STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0693-AOP-R14 AFIN: 66-00274

1. PERMITTING AUTHORITY:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Gerdau MacSteel Inc.
5225 Planters Road
Fort Smith, Arkansas 72916

3. PERMIT WRITER:

Elliott Marshall

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Iron and Steel Mills and Ferroalloy Manufacturing
NAICS Code: 331110

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

| Date of Application | Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment) | Short Description of Any Changes That Would Be Considered New or Modified Emissions |
|---|---|---|
| 2/16/2022 | Modification | - Add a 162 hp emergency generator (SN-39).<br>-Increase throughput to 158,240 tpy slag at SN-22 and SN-38.<br>-Correct typo at SN-22 |
| 3/11/2022 | Modification | -Remove cyclone and baghouse from SN-10 to resolve clogging issues |

6. REVIEWER'S NOTES:

This permitting action is necessary to:

1. Add a 162 hp, rich burn, natural gas fired spark ignition emergency generator (SN-39).
2. Increase the material throughput at SN-22 and SN-38 from 93,568 to 158,240 tons of slag per year to account for the addition of mill scale and used refractory materials processed at these sources.
3. Remove cyclone and baghouse control devices from the automated deburring line (SN-10) to resolve clogging issues with the control equipment.

Permitted emission rates are increasing/decreasing by 2.4 tpy PM, 2.2 tpy $PM_{10}$, 0.9 tpy $PM_{2.5}$, 0.1 tpy $SO_2$/VOC, 1.1 tpy CO, 0.7 tpy $NO_x$, 0.01 tpy Lead and -0.24 tpy HAPs. HAPs are decreasing because the previous emission rate at SN-22 (0.31 tpy HAPs) was a typographical error and should have been 0.031 tpy.

The powerscreen unit (SN-38) is the mobile unit used as a backup option to process slag when the main plant is down for maintenance. The permitted emission rates for operation of SN-38 are based on the best potential operation of the unit and are unchanged as a result of this revision.

With this revision, Methylene Chloride from SN-39 has been included on the fee sheet.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

This permitting action serves to correct the following compliance issues:

1. Permit the unpermitted emergency generator, SN-39
2. Increase throughput from 93,568 to 158,240 tpy to account for materials already being processed at SN-22/38.
3. Permit SN-10 with no control device. Previously SN-10 would go offline because the control devices would get clogged with large metal debris. Operation of SN-10 without control devices is prohibited per Plantwide Condition #5.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N

b) Is the facility categorized as a major source for PSD? Y

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

Emission rate increases are below PSD significant emission rates.

- The increased throughput at SN-22/38 has no effect on upstream sources.
- The removal of control equipment from SN-10 resulted in small PM/$PM_{10}$/$PM_{2.5}$ emission increases, below PSD SER. Additionally, the removal of the cyclone and baghouse from SN-10 did not affect any previous PSD determinations for this facility. SN-10 has not been considered an "affected source" in any PSD modification, nor have the controlled emissions from SN-10 ever been relied on for PSD emissions netting.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

| Source | Pollutant | Regulation (NSPS, NESHAP or PSD) |
|---|---|---|
| 01 and 12 | PM | NSPS AAa |
| 01 | HAPs | YYYYY |
| 33, 34, 35, 36 and 39 | HAPs | ZZZZ |
| 30 | Natural gas usage record only | Dc |
| 01 and 12 | PM | CAM |

10. UNCONSTRUCTED SOURCES:

| Unconstructed Source | Permit Approval Date | Extension Requested Date | Extension Approval Date | If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit |
|---|---|---|---|---|
| None | | | | |

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N
(Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Regulation 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? N
If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

| Source | Inapplicable Regulation | Reason |
|---|---|---|
| N/A | | |

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source

level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

| Source | Pollutant Controlled | Cite Exemption or CAM Plan Monitoring and Frequency |
|---|---|---|
| 01 and 02 | PM | daily |

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

HAP emission rates decreased as a result of this permitting action.

c) $H_2S$ Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the $H_2S$ Standards Y
If exempt, explain: No $H_2S$ Emissions

15. CALCULATIONS:

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|---|---|---|---|---|---|
| Natural Gas Fired Sources | Established BACT limits or AP-42 emission factors | Varied | None | | |
| 22 and 38 | AP-42 | Equation | Water sprays | | |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|---|---|---|---|---|---|
| 23, 24 | Actual VOC usage | None | None | | |
| 37 | AP-42 for Roadway | Equation | Dust Suppressant | | |
| 10 | Trial at Gerdau JXN Michigan Mill | Uncontrolled PM Emission Rate: 0.103 lb PM/ton<br><br>Laser Diffraction of Collectate: 4.06% $PM_{2.5}$ 11.40% of PM | None | | Calcs Based on 688,000 tpy Steel production limit |
| 13 | Established BACT limits | Varied | None | | |
| 21 | AP-42 for metal scarfing | 0.1 lb/ton | Baghouse | | |
| 15, 25, 27 | Process study at facility | 0.0532 lb/ton | None | | |
| 14, 29 | Testing | 0.015 lb/ton | None | | |
| 31 | Manufacture's emission rate | 0.01 gr/dscf | Baghouse | | |
| 33, 34, 35, 36 | AP-42 for Diesel Rice | Varied | None | | |
| 39 | AP-42 Table 3.2-3, Uncontrolled 4-stroke rich-burn engines | <u>lb/MMBtu</u><br>$PM_{10}$: 9.5E-03<br>$PM_{2.5}$: 9.5E-03<br>PM: 1.9E-02<br>$SO_2$: 5.88E-04<br>$NO_x$: 2.21<br>CO: 3.72<br>VOC: 2.96E-02<br>Lead: 0.0005 | None | | |

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

| SN | Pollutants | Test Method | Test Interval | Justification |
|---|---|---|---|---|
| 01 and 12 | PM<br>$PM_{10}$<br>condensable and alternative filterable<br>VOC<br>lead | 5D<br>202 and 201 or 201A<br><br>25A<br>EAF dust sample or Method 12 | 6 months | Show Compliance with limits. |

17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

| SN | Parameter or Pollutant to be Monitored | Method (CEM, Pressure Gauge, etc.) | Frequency | Report (Y/N) |
|---|---|---|---|---|
| 01 and 12 | AAa monitoring | Air flow ect | Continuous | Y |
| 01 and 12 | CO $NO_x$ and $SO_2$ | CEM | Continuous | Y |

18. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|---|---|---|---|---|
| 01/12 | Production | 688,000 tons of steel | Monthly | Y |
| 01/12 | Turnings per heat of steel | 15,000 lbs or turnings | monthly | Y |
| 01/12 | AAa Records | Vary | As needed | Y |
| 01/12 | YYYYY Records | Vary | As needed | Y |
| 22 and 38 | Slag Processed | 158,240 tons | Monthly | Y |
| 23 | VOC | 15.8 tpy | Monthly | Y |
| 24 | VOC and HAP | 7.5lb/hr 3.8 tpy VOC<br>6.3 lb/hr 3.2 tpy HAP | Daily/Monthly | Y |
| 30 | Dc fuel record | None | Monthly | N |

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|---|---|---|---|---|
| 33, 34, 35, 36 | Hours | 500 | Monthly | Y |
| 33, 34, 35, 36 | ZZZZ Records | None | Monthly | Y |
| 39 | Hours | 500 | Monthly | Y |
| 39 | ZZZZ Records | None | Monthly | Y |
| 1 and 12 | CAM Records | None | As AAa Records | Y |

19. OPACITY:

| SN | Opacity | Justification for limit | Compliance Mechanism |
|---|---|---|---|
| 01/12 | 3/6/10% | NSPS and Department Guidance | COMs NSPS Compliance |
| 02, 03, 04, 05, 11, 21, 26, 30, 39 | 5% | Department Guidance for Natural Gas Combustion | Natural Gas Combustion only |
| 10 | 5% | Department Guidance | Weekly Observation |
| 33, 34, 35, 36 | 20% | Diesel Engines | |
| 13 | 20% | | |
| 22 and 38 | 20% | Department Guidance | Water Spray operation |
| 14 and 29 | 20% | | |
| 31 | 5% | Department Guidance for a Baghouse source | Weekly observation |

20. DELETED CONDITIONS:

| Former SC | Justification for removal |
|---|---|
| None | |

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

| Source Name | Group A Category | Emissions (tpy) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | $PM/PM_{10}$ | $SO_2$ | VOC | CO | $NO_x$ | HAPs | |
| | | | | | | | Single | Total |
| Kerosene Tank (500 gal) | A-3 | | | 0.0004 | | | | |
| Used (waste) Oil Tank (1,500 gal) | A-3 | | | 0.0004 | | | | |
| 2 Used (waste) Oil Tanks | A-3 | | | 0.0012 | | | | |

| Source Name | Group A Category | Emissions (tpy) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | $PM/PM_{10}$ | $SO_2$ | VOC | CO | $NO_x$ | HAPs | |
| | | | | | | | Single | Total |
| (5,000 gal each) | | | | | | | | |
| Diesel Fuel Tank (10,000 gal) | A-3 | | | 0.0004 | | | | |
| Diesel Fuel Tank (2,000 gal) | A-3 | | | 0.001 | | | | |
| Diesel Fuel Tank (500 gal) | A-3 | | | 0.0004 | | | | |
| 2 Petroleum Resin Tanks (5,000 gal each) | A-3 | | | 0.00001 | | | | |
| Petroleum Resin Tank (1,500 gal) | A-3 | | | 0.000005 | | | | |
| Cationic Polymer Tank (2,200 gal) | A-3 | | | 0.000005 | | | | |
| Total | A-3 | | | 0.004 | | | | |
| Lab Etch Room | A-5 | | | 0.075 | | | | |
| SPARCS Cutting Enclosure | A-7 | | | 0.5 | | | | |
| Outdoor Slicing/Cutting | A-7 | | | 0.2 | | | | |
| Total | A-7 | | | 0.7 | | | | |
| Scale Water Cooling Tower | A-13 | | | 0.02 | | | | |
| Clean Water Cooling Tower #1 | A-13 | | | 0.03 | | | | |
| Clean Water Cooling Tower #2 | A-13 | | | 0.04 | | | | |
| Caster Water Cooling Tower | A-13 | | | 0.008 | | | | |
| EMS Water Cooling Tower | A-13 | | | 0.00001 | | | | |

| Source Name | Group A Category | Emissions (tpy) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | $PM/PM_{10}$ | $SO_2$ | VOC | CO | $NO_x$ | HAPs | |
| | | | | | | | Single | Total |
| Rolling Mill Operations | A-13 | | | 0.4 | | | | |
| Hot Saw for Rolled Product | A-13 | | | 0.003 | | | | |
| Ladle Refractory Reline | A-13 | | | 0.03 | | | | |
| Tundish Refractory Reline | A-13 | | | 0.03 | | | | |
| Scrap Handling | A-13 | | | 0.06 | | | | |
| Raw Material Handling | A-13 | | | 0.002 | | | | |
| Parts Washers | A-13 | | | | 0.7 | | | |
| Scale Pits | A-13 | | | | | | | |
| Settling Ponds | A-13 | | | | | | | |
| Total | A-13 | | | 0.6 | 0.7 | | | |

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

| Permit # |
|---|
| 0693-AOP-R13 |

# APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

# Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Gerdau MacSteel Inc.
Permit Number: 0693-AOP-R14
AFIN: 66-00274

| | | | |
|---|---|---|---|
| $/ton factor | 25.13 | Annual Chargeable Emissions (tpy) | 928.20001 |
| Permit Type | Modification | Permit Fee $ | 1000 |

| | |
|---|---|
| Minor Modification Fee $ | 500 |
| Minimum Modification Fee $ | 1000 |
| Renewal with Minor Modification $ | 500 |
| Check if Facility Holds an Active Minor Source or Minor Source General Permit | ☐ |
| If Hold Active Permit, Amt of Last Annual Air Permit Invoice $ | 0 |
| Total Permit Fee Chargeable Emissions (tpy) | 3.100012 |
| Initial Title V Permit Fee Chargeable Emissions (tpy) | |

*HAPs not included in VOC or PM:* *Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride*

*Air Contaminants:* *All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)*

| Pollutant (tpy) | Check if Chargeable Emission | Old Permit | New Permit | Change in Emissions | Permit Fee Chargeable Emissions | Annual Chargeable Emissions |
|---|---|---|---|---|---|---|
| PM | | 149.9 | 152.3 | 2.4 | | |
| $PM_{10}$ | | 162.5 | 164.7 | 2.2 | 2.2 | 164.7 |
| $PM_{2.5}$ | | 152.3 | 153.2 | 0.9 | | |
| $SO_2$ | | 340 | 340.1 | 0.1 | 0.1 | 340.1 |
| VOC | | 88.4 | 88.5 | 0.1 | 0.1 | 88.5 |
| CO | | 1699.6 | 1700.7 | 1.1 | | |
| $NO_X$ | | 334.2 | 334.9 | 0.7 | 0.7 | 334.9 |
| Lead | ☐ | 1.02 | 1.03 | 0.01 | | |

| Pollutant (tpy) | Check if Chargeable Emission | Old Permit | New Permit | Change in Emissions | Permit Fee Chargeable Emissions | Annual Chargeable Emissions |
|---|---|---|---|---|---|---|
| HAPs | ☐ | 10.41 | 10.17 | -0.24 | | |
| Methylene Chloride | ☑ | 0 | 1.20E-05 | 0.000012 | 0.000012 | 0.000012 |