AP32 Section:	12.5.1
Background Chapter	3
Reference:	48
Title:	Summary of stack test results for Georgetown Steel (Georgetown, SC). Testing conducted on March 27-28, 1990; June 3, June 6, November 13, and December 19 1991; June 2-3, 1992; June 23-24 and December 22, 1993; February 16-17, June 14-15, and December 13, 1995; June 20, 1996; April 17-18, and June 24-25, 1997; June 15 and December 8, 1998; April 12-13 and June 15-16, 1999; March 26 and June 19, 2001. Received from Anthony Keeler, South Carolina Department of Health and Environmental Control on September 16, 2002.

South Carolina
DHEC
Department of Health and Environmental Control

July 5, 1990

Georgetown Steel Corp.
P.O. Box 619
Georgetown, S.C. 29000
Attn: Mr. Bill Dobinski

Dear Mr. Dobinski:

Enclosed please find the accepted results of the recent stack tests of the GSC melt shop/main baghouse. Please review the test results and notify us of any discrepancies found.

As you are aware, these test were to prove compliance with the NSPS subpart AA limitations as well as the BAQC 105 tons/hour permit limitations. To this end, three I.D. fans were operated instead of the normal four. This was done in response to our intention to limit operations if fewer fans were in operation than during testing.

During these tests visible emissions from the melt shop exceeded 20% opacity for 28 of 121 sets. The 20% opacity limitation on metal refining operations is a State regulation and not a part of NSPS. Further, the emissions which caused the violations were not from the EAFs but were from state regulated sources in the melt shop or from dust blown from the ground (both inside and outside the melt shop).

The visible emissions violations appeared to be caused by three main factors; Strong winds, excessive dust and fugitive emissions in and around the melt shop and three of four fans on line.

The wind during testing was strong and usually constant from the northeast. This was a significant factor in picking up the dust from the lime handling area and from the slag pits. During the last test of the lime handling system the air flow was measured at 41% of its rated capacity. The low capture efficiency was evident by both the appearance of the area and the amount of lime dust blown into the melt shop. There has since been issued, however, a construction permit for a closed lime handling system which should remove this problem.

Georgetown Steel Corp.
July 5,1990

The winds that brought material into the melt shop also took the shop emissions away from the roof canopies. Strong winds have been a problem in the past in controlling emissions from the melt shop. It is the Bureau's policy that pollution control equipment should be designed and operated so that normal weather conditions have no effect on its efficiency. This particular occurrence is somewhat mitigated in that the tests were run with only three of the four fans normally in operation.

The decision to run only three of four I.D. fans was made to provide GSC with the flexibility of full operating capacity in the event of a fan failure. As the collection system is presently set up, the DECs for both the EAFs and ladle furnaces have priority and whatever airflow remains is directed to the canopies. These tests indicate that three fans cannot supply enough airflow to the canopies to remove emissions before a strong wind can take them out of the building. The airflow priorities should remain as they are because the furnace emissions are far easier to control before they leave the furnaces and they far outweigh the emissions from the other melt shop units.

In summary, the EAFs met the NSPS subpart AA emissions limitations and the State operating permit particulate matter limitation. The melt shop was in violation of the State visible emission limitation during the test periods.

If I can clarify this further or be of any other service please call me at (803) 734-4528.

Very truly yours,

Robert J Brown

Robert J. Brown, Jr.
Engineering Services Division
Bureau of Air Quality Control

cc: Jake Frick
Robert Wood
Max Batavia
Phil Brantley
John Allison, Waccamaw Dist.

Georgetown Steel Corporation
Georgetown, S.C.
March 27 & 28, 1990
Emissions tests for compliance with NSPS
subpart AA and BAQC permit for 105 TPH operation

Particulate emissions from main baghouse:

Run #	Module tested, #	Production Rate, tons/hour	Emissions, lbs/hour	Emissions, grs/DSCF	Allowable Emissions, grs/DSCF
1a	9 & 11	112.1	1.97	0.0021	0.0052
1b	10 & 12	112.1	2.12	0.0023	0.0052
2a	5 & 7	115.6	2.00	0.0022	0.0052
2b	6 & 8	115.6	1.80	0.0019	0.0052
3a	1 & 3	100.3	1.39	0.0015	0.0052
3b	2 & 4	100.3	0.91	0.0010	0.0052
Average	1-12	109.3	10.19	0.0018	0.0052

Operation Notes:

1. Production rates listed are for each individual hour. Permit limit of 105 TPH is based on the monthly average.

2. Three I.D. fans were on-line during testing.

3. Average baghouse pressure drops during testing were as follows:

module #1, 5.4"
module #2, 5.3"
module #3, 5.5"
module #4, 5.3"
module #5, 4.8"
module #6, 5.3"
module #7, 5.0"
module #8, 5.0"
module #9, 5.4"
module #10, 4.2"
module #11, 5.3"
module #12, 4.6"

EAF canopy and DEC control system:

Control panel item	Set point	Test readings
EAF #1 duct temp.	699, F	normally in lower 600s
EAF #1 cooling air damper opening, %	auto	normally stayed open
EAF #3 duct temp.	699, F	normally in lower 600s
EAF #3 cooling air damper opening, %	auto	normally stayed open
EAF #1 DEC #1 pressure drop	.605"	normally .4" - .5"
EAF #1 DEC #1 damper opening, %	auto	always 100 % open
Main duct temp.	180, F	100-150, F
Main duct cooling air damper opening, %	auto	always closed
Combined canopy pressure drop	2.0"	1.44" - 1.99"
Combined canopy damper opening, %	auto *	almost always closed
EAF #3 Dec #3 pressure drop	.605"	.4" -.55"
EAF #3 DEC #3 damper opening, %	auto	always open

* damper set so that it is always at least 5% open

Visible Emissions:

Main Baghouse

Run #	1	2	3	Combined
# of sets	40	30	40	110
Average opacity	0	0	0	0
# of sets >20%	0	0	0	0
Min/max sets	0/0	0/0	0/0	0/0

Melt Shop

Run #	1	2	3	Combined
# of sets	41	40	40	121
Average opacity	17	20	10	16
# of sets >20%	11	16	1	28
Min/max sets	0/44	3/53	5/22	

Indicated Status:

NSPS Subpart AA (particulate).....Compliance
NSPS Subpart AA Visibles).....Guidelines not exceeded
Permit 1140-0004 (particulate).....Compliance
Permit 1140-0004 (visibles).....Violation

Robert J. Brown, Jr. RJB
July 5, 1990

cc: Jake Frick
Robert Wood
Max Batavia
Phil Brantley
John Allison, Waccamaw Dist.

Georgetown Steel Corporation
DRI Division
Metallized Briquetter
Georgetown, South Carolina
RESULTS OF TEST ON June 3, 1991

Permit No. 1140-0003
I.D. No. 04

PARTICULATE:

Test No.	Production Rate long tons/hour	Emissions grains/dscf	Emissions lbs/hour	Allowable Emissions lbs/hour
1	11.0	0.014	0.57	3.8
2	11.0	0.026	1.08	3.8
3	11.0	0.061	2.48	3.8
Avg	11.0	0.034	1.38	3.8

OPERATION NOTES:

1. Emission control device was a wet scrubber. This device has no flowmeter or pressure drop apparatus.
2. Fan amps averaged 28 amps during testing.

STATUS AS TESTED:

Permit No. 1140-0003, Section II, A.....COMPLIANCE

Report Recieved: 06-27-91
Review Completed: 07-03-91
Reviewer: Raymond E. Bishop

cc: Jake Frick
W.P. Brantley
Robert J. Brown, Jr.
John Allison, Waccamaw District

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

July 3, 1991

Georgetown Steel Corporation
DRI Division
P.O. Box 619
Georgetown, South Carolina 29440
Attention: Mr. William L. Rollins

A summary of the results of the recent source test at your Metallized Briquetter facility is enclosed.

This summary includes the emission rates, operating parameters, and compliance status of the source.

Please review this data and if I can be of further assistance in these matters please call. (803) 935-6313

Very truly yours,

Raymond E. Bishop
Division of Engineering Services
Bureau of Air Quality Control

Enclosure

cc: Jake Frick
W.P. Brantley
Robert J. Brown, Jr.
John Allison, Waccamaw District

Georgetown Steel Corporation
Reheat Furnace
Georgetown, South Carolina
RESULTS OF TEST ON June 6, 1991

Permit No. 1140-0004
I.D. No. 10

PARTICULATE:

Test No.	Production Rate tons/hour	Emissions grns/dscf	Emissions lbs/hour	Emissions lbs/ton	Allowable Emissions[1] lbs/ton
1	98.7	0.004	2.58	0.03	0.09
2	109.0	0.005	2.78	0.03	0.09
3	104.1	0.004	2.14	0.02	0.09
Avg	104.0	0.004	2.50	0.02	0.09

[1]Based on Natural Gas as fuel source.

OPERATION NOTES:

1. No emission control device was installed.
2. Natural Gas was used as the fuel source.

STATUS AS TESTED:

Permit No. 1140-0004, Section II, A.....COMPLIANCE

Report Recieved: 06-27-91
Review Completed: 07-03-91
Reviewer: Raymond E. Bishop

cc: Jake Frick
W.P. Brantley
Robert J. Brown, Jr.
John Allison, Waccamaw District

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

July 3, 1991

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29440
Attention: Mr. William J. Dobinski

A summary of the results of the recent source test at your Reheat Furnace facility is enclosed.

This summary includes the emission rates, operating parameters, and compliance status of the source.

Please review this data and if I can be of further assistance in these matters please call. (803) 935-6313

Very truly yours,

Raymond E. Bishop
Division of Engineering Services
Bureau of Air Quality Control

Enclosure

cc: Jake Frick
W.P. Brantley
Robert J. Brown, Jr.
John Allison, Waccamaw District

Georgetown Steel Corp.
Lime Handling Baghouse
Georgetown, S.C.
RESULTS - TESTS OF 11-13-91

PERMIT NO. 1140-0004
ID NO. 4

ARTICULATE:

Test #	Production Rate tons/hr	Emissions lbs/hr	Emissions gr/dscf	Allow. Emissions gr/dscf
1	20.0	0.00	0.000	0.01
2	20.0	7.73	0.080	0.01
3	20.0	8.71	0.093	0.01
Avg.	20.0	8.22	0.087	0.01

ERATION NOTES:

. Due to problems with leak check, run #1 was not included.
. Pressure drop across baghouse was 5.5 inches of water.
. 120,000 pounds of lime was processed during test giving the tons/hr.

ATUS AS TESTED:

1. Operation Permit O/P-22-075.....VIOLATION

Report Received: 11-27-91
Review Completed: 12-06-1991
Reviewer: Roland O. Shaw

R. S.

Jake Frick
W. P. Brantley
M. K. Batavia
John Allison, Waccamaw Dist.

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

December 06, 1991

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29440
Attention: Mr. William L. Rollins

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Very truly yours,

Roland O. Shaw

Roland O. Shaw
Division of Engineering Services
Bureau of Air Quality Control

Enclosure

cc: Jake Frick
W. P. Brantley
M. K. Batavia
John Allison, Waccamaw Dist.

Georgetown Steel Corporation
Lime Handling Baghouse
Georgetown, S.C.
RESULTS - TESTS OF December 19, 1991

PERMIT NO. 1140-0004
ID NO. 9

ARTICULATE:

Test #	Production Rate tons/hr	Emissions lbs/hr	Emissions gr/dscf	Allow. Emissions gr/dscf
1	20.0	0.591	0.0053	0.010
2	20.0	0.515	0.0049	0.010
3	20.0	0.521	0.0052	0.010
Avg.	20.0	0.542	0.0051	0.010

ERATION NOTES:

- Approximately 120,000 lbs of lime was unloaded during test producing 20 tons/hr.
- Pressure drop across the baghouse was approximately 1.1 inches of H2O.

ATUS AS TESTED:

1. Operation Permit O/P-22-075.....COMPLIANCE

Report Received: 01-09-92
Review Completed: 01-20-1992
Reviewer: Roland O. Shaw

Jake Frick
W. P. Brantley
Robert Brown
John Allison, Waccamaw Dist.

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

January 20, 1992

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29440
Attention: Mr. William J. Dobinski

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Very truly yours,

Roland O. Shaw

Roland O. Shaw
Division of Engineering Services
Bureau of Air Quality Control

Enclosure

cc: Jake Frick
W. P. Brantley
Robert Brown
John Allison, Waccamaw Dist.

Georgetown Steel Corporation
Georgetown, South Carolina
Test of June 2 & 3, 1992
Main Baghouse/Melt Shop

Permit No. 1140-0004
Source No. 01

PARTICULATE:

Run #	Vent #'s	Emission (gr/dscf)	Rate (lb/hr)	Allow. Rate (gr/dscf)
1	1&2	0.00165		0.0052
1	7&8	0.00109		0.0052
2	3&4	0.00366		0.0052
2	9&10	0.00124		0.0052
3	5&6	0.00087		0.0052
3	11&12	0.00093		0.0052
Average		0.00182	9.95	0.0052

1. Production rate averaged 112 tons/hour during the period of 2-3 June.
2. Each vent was tested for 2 hours.
3. Total PM was determined by adding the lb/hr for each vent.

VISIBLE EMISSIONS:

Melt Shop

Run #	1	2	3	Combined
# of sets	11	8	6	25
Average opacity	2	8	2	4
# sets >20%	0	1	0	1
Min/max	0/20	0/40	0/20	0/40

Main Baghouse

Run #	3
# of sets	5
Average opacity	0
# sets >20%	0
Min/max	0/0

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

July 27, 1992

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. William J. Dobinski

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the sources(s) tested.

Upon review it was noted that the original "gr/dscf" emission calculations were incorrect. The results are about one half of those reported in the report.

Please review this data and if I can be of further assistance in these matters please call.

Very truly yours,

Michael J. Bennett
Division of Engineering Services
Bureau of Air Quality Control

Enclosure

cc: Jake Frick
W.P. Brantley
Robert Brown
John Allison, Waccamaw Dist.

Georgetown Steel Corp.
Reheat Furnace
Georgetown, S.C.
RESULTS - TESTS OF June 23, 1993

PERMIT NO. 1140-0004
ID NO. 10

PARTICULATE:

Test #	Production Rate tons/hr	Emissions lbs/hr	Emissions lbs/ton	Allow. Emissions lbs/ton
1	112.0	14.82	0.13	0.09
2	112.0	1.73	0.01	0.09
3	112.0	3.58	0.03	0.09
Avg.	112.0	6.71	0.06	0.09

OPERATION NOTES:

1 . The furnace was fired with natural gas during test.
2 . No visible emission was observed during tests.
3 . There was a furnace shutdown during run #1 which may have caused higher emissions during the test.

STATUS AS TESTED:

Permit No. 1140-0004, Section II, A.....COMPLIANCE

Report Received: 07-21-93
Review Completed: 08-04-1993
Reviewer: Roland O. Shaw

RS

:c: Jake Frick
W. P. Brantley
Robert Brown
John Allison, Waccamaw Dist.

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

August 04, 1993

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. John C. Moschgat

A summary of the results of the recent source tests at the indicated faciiity is enciosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Roland O. Shaw

Roland O. Shaw
Division of Engineering Services
Bureau of Air Quality Control

Enclosure

cc: Jake Frick
W. P. Brantley
Robert Brown
John Allison, Waccamaw Dist.

Georgetown Steel Corp.
Metallized Briquetter
Georgetown, S.C.
RESULTS - TESTS OF June 24, 1993

PERMIT NO. 1140-0004
ID NO. 16

PARTICULATE:

Test #	Production Rate tons/hr	Emissions gr/dscf	Emissions lbs/hr	Allow. Emissions lbs/hr
1	8.5	0.035	1.270	3.8
2	8.5	0.018	0.660	3.8
3	8.5	0.014	0.507	3.8
Avg.	8.5	0.022	0.812	3.8

VISIBLES:

Test #	1	2	3	TOTAL
No. of 6 Min. Sets	5	0	0	5
Sets greater than stand.	0	0	0	0
Average opacity - %	0	0	0	0 (Avg.)
max/min opacity - %	0/0	0/0	0/0	-

OPERATION NOTES:

1 . There were no actual pressure or flowmeter devices.

STATUS AS TESTED:

Permit No. 1140-0004, Section II, A.....COMPLIANCE
Permit No. 1140-0004, Section II, A.....COMPLIANCE

Report Received: 07-21-93
Review Completed: 08-04-1993
Reviewer: Roland O. Shaw

RGS

cc: Jake Frick
W. P. Brantley
Robert Brown
John Allison, Waccamaw Dist.

Georgetown Steel Corporation
Lime Handling Baghouse
Georgetown, S. C.
Results of - December 22, 1993

Permit# 1140-0004
Id # 09

Particulate:

Test #	Production Rate tons/hr	Emissions lbs/hr	Emissions gr/dscf	Allowable Emissions gr/dscf
2	18.33	.0666	.0006	.010
3	16.67	.0506	.0005	.010
4	16.67	.1466	.0014	.010
Avg	17.22	.0879	.0008	.010

Visibles: (Method 9)

Test #	2	3	4	Total
No. of 6 Min Sets	3	0	0	3
Sets greater than stand	0	0	0	0
Average Opacity - %	0	0	0	0
Set max/min opacity - %	0/0	0/0	0/0	-

Operational Notes:

1. There was approximately 52 tons of lime unloaded during the test.
2. The pressure drop across the baghouse was 5.1" of H_2O.

Status As Tested:

S.C. Permit 1140-0004, Part II, Special Cond., (A), (PM).....Compliance
S.C. Permit 1140-0004, Part II, Special Cond., (A), (Visible).....Compliance

Report Received: 01-10-94
Review Completed: 01-13-94
Reviewer: Roland O. Shaw

cc: Jake Frick
W. P. Brantley
Brett Caswell
John Allison, Waccamaw Dist.
Main File

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

January 13, 1994

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. John C. Moschgat

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Roland O. Shaw

Roland O. Shaw
Division of Engineering Services
Bureau of Air Quality

Enclosure

cc: Jake Frick
W. P. Brantley
Brett Caswell
John Allison, Waccamaw Dist.
Main File

Georgetown Steel Corporation
Electric Arc Furnaces 1&3/Main Baghouse
Georgetown, South Carolina
Test results of February 16-17, 1995
Permit No. 1140-0004 Id. Nos. 2 & 3 NSPS

Particulate Emissions (EPA Method 5D):

Test No.	Production (tons/hr)	Baghouse Compartment No.	Emissions (lbs/hr)	Emissions (gr/dscf)	Allowed (gr/dscf)
1	174.56	1 and 3	NA	0.00152	---
		2 and 4	NA	0.00458	---
2	180.33	5 and 7	NA	0.00329	---
		6 and 8	NA	0.00214	---
3	140.61	9 and 11	NA	0.00091	---
		10 and 12	NA	0.00181	---
Avg.	**165.17**	**----**	**14.46 (total)**	**0.0024**	**0.0052**

Visible Emissions (Melt Shop Louvers):

Test no.	1	2	3	Total
No. of 6 min. sets	15	5	0	20
Sets > standard	0	0	X	0
Avg. Opacity (%)	0	0	X	0
Set max/min opacity (%)	6/0	0/0	X/X	6/0

Operation Notes:

1. Each furnace is rated at 75 tons/hr for a combined total rating of 150 tons/hr.
2. Each of the three test runs encompassed four of the twelve baghouse compartments.
3. Each test run was 240 min. in duration (60 min./compartment).
4. The furnaces were charged with scrap, iron ore pellets, and alloys.
5. The baghouse inlet flowrate averaged 659,446 dscf/min.

Status As Tested:
40 CFR Part 60.270 Subpart AA (Particulate/Visibles).....Compliance

Report received: 3-30-95
Review completed: 5-20-96
Reviewer: Reynaldo Barron

cc: Jake Frick
Jerry Chalmers
Ken Dulaney
Beth Boland
Kari Terry, Waccamaw District
Main File

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201-1708

June 11, 1996

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. John C. Moschgat

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Reynaldo Barron
Division of Engineering Services
Bureau of Air Quality

Enclosure

cc: Jake Frick
Jerry Chalmers
Ken Dulaney
Kari Terry, Waccamaw District
Main File

Georgetown Steel Corporation
Metallized Briquetter
Georgetown
Results - Tests of June 15, 1995

Permit No. 1140-0004
Id. No 16

Particulate

Test #	Production Rate - TPH	Emissions gr/dscf	Emissions lbs/hr	Allowable lbs/hr
1	8.7	0.038	1.98	3.8
2	8.7	0.036	1:88	3.8
3	8.7	0.04	2.06	3.8
Avg.	8.7	0.038	1.97	3.8

Visibles (Method 9)

Test #	1	2	3	Total
No. of 6 Min. Sets	0	5	1	6
Sets greater than std.	0	0	0	0
Average Opacity - %	0	0	0	0
Set Max/min opacity - %	0/0	0/0	0/0	-

Operational Notes

1. There were no pressure or flowmeter devices.
2. Fan amps were 46 Amps on the test date.

Status as Tested:

Permit No. 1140-0004, Section II, A.....COMPLIANCE
Permit No. 1140-0004, Section II, A.....COMPLIANCE

Report Received: 06-28-95
Review Complete: 07-18-95
Reviewer: Randall K. Tilford

cc: Jake Frick
Jerry Chalmers
Brett Caswell
Matt Maxwell, Waccamaw District
Main File

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

July 28, 1995

Georgetown Steel Corporation.
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. John C. Moschgat

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Randall K. Tilford
Division of Engineering Services
Bureau of Air Quality

Enclosure

cc: Jake Frick
Jerry Chalmers
Brett Caswell
Matt Maxwell, Waccamaw Dist.
Main File

Georgetown Steel Corporation
Reheat Furnace
Georgetown
Results - Tests of June 14, 1995

Permit No. 1140-0004
Id. No 10

Particulate

Test #	Production Rate - TPH	Emissions lbs/hr	Emissions lbs/ton	Allowable lbs/ton
1	107.3	4.76	0.04	0.09
2	107.3	3.63	0.03	0.09
3	107.3	4.77	0.04	0.09
Avg.	107.3	4.39	0.04	0.09

Visibles (Method 9)

Test #	1	2	3	Total
No. of 6 Min. Sets	8	5	1	14
Sets greater than std.	0	0	0	0
Average Opacity - %	0	0	0	0
Set Max/min opacity - %	0/0	0/0	0/0	-

Operational Notes
1.The furnace was fired with natural gas during test..

Status as Tested:
Permit No. 1140-0004, Section II, A.....COMPLIANCE
Permit No. 1140-0004, Section II, A.....COMPLIANCE

Report Received: 06-28-95
Review Complete: 07-18-95
Reviewer: Randall K. Tilford

cc: Jake Frick
Jerry Chalmers
Brett Caswell
Matt Maxwell, Waccamaw District
Main File

Georgetown Steel
Lime Handling Baghouse
Georgetown, SC
Results - Tests of December 13, 1995

Permit No. 1140-0004
Id. No 09

Particulate

Test #	Production tons/hr	Emissions lbs/hr	Emissions gr/dscf	Allowable gr/dscf
1	15.380	0.230	0.0028	0.010
2	15.380	0.200	0.0026	0.010
3	15.380	0.220	0.0029	0.010
Avg.	15.380	0.217	0.0028	0.010

1. Rated capacity = 28.5 input tons/hr.

Operational Notes

1. There was approximately 46.14 tons of lime unloaded durig testing.
2. The pressure drop across the baghouse was 3.5" of H2O.

Status as Tested:

S.C. permit 1140-0004, Part II, Special Conditions.,(A), (PM).....COMPLIANCE

Report Received: 12-29-95
Review Complete: 01-02-96
Reviewer: Randall K. Tilford

cc: Jake Frick
Jerry Chalmers
Brett Caswell
Kari Terry
Main File

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

January 08, 1996

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. John C. Moschgat

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Randall K. Tilford
Division of Engineering Services
Bureau of Air Quality

Enclosure

cc: Jake Frick
Jerry Chalmers
Brett Caswell
Kari Terry
Main File

Georgetown Steel Corporation
Ladle Furnace Baghouse
Georgetown, South Carolina
Results - Tests of June 20, 1996

Permit No. 1140-0004
Id. No CK

Particulate

Test #	Flow Rate DSCFM**	Emissions gr/dscf	Emissions lbs/hr	Allowable lbs/hr
1	43570	2.80E-03	1.04	4.1
2	42625	3.02E-03	1.10	4.1
3	40779	1.67E-03	0.58	4.1
Avg.	42325	2.50E-03	0.91	4.1

**Dry Standard Cubic Feet at stack sampling location

Visibles (Method 9)			
Test #	1	2	3
No. of 6 Min. Sets	0	0	3
Sets greater than std.	X	X	0
Average Opacity - %	X	X	0
Set Max/min opacity - %	X/X	X/X	0/0

Operational Notes

1. Ladle furnaces no. 1 and 3 were operated at their expected maximum rate during testing.
2. The baghouse cleaning pulse is set by the pressure drop. The set point was 6.0" during testing.
3. The baghouse overall pressure drop readings: max. 3.6", min. 2.2", avg. 3.0".

Status as Tested:

Construction Permit No. 1140-0004-CK.....Compliance

Report Received: 07-22-96
Review Complete: 07-25-96
Reviewer: Reynaldo Barron

cc: Jake Frick
Jerry Chalmers
Ken Dulaney
Beth Boland
Kari Terry, Waccamaw District
Permit File

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201-1708

August 08, 1996

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. John C. Moschgat

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Reynaldo Barron
Division of Engineering Services
Bureau of Air Quality

Enclosure

cc: Jake Frick
Jerry Chalmers
Robert Brown
Kari Terry, Waccamaw District
Permit File

Georgetown Steel Corporation Permit No. 1140-0004

Metalized Briquetter Id. No 16

Georgetown, S. C.

Results - Tests of June 25, 1997

Particulate

Test #	Production tons/hour	Capacity1 %	Emissions gr/dscf	Emissions lbs/hour	Allowable lbs/hour
1	10.005	121	0.0307	1.22	
2	10.005	121	0.0226	0.90	
3	10.005	121	0.0227	0.90	
Avg.	10.005	121	0.0253	**1.01**	**3.8**

Rated capacity 8.25 tons/hour.

Operational Notes

1. There were no pressure or flowmeter devices.
2. Fan amps were 40 amps on the test date.

Status as Tested:

Permit Number 1140-0004, Section II, A, (PM).....COMPLIANCE

cc: Jake Frick
Jerry Chalmers
Beth Boland
Larry Ragsdale
Kari Terry, Waccama District
Main File

Report Received : July 23, 1997
Review Complete : July 23, 1997
Reviewer: Chris Corley CC

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

May 11, 1998

Georgetown Steel Corporation
Attn: Mr. John C. Moschgat
P. O. Box 619
Georgetown, South Carolina 29442

RE: Metalized Briqetter and Reheat Furnace

Dear Mr. Moschgat,

Updated summaries of the June 24-25, 1997 source tests are enclosed. Please discard the old report reviews of the above mentioned sources and put these in their place.

If I can be of any further assistance in this matter, please call @ (803)734-4903.

Sincerely,

Chris Corley
Source Evaluation Section
Bureau of Air Quality

cc: Jerry Chalmers
Beth Boland
Larry Ragsdale
Kari Terry, Waccama District
Main File

Georgetown Steel Corporation
Reheat Furnace
Georgetown, S. C.
Results - Tests of June 24, 1997

Permit No. 1140-0004
Id. No 10

Particulate

Test #	Production tons/hour	Capacity1 %	Emissions lbs/hour	Emissions lbs/ton	Allowable lbs/ton
1	110.24	88.000	3.89	0.0353	0.090
2	110.24	88.000	3.63	0.0329	0.090
3	110.24	88.000	3.57	0.0324	0.090
Avg.	110.24	88.000	3.70	0.0335	0.090

Based on a process rate of 125 tons/hour.

Operational Notes

1. The furnace was fired with natural gas during testing.

Status as Tested:

Permit Number 1140-0004, Section II, A, (PM).....COMPLIANCE

cc: Jake Frick
Jerry Chalmers
Beth Boland
Larry Ragsdale
Kari Terry, Waccama District
Main File

Report Received : July 23, 1997
Review Complete : July 23, 1997
Reviewer: Chris Corley CC

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

May 11, 1998

Georgetown Steel Corporation
Attn: Mr. John C. Moschgat
P. O. Box 619
Georgetown, South Carolina 29442

RE: Metalized Briqetter and Reheat Furnace

Dear Mr. Moschgat,

Updated summaries of the June 24-25, 1997 source tests are enclosed. Please discard the old report reviews of the above mentioned sources and put these in their place.

If I can be of any further assistance in this matter, please call @ (803)734-4903.

Sincerely,

Chris Corley
Source Evaluation Section
Bureau of Air Quality

cc: Jerry Chalmers
Beth Boland
Larry Ragsdale
Kari Terry, Waccama District
Main File

Georgetown Steel Corporation
Georgetown, South Carolina
Electric Arc Furnaces 1&3/Main Baghouse
Results - Tests of April 17 and 18, 1997
Permit No. 1140-0004
Id. No 1, 2, and 3

Particulate (Method 5D)

Test #	Production Tons/hr	Capacity1 %	Baghouse Compartment No.	Emissions lbs/hr	Emissions gr/dscf	Allowable gr/dscf
1	138.4	92.3	1 and 3	2.52	0.00239	**
			2 and 4	3.63	0.00342	**
2	122.1	81.4	5 and 7	2.18	0.00197	**
			6 and 8	2.96	0.00267	**
3	122.9	82.0	9 and 11	1.77	0.00149	**
			10 and 12	2.37	0.00199	**
Avg.	**127.8**	**85.2**	**(1 - 12)**	**15.43**	**0.0023**	**0.0052**

1 Based on rated output of 150 tons/hr

Visibles (Method 9)

Test #	1	2	3	Total
No. of 6 Min. Sets	36	40	40	116
Sets greater than std.	0	0	0	0
Average Opacity - %	0	0	0	0
Set Max/min opacity - %	0/0	0/0	0/0	0/0

Operational Notes

1. Control device is a positive pressure baghouse with 12 individual compartments.
2. Allowable for opacity from baghouse is 3%.
3. Volumetric flowrate averaged 708,448 dscf/min.
4. Total pressure drop of baghouse averaged 8.3 and ranged from 7.0 to 9.5 inches of H2O.

Status as Tested:

40 CFR Part 60.270 Subpart AA (PM and Visibles).....Compliance

Report Received: 5-16-97
Review Complete: 6-16-97
Reviewer: Robert W. Mitchum

cc: Jake Frick
Jerry Chalmers
Beth Boland
Larry Ragsdale
Karri Terry, Waccamaw EQC District
Main File

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

June 20, 1997

John Moschgat
Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442

A summary of the results of the source test at the Georgetown facility is enclosed.

This summary includes emission rates, operating parameters, and compliance status of the source tested.

Please review this information, and if I can be of further assistance, please call me at (803) 734-8733.

Sincerely,

Robert W. Mitchum
Source Evaluation Section
Air Compliance Management Division
Bureau of Air Quality

Enclosure

cc: Jake Frick
Jerry Chalmers
Beth Boland
Larry Ragsdale
Karri Terry, Waccamaw EQC District
Main File

Robert –

GEORGETOWN STEEL CORPORATION

P.O. Box 619
Georgetown, S.C. 29442
803/546-2525 Fax: 803/527-3134

October 10, 1997

Mr. Thomas Lathan OKR
Bureau of Air Quality Control
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

Subject: Lime Handling System - Stack Test

Dear Robert:

To follow up our phone conversation on October 9, 1997, concerning the Lime Handling System Baghouse Stack Test, Georgetown Steel eliminated the Baghouse this year and it is no longer in operation. This work was done under SC DHEC Construction Permit No. 1140-0004-CL.

Thank you in advance for your time and consideration in this matter, and should you require any further information please do not hesitate to contact me at (803) 546-2525 x345.

Sincerely,

John C. Moschgat
Mechanical Project Engineer

No [redacted] Retest done in '97
Operation closed KSL

cc: W. Dobinski
DHECTL1

GEORGETOWN STEEL CORP.
LADLE FURNACE BAGHOUSE
GEORGETOWN, SOUTH CAROLINA
RESULTS - TESTS OF JUNE 15, 1998
PERMIT NO. 1140-0004-CK

PARTICULATE					
TEST	FLOW RATE	CAPACITY	EMISSIONS		ALLOWABLE
#	ACFM	%	GR/DSCF	LB/HR	LB/HR
1	86813	78.9	0.002	1.38	4.1
2	85491	77.7	0.003	1.71	4.1
3	85447	77.7	0.003	1.97	4.1
AVG.	85917	78.1	0.003	1.69	4.1

BAGHOUSE IS RATED AT 110,000 ACFM.

VISIBLES (METHOD 9)	
TEST #	3
NO. OF 6 MIN. SETS	2
SETS GREATER THAN STD.	0
AVERAGE OPACITY %	0
SET MAX/MIN OPACITY %	0/0

OPERATIONAL NOTES

1. BOTH LADLE FURNACES 1 & 2 WERE IN OPERATION DURING TESTING.
2. THE BAGHOUSE IS SET TO CLEAN AT A PRESSURE DROP OF 6 INCHES H2O.
3. PRESSURE DROPS AVERAGED 5.2 AND RANGED FROM 5-5.5 INCHES H2O.
4. VISIBLES (METH 9) WERE NOT TAKEN DURING RUNS 1 & 2.

STATUS AS TESTED:

CONSTRUCTION PERMIT NO. 1140-0004-CK.....COMPLIANCE

REPORT RECEIVED : JULY 10, 1998
REVIEW COMPLETE : JULY 21, 1998
REVIEWER: MICHAEL VERZWYVELT

CC: JERRY CHALMERS
BETH BOLAND
LARRY RAGSDALE
KARI TERRY, WACCAMAW DISTRICT
MAIN FILE

D H E C
PROMOTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201-1708

July 23, 1998

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. John C. Moschgat

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Michael G. Verzwyvelt
Air Compliance Management Division
Bureau of Air Quality

Enclosure

cc: Jerry Chalmers
Beth Boland
Larry Ragsdale
Kari Terry, Waccamaw District
Main File

Georgetown Steel Corp.
DRI Reformer
Georgetown, SC
Results - Tests of December 8, 1998

Permit No. 1140-0004
Id. No 14

NOx Emissions:

Test #	Prod. Rate metric tons/h	Capacity %	Emissions ppm	Emissions lbs/hr	Allowable lbs/hr
1	70.91	87.2	46.2	66.2	33.5
2	71.01	87.3	48.3	69.4	33.5
3	70.98	87.3	50.1	69.4	33.5
Avg.	**70.97**	**87.3**	**48.2**	**68.3**	**33.5**

Rated @ 81.3 metric tons/hr

SO2 Emissions:

Test #	Prod. Rate metric tons/h	Capacity %	Emissions ppm	Emissions lbs/hr	Allowable * lbs/hr
1	70.91	87.2	2.61	3.99	UD
2	71.01	87.3	2.17	3.31	UD
3	70.98	87.3	1.97	2.86	UD
Avg.	**70.97**	**87.3**	**2.25**	**3.39**	**UD**

Rated @ 81.3 metric tons/hr
* - Undetermined

Operational Notes
1. The reformer temperature ranged from 2053F- 2057F and averaged 2055F during testing.
2. The bustle temperature ranged from 1671F - 1673F and averaged 1672F during testing.

Status as Tested:
BAQ Permit (1140-0004), Part II, Special Cond., Id. 14, , NOx.....VIOLATION
BAQ Permit (1140-0004), SO2 (Modelling).....Undetermined

Report Received: 01-18-99
Report Completed: 04-06-99
Reviewer: Roland O. Shaw

cc: Jerry Chalmers
Larry Ragsdale
Beth Boland
Kari Terry, Waccamaw Dist.
Main File

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

April 06, 1999

Mr. John Moschgat
Georgetown Steel Corp.
P.O. Box 619
South Fraser St.
Georgetown, S.C. 29442

Dear Mr. Moschgat:

A summary of the source test of the **DRI Reformer Stack** is enclosed. This summary includes emission rates, operational notes, and compliance status.

Please note that for Permit Number 1140-0004 Stack ID #14, the status as tested for **NOx** has been found to be in violation with your current permit. Please submit a plan of action to bring this source into compliance. The status as tested for sulfur dioxide **(SO2)** has been deemed undetermined. The emissions of SO2 are above the limits listed on the modeling permit. Therefore, these options are possible: 1) Revise the emission rates to those listed in the permit by process changes (i.e. limiting hours of operation, limiting production levels and/or the addition of control devices). These changes will also require resubmittal of permit applications. 2) Submit additional modeling demonstrating compliance with Standard 8 using the new emission rates. Modeling must be submitted within 30 calendar days. **Please submit in writing, within 10 calendar days, the option you have chosen.**

Please review this data and if I can be of further assistance please call me at (803) 898-4294.

Sincerely,

Roland Shaw
Division of Air Compliance Management
Bureau of Air Quality

Enclosure
cc: Jerry Chalmers
Larry Ragsdale
Beth Boland
Kari Terry, Waccamaw Dist.
Main File

Georgetown Steel Corporation

Electric Arc Funaces 1 and 3/Main Baghouse
Georgetown, South Carolina
Results - Tests of April 12 and 13, 1999
Permit No. 1140-0004
Id. No 01, 02, and 03

Particulate (Method 5D)

Test #	Production tons/hr	Capacity1 %	Baghouse Compartment No.	Emissions lbs/hr	gr/dscf2	Allowable gr/dscf
1	126.35	84.2	1 and 3	2.49		
			2 and 4	2.14		
2	110.65	73.8	5 and 7	2.06		
			6 and 8	2.54		
3	125.94	84.0	9 and 11	1.88		
			10 and 12	1.66		
Avg.	120.98	80.7	1-12	12.77	0.0021	0.0052

1. Based on a process rate of 150 tons/hr.
2. Gr/dscf = total lbs/hr/average flowrate*7000/60

1. Control device is a positive pressure baghouse with 12 individual compartments.
2. The volumetric flowrate averaged 720,261 dscf/min.
3. The static pressure for the test were as follows (in inches of HOH):

Note: Furnace No. 1 is in regular font, while *Furnace No. 3 is in italics*.

Run	Average		Range	
1	-0.799	*-0.723*	-0.224/-1.0	*-0.3/-1.0*
2	-0.468	*-0.722*	-0.238/-1.0	*-0.199/-0.968*
3	-0.620	*-0.798*	-0.188/-1.0	*-0.217/-0.937*

4. No VEEs were done.

Status as Tested:
40 CFR Part 60.270, Subpart AA (Particulate).....COMPLIANCE

Report Received : May 5, 1999
Review Complete : May 24, 1999
Reviewer: Chris Corley CC

cc: Jerry Chalmers
Annie Richardson
Larry Ragsdale
Kari Terry, Waccamaw District
Main File

D H E C

PROMOTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201-1708

May 25, 1999

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. John C. Moschgat

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Chris Corley
Air Compliance Management Division
Bureau of Air Quality

Enclosure

cc: Jerry Chalmers
Annie Richardson
Larry Ragsdale
Kari Terry, Waccamaw District
Main File

GEORGETOWN STEEL
BRIQUETTE STACK
GEORGETOWN, SOUTH CAROLINA
RESULTS - TESTS OF JUNE 15, 1999
PERMIT NO. 1140-0004
ID. NO 16

PARTICULATE (METHOD 5)

TEST #	PRODUCTION TONS/HR	CAPACITY* %	EMISSIONS GR/DSCF	EMISSIONS LBS/HR	ALLOWABLE LBS/HR
1	7.25	87.9	0.0336	1.351	3.800
2	7.25	87.9	0.0377	1.480	3.800
3	7.25	87.9	0.0324	1.289	3.800
AVG.	7.25	87.9	0.0346	1.373	3.800

*BASED ON A PROCESS RATE OF 8.25 TONS/HR

OPERATIONAL NOTES

1. THE METALLIZED BRIQUETTER OPERATES ONLY 8 HOURS PER DAY, BUT PRODUCTION IS BASED ON A D 24 HOUR CYCLE.
2. THE FAN AMPERAGE AVERAGED A STATIC 38 AMPS DURING THE TESTING.
3. VEES WERE NOT TAKEN DUE TO INCLIMATE WEATHER.

STATUS AS TESTED:

SCDHEC BAQ PERMIT 1140-0004, ID NO. 16, SPECIAL CONDITIONS (PARTICULATE).... (COMPLIANCE)
SCDHEC BAQ PERMIT 1140-0004, ID NO. 16, SPECIAL CONDITIONS (VISIBLES)..... (COMPLIANCE)

REPORT RECEIVED: 07/16/99
REVIEW COMPLETE: 09/17/99
REVIEWER: JASON D. HOBBS

CC: JERRY CHALMERS
ANNIE RICHARDSON
LARRY RAGSDALE
KARI TERRY, WACCAMAW DISTRICT
MAIN FILE

GEORGETOWN STEEL
REHEAT FURNACE STACK
GEORGETOWN, SOUTH CAROLINA
RESULTS - TESTS OF JUNE 16, 1999
PERMIT NO. 1140-0004
ID. NO 10

PARTICULATE (METHOD 5)

TEST #	PRODUCTION TONS/HR	CAPACITY* %	EMISSIONS GR/DSCF	EMISSIONS LBS/HR	EMISSIONS LBS/**TON	ALLOWABLE LBS/**TON
1	111.52	89.2	0.0018	1.272	0.011	0.090
2	111.52	89.2	0.0024	1.773	0.016	0.090
3	111.52	89.2	0.0021	1.478	0.013	0.090
AVG.	111.52	89.2	0.0021	1.508	0.014	0.090

*BASED ON A PROCESS RATE OF 125.0 TONS/HR BILLETS PROCESSED

** TONS OF BILLETS PROCESSED, STEEL PRODUCED

OPERATIONAL NOTES

1. THE PROCESS DESIGN RATE IS 125.0 TONS/HR BILLETS PROCESSED.
2. NATURAL GAS WAS USED TO FIRE THE FURNACE DURING THE TESTING.
3. VEES WERE NOT TAKEN DUE TO INCLIMATE WEATHER.

STATUS AS TESTED:

SCDHEC BAQ PERMIT 1140-0004, ID NO. 10, SPECIAL CONDITIONS (PARTICULATE).... (COMPLIANCE)
SCDHEC BAQ PERMIT 1140-0004, ID NO. 10, SPECIAL CONDITIONS (VISIBLES)..... (COMPLIANCE)

REPORT RECEIVED: 07/16/99
REVIEW COMPLETE: 09/17/99
REVIEWER: JASON D. HOBBS

CC: JERRY CHALMERS
ANNIE RICHARDSON
LARRY RAGSDALE
KARI TERRY, WACCAMAW DISTRICT
MAIN FILE

Georgetown Steel Corporation
Electric Arc Furnaces 1 and 3 / Main Baghouse
Georgetown, South Carolina
Results - Tests of March 26, 2001

Permit No. 1140-0004
Id. No. 01, 02, and 03

Particulate (Method 5D)

Test #	Production Capacity1 tons/hr	%	Baghouse Compartments No.	Emission lbs/hr	gr/dscf2	Allowable gr/ dscf
1	102.01	82	1 and 3	4.04		
			2 and 4	3.11		
2	88.24	70	5 and 7	2.65		
			6 and 8	2.79		
3	116.15	93	9 and 11	2.08		
			10 and 12	2.20		
Avg.	102.13	82	1 - 12	16.87	0.0028	0.0052

1. Based on a process rate of 125 tons/hr.
2. Gr/ dscf = total lbs/hr average flowrate *70126 / 60.

Visibles (Method 9)

Test #	1	2
No. of 6 min. sets	3	3
Sets greater than std.	0	0
Average Opacity -%	0	0
Sets max/min opacity-%	0/0	0/0

Operational Notes

1. Control device is a positive pressure baghouse with 12 individual compartments.
2. The volumetric flowrate averaged 714,179 dscf/ min.
3. The static pressure for the test were as followed (in inches of H2O) .

Run	Average		Range	
1	-0.616	-0.714	-0.212 / -1.0	-0.25 / -1.1
2	-0.656	-0.756	-0.253 / -1.1	-0.23 / -1.0
3	-0.603	-0.677	-0.194 / -1.0	-0.163 / -0.96

Status as Tested:

40 CFR Part 60.270, Subpart AA (Particulate).....Compliance
40 CFR Part 60.270, Subpart AA (Visibles).....Compliance

cc: Jake Frick
Annie Richardson
Robbie Brown
Kari Terry, Waccamaw District
Main File

Report Received : April 30, 2001
Review Complete: May 15, 2001
Reviewer: Roderick A. Moore

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

May 15, 2001

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. John C. Moschgat

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Roderick A. Moore

Roderick A. Moore
Air Compliance Management Division
Bureau of Air Quality

Enclosure

cc: Jake Frick
Annie Richardson
Robbie Brown
Kari Terry, Waccamaw District
Main File

Georgetown Steel Corporation
Reheat Furnace Stack
Georgetown, South Carolina
Results - Tests of June 19, 2001
Permit # 1140-0004 Id. # 10

Particulate: (Method 5)

Test #	Production Tons/hr	Capacity %		Emissions		Allowable
			gr/dscf	lbs/hr	lbs/Ton*	lbs/Ton*
1	97.9	78.3	0.00227	1.35	0.014	0.30
3	97.9	78.3	0.00274	1.81	0.019	0.30
4	97.9	78.3	0.00354	2.51	0.026	0.30
Average	97.9	78.3	0.00285	1.89	0.019	0.30

Capacity based on rated output of 125 tons/hr billets processed.
* indicates tons of billets processed.

Operational Notes:
1. During this test, the top zone was fired with # 6 fuel oil, while the soak zone was fired with natural gas, leading to an allowable emission factor of 0.30 lb/ton.
2. VEE's were not taken due to inclement weather.
3. Run # 2 was voided due to an excessive leak rate following the run.

Status as Tested:
Permit # 1140-0004 Id # 10, *Special Conditions* (particulate).....Compliance

Report received: July 20, 2001
Report Complete: July 23, 2001
Reviewer: Keith E. Bartlett

KEB

cc: Jake Frick
Annie Richardson
Larry Ragsdale
Kari Terry, Waccamaw District
Main File

D H E C

P[illegible]MOTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201-1708

July 23, 2001

Georgetown Steel Corporation
P.O. Box 619
Georgetown, South Carolina 29442
Attention: Mr. John C. Moschgat

A summary of the results of the recent source tests at the indicated facility is enclosed.

This summary includes the emission rates, operating parameters and compliance status of the source(s) tested.

Please review this data and if I can be of further assistance in these matters please call.

Sincerely,

Keith Bartlett

Keith E. Bartlett (803) 898-4078
Air Compliance Management Division
Bureau of Air Quality

Enclosure

cc: Jake Frick
Annie Richardson
Larry Ragsdale
Kari Terry, Waccamaw District
Main File

ELECTRIC ARC FURNACES (2)

Mfg. by Mannesmann-Demag (2)
#1 Furnace Start-up 1969 - EBT Conversion Dec. 1987
#3 Furnace Start-up 1974 - EBT Conversion Dec. 1986
Average Heat Size - 80 Net Tons
Production Capacity - 83,333 Net Tons/Month
Shell Diameter - 18 Feet, (5.5 m)

Transformer Rating:
#1 Furnace Transformer Rating 54/60 MVA
- Actual Load - 45 MW
- Primary Voltage 13.8 KV (115 KV Incoming Power)
- Secondary Voltage 500V - 750V
- Power Factor 78/82

#3 Furnace Transformer Rating 65/72.8 MVA
- Actual Load - 50 MW
- Primary Voltage 13.8 KV (115 KV Incoming Power)
- Secondary Voltage 525V - 880V
- Power Factor 78/82

Electrode Diameter - 20 inch (508 mm)
Electrode Pitch Circle - 47.25 inch (1200 mm)
Oxygen Lance Manipulator with Carbon Injection
Raw Material Charge Ratio 55% Scrap - 45% DRI
Fume Collection System
- Baghouse - Direct and Building Evacuation
- Mfg. by American Air Filter
- Number of Compartments - 12
- Number of Bags Per Compartment - 228
- Total Filter Area - 286,130 sq. ft.

LADLE REFINING FURNACES (2)

#1 Danieli LF - February 1988
#2 Mannesmann-Demag LF - Originally an electric arc furnace converted to a ladle refining furnace - November 1984

Both Ladle Furnaces:
Transformer Ratings
- Transformer Capacity - 34 MVA
- Actual Load - 10 MW
- Secondary Voltage - 70V

Electrode Diameter - 14 inch (356 mm)
Electrode Pitch Circle - 28 inch (711 mm)
Carbon Injection for Fine Trimming
CaSi Wire Feeding
Alloy/Flux Additions - Automatic

CONTINUOUS CASTER

DANIELI
- Start-up Date - 1989
- Number of Strands - (6)
- Billet Size - 4.75x4.75 inch (120x120 mm)
- To 8.00x8.00 inch (200x200 mm)
- Mold Type - Curved/Tubular

Mold Length - 30.7 inch (780 mm)
Bending Radius - 23 feet (7.0 m)
Mold Level Control - Berthold
Tundish Flow Control - Metering Nozzles
Tundish Level Control - Load Cells
Billet Cutting - Gas Torch (Variable Lengths)

Casting Sequence World Record - 24,580 tons
10/27/92-11/11/92, 353 hrs 55 mins, 310 Heats

COOLING BEDS

Walking Beam Type
Maximum Billet Length - 56 feet (17.1 m)

ANNUAL BILLET CAPACITY - 1,000,000 TONS

ROLLING MILL

Mill Start -up - June 1969
Mill Type
Full Continuous Two Strand Mill - Max. Rolling Speed: 75 m/sec.
Mill Maker
Schloemann - Roughing and Intermediate Mill
Kocks - Precision Sizing Mill
Morgan - No-Twist Finish Mill
Annual Capacity - 792,000 Tons
Billet Size - 120 mm^2, 17 m long , 1905 kg
Product Size - Wire Rod 13/64 - 19/32 (5.0 - 15.1 mm)
Modernization:
1982 - Installation of New Water Cooling Boxes, Looplayer and

- Collecting Station by Ashlow, U.K.

1982 - Installation of Two Sund Compactors
1987 - Installation of Roller Conveyor on Stelmore Deck
1990 - Computer Controlled Deck Cooling
1991 - Installation of Kocks Precision Sizing Mill
1991 - Hot Eddy Current Rod Inspection System
1991 - Continuous Size Monitor Gage
1996 - Installation of C-Hook Coil Transport System
Reheat Furnace - Holcroft 120 mt/hour - 3 Zone Pusher Type
17.5 m Width x 17.5 m Length - Fuel: Gas or #6,#2 Oil

Send Comments to webmaster@gscrods.com

Ms. Melanie Taylor, Alpha-Gamma
Questions from 9/17/02 E-mail

Mr. Ragsdale, Mr. Keeler
I was reviewing the test data and I have a couple of questions about Georgetown Steel. Hopefully one of you can answer them, or direct me to someone who can. They are as follows:

1) Does the reheat furnace have any type of control device? I don't see one indicated.
   A: There is no control device for the reheat furnace.

2) The tests that were conducted on "Electric Arc Furnaces 1&3/Main Baghouse" (2/16/95, 4/17/97, 4/12/99, 3/26/01) - does this just include emissions from the EAFs? Or does it include other emission sources such as ladle metallurgy or casting?
   A: Only emissions from the EAF and casting. The ladle metallurgy has its own baghouse.

3) Is there any type of air pollution control for the DRI Reformer?
   A: Yes, a cyclone and scrubber.

4) The tests that were conducted on "Ladle Furnace Baghouse" (6/20/96, 6/15/98) - does this include emissions from the ladle furnace only (i.e. this furnace has its own baghouse)?
   A: Yes

5) The testing on 3/27/90 and 6/2/92 was done on the "Main Baghouse" - what emission sources are vented to the baghouse?
   A: See answer to question #2.

6) Do you know if the EAFs use auxiliary burners and/or oxygen/carbon lancing?
   A: oxygen/carbon lancing.

limited to, requirements governing training, licensing, notification, work practice, cleanup, and disposal.

PART 5.0 EMISSION UNIT REQUIREMENTS

A. EMISSION UNIT DESCRIPTION

Table 5.1 is a description of emission units located at this facility.

TABLE 5.1 EMISSION UNITS

Unit ID	Unit Description	Control Device Description
01	Melt Shop	Main Baghouse
02	Ladle Furnace Stations	Ladle Refining Baghouse
03	Ladle Preheaters	Main Baghouse on vertical preheater*
04	Reheat Furnace	N/A
05	DRI Production	Scrubbers
06	DRI Ore Handling and Conveying	N/A
07	Offloading/Loading Activities	N/A

N/A = Not Applicable

*there is no duct or hood which directs the vertical preheater to the main baghouse. It is listed only because the vertical preheater exhausts to the melt shop which is vented to the main baghouse.

B. CONTROL DEVICE DESCRIPTION

Table 5.2 is a description of control devices located at this facility.

TABLE 5.2 CONTROL DEVICES

Control Device ID	Control Device Description	Installation/ Modification Date	Pollutant(s) Controlled	Control Efficiency

Main Baghouse	Positive pressure baghouse rated at 1,000,000 acfm with reverse air fan that allows the four main 1,000 hp fans to continually pull air through	1973/1996	PM	0.0052 gr/dscf
Ladle Refining Baghouse	Negative pressure baghouse rated at 110,000 acfm. (Connected to the LRF DEC systems) Controls the ladle refining furnaces and slag pits.	1996	PM	--
DRI Scrubber	Cyclone/Scrubber - fines pass through the cyclone where the large particles are separated and briquetted and the finer particles move to the venturi scrubber. (DRI scrubber - FS471)	Scrubber 1989/1997	PM	--
Passivation Scrubber	Scrubber (FS462)	1974	PM	--
Briquetting Scrubber	Cyclone/Scrubber - fines pass through the cyclone where the large particles are separated and briquetted and the finer particles move to the venturi scrubber. (FS738)	Scrubber 1989/1995	PM	--

The cyclones for DRI scrubber and briquetting scrubber are not control devices but are part of the process.

C. EQUIPMENT DESCRIPTION

A description of the equipment located at this facility is provided in the following tables:

TABLE 5.3 UNIT ID 01 - Melt Shop*

Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
EAF1	75 ton nominal capacity AC powered electric arc Furnace (EAF) equipped with a direct shell evacuation system (water tube shell duct on DSE) and canopy hood system	1969	main baghouse	6
EAF3	75 ton nominal capacity AC powered electric arc Furnace (EAF) equipped with a direct shell evacuation system (water tube shell duct on DSE) and canopy hood system	1973	main baghouse	6
BC1	6 strand Danieli Continuous billet Casting machine	1990	main baghouse	6

NAHS	8.1 input tons per hour Nikko Alloy and Additive Handling System	1983	main baghouse	6
BHDC	1.7 input tons per hour Main Baghouse Dust Handling System	1993	main baghouse	6
LS1	28.5 input tons per hour lime handling system	1974	main baghouse	6
LS2	28.5 input tons per hour lime handling system	1974	main baghouse	6
LUS	Lime Unloading System	1969	main baghouse	6

*125 billet tons/hr melt shop (monthly average)

TABLE 5.4 UNIT ID 02 - Ladle Furnace Stations

Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
LFR1	88 ton (ladle capacity) ladle furnace station equipped with a DEC system and canopy hood system	1989	ladle refining baghouse	1
LFR2	88 ton (ladle capacity) ladle furnace station equipped with a DEC system and canopy hood system	1989	ladle refining baghouse	1

TABLE 5.5 UNIT ID 03 - Ladle Preheaters

Equip ID	Equipment Description	Installation Date	Modification Date	Control Device ID	Stack ID
LPH1	Horizontal Ladle Preheater; burns natural gas, propane, (9.45×10^6 BTU/hr) and No. 2 fuel oil with maximum sulfur content of 0.35% (9.87×10^6 BTU/hr)	1985	1994	N/A	LP
LPH2	Horizontal Ladle Preheater; burns natural gas, propane, (9.45×10^6 BTU/hr) and No. 2 fuel oil with maximum sulfur content of 0.35% (9.87×10^6 BTU/hr)	1985	1994	N/A	LP

LPH3	Horizontal Ladle Preheater; burns natural gas, propane, (9.45×10^6 BTU/hr) and No. 2 fuel oil with maximum sulfur content of 0.35% (9.87×10^6 BTU/hr)	1985	1994	N/A	LP
LPH4	Vertical Ladle Preheater; burns natural gas, propane, (9.45×10^6 BTU/hr) and No. 2 fuel oil with maximum sulfur content of 0.35% (9.87×10^6 BTU/hr)	1993	--	main baghouse*	6

N/A = Not Applicable

*there is no duct or hood which directs the vertical preheater to the main baghouse. It is listed only because the vertical preheater exhausts to the melt shop which is vented to the main baghouse.

TABLE 5.6 UNIT ID 04 - Reheat Furnace

Equip ID	Equipment Description	Installation Date	Modification Date	Control Device ID	Stack ID
BRHF	200×10^6 BTU input/hr Holcroft (pusher type) Reheat Furnace; burns natural gas, propane, No. 2 (maximum sulfur content of 0.35%) and No. 6 (maximum sulfur content of 2.1%) fuel oils.	1981	--	N/A	8

N/A = Not Applicable

TABLE 5.7 UNIT ID 05 - DRI Production*

Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
REFF	637×10^6 BTU input/hr gas Reformer - prepares reducing gas	1970	N/A	PS
REDF	80 long tons/hr Direct Reduction Furnace - reduces iron ore	1970	scrubber 471	471
PASS	250 long tons/hr Passivation and Conveying System - DRI pellet storage	1974	passivation scrubber	3

MBR1	7.5 long tons/hr Metalized Briquetting Process - forms pellets from fines	1974	briquetting scrubber	4
DAYB	Day Bin - screened ore storage	1970	N/A	DB

*89.5 tons of production per hour (80 long tons of production per hour) at the DRI facility
N/A = Not Applicable

TABLE 5.8 UNIT ID 06 - DRI Ore Handling and Conveying*

Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
OCS	Conveying and Screening - ore transfer & screening	1970	N/A	N/A

*89.5 tons of production per hour (80 long tons of production per hour) at the DRI facility
N/A = Not Applicable

TABLE 5.9 UNIT ID 07 - Offloading/Loading Activities

Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID

	Unloads and loads materials at pier 32 on Winyah Bay. The pier is leased by GSC from the SC Ports Authority. GSC loads/unloads loose, solid, and bagged material at this site. Only the loose material has the potential to emit fugitive PM emissions. The loose material is unloaded by a magnet or clamshell to a hopper located adjacent to the pier. The material is then loaded into trucks and moved to various storage locations throughout the facility. The facility is requesting to be allowed to unload the following: Scrap Steel, pig iron, hot briquetted iron (HBI), DRI (ore that has been reduced), and Iron Ore. GSC would also like to unload the following alloys (already processed): SiMn, FeSi, FeV, Boron, CaSi, $CaCO_3$, MgO. A magnet or clamshell also loads material into the hold of a container ship or barge. GSC will be loading the following: Wire Rod, Billets, Mill Scale, and Iron Ore Fines (there will be no emissions from the rods and billets; only from the scale and fines). The maximum hourly throughput will be 650 tons per hour using a clam shell or magnet.	1970	N/A	fugitive

N/A = Not Applicable

D. EMISSION LIMITS AND STANDARDS

Table 5.10 contains summaries of emission unit emission limits and standards.

TABLE 5.10 EMISSION LIMITS AND STANDARDS

Unit ID	Pollutant/ Standard	Limit	Reference Method	Regulation	State Only	Condition Number
01	PM	0.0052 gr/dscf 39.3 lbs/hr and 172.1 TPY	As Approved by BAQ	40 CFR 60, Subparts A and AA	No	5.E.1-2
01	Opacity	3% (main baghouse)	9	40 CFR 60, Subparts A and AA	No	5.E.1-2
01	Opacity	6% (EAF emissions from the Melt Shop Building)	9	40 CFR 60, Subparts A and AA	No	5.E.1-2

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

September 12, 2002

Alpha-Gamma Technologies, Inc.
4700 Falls of Neuse Road
Suite 350
Raleigh, North Carolina 27609
Attention: Ms. Melanie Taylor

Re: South Carolina Steel Mill Stack Test Results from 1990 to 2001 (c/o Dallas W. Safriet at EPA/RTP)

Dear Ms. Taylor:

Enclosed please find the information you requested of Mr. Larry Ragsdale of the South Carolina Department of Health and Environmental Control, Bureau of Air Quality. We have complied this information from the BAQ's Source Evaluation Section file room. We have searched our test database and found no records of tests conducted in 2000, therefore there are no validated test results from that year. Please note that CMC Steel in Cayce has changed their name two times (Owens Steel and SMI Steel).

If I can be of further assistance in these matters please call me at (803) 898-4303 or by E-mail at keelerav@dhec.state.sc.us.

Sincerely,

Anthony V. Keeler

Anthony V. Keeler
Environmental Chemist
Division of Air Compliance Management
Bureau of Air Quality
2600 Bull Street
Columbia, South Carolina 29201