



State of Ohio Environmental Protection Agency

Street Address:

Lazarus Gov. Center
122 S. Front Street
Columbus, OH 43215

TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

RE: **FINAL PERMIT TO INSTALL MODIFICATION CERTIFIED MAIL**
FULTON COUNTY
Application No: 03-09212

	TOXIC REVIEW
Y	PSD
	SYNTHETIC MINOR
Y	CEMS
	MACT
Ee	NSPS
	NESHAPS
	NETTING
	MAJOR NON-ATTAINMENT
Y	MODELING SUBMITTED
	GASOLINE DISPENSING FACILITY

DATE: 1/9/2003

North Star BHP Steel, LTD
Satara Taylor
6767 County Rd. 9
Delta, OH 43515

Enclosed Please find a modification to the Ohio EPA Permit To Install referenced above which will modify the terms and conditions.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

cc: USEPA

NWDO



FINAL ADMINISTRATIVE MODIFICATION OF PERMIT TO INSTALL 03-09212

Application Number: **03-09212**

APS Premise Number: **0326000073**

Permit Fee: **\$1100**

Name of Facility: **North Star BHP Steel, LTD**

Person to Contact: **Satara Taylor**

Address: **6767 County Rd. 9
Delta, OH 43515**

Location of proposed air contaminant source(s) [emissions unit(s)]:
**6767 County Road 9
Delta, OHIO**

Description of modification:

Modification of PTI 03-09212 to change OC emission limits for natural gas fired equipment.

The above named entity is hereby granted a modification to the permit to install described above pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this modification does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans included in the application, the above described source(s) of pollutants will be granted the necessary operating permits.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

North Star BHP Steel, LTD

Facility ID: **0326000073**

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GENERAL PERMIT CONDITIONS

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCES

The proposed source(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of Ohio Administrative Code (OAC) Rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities prove to inadequate or cannot meet applicable standards.

PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

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PUBLIC DISCLOSURE

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC Rule 3745-49-03.

APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

BEST AVAILABLE TECHNOLOGY

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

PERMIT TO OPERATE APPLICATION

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be filed no later than thirty days after commencement of operation.

SOURCE OPERATION AFTER COMPLETION OF CONSTRUCTION

This facility is permitted to operate each source described by this permit to install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws and regulations.

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AIR EMISSION SUMMARY

The air contaminant sources listed below comprise the Permit to Install for **North Star Steel, LTD.** located in Fulton County. The sources listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

Ohio EPA	<u>Source</u> <u>Number</u>	<u>Source Identification</u> <u>Description</u>	<u>BAT</u> <u>Determination</u>	<u>Applicable Federal &</u> <u>OAC Rules</u>	<u>Permit Allowable Mass</u> <u>Emissions and/or</u> <u>Control/Usage</u> <u>Requirements</u>
P901	315 TPH EAF (twin shell, twin shaft electric arc furnace)	Use of baghouse, use of post combustion chamber, and compliance with the terms and conditions of this permit.		3745-31-05 3745-17-11 3745-17-07 3745-18-06 3745-23-06 3745-21-08 40 CFR Part 60 Subpart AAa	Opacity restrictions and metals emissions See ASTCs Fugitive PM 8.8 lbs/hr and 31.5 TPY Fugitive PM ₁₀ 6.7 lbs/hr and 23.9 TPY SO ₂ 31.5 lbs/hr & 112.5 TPY NO _x 170.1 lbs/hr & 607.5 TPY CO 2488.5 lbs/hr & 8887.5 TPY OC 110.3 lbs/ hr & 393.8 TPY Group Limits from P901, P902, and P903 combined: 0.0018 grain PM/dscf* (15.6 lbs/hr & 68.2 TPY SO ₂ 78.8 lbs/hr* & 281.3 TPY**

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
P901 cont'd				NO _x 179.6 lbs/ hr* & 641.3 TPY** CO 2646.0 lbs/hr* & 9450.0 TPY** Opacity restrictions See ASTCs
P902	268 TPH LMF Station #1	Use of baghouse and compliance with the terms and conditions of this permit	and3745-31-05 and3745-17-11 3745-17-07 3745-18-06 3745-23-06 3745-21-08	Fugitive PM 1.6 lb/hr and 6.8 TPY Fugitive PM ₁₀ 1.2 lb/hr and 5.1 TPY SO ₂ 40.2 lbs/hr & 168.8 TPY NO _x 8.0 lbs/hr & 33.8 TPY CO 133.9 lbs/hr & 562.5 TPY Group Limits from P901, P902, and P903 combined: 0.0018 grain PM/dscf* (15.6 lbs/hr & 68.2 TPY SO ₂ 78.8 lbs/hr* & 281.3 TPY** NO _x 179.6 lbs/ hr* & 641.3 TPY** CO 2646.0 lbs/hr* &

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
P902 Cont'd				9450.0 TPY** Opacity restrictions See ASTCs Fugitive PM 1.6 lb/hr and 6.8 TPY Fugitive PM ₁₀ 1.2 lb/hr and 5.1 TPY
P903	268 TPY LMF Station #2	Use of baghouse and compliance with the terms and conditions of this permit	3745-31-05 3745-17-11 3745-17-07 3745-18-06 3745-23-06 3745-21-08	SO ₂ 40.2 lbs/hr & 168.8 TPY NO _x 8.0 lbs/hr & 33.8 TPY CO 133.9 lbs/hr & 562.5 TPY Group Limits from P901, P902, and P903 combined: 0.0018 grain PM/dscf* (15.6 lbs/hr & 68.2 TPY SO ₂ 78.8 lbs/hr* & 281.3 TPY** NO _x 179.6 lbs/hr* & 641.3 TPY** CO 2646.0 lbs/hr* & 9450.0 TPY** PM 1.13 lbs/hr SO ₂ 0.068 lb/hr NO _x 22.6 lbs/hr

Ohio EPA Source Number	Source Identification Number	BAT Determination	Applicable Federal & OAC Rules	Permit Allowable Mass Emissions and/or Control/Usage Requirements
P903 Cont'd				CO 7.91 lbs/hr
	Tunnel furnace #1	Use of low NO _x burners and compliance with the terms and conditions of this permit	3745-31-05 3745-17-11	PM 0.60 lb/hr SO ₂ 0.036 lb/hr NO _x 9.0 lbs/hr CO 4.20 lbs/hr
P001			3745-17-07 3745-18-06 3745-23-06	
	Tunnel furnace #2	Use of low NO _x burners and compliance with terms and conditions of this permit	3745-21-08 3745-31-05 3745-17-11	PM 2.20 lbs/hr
P002			3745-17-07 3745-18-06 3745-23-06	PM 0.06 lb/hr SO ₂ 0.012 lb/hr NO _x 2.0 lbs/hr CO 0.40 lb/hr
	Finish mill (hot rolling mill)	Compliance with the terms and conditions of this permit	3745-21-08 3745-31-05 3745-17-11	
P003			3745-17-07	NO _x 2.0 lbs/hr CO 0.40 lb/hr
	Ladle preheater #1	Compliance with the terms and conditions of this permit	3745-31-05 3745-17-11	PM 0.05 lb/hr SO ₂ 0.0096 lb/hr
P004			3745-17-07 3745-18-06 3745-23-06 3745-21-08	NO _x 1.60 lbs/hr CO 0.32 lb/hr
	Ladle preheater #2	Compliance with the terms and conditions of this permit	3745-31-05 3745-17-11	PM 0.05 lb/hr SO ₂ 0.0096 lb/hr
P005			3745-17-07	NO _x 1.60 lbs/hr

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
P006	Ladle preheater #3	Compliance with the terms and conditions of this permit	3745-18-06	CO 0.32 lb/hr
			3745-23-06	
			3745-21-08	
			3745-31-05	
P006	Ladle dryer #1	Compliance with the terms and conditions of this permit	3745-17-11	PM 0.05 lb/hr
			3745-17-07	SO ₂ 0.0096 lb/hr
			3745-18-06	NO _x 1.60 lbs/hr
			3745-23-06	CO 0.32 lb/hr
P008	Ladle dryer #2	Compliance with the terms and conditions of this permit	3745-21-08	
			3745-31-05	PM 0.03 lb /hr
			3745-17-11	SO ₂ 0.006 lb/hr
			3745-17-07	NO _x 1.05 lbs/hr
P009	Tundish preheater #1	Compliance with the terms and conditions of this permit	3745-18-06	CO 0.21 lb/hr
			3745-23-06	
			3745-21-08	
			3745-31-05	PM 0.03 lb /hr
P010	Tundish preheater #2	Compliance with the terms and conditions of this permit	3745-17-11	SO ₂ 0.001 lb/hr
			3745-17-07	NO _x 0.12 lbs/hr
			3745-18-06	CO 0.02 lb/hr
			3745-23-06	
P011	Tundish dryer #1	Compliance with the terms and conditions of this permit	3745-21-08	
			3745-31-05	PM 0.1 lb/hr
			3745-17-11	
			3745-17-07	

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<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
P012	Continuous caster	Use of casting shrouds and compliance with the terms and conditions of this permit	3745-17-11 3745-17-07 3745-18-06 3745-23-06 3745-21-08 3745-31-05	PM 2.91 lbs/hr
P904	Cooling towers	Compliance with the terms and conditions of this permit	3745-17-11 3745-17-07 3745-31-05	Fugitive PM 0.7 lb/hr
P014	EAF Dust handling system	Compliance with the terms and conditions of this permit	3745-17-11 3745-17-07 3745-31-05	Opacity Restrictions See ASTCs
F001	Limestone and carbon silos (Eastside)	Compliance with the terms and conditions of this permit	3745-31-05 3745-17-11 3745-17-07 NSPS Part 60, Subpart AA	PM 0.39 lb/hr
F002	Limestone and carbon silos (Westside)	Compliance with the terms and conditions of this permit	3745-31-05 3745-17-07	PM 0.39 lb/hr
F003	Plant, roadways and parking areas	Use of sweeping or watering and compliance with the terms and conditions of this permit	3745-31-05 3745-17-07 3745-31-05	PM 213.8 lbs/day (average) PM ₁₀ 42.8 lbs/day (average)
F005				Opacity restrictions

* Combined emissions as measured from the exit of the baghouse.

** Per rolling 12-month period.

SUMMARY
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Existing tons/year</u>	<u>New Allowables tons/year</u>	<u>Net Increase tons/year</u>
PM	154.83	181.08	26.25
PM ₁₀	124.83	140.64	15.81
SO ₂	219.26	281.971	62.71
OC	304.62	393.66	89.04
NO _x	510.53	828.03***	317.50
CO	2250.25	9512.75***	7262.50
Pb	1.76	1.99	0.23
Mg	2.46	2.79	0.33
Mn	3.24	3.69	0.45
Zn	21.66	24.63	2.97
Hg	0.23	0.26	0.03

Note: On the emissions units where a PM₁₀ limit is not specified, the PM emissions are considered to be PM₁₀. This PTI does not include slag processing, which, at 7.8 TPY, is included in the above PM emissions for the previous permit.

*** For this administrative permit modification (issued on xxxxxx xx, 2000), the only changes from the previous allowables are for CO and NO_x. These changes are required due to the use of inaccurate emission factors in developing the emission limits in the initial PTI (03-8454) as well as the 1996 request to increase annual steel production from 1.75 to 2.25 million tons per year (03-9212). Although they were the best available factors at the time the permits were issued, they have proven to not be representative of CO and NO_x emissions from a dual-shaft dual-shell EAF.

NSPS REQUIREMENTS

The following sources are subject to the applicable provisions of the New Source Performance Standards (NSPS) as promulgated by the United States Environmental Protection Agency, 40 CFR Part 60.

<u>Source Number</u>	<u>Source Description</u>	<u>NSPS Regulation (Subpart)</u>
P901	315 TPH EAF furnace	AAa
F001	Baghouse dust silo	AAa

The application and enforcement of these standards are delegated to the Ohio EPA. The requirements of 40 CFR Part 60 are also federally enforceable.

Pursuant to the NSPS, the source owner/operator is hereby advised of the requirement to report the following at

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the appropriate times:

- a. construction date (no later than 30 days after such date);
- b. anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- c. actual start-up date (within 15 days after such date); and
- d. date of performance testing (If required, at least 30 days prior to testing).

Reports are to be sent to:

Ohio Environmental Protection Agency
DAPC - Air Quality Modeling and Planning
P.O. Box 1049
Columbus, OH 43216-1049

and OEPA Northwest District Office - DAPC
347 North Dunbridge Road
Bowling Green, Ohio 43402

PERFORMANCE TEST REQUIREMENTS

The permittee shall conduct, or have conducted, performance testing on the air contaminant source(s) in accordance with procedures approved by the Agency. Two copies of the written report describing the test procedures followed and the results of such tests shall be submitted and signed by the person responsible for the test. The Director, or an Ohio EPA representative, shall be allowed to witness the test, examine testing equipment, and require the acquisition or submission of data and information necessary to assure that the source operation and testing procedures provide a valid characterization of the emissions from the source and/or the performance of the control equipment.

- A. A completed Intent to Test form shall be submitted to the appropriate Ohio EPA District Office or Local Air Pollution Control Agency where the original permit application was filed. This notice shall be made 30 days in advance and shall specify the source operating parameters, the proposed test procedures, and the time, date, place and person(s) conducting such tests.
- B. Two copies of the test results shall be submitted within 30 days after the completion of the performance test.

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C. Tests shall be performed for the following source(s) and pollutant(s):

<u>Source</u>	<u>Pollutant(s)</u>
P901, P902, P903	PM, PM ₁₀ , SO ₂ , NO _x , CO, VOC, and Pb
P001	NO _x

PSD REQUIREMENTS

The source described in this Permit to Install is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21. The authority to apply and enforce the PSD regulations has been delegated to the Ohio Environmental Protection Agency. The terms and conditions of this permit and the requirements of the PSD regulations are also enforceable by the United States Environmental Protection Agency.

In accordance with 40 CFR 124.15, 124.19 and 124.20, the following shall apply: (1) the effective date of this permit shall be 30 days after the service of notice to any public commentors of the final decision to issue, modify, or revoke and re-issue the permit, unless the service of notice is by mail, in which case the effective date of the permit shall be 33 days after the service of notice; and (2) if an appeal is made to the Administrator of the United States Environmental Protection Agency, the effective date of the permit is suspended until such time as the appeal is resolved or denied.

RECORD(S) RETENTION AND AVAILABILITY

All records required by this Permit to Install shall be retained on file for a period of not less than three years unless otherwise indicated by Ohio Environmental Protection Agency. All records shall be made available to the Director, or any representative of the Director, for review during normal business hours.

REPORTING REQUIREMENTS

Unless otherwise specified, reports required by the Permit to Install need only be submitted to OEPA Northwest District Office - DAPC, 347 North Dunbridge Road, Bowling Green, Ohio 43402.

WASTE DISPOSAL

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

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MAINTENANCE OF EQUIPMENT

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

MALFUNCTION/ABATEMENT

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the Ohio EPA Northwest District Office - DAPC, 347 North Dunbridge Road, Bowling Green, Ohio 43402.

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

AIR POLLUTION NUISANCES PROHIBITED

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

CONSTRUCTION COMPLIANCE CERTIFICATION

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

ADDITIONAL SPECIAL TERMS AND CONDITIONS

Introduction

North Star Steel Company and Broken Hill Proprietary Company, have combined resources to form a new company, North Star BHP, that will manufacture flat rolled steel from recycled steel scrap. North Star BHP requested a modification to its original PTI (#03-8454) for this new steel making facility. The company desires to increase annual production from the original permitted level of 1.75 million tons of steel per year to 2.25 million tons of steel per year.

This annual production increase does not have an effect on the short term emission rates established in the original PTI, however corrections have been made to the short term limits for NO_x and CO due to the use of inaccurate emissions factors for these pollutants in the original PTI. This permit does result in an increase in fugitive long term allowable emission limits for Ohio Environmental Protection Agency (EPA) emissions units P901, P902, P903, and F005. In addition, the proposed modification will result in increased allowable emission limits for most of the facility's natural gas fired equipment.

A. Applicable Emission Limitations and/or Control Requirements

1. Particulate Matter (PM) emission from the baghouse controlling the electric arc furnace (EAF), and two ladle melt furnaces (LMFs), OEPA emissions units P901, P902, and P903 respectively, shall not exceed the following outlet emission rates:
 - a. 0.0018 grain/dscf; and,
 - b. 15.6 pounds/hr* & 68.2 TPY**.

For Prevention of Significant Deterioration (PSD) purposes, the permittee has agreed to model stack emissions under the assumption that all PM emissions are PM less than 10 microns in diameter (PM₁₀).

*These limits were calculated for PSD purposes and are based on the above allowable outlet grain concentration, the baghouse exhaust rate of 1,300,000 acfm, ambient and operating temperatures of 68 degrees Fahrenheit and 220 degrees Fahrenheit respectively, at 8760 hours/year. Since moisture in the exhaust stream was not accounted for, the final permit limits in the pounds/hour and tons per year (TPY) may vary somewhat depending on stack test results.

Note: The previous PTI assumed a baghouse exhaust rate of 1,200,000 acfm. The emission rate of 15.6 pounds PM/hour is a slight increase over the previously established limit, of 14.4 pounds PM/hour, and is directly attributed to the increased baghouse exhaust rate.

2. Fugitive PM emissions resulting from the operations of emissions units P901, P902, and P903 shall not exceed the following rates:
 - a. for emissions unit P901:
PM - 8.8 pounds/hour and 31.5 TPY
PM₁₀ - 6.7 pounds/hour and 23.9 TPY
 - b. for emissions unit P902:
PM - 1.6 pounds/hour and 6.8 TPY
PM₁₀ - 1.2 pounds/hour and 5.1 TPY
 - c. for emissions unit P903:
PM - 1.6 pounds/hour and 6.8 TPY
PM₁₀ - 1.2 pounds/hour and 5.1 TPY
 - d. for emissions units P901, P902, and P903 as a group:
PM - 10.7 pounds/hour and 38.3 TPY*

PM₁₀ - 8.1 pounds/hour and 29.1 TPY*

* Per rolling 12-month period.

Fugitive PM emissions were calculated from emission factors [1.4 pounds of PM per ton of steel produced for the EAF (with 98% capture) and 0.6 pound of PM per ton of steel produced for each of the LMFs (with 99% capture)] applied to each unit's maximum production rate. The EAF and each of the LMFs have a maximum hourly production rate of 315 tons and 267.75 tons respectively. The maximum hourly production rate for the group is limited by the EAF and is therefore 315 tons. Through this permit, the permitted annual production is 2.25 million tons per rolling 12 month period. PM₁₀ emissions are calculated based on 76% of the PM emissions being PM₁₀.

3. Visible emissions of PM resulting from melt shop operations shall not equal or exceed the following opacity levels:
 - a. exit from the EAF baghouse - 3%;
 - b. exit from the melt shop due solely to the operation of the EAF - 6%;
 - c. exit from the EAF dust handling system - 10%; and,
 - d. visible emissions of particulate matter resulting from all operations in the melt shop shall not exceed 20% opacity (this includes the 6% opacity limit on the EAF as part of the New Source Performance Standards).

The above opacity restrictions are based on a 6 minute average and using U.S. EPA Method 9. All stack emissions not addressed above must comply with the opacity restrictions outlined in the Ohio Administrative Code (OAC) 3745-17-07.

4. Metals emissions from the baghouse controlling emissions units P901, P902, and P903 shall not exceed the following rates:
 - a. Lead (Pb) - 0.31 pound/hour and 1.36 TPY (calculated at 2.0%* of the PM emission limits in condition A.1.b. above;
 - b. Magnesium (Mg) - 0.44 pound/hour and 1.91 TPY (calculated at 2.8%* of the PM emission limits in condition A.1.b. above;
 - c. Manganese (Mn) - 0.58 pound/hour and 2.52 TPY (calculated at 3.7%* of the PM emission limits in condition A.1.b. above;
 - d. Zinc (Zn) - 3.85 pounds/hour and 16.85 TPY (calculated at 24.7%* of the PM emission limits in condition A.1.b. above; and,
 - e. Mercury (Hg) - 0.038 pound/hour** and 0.17 TPY.

*These are the assumed weight percentages of metals in the baghouse dust based on data obtained from North Star Steel's plants which produce bar steel. This facility will be the first North Star Steel facility producing flat rolled steel. Ohio EPA recognizes there may be differences between the weight percentages of metals in the two types of steel and all weight percentages will continue to be evaluated for accuracy as further data is obtained in the testing required by this permit (see condition C.3. below).

**The emission limit for mercury is not based on a weight percent of the hourly PM emission limit. The permittee has agreed to a total mercury emission limit from the EAF of 0.06 pound/hour which will comply with Ohio EPA's "Air Toxics Policy". The 0.06 pound/hour was then apportioned between the baghouse emissions (64%) and the fugitive emissions (36%) associated with the EAF.

5. Metals emissions contained in the fugitive PM emissions from emissions unit P901 shall not exceed the following rates:
 - a. Lead (Pb) - 0.18 pound/hour and 0.63 TPY;
 - b. Magnesium (Mg) - 0.22 pound/hour and 0.88 TPY;
 - c. Manganese (Mn) - 0.32 pound/hour and 1.16 TPY;
 - d. Zinc (Zn) - 2.18 pounds/hour and 7.75 TPY; and,
 - e. Mercury (Hg) - 0.022 pound/hour and 0.17 TPY.

These emission limits were calculated by applying the same metal weight percentage estimates contained in conditions A.4.a. through A.4.e. above to the allowable fugitive PM limit for the EAF contained in condition A.2.a. above.

6. Sulfur Dioxide (SO₂), Nitrogen Oxides (NO_x), and Carbon Monoxide (CO) emissions from emissions units P901, P902, and P903 combined shall not exceed the following rates:
 - a. for emissions unit P901;
SO₂ - 31.5 pounds/hour and 112.5 TPY
NO_x - 170.1 pounds/hour and 607.5 TPY
CO - 2488.5 pounds/hour and 8887.5 TPY
OC - 110.3 pounds/hour and 393.8 TPY
 - b. for emissions unit P902;
SO₂ - 40.2 pounds/hour and 168.8 TPY
NO_x - 8.0 pounds/hour and 33.8 TPY
CO - 133.9 pounds/hour and 562.5 TPY
 - c. for emissions unit P903;
SO₂ - 40.2 pounds/hour and 168.8 TPY

NO_x - 8.0 pounds/hour and 33.8 TPY
CO - 133.9 pounds/hour and 562.5 TPY

- d. for emissions units P901, P902 and P903 as a group;
SO₂ - 78.8 pounds/hour and 281.3 TPY*
NO_x - 179.6 pounds/hour and 641.3 TPY*
0.57 lbs NO_x/ton of liquid steel produced
CO - 2646.0 pounds/hour and 9450.0 TPY*
8.4 lbs CO/ton of liquid steel produced

* Per rolling 12-month period.

Note: There are no Organic Compound (OC) emissions associated with the operations of the LMFs and therefore OC emissions are not included in the group limits.

These individual mass emission limits were calculated using company supplied emission factors in conjunction with each unit's and the group's maximum production rate.

8. Emission from the tunnel furnace #1, emissions unit P001, shall not exceed the following rates:
- a. PM - 1.13 pounds/hour and 4.95 TPY (10.0 pounds/MMcf);
 - b. SO₂ - 0.068 pound/hour and 0.30 TPY (0.6 pound/MMcf)³
 - c. NO_x - 22.6 pounds/hour and 99.0 TPY (200 pounds/MMcf);
 - d. CO - 7.91 pounds/hour and 34.7 TPY (70.0 pounds/MMcf);

These emission limits were calculated using natural gas emission factors (in parenthesis) applied to the unit's maximum heat input and allowing the unit to operate 8760 hours/year. The above emission factors for PM, NO_x, and CO were equipment vendor estimates.

Note: All the AP-42 emission factors used in sections A. 9.-14. of this permit were obtained from "Compilation of Air Pollutant Emission Factors" (AP-42), Section 1.4, natural gas combustion (dated January, 1995).

9. Emissions from tunnel furnace #2, emissions unit P002, shall not exceed the following rates:
- a. PM - 0.60 pound/hour and 2.63 TPY (10.0 pounds/MMcf);
 - b. SO₂ - 0.036 pound/hour and 0.16 TPY (0.6 pound/MMcf);
 - c. NO_x - 9.0 pounds/hour and 39.5 TPY (150 pounds/MMcf);
 - d. CO - 4.20 pounds/hour and 18.4 TPY (70.0 pounds/MMcf);

These emission limits were calculated using natural gas emission factors (in parenthesis) applied to the unit's maximum heat input, with operations at 8760 hours/year. The above emission factors for PM, NO_x, and CO were vendor estimates.

10. PM emissions from the Finish Mill, emission unit P003, shall not exceed 2.20 pounds/hour.
11. Emissions from the ladle preheaters numbers 1 and 2, emissions units P004 and P005, shall not exceed the following rates on a "per unit" basis:
 - a. PM - 0.06 pound/hour and 0.26 TPY (3.0 pounds/MMcf);
 - b. SO₂ - 0.012 pound/hour and 0.053 TPY (0.6 pound/MMcf);
 - c. NO_x - 2.0 pounds/hour and 8.76 TPY (100 pounds/MMcf);
 - d. CO - 0.40 pound/hour and 1.75 TPY (20.0 pounds/MMcf);

These emission limits were calculated using AP-42 natural gas emission factors (in parenthesis) applied to each unit's maximum heat input and allowing the unit to operate 8760 hours/year.

Note: The permittee no longer plans on installing ladle preheater #4, emissions unit P007, contained in the original PTI.

12. Emissions from the ladle preheater #3 and ladle dryers numbers 1 and 2, emissions units P006, P008, and P009 respectively, shall not exceed the following rates on a "per unit" basis:
 - a. PM - 0.05 pound/hour and 0.21 TPY (3.0 pounds/MMcf);
 - b. SO₂ - 0.0096 pound/hour and 0.042 TPY (0.6 pound/MMcf);
 - c. NO_x - 1.60 pounds/hour and 7.01 TPY (100 pounds/MMcf);
 - d. CO - 0.32 pound/hour and 1.40 TPY (20.0 pounds/MMcf);

These emission limits were calculated using AP-42 natural gas emission factors (in parenthesis) applied to each unit's maximum heat input and allowing the unit to operate 8760 hours/year.

13. Emissions from the tundish preheater numbers 1 and 2, emissions unit P010 and P011, shall not exceed the following rates on a "per unit" basis:
 - a. PM - 0.03 pound/hour and 0.14 TPY (3.0 pounds/MMcf);
 - b. SO₂ - 0.006 pound/hour and 0.028 TPY (0.6 pound/MMcf);

c. NO_x - 1.05 pounds/hour and 4.60 TPY (100 pounds/MMcf);

d. CO - 0.21 pound/hour and 0.92 TPY (20.0 pounds/MMcf);

These emission limits were calculated using AP-42 natural gas emission factors (in parenthesis) applied to each unit's maximum heat input and allowing the unit to operate 8760 hours/year.

14. Emissions from the tundish dryer, emissions unit P012, shall not exceed the following rates:

a. PM - 0.004 pound/hour and 0.02 TPY (3.0 pounds/MMcf);

b. SO₂ - 0.001 pound/hour and 0.003 TPY (0.6 pound/MMcf);

c. NO_x - 0.12 pound/hour and 0.53 TPY (100 pounds/MMcf);

d. CO - 0.02 pound/hour and 0.11 TPY (20.0 pounds/MMcf);

15. The continuous casting process, emissions unit P904 was originally permitted as emissions unit P013. Fugitive PM emissions are reduced by casting shrouds, however, since the potential for insignificant fugitive PM emissions does exist, this permit establishes an emission limit of 0.10 pound/hour for them. Ohio EPA will consider the unit to be in compliance with this fugitive mass limit as long as there are no visible emissions exiting the building from the continuous casting process.

16. PM emissions from the cooling towers, emissions unit P014, shall not exceed 2.91 pounds/hour.

The permittee shall employ high efficiency mist eliminators to reduce PM emissions from this emissions unit.

17. PM emissions from the baghouse dust-handling system, emissions unit F001, shall not exceed the following levels:

a. fugitive PM emissions from load-out operations shall not equal or exceed 10% opacity; and,

b. PM emissions from the filter vent on the baghouse dust silo shall not exceed 0.07 pound/hour and 0.31 TPY.

For PSD purposes, all PM emissions from this unit are assumed to be PM₁₀.

18. PM emissions from the (3) filter vents on the limestone silos and carbon silos (eastside), emissions unit F002, shall not exceed an outlet emission rate of 0.02 grain/scf. For three filter vents, this equates to an allowable limit of 0.39 pound/hour and 1.71 TPY.

19. PM emissions from the (3) filter vents on the limestone silos and carbon silos (westside),

emissions unit F003, shall not exceed an outlet emission rate of 0.02 grain/scf. For three filter vents, this equates to an allowable limit of 0.39 pound/hour and 1.71 TPY.

20. Fugitive PM emissions from slag processing, formerly emissions unit F004, are no longer included in this permit. These operations have been contracted out to another company and permitting of the slag processing plant, and the roadways and storage piles associated with it, will be their responsibility. However, for the purposes of complying with PSD requirements for “secondary emissions”, North Star BHP has included the emissions from slag processing in all emissions modeling.
21. Fugitive emissions from plant roadways and parking areas, emissions unit F005, shall not exceed the following levels:
 - a. 213.8 pounds PM/day* and 42.8 pounds PM₁₀/days*;
 - b. there shall be no visible PM emissions, except for a period of time not to exceed 1 minute during any 60 minute observation period, from any paved roadway or parking area located at North Star BHP; and,
 - c. there shall be no visible PM emissions, except for a period of time not to exceed 3 minutes during any 60 minute observation period, from any unpaved roadway or parking area located at North Star BHP.

Compliance with roadway/parking area opacity restrictions will be determined by conducting observations in accordance with the provisions of U. S. EPA Method 22.

*These emissions limits are average daily values (estimated emissions associated with annual vehicle miles traveled (VMT) divided by 365 days) based on the VMT associated with maximum production (2.25 million tons of steel/year). It is assumed that 20% of the PM emissions are PM₁₀.

The Ohio EPA will consider the permittee to be in compliance with these mass emission limits as long as compliance is maintained with both the opacity restrictions in condition A.21.b. and c. and this production restrictions in condition B.1.

22. The EAF furnace/post combustion chamber shall achieve a minimum destruction efficiency of 92%. The destruction efficiency shall be determined by the calculations described in condition E.6.

B. Operational Restrictions

1. North Star BHP shall limit hourly production in emissions unit P901 to an average of 315 tons of liquid steel (measured as the total daily production divided by the number of hours the emissions unit was operated).

Annual production from emissions unit P901 shall not exceed 2.25 million tons of liquid steel per year, based upon a rolling, 12-month summation of the monthly liquid steel production.

Note: This emissions unit has been in operation for over 12 months and, for the purposes of demonstrating compliance with the first 12 months of the rolling restrictions, the permittee shall use existing records verified by the Ohio EPA, Northwest District Office.

2. For purposes of minimizing Carbon Monoxide emissions, the permittee shall implement the following control practices:
 - a. the post combustion chamber ignition burner set point shall be at a minimum of 1.0 MW (megawatt) during any EAF steel making operation;
 - b. the active EAF DEC offgas ignition burner set point shall be at a minimum of 1.0 MW during any EAF steel making operation; and,
 - c. the combustion air fan for the active EAF shell shall be set to ensure excess combustion air.

The permittee may petition the Ohio EPA to reestablish these set points whenever they can demonstrate to the agency's satisfaction that, by doing so, CO emissions will not increase above permitted levels.

3. The permittee shall only use natural gas as a fuel source in emissions units P001, P002, and P004 through P012.
4. The permittee shall only use rolling mill solutions and/or oils in the finishing mill, emissions unit P003, that will not result in the emissions of organic compounds.
5. The permittee shall follow the procedures outlined in its "Scrap Management Program" in order to minimize the use of scrap that contains mercury, lead, oils, plastics, and organic materials that are charged in the EAF. The "Scrap Management Program" was reviewed and approved by Ohio EPA, Northwest District Office and shall be viewed as part of the operational requirements for the EAF permit. Any change to the "Scrap Management Program" that would increase the amount of these compounds present in the scrap, or result in the emissions of an air contaminant not previously emitted, must be approved by Ohio EPA, Northwest District Office.

6. The permittee shall achieve compliance with the emission limitations for the roadways and storage piles by employing a combination of the following fugitive dust control measures:
 - a. sweeping;
 - b. applying water as a dust suppressant;
 - c. speed reduction (vehicular traffic on unpaved surfaces shall not exceed 20 MPH); and,
 - d. prompt cleanup of spills.

Frequencies for employing these control measures shall be on a "as needed" basis, i.e., whenever visible emissions of fugitive dust generated by vehicular traffic or wind are observed. No fugitive dust control measures are required for a road surface that is covered with snow and/or ice, or when precipitation occurs that is sufficient to eliminate visible emissions of fugitive dust. Although the use of water for fugitive dust control during periods when the temperature drops below freezing is at the company's discretion, compliance with the opacity limits must be maintained.

In the event that equipment used for the control of fugitive dust from the roadways becomes inoperable and weather conditions are such that the permittee believes the remaining control measures may not be sufficient to comply with opacity restrictions for roadways, the permittee shall notify the Ohio EPA, Northwest District Office, Division of Air Pollution Control in accordance with the provisions of condition D.3.

The permittee shall make every effort to procure similar backup equipment should this situation occur. The malfunction of a control device does not cancel any violation that may have occurred.

The permittee shall promptly remove dirt/mud tracked onto public thoroughfares from company roadways. Under no circumstances shall the company allow public thoroughfares around this facility to become fugitive dust sources as the result of vehicular traffic egressing company property.

C. Monitoring and/or Recordkeeping Requirements

1. In accordance with the provisions of 40 CFR Part 60, Subpart AAa, section 60.273a, the permittee must monitor the stack emissions from any device controlling the EAF. In lieu of installing a continuous monitoring system for the measurement of opacity, observations of the opacity of the visible emissions from the control device shall be performed by a certified visible emission observer as follows:
 - a. the permittee shall conduct or have conducted visible emission observations in accordance with Method 9 procedures. Visible emission observations shall be conducted at least once when the furnace is operating in the melting and refining period. These

observations shall be taken in accordance with Method 9 for a least three 6-minute periods.

Records shall be maintained of any 6-minute average that is in excess of the opacity limits specified in condition A.3.; and,

- b. the permittee shall ensure that an adequate number of personnel on site are “certified” to conduct visible emission observations in accordance with U.S. EPA Method 9 procedures. North Star BHP may choose to have visible emissions observations contracted out, i.e. “certified” personnel may be provided by another company.

The appropriate records shall be maintained in the permittee’s files to identify the persons responsible for conducting the readings and to verify their Method 9 certifications are up-to-date.

2. The North Star BHP shall monitor the operation of the furnace and ladle melt station’s control system and maintain records in accordance with the following requirements:

- a. the permittee shall install, calibrate, and maintain a monitoring device that allows the pressure in the free space inside the EAF to be monitored. The monitoring device may be installed in any appropriate location in the EAF ducts prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of plus or minus 5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer’s instructions. The pressure range determined during the most recent demonstration of compliance shall be maintained at all times when the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the Ohio EPA, Division of Air Pollution Control (DAPC) to be unacceptable operation and maintenance of the control system. The permittee may petition the Ohio EPA for reestablishment of the 15-minute integrated average of the pressure whenever the owner or operator can demonstrate to the Agency’s satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable;
- b. the permittee shall check and record on a once-per-shift basis the furnace static pressure and either (1) check and record the control system fan motor amperes and damper positions on a once-per-shift basis; or (2) install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood. The monitoring devices may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring devices shall have an accuracy of plus or minus 10% over its normal operating range and shall be calibrated according to the manufacturer’s instructions. The Ohio EPA, DAPC may require the permittee to demonstrate the accuracy of the monitoring devices relative to Methods 1 and 2 of Appendix A of 40 CFR Part 60. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate levels for each applicable period. Operation at other than baseline values will be considered by the Ohio EPA, DAPC to be unacceptable operation and

maintenance of the control system. The permittee may petition the Ohio EPA for reestablishment of these parameters whenever the owner or operator can demonstrate to the Agency's satisfaction that the operating conditions upon which the parameters were previously established are no longer applicable; and,

- c. the permittee shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture systems (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be recorded and proper maintenance performed. The permittee may petition the Ohio EPA, DAPC to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.
- d. A furnace static monitoring device is not required if observations on shop opacity are performed by a certified visible emission observer as follows:

Shop opacity observations shall be conducted at least once when the furnace is operating in the melting and refining period. Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop. These observations shall be taken in accordance with Method 9. Shop opacity shall be recorded for any points where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident.

3. The permittee shall obtain an analysis of the EAF baghouse dust on a monthly basis. At a minimum, the samples shall be analyzed for the magnesium, manganese, lead, zinc, and mercury contents. The results shall be reported in weight percent. This analysis shall be conducted in accordance with U.S. EPA test methods and procedures.

The emission rates for each calendar quarter shall be calculated by multiplying the average percentage of each metal in the baghouse dust with the PM allowable limit in condition A.1.b. above.

4. The permittee shall maintain daily production records of the following for emissions unit P901:
 - a. the number of hours of operation;
 - b. the tons of liquid steel produced; and,
 - c. the average hourly production rate (b divided by a).

The permittee shall maintain monthly production records of the following for emissions

unit P901:

- d. the tons of liquid steel produced;
- e. of annual production of liquid steel, based on a rolling, 12-month summation of the monthly liquid steel production;

The permittee shall maintain monthly emissions calculations of the following for emissions units P901, P902, and P903 combined:

- f. the emissions of particulate matter, sulfur dioxide, nitrogen oxides, and organic compounds; and
 - g. the annual emissions of particulate matter, sulfur dioxide, nitrogen oxides, and organic compounds per rolling 12-month period.
5. The permittee shall maintain daily records of all instances where the computer program for monitoring the set points established in condition B.2. above for emissions unit P901 required cessation of, or delays in, furnace operations. The records shall include the reasons for any delay and/or cessation in furnace operations, the duration, a description of the corrective actions taken, and a determination whether or not a malfunction resulting in a violation of a condition of the permit has occurred.
6. With regards to the paved and unpaved roadways, the permittee shall maintain daily records that contain the following information:
- a. amount of precipitation that has occurred;
 - b. number of hours and location in which sweeping of paved roads occurred;
 - c. number of hours that water was applied, the amount applied, and the location at which it was applied;
 - d. dates of application of a dust suppressant (other than water), the type of suppressant, the amount applied, and the locations at which it was applied, and;
 - e. if any of the control measures required by this condition are contracted out, the name and telephone number of the company responsible for those services.
7. The permittee shall operate and maintain equipment to continuously monitor and record CO from this emissions unit. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

The permittee shall maintain records of all data obtained by the continuous CO monitoring system including, but not limited to, parts per million CO on an instantaneous (one minute) basis, emission of CO in lbs per hour in the appropriate averaging period (8-hour), results of

daily zero/span calibration checks, and magnitude of manual calibration adjustments.

Within 180 days of the effective date of this permit, the permittee shall conduct certification tests of the continuous CO monitoring system pursuant to ORC section 3704.03(I), 40 CFR Part 60, Appendix B, Performance Specification 4 and 6. Personnel from the Ohio EPA, Northwest District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the Ohio EPA, Northwest District Office within 30 days after the test is completed. Copies of the test results shall be sent to the Ohio EPA, Northwest District Office and the Ohio EPA, Central Office. Certification of the continuous CO monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.31(I) and 40 CFR Part 60, Appendix B, Performance Specification 4 and 6.

8. All records and measurements required in this section shall be retained in the company's files for a period of at least 2 years and shall be made available to Ohio EPA, DAPC upon request.

D. Reporting Requirements

1. The permittee shall notify the Ohio EPA, Northwest District Office, Division of Air Pollution Control within 3 days from the date of any exceedance of the production restrictions contained in condition B.1. The permittee shall submit a written report summarizing all of these exceedances to the Ohio EPA, Northwest District Office, Division of Air Pollution Control semiannually.
2. The permittee shall submit a written report of all exceedances of the opacity restrictions contained in condition A.3. to the Ohio EPA, Northwest District Office, Division of Air Pollution Control semiannually. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity exceeds these limits.
3. Unacceptable operation and maintenance of the control systems as outlined in condition B.5. and C.2. shall be reported in accordance with the provisions of OAC 3745-15-06. The permittee shall also submit a written report summarizing these exceedances to the Ohio EPA, Northwest District Office, Division of Air Pollution Control semiannually.
4. If the permittee does not experience some or all of the exceedances outlined above a report stating there were no exceedances is still required.
5. The permittee shall submit to the Ohio EPA, Northwest District Office, on a quarterly basis, copies of the baghouse dust analyses and calculated metals emission rates required by condition C.3. above.

These quarterly reports shall be submitted by February 15th, May 15th, August 15th, and November 15th of each year and shall cover the data obtained during the previous calendar quarter.

The permittee may request to Ohio EPA, Northwest District Office that these analyses be discontinued after the first two years if it is determined that the scrap management plan is effective in restricting these heavy metal emissions.

6. Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA, Northwest District Office documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any) of all instances of CO values in excess of any applicable limitation(s) specified in OAC Chapter 3745-21, 40 CFR Part 60, or any limitation(s) specified in the terms and conditions of this permit, in units of the standard. These reports shall also contain the total CO emissions for the calendar quarter (in tons).

The permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA Northwest District Office documenting any continuous CO monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60 section 60.7. The summary shall be submitted to the Ohio EPA Northwest District Office within 30 days following the end of each calendar quarter in a manner prescribed by the Director.

7. Unless otherwise specified, all reports, test results, notifications, etc., required by the above terms and conditions shall be submitted to the Ohio EPA, Northwest District Office, Division of Air Pollution Control, 347 North Dunbridge Road, Bowling Green, Ohio 43402.

E. Testing Requirements

1. Within 180 days after the issuance of this permit, North Star BHP shall conduct or have conducted emissions tests for emissions units P901, P902, and P903 in order to demonstrate compliance with the mass emission rates for particulate matter, sulfur dioxide, nitrogen oxides, and organic compounds. The emission tests shall be conducted in accordance with approved Ohio EPA test methods and procedures.

Within 180 days after the issuance of this permit, North Star BHP shall conduct or have conducted an emission test for emissions unit P001 in order to demonstrate compliance with the mass emission rate for nitrogen oxides. The emission test shall be conducted in accordance with approved Ohio EPA test methods and procedures.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit and "Intent to Test" notification to the Ohio EPA, Division of Air Pollution Control, Northwest District Office. The notification shall describe in detail the proposed test methods and procedures, the emissions unit(s) operating parameters, the times and dates of the tests, and the person who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the field offices refusal to accept the results of the emission tests.

Personnel from the Northwest District Office shall be permitted to witness the tests, examine the testing equipment, and acquire data and information regarding the emissions unit's operating parameters. A comprehensive written report on the results of the emissions tests shall be submitted to the Ohio EPA, Division of Air Pollution Control, Northwest District Office within 30 days of the test date(s).

2. The permittee shall determine compliance with the particulate matter standards in condition A.1. as follows:
 - a. method 5D of 40 CFR Part 60, Appendix A shall be used for positive-pressure fabric filters to determine the particulate matter concentration and volumetric flow rate of the effluent gas.
 - b. The sampling time and sample volume for each run shall be at least 4 hours and 4.50 dscm (160 dscf) and the sampling time shall include an integral number of heats; and,

During the particulate matter runs, the permittee shall obtain the following additional information:
 - c. the pressure in the free space* inside the furnace shall be determined during the melting and refining period(s) using the monitoring devices required under condition C.2.a.; and,

- d. the control system fan motor amperes and all damper positions or the volumetric flow rate through each separately ducted hood shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the EAF's.

*If the pressure in the free space is used to show compliance.

- 3. The permittee shall determine compliance with the NO_x, CO, VOC, and SO₂ standards in conditions A.6. as follows:
 - a. Method 7 of 40 CFR Part 60, Appendix A shall be employed to demonstrate compliance with the emissions limitations for NO_x;
 - b. Method 18, 25, or 25A of 40 CFR Part 60, Appendix A shall be employed to demonstrate compliance with the emissions limitations for VOC;
 - c. Method 6 of 40 CFR Part 60, Appendix A shall be employed to demonstrate compliance with the emissions limitations for SO₂;
 - d. Method 10 of 40 CFR Part 60, Appendix A shall be employed to demonstrate compliance with the emissions limitations for CO; and
 - e. The sampling time for each run shall be approximately 8 hours in duration. Each run shall include an integral number of heats.
- 4. Stack testing will also be required for the following air toxics:

a. Cadmium	f. Nickel
b. Total chromium	g. Vanadium
c. Copper	h. Zinc
d. Magnesium	i. Arsenic
e. Manganese	j. Mercury

This testing is required to ensure that the emission of these metals from the melt shop baghouse comply with Ohio EPA's "Air Toxics Policy".

- 5. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
- 6. For all performance tests, test runs shall be conducted concurrently, unless inclement weather interferes.
- 7. During performance tests, the permittee shall not add gaseous diluents to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

8. As part of the stack test submittal, the permittee shall submit calculations for the lbs of emissions per ton of liquid steel produced for CO and NO_x. The lbs of pollutant/ton of liquid steel produced shall be determined by dividing the average hourly mass emission rate for each pollutant as measured during the performance test, divided by the average hourly amount of liquid steel produced during the same period.

The permittee shall also submit calculations to determine the CO destruction efficiency of the shaft furnace/post combustion chamber as part of the stack test submittal. The following data is to be collected during the performance test and the efficiency calculated as follows:

- a. the total pounds of each material charged/tapped (Pig Iron, Scrap Steel, Foamy Slag, Charge Carbon, Electrodes, Liquid Steel being tapped, etc.);
- b. the percent by weight of carbon in each of the above items;
- c. the pounds of carbon in each of the above items (pounds of material times the percent of carbon);
- d. the total pounds of carbon during the test (the sum of item c. above for each charge material minus the amount of carbon removed in the tapped liquid steel);
- e. the total pounds of oxygen needed to produce CO from the above total carbon (item d.) for the test (at 16 pounds of oxygen per 12 pounds of carbon);
- f. the total pounds of CO produced (the sum of item d and e above);
- g. the total amount of CO emitted during the test, and
- h. the overall CO destruction efficiency (item f minus item g and then the result divided by item g and multiplied by 100).

F. Miscellaneous Requirements

1. An alternative exhaust gas discharge configuration for the baghouse controlling the EAF may be used if found to be acceptable by Ohio EPA, pursuant to the requirements of federal and state rules. No less than 60 days prior to changing the exhaust gas discharge configuration, a complete description of the changed must be submitted to Ohio EPA. The final plan must be approved by Ohio EPA prior to any alteration of the exhaust gas discharge configuration. The above exhaust gas discharge requirement is based on the proposed emission limits for the entire plant.
2. Prior to the installation of the continuous CO monitoring system, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 4 and 6 for approval by the Ohio EPA, Central Office.

Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous CO monitoring system designed to ensure continuous valid and representative readings of CO. The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous CO monitoring system must be kept on site and available for inspection during regular office hours.

3. The permittee shall continue to investigate and research the feasibility of reducing carbon monoxide emissions from the EAF. This investigation and research requirement shall expire two years after the final issuance of this permit. The permittee shall submit detailed annual reports on the progress of their research to reduce CO emissions. These reports shall include the following information:
 - a. a description of any project conducted for the purpose of reducing CO emissions. This description should include the date conducted, any key process data collected and the duration of the project;
 - b. the results of any emissions testing conducted in relation to the above project;
 - c. a discussion of the results of the project. This should include the resulting CO emissions rate in pounds per hour and a description of the reason(s) why the project produced positive or negative* results; and,
 - d. a date when any process modification was put into production for the purpose of reducing CO emissions.

*The permittee may proceed with CO reduction projects that could potentially result in short term CO emissions which are higher than those established by this permit. If the project is solely for the purpose of evaluating CO emissions and is appropriately documented as described above, it will not be considered a violation of the CO emissions limits in this permit.

These reports shall be submitted to the Ohio EPA, Northwest District Office, 347 North Dunbridge Road, Bowling Green, Ohio, 43402 and to U.S. EPA, Region V. The reports shall be submitted semiannually. The first report shall be due six months from the date the final modified permit is issued and the final report shall be due two years from the date the final permit is issued.

The permittee shall begin utilizing any developed process change as soon as practically possible when the research has shown positive results and if the process change is economically feasible for the permittee to utilize. Economic feasibility shall be determined by Best Available Technology cost-effectiveness analysis.

After the two-year evaluation process is complete, the agency may reduce the allowable BACT CO emission limit if the data indicates the changes that have been implemented justify such a change.