

Note: This is a reference cited in AP 42, *Compilation of Air Pollutant Emission Factors, Volume I Stationary Point and Area Sources*. AP42 is located on the EPA web site at www.epa.gov/ttn/chief/ap42/

The file name refers to the reference number, the AP42 chapter and section. The file name "ref02_c01s02.pdf" would mean the reference is from AP42 chapter 1 section 2. The reference may be from a previous version of the section and no longer cited. The primary source should always be checked.

AP32 Section:	12.5.1
Background Chapter	3
Reference:	10
Title:	Report on SO₂/NO_x/CO/PB/VOC Compliance Testing. Performed for: Qualitech Steel Corporation, Pittsboro, IN, EAF, VTD Boiler and Reheat Furnace Stacks. By SESCO on September 7-10 and 15, 1999. SESCO Project No. 090799.

Indiana Department of Environmental Management
Office of Air Management

Office Memorandum

To: Jay Patterson
Date: March 10, 2000

From: Scott Stacy *sws*
Thru: Ed S. Surla *ES*

Subj: Qualitech Steel Corporation
Pittsboro, Indiana
Source ID No. 063-00037
Permit No. CP063-6093-00037

The subject company has submitted a report concerning the stack emissions testing at the subject source. The test was conducted by G/SA. The purpose of the testing was to determine the compliance status of the facility with regard to the emission limitations stated below. The Protocol was approved by Marie Jackson, and the field test was observed by Scott Stacy. I have reviewed the report and found the sampling procedures used and results to be acceptable to this Office. A copy of the test report is filed in the Compliance Data Section. The following is a summary of the test results:

Date of Test:	9/7/99
Identification and Unit No. of Facility Tested:	VTD Boiler Stack
APC Operating Parameters:	No Controls
Pollutant:	NOX
Test Methods:	1-4, 7E
Permit Operating Condition #25	81.0 lbs NOX/million cubic feet of gas
Maximum Permitted Operating Rate:	67.5 mmBtu/hr
Average Operating Rate During Test:	50.21 mmBtu/hr (this is the actual maximum capacity)*
Average Measured Emissions:	10.9 lbs NOX/million cubic feet of gas

STATUS: IN COMPLIANCE at 74% of maximum permitted rate

*Note: The boiler only operates in an on or off mode. The maximum design capacity is 50.21 mmBtu/hr, not the permitted 67.5 mmBtu/hr. The actual maximum design rate operating capacity was 100%.

Date of Test:	9/10/99
Identification and Unit No. of Facility Tested:	Reheat Furnace
APC Operating Parameters:	No Controls
Pollutant:	NOX
Test Methods:	1-4, 7E
Permit Operating Condition #21	0.15 lbs NOX/mmBtu
Maximum Permitted Operating Rate:	175 mmBtu/hr
Average Operating Rate During Test:	67.7 mmBtu/hr*
Average Measured Emissions:	0.154 lbs NOX/ mmBtu

STATUS: Out of COMPLIANCE at 39% of maximum permitted rate

***Note: This was the highest that the Reheat Furnace could run at this time.**

Date of Test: 9/8/99
Identification and Unit No. of Facility Tested: EAF-1200 sulfur grade
APC Operating Parameters: Baghouse
Pressure Drop Range: 7.0-8.0 "H2O
Pressure Drop Average: 7.59"H2O

Pollutant: NOX, VOC, Pb(lead), SO2
Test Methods: 1-4, 6C, 7E, 25, 12

Permit Operating Condition #10 0.5 lbs NOX/ton steel produced
Permit Operating Condition #12 0.15 lbs VOC/ton steel produced
Permit Operating Condition #13 1.4 lbs SO2/ton steel produced at 1200 sulfur grade
Permit Operating Condition #18 0.07 lbs/hr Pb(lead)

Maximum Permitted Operating Rate: 135 tph steel produced
Average Operating Rate During Test: 72.8 tph steel produced*

Average Measured Emissions: 0.12 lbs NOX/ton steel produced
7.08 lbs VOC/ton steel produced
1.68 lbs SO2/ton steel produced at 1200 sulfur grade
0.032 lbs/hr Pb(lead)

**STATUS: Out of COMPLIANCE at 54% of maximum permitted rate for VOC, and SO2
In Compliance at 54% of maximum capacity for Pb(lead) and NOX**

***Note: This was the highest that the Reheat Furnace could run at this time.**

Date of Test: 9/9/99
Identification and Unit No. of Facility Tested: EAF-1100 sulfur grade
APC Operating Parameters: Baghouse

Pollutant: SO2
Test Methods: 1-4, 6C

Permit Operating Condition #13 0.52 lbs SO2/ton steel produced at 1100 sulfur grade

Maximum Permitted Operating Rate: 135 tph steel produced
Average Operating Rate During Test: 71 tph steel produced*

Average Measured Emissions: 1.5 lbs SO2/ton steel produced at 1100 sulfur grade

STATUS: Out of COMPLIANCE at 53% of maximum permitted rate for SO2

***Note: This was the highest that the Reheat Furnace could run at this time.**

Date of Test: 9/15/99
Identification and Unit No. of Facility Tested: EAF-low sulfur grade
APC Operating Parameters: Baghouse

Pollutant: CO, SO2
Test Methods: 1-4, 6C, 10
Permit Operating Condition #11 4.7 lbs CO/ton steel produced
Permit Operating Condition #13 0.083 lbs SO2/ton steel produced at low sulfur grade

Maximum Permitted Operating Rate: 135 tph steel produced
Average Operating Rate During Test: 53.2 tph steel produced*

Average Measured Emissions: 3.47 lbs CO/ton steel produced
0.71 lbs SO2/ton steel produced at low sulfur grade

**STATUS: Out of COMPLIANCE at 39% of maximum permitted rate for SO2,
in compliance for CO**

cc: WPS/ General Files-Hendricks County
Scott Stacy

~~ESS~~
~~HW~~
SWS r.w.

**Supreme
Environmental Service Company**

5876 West 71st Street *Indianapolis, Indiana 46278

SESCo Group

(317)347-9590, FAX (317)347-9591

**REPORT on
SO₂/NO_x/CO/Pb/VOC-COMPLIANCE TESTING**

Performed for:

Qualitech Steel Corporation

Pittsboro, Indiana

EAF, VTD Boiler & Reheat Furnace Stacks

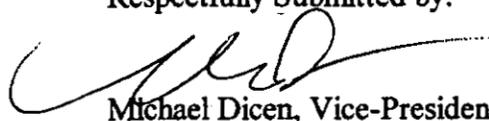
by: SESCO

on 9/7-10,15/99

SESCO Project No.: 090799

To the best of our knowledge, the data presented in this report is accurate and complete.

Respectfully Submitted by:



Michael Dicen, Vice-President

SESCo Group

1-1 PROJECT OVERVIEW

SESCO Group, was contracted by Qualitech Steel Corporation of Pittsboro, Indiana to perform air sampling of:

- Electric Arc Furnace (EAF) - baghouse stack on September 8, 9, 15, 1999.
- Vacuum Tank Degasser (VTD) Boiler - stack on September 7, 1999.
- Reheat Furnace - stack on September 10, 1999.

The objective of the testing was to determine permit compliance for SO₂, NO_x, CO, Pb and VOC emissions. The following personnel were involved with the testing program:

SESCO	Mike Dicen
SESCO	Andrew Young
SESCO	Carlos Brown
IDEM	Scott Stacy
Qualitech	Carter Hansen
Qualitech	Ken Sills

The testing program included (Methods 1-4), sulfur dioxide emissions (Method 6C), nitrogen oxide emissions (Method 7E), carbon monoxide emissions (Method 10), lead emissions (Method 12), volatile organic compound emissions (Method 25A) and visible emissions (Method 9). Below is a summary of the results:

Electric Arc Furnace

Table 1-1

Pollutant	Runs	Date	Time	Emissions	Limits
SO ₂ 1200	1 - 3	09/08/99	13:00-14:12P	1.736 lbs/ton	1.40 lbs/ton
NO _x	1 - 3	09/08/99	14:52-16:02P	0.119 lbs/ton	0.50 lbs/ton
Pb	1 - 3	09/08/99	17:08-18:17P	0.032 lbs/hr	0.07 lbs/hr
VOC	1 - 3	09/08/99		8.151 lbs/ton	0.15 lbs/ton
SO ₂ 1100	1	09/09/99	11:42-12:52P	1.474 lbs/ton	0.52 lbs/ton
Sulfur Grade	2	09/09/99	13:34-14:53P		
	3	09/09/99	15:34-17:03P		
SO ₂ Low	1	09/15/99	11:54-12:54P	0.694 lbs/ton	0.083 lbs/ton
Sulfur Grade	2	09/15/99	14:57-16:31P	3.316 lbs/ton	4.70 lbs/ton
CO	3	09/15/99	17:11-18:11P		

1-1 PROJECT OVERVIEW (cont)

VTD Boiler

Table 1-1

Pollutant	Runs	Date	Time	Emissions	Limit
NO _x	1	09/07/99	11:00-12:22P	10.95 lbs/Million CF Natural Gas	81.0 lbs/Million CF Natural Gas
	2	09/07/99	13:49-14:54P		
	3	09/07/99	15:22-16:34P		

Reheat Furnace

Pollutant	Runs	Date	Time	Emissions	Limit
NO _x	1	09/10/99	09:45-10:45A	0.153 lbs/MMBtu	0.15 lbs/MMBtu
	2	09/10/99	10:53-11:53A		
	3	09/10/99	12:00-13:00P		

Qualitech Steel Corporation
Pittsboro, Indiana

SESCO Project No. 090799

2-1 RESULTS

SULFUR DIOXIDE EMISSIONS

Electric Arc Furnace

<u>Gas Conditions</u>		1	2	3	Avg.
Ts	Stack Temperature (°F)	150.33	159.79	149.33	153.15
Bwo	Moisture (volume %)	2.51	2.94	1.79	2.41
O2	Oxygen (dry volume %)	18.0	18.0	18.0	18.0
CO2	Carbon Dioxide (dry volume %)	0	0	0	0
<u>Volumetric Flow Rate</u>					
Qa	Actual Conditions (acfm)	637,060	633,858	636,165	635,694
Qstd	Standard Conditions (dscfm)	537,378	524,178	541,487	534,348

SULFUR DIOXIDE - 1200

C _{ppm}	parts per million (ppm)	7.757	9.2914	53.2635	23.437
E _{TSP}	Emission Rate, (lb/ton)	0.6288	0.6385	3.7894	1.7360

SULFUR DIOXIDE - 1100

C _{ppm}	parts per million (ppm)	11.60	28.20	20.66	20.15
E _{TSP}	Emission Rate, (lb/ton)	0.7714	1.8541	1.8894	1.4740

SULFUR DIOXIDE - Low

C _{ppm}	parts per million (ppm)	7.04	3.05	10.18	6.756
E _{TSP}	Emission Rate, (lb/ton)	0.9039	0.2468	0.9530	0.6940

SESCO Group

2-2 RESULTS

NITROGEN OXIDE EMISSIONS

Electric Arc Furnace

<u>Gas Conditions</u>		1	2	3	Avg.
Ts	Stack Temperature (°F)	150.33	159.79	149.33	153.15
Bwo	Moisture (volume %)	2.51	2.94	1.79	2.41
O2	Oxygen (dry volume %)	18.0	18.0	18.0	18.0
CO2	Carbon Dioxide (dry volume %)	0	0	0	0
<u>Volumetric Flow Rate</u>					
Qa	Actual Conditions (acfm)	637,060	633,858	636,165	635,694
Qstd	Standard Conditions (dscfm)	537,378	524,178	541,487	534,348

NITROGEN OXIDE

C _{ppm}	parts per million (ppm)	1.025	2.8305	2.9331	2.2628
E _{TSP}	Emission Rate, (lb/ton)	0.0595	0.1397	0.1498	0.1190

Reheat Furnace

NITROGEN OXIDE

C _{ppm}	parts per million (ppm)	55.934	61.279	60.744	59.319
E _{TSP}	Emission Rate, (lb/MMBtu)	0.1447	0.1585	0.1571	0.1534

Qualitech Steel Corporation
Pittsboro, Indiana

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2-2 RESULTS (cont)

NITROGEN OXIDE EMISSIONS

VTD Boiler

<u>Gas Conditions</u>		1	2	3	Avg.
Ts	Stack Temperature (°F)	375.43	384.68	361.75	373.95
Bwo	Moisture (volume %)	9.88	11.85	10.88	10.87
O2	Oxygen (dry volume %)	14.0	11.0	11.0	12.0
CO2	Carbon Dioxide (dry volume %)	4.0	7.0	6.5	5.83
<u>Volumetric Flow Rate</u>					
Qa	Actual Conditions (acfm)	3332	3043	3098	3157.66
Qstd	Standard Conditions (dscfm)	1909.48	1687.43	1784.95	1793.95

NITROGEN OXIDE

C _{ppm}	parts per million (ppm)	45.11	32.14	50.22	42.49
E _{TSP}	Emission Rate, (lb/Million CF Natural Gas)	12.284	7.735	12.7842	10.95

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Qualitech Steel Corporation
Pittsboro, Indiana

SESCO Project No. 090799

2-3 RESULTS

CARBON MONOXIDE EMISSIONS

Electric Arc Furnace

<u>Gas Conditions</u>		1	2	3	Avg.
Ts	Stack Temperature (°F)	131.3	130.1	132.6	131.3
Bwo	Moisture (volume %)	1.43	1.65	1.44	1.50
O2	Oxygen (dry volume %)	19	19	19	19
CO2	Carbon Dioxide (dry volume %)	0	0	0	0
<u>Volumetric Flow Rate</u>					
Qa	Actual Conditions (acfm)	593,422	593,883	580,776	589,360
Qstd	Standard Conditions (dscfm)	529,982	530,271	517,508	525,920

CARBON MONOXIDE

C _{ppm}	parts per million (ppm)	100	64	56	73.3
E _{TSP}	Emission Rate, (lbs/ton)	4.547	2.912	2.486	3.316

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Qualitech Steel Corporation
Pittsboro, Indiana

SESCO Project No. 090799

2-4 RESULTS

LEAD EMISSIONS

Electric Arc Furnace

<u>Gas Conditions</u>		1	2	3	Avg.
Ts	Stack Temperature (°F)	150.33	159.79	149.33	153.15
Bwo	Moisture (volume %)	2.51	2.94	1.79	2.41
O2	Oxygen (dry volume %)	18.0	18.0	18.0	18.0
CO2	Carbon Dioxide (dry volume %)	0	0	0	0
<u>Volumetric Flow Rate</u>					
Qa	Actual Conditions (acfm)	637,060	633,858	636,165	635,694
Qstd	Standard Conditions (dscfm)	537,378	524,178	541,487	534,348

LEAD EMISSIONS

E _{TSP}	Emission Rate, (lbs/hr)	0.0207	0.0291	0.0462	0.0320
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Qualitech Steel Corporation
Pittsboro, Indiana

SESCO Project No. 090799

2-5 RESULTS

VOLATILE ORGANIC COMPOUND EMISSIONS

Electric Arc Furnace

<u>Gas Conditions</u>		1	2	3	Avg.
Ts	Stack Temperature (°F)	150.33	159.79	149.33	153.15
Bwo	Moisture (volume %)	2.51	2.94	1.79	2.41
O2	Oxygen (dry volume %)	18.0	18.0	18.0	18.0
CO2	Carbon Dioxide (dry volume %)	0	0	0	0
<u>Volumetric Flow Rate</u>					
Qa	Actual Conditions (acfm)	637,060	633,858	636,165	635,694
Qstd	Standard Conditions (dscfm)	537,378	524,178	541,487	534,348

VOLATILE ORGANIC COMPOUND

C _{ppm}	parts per million (ppm)	16	20	1717	584.3
E _{TSP}	Emission Rate, (lbs/ton)	0.2428	0.2577	22.902	8.1514

SESCO Group

3-1 DESCRIPTION OF INSTALLATION

Electric Arc Furnace

Qualitech Steel Corporation, operates a steel plant in Pittsboro, Indiana. The plant consists of one 135-ton/hr (EAF) Electric Arc Furnace which utilizes charge electrodes. The EAF process involves the use of *100% Scrap Metal* or *Scrap & Maximum Iron Carbide Injection*.

During the 100% scrap process, the furnace undergoes an initial charge of approximately 50-tons of scrap metal, lime and charge carbon before melting for approximately 25-minutes. After completion of initial charge, a second 50-ton charge of scrap metal, lime, and charge carbon are introduced into furnace for an additional 25-minutes. During last 10-minutes of heat, oxygen is blown into furnace to reduce carbon in steel and to foam any slag so that it can be poured off. Approximately 100-tons of molten metal is tapped into the ladle and taken to the Ladle Metallurgy Furnace.

Scrap & Maximum Iron Carbide Injection begins with same initial process as 100% Scrap, with iron carbide being introduced during second charge to bring tap weight up to 100-tons. All other phases of this process follow the 100% scrap procedure.

Reheat Furnace

Qualitech Steel Corporation, operates a 182 MMBtu/Hr Reheat Furnace which uses natural gas for heating blooms evenly to 2050 degrees F before rolling. The furnace operates at 125 ton/hr when cold charging and 160 ton/hr when hot charging.

VTD Boiler

Qualitech Steel Corporation, operates a 50.21 MMBtu/hr Vacuum Tank Degassing Boiler (VTD). The natural gas boiler's sole purpose is to provide steam for pulling vacuum on the (VTD) vessel. Through a series of steam injectors, the pressure in the vessel is lowered to less than 1 ton.

Testing for Compliance purposes were conducted at the aforementioned sources.



CONSTRUCTION PERMIT

OFFICE OF AIR MANAGEMENT

Control No. 021

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
100 North Senate
P.O. Box 6015
Indianapolis, Indiana 46206-6015

Qualitech Steel Corporation
Section 35 & 36, Middle Township
Pittsboro, Indiana 46167

is hereby authorized to construct

Mini-mill steel recycling facility with a maximum capacity of 135 tons per hour and a total projected maximum production of one million one-hundred eight two-thousand six hundred (1,182,600) tons per year consisting of the operations listed on page 2.

THIS PERMIT IS ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1, 326 IAC 2-2, 40 CFR 52.21, 40 CFR 52.780, and 40 CFR 124 WITH CONDITIONS LISTED ON THE ATTACHED PAGES.

Identification No. 063-6093-00037

Expiration Date N/A

Date Issued October 31, 1996

Issued by *Paul M. [Signature]*

Commissioner

Qualitech Steel Corporation
Pittsboro, Indiana

CP 063-6093
Pit. Id 063-00037

The facility will consist of:

- a. one (1) electric arc furnace (EAF) with 135 tons per hour total capacity, with an above bath post combustion system consisting of six (6) oxygen injectors and four (4) oxyfuel burners, a direct shell evacuation system (DSE), and a canopy hood connected to a baghouse controlling particulate matter (PM) and PM10 discharging through a stack 150 feet above ground level,
- b. one (1) ladle metallurgy station (LMS) with collection hood exhausting through the EAF baghouse,
- c. one (1) caster to form a solid continuous bloom,
- d. scarfing operations using an oxy-fuel-flame to remove oxidation with PM & PM10 emissions controlled by a baghouse,
- e. a vacuum tank degasser 67.5 MMBtu/hr natural gas-fired boiler with low-NOx burners exhausting 40 feet above the ground through a stack,
- f. a vacuum tank degasser with carbon monoxide (CO) emissions controlled by flare,
- g. four (4) 8 MMBtu/hr ladle preheaters/dryers with low-NOx natural gas-fired burner venting through the mill roof monitor,
- h. one (1) 4 MMBtu/hr and one (1) 1 MMBtu/hr tundish preheaters with low-NOx natural gas-fired burners venting through the mill roof monitor,
- i. one (1) 5 MMBtu/hr tundish refractory dryer low-NOx natural gas-fired burner venting through the mill roof monitor,
- j. one (1) 175 MMBtu/hour natural gas-fired reheat furnace with low-NOx burners exhausting 150 feet above the ground,
- k. a bar cutting building with PM emissions controlled by a baghouse,
- l. an inspection descaler unit containing a dust collecting system,
- m. slag processing consisting of: grizzly/feeder with front end loader, crushing, conveying, screening, and stacking with wet suppression system to control particulate matter emissions,
- n. six (6) raw material storage silos for lime and carbon with bin vents filters,
- o. one (1) EAF dust storage silo with a bin vent filter fed by a cross screw conveyor, and
- p. an iron carbide handling consisting of bulk unloading in a building with a drop shield on the open ends, an adjustable boot assembly extending to the bottom of the railcar discharge hopper, covered conveyors to an enclosed storage building, covered conveyors to two (2) day storage silos with bin vent filters, and a pressurized and a sealed injection hopper.

Qualitech Steel Corporation
Pittsboro, Indiana

CP 063-6093
Pit. Id 063-00037

Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. That pursuant to 40 CFR 124, the effective date of this permit shall be thirty-three (33) days after issuance if comments are received.
4. That pursuant to 326 IAC 2-2-8 (source obligation), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months or if construction is not completed within a reasonable time. The time may be extended eighteen months upon satisfactory showing that an extension is justified.
5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).
6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
 - (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit is postmarked or delivered to IDEM. If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
 - (b) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
7. That the operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1-7.1(Fees).
8. That pursuant to 326 IAC 2-1-4, the permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date established in the validation letter. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.
9. That pursuant to the New Source Performance Standards (NSPS), Part 60.40c, Subpart Dc and Part 60.270, Subpart AAa, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

Qualitech Steel Corporation
Pittsboro, Indiana

CP 063-6093
Plt. Id 063-00037

- a) Commencement of 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 (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

**Compliance Data Section
Office of Air Management
100 North Senate Avenue
P. O. Box 6015
Indianapolis, IN 46206-6015**

The application and enforcement of these standards have been delegated to the IDEM-OAM. The requirements of 40 CFR Part 60 are also federally enforceable.

10. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.
3. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed at the EAF baghouse outlet for filterable PM/PM₁₀, SO₂, CO, VOC, NO_x, and lead and the reheat furnace for NO_x within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. That the EAF shall be tested with a hundred (100%) scrap only and at the maximum iron carbide injection rate. These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using methods approved by the commissioner or required by NSPS 40 CFR Part 60, Subpart AAa, . The Office of Air Management (OAM) shall be notified of the actual test date at least two (2) weeks prior to the date, a test protocol shall be submitted to the OAM 35 days in advance of the test, and all test reports must be received by the OAM within 45 days of the completion of the testing, pursuant to that rule.
4. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

Qualitech Steel Corporation
Pittsboro, Indiana

CP 063-6093
Pit Id 063-00037

326 IAC 5-1 (Opacity Limitations)

This facility is subject to opacity limits as specified in 326 IAC 5-1-2 and specific opacity limitations established by operation condition.

326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating)

The (67.5 MMBTU/hr) natural gas fired boiler is subject to 326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating). Pursuant to 326 IAC 6-2-4, the particulate matter (PM) emissions shall be limited to 0.36 pounds per million BTU heat input.

326 IAC 6-3 (Process Operations)

This facility will achieve compliance by the use of BACT controls and operation condition emission limits.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

This facility is subject to opacity limits as specified in 326 IAC 6-4 and the fugitive dust plan submitted by the facility.

326 IAC 7-1.1-2, (Sulfur Dioxide Emission Limitations)

The facility will be adding sulfur to the steel to make it machineable. A limit on the amount of SO₂ emissions will be established to maintain the amount listed in the application to not be exceeded.

Permit requirement determination

The new source is a major stationary source subject to a 326 IAC 2-2-1 Prevention of Significant Deterioration (PSD) permit because it is one of the 28 listed source categories listed and at least one pollutant is emitted at a rate of 100 tons per year or greater. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21 the (PSD) requirements do apply.

BACT Analysis

The BACT analysis supplied by the company and reviewed by the staff are found in Section 6 of the application. All the pollutant emissions that exceed the significant emission amount as listed in 326 IA 2-2 were reviewed to determine if the Best Available Control Technology (BACT) was applied to each source of significant emissions. In addition, information in the EPA BACT/LAER Information Service (BLIS) has been used to review possible controls used for each pollutant for each operation.

Electric arc furnace (BACT)

Particulate Matter (PM/ PM₁₀)

PM and PM₁₀ emissions are generated from the combination of the electric arc furnace operation and the heat from the auxiliary burners used to melt the scrap into molten steel. The furnace will be charged with scrap metal, lime, and iron carbide. The furnace will be located in a separate enclosed area. Scrap will be lifted through an opening in the floor. The molten meal will be poured through another hole into the ladle. The exhaust air from the furnace during melting will be controlled by direct shell evacuation (DSE). The emissions

Qualitech Steel Corporation
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generated when the DSE is removed from the furnace will be exhausted through a hood over the furnace. The DSE and hood emissions will be ducted to a baghouse. The particulate matter emissions from the baghouse shall not exceed 0.0032 grains per dry standard cubic foot of air. The emission limit will be considered as BACT. The baghouse will exhaust through a stack 150 feet above the ground.

The electric arc furnace (EAF) baghouse will have a total air flow rate from of 800,00 actual cubic feet per minute. This will provide an air to cloth ratio of 1.56 :1.

Three control devices; a cyclone, an electrostatic precipitator (ESP), a scrubber, were also evaluated as methods to control.

The cyclone was rejected because of the low collection efficiency.

The ESP was eliminated because of the high metal content in the particulate matter, moisture in the waste stream, and exhaust temperature.

The scrubber was rejected because of the high energy requirements, the additional waste to be handled, and disposal problems.

BACT will be the use of a baghouse with limitations on the grain loadings of 0.0032 grains per dry standard cubic foot of air flow.

Sulfur Dioxide (SO₂)

The maximum sulfur dioxide emissions from the furnace will be when the 1200 series bars are made. This represents approximately ten (10%) percent of projected production. Two methods of controlling the SO₂ emission, charge substitution, and flue gas desulfurization (FGD) were evaluated.

Charge substitution was rejected because the facility will produce resulfurized steel bars which require the addition of sulfur.

The three FGD systems all have some common areas of drawbacks. The sulfur content in the EAF gas stream is very minimal when compared to 1% to 12% SO₂ level experienced in foundries steams and power plant, the high air flow 800,000 acfm to the baghouse, and the wide variation in SO₂ concentrations in the gas stream during the melting time. In addition, each unit has the additional problems:

- 1) The wet scrubber can be easily plugged by particulate matter in the gas stream requiring installation after the baghouse. This would make the cost two to three times greater than the dry scrubber. The operation would require the handling, treatment, and disposal of the sludge. The scrubber was, therefore, rejected.
- 2) The dry scrubber would require the construction of a chamber for the reaction of the sodium carbonate or lime slurry with the sulfur dioxide prior to the baghouse. The main purpose of slurry mix is to help transfer the SO₂ to the particulates. The dry

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scrubber was rejected because of the high air flow, SO₂ concentration variations in the exhaust gasses, and added particulate matter load to the baghouse.

- 3) The dry sorbent injection was rejected due to: the economically prohibitive cost of \$25,000 per ton, the temperature of the gasses required to not burn the bags in the baghouse are too low to thermodynamically favor the necessary reaction and mixing will not be uniform. The bags can be caked if humidity is below the dew point and the inability to meter the proper amount of reactant due to the variation of SO₂ in the gas stream.

Due to the limitations of each control method and that no controls have been indicated as applied to EAF exhaust gasses, BACT will be the use of high quality steel scrap in the production of resulfurized steel bars and through production limitations.

Nitrogen Oxide (NO_x)

The nitrogen oxide emissions are generated by reaction of nitrogen with oxygen in the furnace, combustion of the fuel, and the breakdown of the hydrogen cyanide by oxidation.

The following NO_x controls were reviewed: Low Excess Air, oxyfuel burners, burners out of service, reduced combustion temperature, load reduction, flue gas recirculation (FGR), selected non-catalytic reduction (NSCR), Exxon's Thermal DeNO_x and Nalco Fuel Tech's NoxOUT. All methods were eliminated, as BACT, due to physical limitations, operating problems, cost of operation, and technical feasibility. BACT will be the design and operation of the EAF and DSE and an emission limit of 0.5 lb/ton of steel.

Carbon Monoxide (CO)

Carbon monoxide is a product of the melting phase and the injection of iron carbide and carbon to refine the steel produced. Spikes (high readings) caused by scrap cave-ins will occur during this period. The control equipment cannot react quickly enough to adjust to the CO spikes. The spikes cannot be predicted. Reductions in the heat cycle will not reduce the number of spikes. The following methods of controlling CO were evaluated: operation practices, post combustion reaction chamber, catalyst incineration, oxygen injection, and thermal oxidation of CO to CO₂ at the air gap between direct shell evacuation control (DSE) elbow and the DSE duct. BACT will be thermal oxidation in the EAF, an air gap between the DSE elbow gap where the DSE fourth hole and the water cooled ductwork to the EAF baghouse meet. BACT shall be reduced with above bath post combustion system consisting of six (6) oxygen injectors and four (4) oxyfuel burners and CO emissions shall not exceed a maximum of 4.7 lbs/ton of steel at the maximum percentage of iron oxide. The higher carbon monoxide emissions are being allowed in lieu the existing BACT of 2.0 pounds per ton because the EAF will be producing to a high carbon content steel. In addition, the iron carbide added will have a six percent (6%) higher carbon content. The control technology for this type of operation is currently under development and may result in a greater reduction. The other methods were rejected because of technical reasons or the generation of additional pollutants.

Volatile Organic Compounds (VOC)

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The main source of VOC emissions is oily scrap and combustible materials mixed with the scrap. Thermal oxidation was evaluated as a control. The thermal oxidation was determined to be non-viable and technically infeasible. BACT will be the extensive scrap management program supplied with the construction permit application to eliminate the purchase of oily scrap and other combustible material.

Ladle metallurgy furnace (BACT)

The side draft hood collection arrangement exhausted to the EAF baghouse has been determined as BACT for the ladle metallurgy furnace (LMF) facility. This control method has been used for operations at other installations of this type. The emissions from the ladle during transfer from the EAF to the LMF facility will be controlled by slag on the metal and the use of a refractory cover if the ladle cannot be immediately placed under the side draft hood.

Reheat furnace BACT

PM/ PM₁₀ & SO₂

Due to the low amount of PM/PM₁₀ and SO₂ emissions generated from low-NO_x burners and particulate emissions from the tunnel furnace, add on controls were eliminated because they were impractical.

NO_x

The following controls: seven (7) combustion control methods, selective catalytic reduction (SCR), non-selective catalytic reduction (NSCR), two types of selective non-catalytic reduction (SNCR), were evaluated for NO_x emissions. All methods except low-NO_x natural gas-fired burners were eliminated, as BACT, due to combustion requirements, physical limitations, operation conditions, or cost. The SCR proposed for two (2) 264 MMBtu per hour furnace in Northwest Indiana as control technology have not been successfully demonstrated. The company does not produce bar stock. BACT will be low-NO_x natural gas-fired burners with specially designed cones, air baffles, and the emissions limited to 0.15 pounds per MMBtu of heat input by an operation condition.

CO

The use of an oxidation catalyst was considered as a method to control the CO emissions. The oxidation catalyst can potentially be subject to fouling and masking. BACT will be the application of good combustion control and firing of natural gas.

VOC

The use of an oxidation catalyst was considered as a method to control the VOC emissions. The cost analysis showed that to reduce the 1.1 tons per year by one half a ton tons per year would result in a cost of \$348,000. BACT will be the application of good combustion control and firing of natural gas.

Caster BACT

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PM/PM10

The casting is done in a water cooled-mold. The PM fugitive emissions are generated during the caster during the casting. A lid is used to control emissions from the tundish. The fugitive PM emissions will be emitted from the roof monitors with visible emissions estimated to be two (2) percent opacity. BACT will be no control with a lid on the tundish. The fugitive emissions after capture are calculated to be less than one (1) ton per year.

Scarfig BACT

PM/PM₁₀

A scrubber and a baghouse were considered as methods to control particulate matter emissions from the scarfer. The scrubber was eliminated due to the control efficiency and the plume emissions. The baghouse will emit 0.0052 grains per dscf of air flow compares to 0.02 grains per dscf from the scrubber. BACT will be the baghouse.

Vacuum Tank Degasser

PM/PM₁₀ & CO

The vacuum degasser will be used at the plant to alter the composition of the steel by removal of hydrogen, nitrogen and other dissolved gasses. The vacuum for the degasser will be generated by steam injection. The unit will remove PM, non-condensable and some CO from the steel. BACT will be a condenser to collect the exhaust gasses and a flare will be used to control any PM emissions and incinerate non-condensable exhaust gasses. The flare will operate less than thirty (30) minutes each hour.

Vacuum Tank Degassed Boiler

NOx

The use of the controls listed in the reheat furnace (SCR, NSCR and SNCR) were reviewed to control NOx from the boiler. These controls were considered to be impractical. The boiler will use Low-NOX burners to limit the nitrogen oxide emissions from the boiler. BACT will be limiting the boiler to 0.81 pounds per million cubic feet of natural gas burned.

PM, PM₁₀, SO₂, VOC, and CO

The installation of add-on control equipment was considered as impractical because of the amount of emissions generated. BACT will be the combustion of natural gas combined with good combustion control.

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Bar Cutting Building BACT

PM/ PM₁₀

The scrap material will be cut to size in a separate building with the particulate emissions to be exhausted to a baghouse. The emissions from the baghouse will be 0.01 grains per dry standard cubic foot of air flow.

Other Combustion Sources

The burners used in the ladle preheater, ladle dryer, tundish preheater a tundish dryer, will be low-NOX natural gas-fired units with emissions of 0.1 lb. of NOX/MMBtu. This will be considered BACT for NOx. A BACT analysis was not conducted for the remaining pollutants because the burners are 10 MMBtu/hr or less in size.

Slag Handling (BACT)

PM/ PM₁₀

The slag will be allowed to cool and solidify naturally. It will be removed in large chucks. The handling of the slag is outlined in the fugitive dust plan. A dust suppressant will be used to reduce screening emissions by at least ninety (90) and visible emissions to less than five (5%) percent utilizing methods outlined in 326 IAC 5. The dropping distance of the material during loading and unloading will be specified in an operation condition to control transfer emissions.

The control of road dust emissions is outlined in the fugitive dust plan for the unpaved roads. Wetting of the roads will be required to maintain the emissions below an average of ten (10%) percent opacity. The size of storage pile and the addition of wetting agents will be used to minimize fugitive emissions. All fugitive emissions will be required to comply with 326 IAC 6-5 unless otherwise specified in the operation conditions.

Lime Storage and Handling (BACT)

PM & PM₁₀

The six (6) lime and carbon storage bins will be equipped with displacement air bin filters to control dust in the exhaust air.

Iron Carbide receiving, handling, and Injection (BACT)

PM/ PM₁₀

Iron carbide will be unloaded from bottom unloading rail cars in a shed open on both ends. Plastic strips will be placed in the opening to allow the train cars to pass through. The hoppers will discharge into boots that will be raised up to the hopper.

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covered conveyor to an enclosed building. Material shall be moved by covered conveyor to the day storage bin. The air exhausted from the bin shall pass through a displacement air bin filter.

48. That pursuant to 326 IAC 2-2-3, collected material from the EAF baghouse shall be conveyed in covered conveyors to a bucket elevator and into the storage bin. The bins shall have a displacement air bin filter to control dust in the displaced air. The waste from the bins shall be loaded into sealed tanker trucks by an adjustable spout extend from the bottom of the bin into the truck opening. The loading shall be done inside an enclosure with plastic strips over the opening. The spillage shall be vacuumed immediately.
49. That pursuant to 326 IAC 2-2-3, CO emissions monitoring.
 - a) Qualitech shall install a system for continuously measuring and recording CO emissions during operation of the electric arc furnace. No later than 60 days prior to receiving authorization from the department to operate the electric arc furnace, Qualitech shall submit a monitoring protocol to the Office of Air Management 326 IAC 3-1.1-2. (Continuous Monitoring: Performance and operating requirements)
 - b) No sooner than 6 months after commencing normal operation of the furnace, Qualitech may submit a request for the department to delete this requirement from the permit. The department shall approve such a request if Qualitech demonstrates to the department's satisfaction that CO total emissions comply with the limits established in operation condition 11 per furnace heat.
 - c) Lacking an approval under b within 12 months of normal operation, Qualitech shall install a continuous emissions monitoring system to demonstrate compliance with operation condition No. 11 that satisfies all criteria established by complying with 326 IAC 3-1.1-2. (Continuous Monitoring: Performance and operating requirements), 326 IAC 3-1.1-3 (Continuous Monitoring: Record Keeping and Reporting), and 3-1.1-3 (Continuous Monitoring: Standard Operating Procedures)
50. That the temperatures of the burner on the degasser stack shall be monitored and temperatures recorded during the operation of the degasser.

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- (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

44. Transfer of Permits:

That pursuant to 326 IAC 2-1-6 (Transfer of Permits):

- (a) In the event that ownership of this (name of operation or process) is changed, (current company name) shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
- (b) The written notification shall be sufficient to transfer the permit from (original company name) to the new owner.
- (c) The OAM shall reserve the right to issue a new permit.

45. Permit Revocation:

That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

46. Availability of Permit:

That a copy of this permit shall be available on the premises of the source.

- 47 That pursuant to 326 IAC 2-2-3, Iron carbide shall be unloaded from bottom unloading rail cars in a shed open on both ends. Plastic strips shall be placed in the opening to allow the train cars to pass through. The hoppers shall be discharge into boots that shall be raised up to the hopper. The iron carbide shall be conveyed by

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half (0.5) second. The flare shall be monitored to ensure that the pilot is operating at the beginning of pump down and the required temperature is maintained during combustion of the gas stream. Records shall be maintained at the source for a minimum period of three (3) years and be made available upon request of the Office of Air Management (OAM). In the event that the pressure is outside the stated limits, the permittee shall comply requirements of the operation condition No. 41.

41. That the permittee shall implement the following procedures when parameters for the baghouses and flare are not operating in the required operation permit conditions:
- a) implement the inspection of the system and the baghouse in accordance with the operation and a maintenance plan submitted to the IDEM OAM,
 - b) maintain documentation on the cause of the out of range readings,
 - c) implement immediate corrective action for any problems discovered, corrective action shall be taken in accordance with Operation, and Maintenance submitted to the OAM prior to the start of operation,
 - d) report to IDEM failure or partial failure of control devices according to the procedure specified for malfunctions in 326 IAC 1-6-2, in which case the provisions of 326 IAC 1-6-5 may apply at the discretion of IDEM. OAM reserves the right to request stack tests pursuant to 326 IAC 2-1-4 (Operating Permits).
- 42 That a log of information necessary to document compliance with production limitations, process emission limits, heater capacities, visible emission exceedances, ambient monitoring results, and NSPS requirements shall be maintained. These records shall be kept for at least the past 36 months and made available upon request to the Office of Air Management. A quarterly summary shall be submitted to:

**Compliance Data Section
Office of Air Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015**

Within 30 days after the end of the quarter being reported in the format attached. These reports shall include the required sulfur tons data reports included in the permit, NSPS requirements, and operation permit requirements.

43. Preventive Maintenance Plan:

That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), (company name) shall prepare and maintain a preventive maintenance plan, including the following information:

- (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
- (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.

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After August 7, 1983, the EAF shall comply with New Source Performance Standards requirements of 40 CFR 60.276a, Recordkeeping and reporting requirements (copy attached).

37. That pursuant to 326 IAC 2-6-3(a), the owner or operator of this facility shall submit an emission statement to the Office of Air Management by July 1 covering the twelve consecutive month time period beginning January 1 and ending December 31 for each year.
38. That before the operation of the permitted facilities two (2) ambient monitoring sites shall be established at locations approved by the commissioner:
 - a. Each monitoring site shall measure PM₁₀, sulfur dioxide, carbon monoxide, and oxides of nitrogen (NO, NO₂, NO_x). IDEM reserves the right to require the permittee to monitor for compliance with NAAQS for PM in the event that such standard is promulgated before or during the required monitoring period. Sites shall operate for at least twenty-four (24) months after the permitted facility begins operation. Qualitech Steel Corporation may petition the Commissioner for the removal of this site if it is established that the ambient pollutant levels continue to comply with NAAQS and that the plant has minimal impact on the air quality.
 - b. One site shall be monitor the following meteorological parameters: wind speed, wind direction, outdoor temperature, relative humidity, solar radiation, and UV radiation.
 - c. One site shall be near the maximum impact area.
 - d. One site shall be on or near the school property.
 - e. All monitors shall meet the operating and maintenance criteria outlined in the Indiana Department of Environmental Management, Office of Air Management, Quality Assurance Manual. Additionally, a monitoring/QA plan must be submitted and approved by the Commissioner prior to commencement of the monitoring.
 - f. Ambient data along with precision and accuracy data from the monitors shall be submitted on a quarterly basis in a format approve by the Commissioner within sixty (60) days after the end of the quarter being reported.
39. That the baghouses shall be operated at all times when the EAF, LMF, scarfer, and bar cutting facilities are in operation. The pressure drops from the LMF, scarfer, and bar cutting facilities shall be maintained within the following range 5 and 8 inches of water. If visible emissions from the EAF and EAF dust storage bin exceeds three (3%) percent or water pressure drops on the EAF, LMF, scarfer, and bar cutting facilities fall outside their ranges, corrective action will be taken in accordance with Qualitech Steel Corporation Operation, Maintenance and Fugitive Dust Plan as submitted to IDEM. The company shall document the cause of the out of range reading and take immediate action to correct any problem. Failure or partial failure of control devices shall be reported to IDEM according to the procedure specified for malfunctions in 326 IAC 1-6-2, in which case the provisions of 326 IAC 1-6-5 may apply at the discretion of IDEM. Records shall be maintained at the source for a minimum period of three (3) years and be made available upon request of the Office of Air Management (OAM). In the event that the pressure is outside the stated limits, the permittee shall comply with the requirements of operation condition No. 41.
40. That the flare shall be operated during vacuum tank degasser pumpdown when CO is being formed. The temperature shall exceed 1,100°F and gas residence time shall be at least one-

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- (d) The owner or operator shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture system (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 noted and proper maintenance performed.
 - (e) The owner or operator may petition the Commissioner to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.
 - (f) If emissions during any phase of the heat time are controlled by the use of a DEC system, the owner or operator 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 or DEC duct prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ± 5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.
 - (g) When the owner or operator of an EAF controlled by a DEC is required to demonstrate compliance with the standard under § 60.272a(a)(3) of this Subpart, and at any other time the Commissioner may require (under section 114 of the Clean Air Act, as amended), the pressure in the free space inside the furnace shall be determined during the melting and refining period(s) using the monitoring device required under paragraph (f) of this section. The owner or operator may petition the Commissioner for reestablishment of the 15-minute integrated average of the pressure whenever the owner or operator can demonstrate to the Commissioner's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure 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 Commissioner to be unacceptable operation and maintenance of the affected facility.
 - (h) During any performance test required under § 60.8, and for any report thereof required by § 60.275a(d) of this Subpart, or to determine compliance with § 60.272a(a)(3) of this Subpart, the owner or operator shall monitor the following information for all heats covered by the test:
 - (1) Charge weights and materials, and tap weights and materials;
 - (2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and the pressure inside an EAF when direct-shell evacuation control systems are used;
 - (3) Control device operation log; and
 - (4) Continuous monitor or Reference Method 9 data.
36. That pursuant to 326 IAC 12 and 40 CFR Part 60, Subpart AAa, Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed

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- b) made available for review upon request of OAM staff, and
 - c) reported to the OAM readings in excess of the limits specified in the operation conditions on a quarterly basis.
33. That Qualitech Steel Corporation shall reduce the steel scrap to be processed steel in the bar cutting building with emissions captured and ducted to a baghouse designated for the operation.
34. That pursuant to NSPS 40 CFR 60.273 a, Emission Monitoring, a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device on the EAF stack shall be installed, calibrated, maintained, and operated by the owner or operator. This monitor shall be maintained in accordance with 326 IAC 3-1.1.
35. That pursuant to 40 CFR 60.274a, Monitoring of operations.
- (a) The owner or operator subject to the provisions of this Subpart shall maintain records of the following information:
 - (1) All data obtained under paragraph (b) of this section; and
 - (2) All monthly operational status inspections performed under paragraph © of this section.
 - (b) Except as provided under paragraph (d) of this section, the owner or operator subject to the provisions of this Subpart shall check and record on a once-per-shift basis the furnace static pressure on the DEC system and either (1) check and record the control system fan motor amperes and damper position 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 device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ± 10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Commissioner may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of appendix A of this part.
 - (c) When the owner or operator of an affected facility is required to demonstrate compliance with the standards under § 60.272a(a)(3) and at any other time the Commissioner may require that (under section 114 of the Act, as amended) either 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 affected facility subject to paragraph (b)(1) or (b)(2) of this section. The owner or operator may petition the Commissioner for reestablishment of these parameters whenever the owner or operator can demonstrate to the Commissioner's satisfaction that the affected facility operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of paragraph 276a(c).

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25. That pursuant to 326 IAC 2-2-3, the nitrogen oxide emissions from the vacuum tank boiler, rated at 67.5 million BTU/hour boiler shall be limited to 81.0 pounds per million cubic feet of gas burned.
26. That pursuant to 326 IAC 2-2-3, the remaining emissions of other pollutants from the 67.5 million BTU/hour boiler shall be limited to burning only natural gas.
27. That pursuant to 326 IAC 2-2-3, rolling oils or water containing oil in solution shall not be used in the rolling mill.
28. That the fugitive dust program, as specified in the fugitive dust plan in the summary of information supplied submitted 8/13/96, copy attached, shall be implemented to reduce paved road, parking lot, unpaved road, traveled open areas, and storage pile emissions. The name of the person, his/her title, and telephone number on site who is responsible for implementing the plan shall be supplied to the OAM Compliance Section. All process and hauling roads shall be paved. Paved roads and parking lots silt shall be controlled by the use of a vehicular vacuum sweeper and shall be performed every 14 days. Upon request of the Assistant Commissioner, Qualitech Steel Corporation, shall sample and provide to IDEM surface material silt content and surface dust loadings in accordance with field and laboratory procedures set by IDEM. IDEM will have the right to specify road segments to be sampled. Qualitech Steel Corporation, shall provide supplemental cleaning of paved road sections found to exceed the controlled silt surface loading of 16.8 pounds of silt per mile. Qualitech Steel Corporation shall provide supplemental cleaning of paved road sections found to exceed the controlled silt surface loading of 16.8 pounds of silt per mile.
29. That pursuant to 326 IAC 2-2-3, the carbon and flux additive system conveyors and transfer points shall be enclosed and vented into the melt shop building.
30. That the slag processing particulate matter emissions shall be controlled by the application of water spray to maintain:
 - a) the slag moisture content at five percent (5%) or greater,
 - b) visible emissions from the screening and conveying to not exceed an average of ten percent (10%) opacity for twenty-four (24) consecutive reading in a six (6) minute period as determined by 40 CFR 60, Appendix, Method 9, and
 - c) visible emissions from the crushing to not exceed an average of fifteen percent (15%) opacity for twenty-four (24) consecutive reading in a six (6) minute period as determined by 40 CFR 60, Appendix, Method 9.
31. That visible emissions from vents, stacks, building roof monitors, iron carbide receiving, handling, and storage, or slag pit dig out and processing shall not exceed an average of three percent (3%) opacity, unless otherwise specified. Visible emissions shall be determined by twenty-four (24) consecutive reading in a six (6) minute period as determined by 40 CFR 60, Appendix, Method 9, pursuant to 326 IAC 5-1-4.
32. That visible emission readings shall be:
 - a) recorded and maintained for three (3) years,

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- a. the addition of all the additives to the ladle under a hood vented to the EAFbaghouse,
 - b. by restricting the addition of material to form artificial slag by chute loading,
 - c. moving the ladle from the EAF to the LMF in such a manner that the slag crust is not disturbed,
 - d. covering the ladle with a refractory lined cover if the transfer to the LMF or VTD is delayed, and
 - e. conducting argon stirring under the EAF, LMF and VTD hoods and not during the transfer period.
15. That pursuant to 326 IAC 2-2-3, the emissions from the Ladle Metallurgical Stations (LMS) shall be vented to the EAF baghouse.
 16. That pursuant to 326 IAC 2-2-3, the argon stirring shall be conducted only at the EAF tapping location, LMF station, or the vacuum tank degasser.
 17. That the fugitive particulate matter emissions from the tundish above the caster shall be vented through roof monitors.
 18. That the total emissions of lead shall not exceed 0.07 pounds per hour (0.31 tons per year).
 19. That pursuant to 326 IAC 2-2-3, the particulate matter emissions from the scarfer baghouse shall not exceed 1.9 pounds per hour base on 0.0052 grains per dscf at an air flow rate of forty-three thousand five hundred (43,500) dscf.
 20. That pursuant to 326 IAC 2-2-3, the reheat furnaces PM emissions from the furnace shall not exceed 0.003 pound per million Btu.
 21. That pursuant to 326 IAC 2-2-3, the reheat furnaces shall be limited to the use of low-NOx natural gas-fired burners, shall not exceed 175 million Btu per hour heat input. The nitrogen oxides emissions from the furnace shall not exceed 0.15 pounds per million Btu.
 22. That pursuant to 326 IAC 2-2-3, the four (4) Ladle Preheat/Dryer Stations (LPS) shall be limited solely to the use of low-NOx natural gas-fired burners. The four preheat stations combined shall not exceed 32 million Btu per hour heat input and nitrogen oxides emissions shall not exceed 0.10 pounds per million Btu.
 23. That pursuant to 326 IAC 2-2-3, the Tundish Dryer shall be limited solely to the use of a low-NOx natural gas-fired burner, shall not exceed 5.0 million Btu per hour heat input, and nitrogen oxides emissions shall not exceed 0.1 pounds per million Btu.
 24. That pursuant to 326 IAC 2-2-3, the two (2) Tundish Preheaters shall be limited solely to the use of low-NOx natural gas-fired burners, shall not exceed 5.0 million Btu per hour heat input combined, and nitrogen oxides emissions shall not exceed 0.1 pounds per million Btu.

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- hundred thirty two thousand seven hundred eighty-eight (632,788) dscf. The opacity shall not exceed an average of three percent (3%) opacity in twenty-four (24) consecutive reading in a six (6) minute period as determined by 40 CFR 60, Appendix, Method 9, pursuant to 326 IAC 5-1-4. This condition will satisfy NSPS 40 CFR Part 60, Subpart AAa, 40 CFR 60.272a.
9. That pursuant to 326 IAC 2-2-3 the particulate matter discharged into the atmosphere from the EAF dust storage silo vent filter and handling system transfer points shall be limited to an average of three percent (3%) opacity. The opacity shall be determined by twenty-four (24) consecutive reading in a six (6) minute period as determined by 40 CFR 60, Appendix, Method 9, pursuant to 326 IAC 5-1-4. This condition will satisfy NSPS 40 CFR Part 60, Subpart AAa, 40 CFR 60.272a(b).
 10. That pursuant to 326 IAC 2-2-3, the nitrogen oxide(s) emissions from the EAF shall not exceed 0.5 pounds per ton of steel produced.
 11. That pursuant to 326 IAC 2-2-3, the carbon monoxide emissions from the EAF shall be controlled by thermal oxidation and maintaining a negative pressure at the gap where the DSE fourth hole and the water cooled ductwork to the EAF baghouse meet. The CO emissions shall be reduced by twenty-two percent (22%) by thermal oxidation when iron carbide is added but shall not exceed a maximum of 4.7 lbs/ton of steel.
 12. That pursuant to 326 IAC 2-2-3, the volatile organic compound (VOC) emissions from the EAF shall be controlled through a scrap management plan. A copy has been filed with the OAM. The nonmetallic materials in scrap shall be minimized. All grades of scrap shall be free of excessive dirt, oil, and grease. Heavily oiled scrap such as used engine blocks and machine shop borings shall not be used. The furnace shall not exceed 0.15 pounds of volatile organic emissions per ton of steel produced.
 13. That pursuant to 326 IAC 2-2-3, the sulfur dioxide emissions from the electric arc furnace (EAF) and the ladle metallurgy facility (LMF) combined shall not exceed 149 tons per year rolled on a 12 month period based on the total tons of each series of steel produced, times the pounds of sulfur per ton. The quantity of sulfur added at the EAF and LMF per ton of steel for each melt shall be recorded. The maximum amount of the sulfur to be added for each of the three (3) types of the steel shall be established by stack tests. The sulfur dioxide per ton of steel shall not exceed the following: low sulfur, 0.083 lbs; 1100 series, 0.52 lbs; and 1200 series, 1.4 lbs. During the first 12 months of operation, the sulfur dioxide emission shall be limited such that the total SO₂ emissions divided by months of operation shall not exceed an average of 12.5 tons per month from the EAF and LMF combined. (Sulfur Dioxide Emission Limitations).

L = tons of low sulfur heats/month
M = tons of 1100 series heats/month
H = tons of 1200 series heats/month

$$\text{Tons of SO}_2/\text{month} = \frac{(0.083 \cdot L) + (0.52 \cdot M) + (1.4 \cdot H)}{2000 \text{ lbs per ton}}$$

14. That pursuant to 326 IAC 2-2-3, the PM emissions from the ladle shall be controlled by:

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- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.
 - (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
 - (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
 - (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]
5. That the permittee shall submit required reports of malfunctions exceeding one (1) hour resulting in violation of operation permit conditions, maintain records of malfunctions less than one(1) hour in duration, and develop a preventive maintenance plan pursuant to 326 IAC 1-6 (copy attached). The reporting of the malfunction does not relieve the company from enforcement actions and is not a defense against permit violations.
6. That pursuant to 326 IAC 2-6 (Emission Reporting), the owner/operator of Qualitech Steel Corporation must annually submit an emission statement for the facility. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. A copy of this rule is enclosed. The annual statement must be submitted to:
- Data Support Section
Office of Air Management
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015**
7. That the fugitive particulate matter emissions generated during furnace operations shall be controlled by an enclosed building with the collected emissions ducted to the EAF baghouse. Fugitive emissions generated at the EAF during each complete cycle from tap to tap shall not exceed three percent (3%) from any opening during charging. The opacity shall be determined by a 6 minute average (24 readings taken in accordance with EPA Method 9, Appendix A), pursuant to 326 IAC 5-1-4.
8. That pursuant to 326 IAC 2-2-3, the particulate matter emissions from the EAF baghouse shall not exceed 17.36 pounds per hour based on 0.0032 grains per dscf, at an air flow rate of six