in a three-sided shed, and picking up any spilled materials immediately.

Comment 3-3: The commenter asked what is done with runoff from the water cannons.

Response: Please response to Comment 2-4.

Comment 3-4: The commenter stated concerns about the ability of NM to control the fluff and shredded materials housed in the three-sided sheds in high wind conditions. The commenter asked how NM will monitor the site during non-work hours.

Response: The majority of fugitive emissions occur from the handling of material and the disturbance of piles and roadways. Material handling will not occur during non-work hours. There are some emissions from wind erosion of piles, but those emissions are minimized by storing the fluff and shredded clip in the three-sided, covered shed. Ferrous product may be stored outside. Ferrous product is large (about 4-5 inches in diameter), and will be cleaned in the ferrous process to remove entrained dust. The Project site is monitored electronically during non-work hours. The air quality dispersion modeling and the AERA included conservative estimates of emissions based on handling this material and disturbing the piles 24 hours a day.

Comment 3-5: The commenter stated concerns that the proposed infrastructure is not adequate to deal with expected truck traffic during peak delivery times.

Response: NM expects the maximum hourly traffic count to be 40 vehicles per hour, and the maximum daily traffic count to be 549 vehicles per day. NM current layout has enough room for 24 semi-trucks to park in the staging area and has another 40 parking spaces where NM semi-trucks are parked at the end of the day. The semi-truck parking area is also available for "over flow" parking if needed. Therefore, assuming NM has 24 spaces for staging and at any one time 6 to 8 trucks are in the yard dumping or loading, there is capacity for over 30 trucks to be on site at the same time without counting the extra 40 spaces for the semi-trucks that could be used as overflow. NM dispatches its trucks to several different locations, and travel times vary from one hour to nine hours round trip. NM strives to keep its trucks spread out so they don't all arrive at the plant at the same time.

Also, see response to Comment 1-1.

Comment 3-6: The commenter asked if incoming and outgoing trucks are covered.

Response: According to NM the majority of its incoming trucks are covered when taking deliveries with few exceptions such as receiving crushed automobiles. Outgoing trucks are covered unless empty.

Comment 3-7: The commenter stated the term "State of the Art" was stated numerous times at the meeting and in all the talk about this facility what is the action plan for when new technology emerges and the time frame it needs to be implemented by?

Response: For this Project, the facility must install equipment that meets air quality regulations. If new technology becomes available, NM is not required to install new equipment unless there is a change in regulations that would require NM to update its equipment.

Comment 3-8: Commenter asked what type of observation/monitoring is going to take place to verify everything NM is going to comply with what they say they are going to do, other than the records they keep as they have a pretty bad track record.

Response: In addition to the records NM is required to keep, the MPCA will periodically conduct unannounced inspections of the Project, including an inspection after the Project begins operating. The MPCA has a risk-based strategy for determining frequency of inspections that is dependent on many factors including the compliance history of the Project. The MPCA also conducts inspections as a result of complaints. As part of the inspection, the inspector reviews records that NM is required to keep to ensure that it is meeting the requirements of its permit. These records include, but are not limited to, assessments of control equipment and operating conditions, calculation of emission rates, control equipment performance parameters, composition and monitoring of the feedstock, visible emissions checks, dust mitigation measures, employee training, etc.

The MPCA will also review all reports and self-reporting required by the permit. These reports and their frequency are:

- Semiannual deviations reports (submitted in July and January of every year) identify any deviations from requirements of the air permit.
- Annual compliance certifications (January of every year) identify any deviations from permit requirements and certifies compliance with all other requirements of a permit.
- Annual emission inventory reports (April every year) identify what was emitted at the facility on an annual basis.
- Annual report (January of every year) identifies any changes made at the facility that did not require a permit amendment.
- Performance test report (due 45 days after each performance test) contains stack emissions test results.
- A Report of any violation or issue that could pose a threat to human health or the environment as soon as it is discovered.

The MPCA will follow-up on all citizen complaints.

NM is required to have a third party conduct stack emissions testing after startup and periodically thereafter (every 1, 3, or 5 years depending on how close NM initial test is to the emission limit). The test is conducted under conditions that generate the maximum amount of emissions. This is a reasonable frequency because periodic stack tests provide supplemental assurance that the equipment continues to operate properly and that the emissions limits are met. The permit requires monitoring of other surrogate parameters on a daily basis to ensure that emission limits are met.

NM will receive an enforcement action if it is found to be in violation of the permit or an emissions limit. The enforcement action will require that NM correct the violation and it may include a penalty depending on the type of violation.

Comment 3-9: Commenter stated concerns regarding what will happen to the housing values in Becker and the impact to the public image of the area for potential residents as a result of the Project.

Response: Although this is an important local issue, it is not an environmental impact and is beyond the scope of the EAW.

Comment 3-10: The commenter stated concerns about the impact the Project will have on the tax base.

Response: Although this is an important local issue, it is not an environmental impact and is beyond the scope of the EAW.

4. <u>Comments by: Sarah Petrodke. Letter dated May 16, 2018.</u>

Comment 4-1: The commenter stated concerns about how the MPCA will deal with future changes to EPA emissions limits associated with this project.

Response: Please response to Comment 2-1.

Comment 4-2: The commenter asked what was considered when looking at potential cumulative impacts associated with the Facility.

Response: Please response to Comment 2-2.

Comment 4-3: The commenters stated concerns that the strong prevailing winds were not considered.

Response: Please response to Comments 2-3 and 3-2.

Comment 4-4: The commenter stated concerns that given the high hydro-geologic sensitivity of the soils in the area of the Facility, local aquafers and shallow wells in the area could be impacted.

Response: Please see response to Comments 2-4 and 2.8

Comment 4-5: The commenter stated concerns that given the high hydro-geologic sensitivity of the soils in the area of the Facility, local aquafers and shallow wells in the area could be impacted.

Response: Please see response to Comments, 2-5 and 2-8.

Comment 4-6: The commenter stated concerns that the Facility is too close to the Wellhead Protection Area.

Response: Please see response to Comment 2-6.

Comment 4-7: The commenter stated concerns that the Wellhead Protection Plan should be completed before the project moves forward.

Response: Please see response to Comment 2-7.

Comment 4-8: The commenter points out that Sherburne County is dominated by very high pollution sensitivity due to the presence of sand and gravel over much of the surface of the county.

Response: Please see response to Comment 2-8.

Comment 4-9: The commenter stated concerns that the Mississippi River and Elk River near the Facility are already impaired and additional pollutants blown from the Facility will add to an already existing problem. This would hold true for the schools, businesses, nursing homes and agriculture in the area around the Facility.

Response: Please see response to Comment 2-9.

Comment 4-10: The commenter stated concerns that the Facility might be in a flood plain.

Response: Please see response to Comment 2-10.

Comment 4-11: The commenter stated concerns regarding the watering of paved roads on site. How does NM contain and treat the wet dust runoff from the paved roads?

Response: Please see response to Comments 2-11 and 3-1.

Comment 4-12: The commenter asked if the Vonco Landfill has enough capacity to handle the waste from the NM Facility. If the Vonco Landfill is not available, what will NM do with the waste?

Response: Please see response to Comment 2-12.

Comment 4-13: The commenter stated concerns that the EAW did not list impact levels for VOCs, PM, or CO_2 in Table 8.

Response: Please see response to Comment 2-13a and 2-13b.

Comment 4-14: The commenter asked if the HAP from cutting torches were measured.

Response: Please see response to Comment 2-14.

Comment 4-15: The commenter stated concerns that measuring the noise of the exhaust fan is an accurate measurement of the overall noise expected from the Facility.

Response: Please see response to Comment 2-15.

Comment 4-16: The commenter asked if a noise barrier has been considered for the Facility.

Response: Please see response to Comment 2-16.

Comment 4-17: The commenter stated concerns about odors from the Facility.

Response: NM expects odors from the operations to be minimal based on the operations at the current Minneapolis site. NM will install a Regenerative Thermal Oxidizer at the Project to control air emissions,

including odors that may occur from the shredding process. NM expects odors from the Project to be minimal, and nuisance conditions are not expected.

Comment 4-18: The commenter stated concerns regarding stack release of pollutants in the steam and cannot understand how the contractor hired to do the safe limit measurements came up with approximately 1 mile as a radius around the project when we all know the stack will get the pollutants up into the atmosphere and the wind will carry it much further than 1 mile from their site. The less dense pollutants will be spread out but LEAD IS LEAD. (See what the MDH says about lead.)

Response: The impacts from the Project were evaluated on 100 kilometer by 100 kilometer (approximately 62 mile by 62 mile) grid around the proposed Facility. The air dispersion modeling and the air emissions risk analysis use the worst-case concentration predicted over the entire 100 kilometer by 100 kilometer grid.

Both the permitting rules and risk assessment guidelines upon which we evaluate a project have standards or benchmarks for lead. The health benchmark for lead used in the AERA comes from the EPA and California EPA. The MDH is responsible under Minnesota rules for developing health benchmarks intended for the use by public agencies or private entities as part of an evaluation of risks to human health from chemicals in ambient air. For pollutants for which MDH has not developed a value, the MPCA and MDH have agreed upon a hierarchy of health benchmark information sources. The MDH has not developed a health benchmark for lead, so the AERA uses the hierarchy agreed upon with MDH. Additionally, the EPA ambient standards for lead are designed to provide health protection for at-risk groups, including children, and protect the aquatic and terrestrial ecosystems. The Project was evaluated against these standards and benchmarks. The results of the analyses were below the standards and benchmarks.

Comment 4-19: The commenter stated concerns regarding NM's past operating history and the ability of the city of Becker to deal with NM.

Response: Please see response to Comments 2-22, 1-2, 5-6, 2-19, and 3-8.

Comment 4-20: The commenter stated concerns regarding NM's past violations and the health aspects of those violations and the attitude towards their new neighbors.

Response: Please see response to Comment 4-10.

Comment 4-21: The commenter pointed out that NM will mostly be monitoring themselves.

Response: Please see response to Comments 2-19 and 5-6.

Comment 4-22: The commenter asked what assurances the community has regarding the oversight of the Facility.

Response: Please see response to Comments 2-29, 3-8, and 5-6.

Comment 4-23: The commenter stated concerns that the Facility needs community oversight.

Response: Thank you for your observation and the MPCA encourages your involvement in your community and neighborhoods. Please see response to Comment 2-22.

5. **Comments by: Scott Gifford. Letter received May 15, 2018.**

Comment 5-1: The commenter asked if the geologic and water table sensitivity of the Becker area was considered.

Response: Please see response to Comment 2-4.

Comment 5-2: The commenter asked if wind effects and pollution from multiple contributors were considered.

Response: Please see response to Comments 2-3 and 3-2.

Comment 5-3: The commenter stated concerns if area water sources such as the Mississippi River and Elk River were taken into consideration as drinking water sources, impacts to flooding and recipients of surface water runoff from the Facility.

Response: Please see response to Comment 2-9.

Comment 5-4: The commenter asked how gaseous emissions from the site are being measured and controlled.

Response: The main types and sources of gaseous emission from the Project include: volatile organic compounds (VOCs) from the volatilization of any residual paint or organic compounds on the scrap metal due to the heat generated by the shredding process. These emissions are controlled by a thermal oxidizer, a highly effective control device that breaks down the VOCs into carbon dioxide and water. Emissions of VOCs from this process will be tested within 180 days after startup by a third party using an EPA-approved test method for VOCs. NM is not required to directly monitor emissions rate out of the stack on a continuous basis from the Project. Instead, it monitors "surrogate" parameters, such as the temperature of the thermal oxidizer, on a daily basis. It is standard practice for the MPCA to require this type of monitoring as a surrogate for direct measurement of emission rates. This is a well-established way of ensuring that control equipment is functioning properly and the Project is meeting its emissions limits.

The Project generates small amounts of gaseous emissions (VOCs, sulfur dioxide, carbon monoxide, nitrogen oxides, and greenhouse gas emissions) from the combustion of natural gas in small combustion units – space heaters, a boiler, evaporators and the thermal oxidizer. The MPCA has a good understanding of the potential emissions from the combustion of natural gas in these types of units and therefore can estimate worst-case gaseous emissions from these units. The worst-case gaseous emissions from these are so small that they do not trigger the need to be controlled or tested under the air quality regulations.

Comment 5-5: The commenter asked how noise is measured and controlled at the Facility.

Response: The Project consists of an enclosed metal shredder, an enclosed metal recovery plant, an end of life vehicle process, and a Community Recycling Center (CRC). Studies of the physics of noise

have shown that in a setting with multiple sources of noise, the predominant source of noise drives the overall noise profile. Predictive models bear out this phenomenon. NM in its analysis of noise from the Project predicted the fans serving the combined stack to be the predominant source of noise of the Project. NM analysis relied on actual sound level measurements taken at the Minneapolis facility during typical operation. These measurements were inclusive of all sounds emanating from the Minneapolis facility over the time of the testing and expected to include many of the noise sources described by the commenter. In this way, the prediction of noise from the Project considers both the predominant source of noise as well as other contributing noise sources such as unloading and loading of material at the Project Site.

The nearest sensitive receptors to the Project Site are residences located approximately 2,480 feet northeast of the site. The preliminary noise assessment predicted the noise levels at the nearest sensitive receptors from the proposed site to be approximately 59 dB. The predicted results are below the Minnesota's daytime noise standard of 65 dB.

Comment 5-6: The commenter asked what reporting tools are in place? As in, if NM violates some sort of regulation, how is the state informed, and how can I and my family be kept abreast.

Response: The MPCA will review all reports and self-reporting required by the permit. These reports and their frequency are:

- Semiannual deviations reports (submitted in July and January of every year) identify any deviations from requirements of the air permit.
- Annual compliance certifications (January of every year) identify any deviations from permit requirements and certifies compliance with all other requirements of a permit.
- Annual emission inventory reports (April every year) identify what was emitted at the facility on an annual basis.
- Annual report (January of every year) identifies any changes made at the facility that did not require a permit amendment.
- Performance test report (due 45 days after each performance test) contains stack emissions test results.
- A report of any violation or issue that could pose a threat to human health or the environment as soon as it is discovered.

The MPCA also conducts its own routine inspections, or inspections as a result of complaints. If violations are identified in the reports submitted or during an inspection, an enforcement action may be issued.

By law, information regarding any MPCA investigation is confidential until the matter is resolved. Any closed enforcement action and the corrective action that NM took to come back into compliance, competed investigation data, facility data, reports, or inspection data is all public information and is available upon request through the MPCA records management. Information is available through our *"What's in My Neighborhood"* tool (https://www.pca.state.mn.us/data/whats-my-neighborhood). This online application allows users to access a wide variety of environmental information about the user's community. For sites with air permits users can view:

1) A list of all on-site inspections conducted by the MPCA and the dates of those inspections
2) Quality assured/quality checked actual emissions by year from the facility
3) A list of any enforcement activities, including the case type, net penalty, violation discovery date,

and case closure date.

Comment 5-7: The commenter stated concerns about NM being trusted to manage and monitor itself.

Response: Please see response to Comments 5-6, 1-2, 1-3, 2-20, 3-8 and 2-22.

Comment 5-8: Commenter stated concerns regarding NM's track record for compliance at its northeast Minneapolis location and the need for additional oversight and monitoring.

Response: Please response to Comment 5-7.

6. <u>Comments by: Anonymous. Letter Received May 9, 2018.</u>

Comment 6-1:
The commenter request that the MPCA reassure the community that there will be no violations of the National Ambient Air Quality Standards by requiring continuous field monitoring to confirm that these standards are not being violated by a third party (Northern Metals Recycling or someone affiliated with them). The commenter states that if the standards are being violated, the MPCA should revoke Northern Metals' permit until standards can be met and revoke their permit if the company continues to be a chronic violator.

Response: Please see response to Comment 1-3.

Comment 6-2:
The commenter includes Table 9 from the EAW and requests that the MPCA conduct an analysis through modeling or additional review for these pollutants prior to issuance of the permit.

Response:
The pollutants listed in Table 9 of the EAW were evaluated in the AERA. These pollutants are not compared to a standard like the "criteria pollutants" in table 8 of the EAW because the AERA calculates risk for all pollutants combined for different health end points. The analysis is based on the total facility risk from all pollutants combined. As summarized in question 16a. of the EAW, based on the results of this analysis the MPCA does not expect the project to have adverse effects on human health and the environment.

Please see response to Comment 2-13a.

Comment 6-3: The commenter believes that the proposed location is too close to the community and would like to see that this company is not in City limits, close to schools and daycares.

Response: The MPCA does not have jurisdiction over zoning. The MPCA evaluates a proposed project based air quality regulations and if a proposed facility meets the regulations the MPCA cannot deny the issuance of an air quality permit to the facility based on its location. However, the MPCA evaluated the effects of worst case air pollution on the community of Becker including the schools and daycares through air quality dispersion modeling and an AERA. The AERA process is used to evaluate and quantify

the potential human health risks due to the air pollution emitted by a proposed project. Based on the results of the AERA the MPCA does not expect the project to have adverse effects on human health and the environment.

Comment 6-4: The commenter requests that the MPCA looks at the accumulated effects of pollution from Sherco, Highway 10 traffic and this proposed facility.

MPCA Response: Please see response to comment 2-2.

7. Comments by: EPA Region V. Letter Received May 18, 2018.

Comment 7-1: EPA comments that the control efficiency conditions are the method by which Northern Metals will avoid major source applicability for both New Source Review and Title V, but the permit does not specify an initial pressure drop range prior to initial performance testing. EPA asks if the MPCA has considered using updated manufacturer's guarantee information or specifications to include a specific range of pressure drop across the baghouse.

Response 7-1: The MPCA has updated the permit with pressure drop ranges for the fabric filters based on information from the fabric filter manufacturers. The ranges may be reset pursuant to Minn. R. 7017.2025, subp. 3 during the initial performance test for PM, PM10 and PM2.5 required by the air permit.

Comment 7-2: EPA states that to ensure continuous compliance with synthetic minor limitations for PM, PM10, and PM2.5 bag leak detection systems could be used in conjunction with monitoring pressure drop across the baghouse. EPA asks if the facility considered using bag leak detection systems to ensure continuous compliance with synthetic minor limitations.

Response: It is the MPCA's understanding that the facility did not consider bag leak detectors in the original design, but the MPCA had a conversation with Northern Metals representatives about the technology. The facility does not want to pursue Triboelectric sensors given that they will have two fabric filters in series for the processes with the highest potential particulate emissions and some of the fabric filters they are proposing to install are indexing filters not baghouses. Rather than cleaning the filters at a given pressure drop set point, the device automatically indexes to new filters. The manufacturer of this type of fabric filter was not aware of this technology being used on this type of filter. The facility believes that based on the redundancy of the fabric filters and the type of fabric filters this technology was not warranted for their facility.