Sheplak, Scott

From: Robert Kalch [kalch@epchc.org]
Sent: Wednesday, December 11, 2002 5:47 PM
To: Sheplak, Scott
Cc: Alice Harman
Subject: TEC, Gannon - Slag Storage and Truck Unloading Activities

Mr. Sheplak,

I have just received TEC's response to the slag handling activities at Gannon. I haven't had the chance to look it over yet. I will look it over and call you late this week or early next week.

If there are concerns in the meantime, please call me.

Sincerely,
Rob Kalch

TAMPA ELECTRIC

November 25, 2002

Mr. Scott Sheplak, Department
of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Rd
Mail Station 5505
Tallahassee, FL 32399-2400

Via FedEx
Airbill No. 7912 4013 1509

RE: Tampa Electric Company (TEC)
F.J. Gannon Station
Title V Permit No. 0570040-014-AV
Request for Generic Exemption
Slag Storage

Dear Mr. Sheplak:

Tampa Electric Company (TEC) has received comments from the Environmental Protection Commission of Hillsborough County (EPCHC) dated April 8, 2002 regarding the above referenced report, and offers the following responses regarding these comments. For your convenience, TEC has restated each point and provided a response below each specific issue.

Item 1.
We request that TEC personnel state the basis for the control efficiencies used in the calculations submitted on August 12, 2002.

TEC Response:
Existing F.J. Gannon Station fuel yard fugitive PM/PM_{10} dust controls include the application of a dust suppressant, enclosure, and enclosure with dust suppressant sprays. Estimates of fugitive dust control efficiencies were primarily based on information obtained from two references: (1) Electric Power Research Institute (EPRI) *Fugitive Emissions from Coal-Fired Power Plants*, EPRI CS-3455, Project 1402-19, Final Report, June 1984, and (2) Utility Air Regulatory Group (UARG) *Workbook on Estimation of Emissions and Dispersion Modeling for Fugitive Particulate Sources*, Document P-A857, September 1981. Specific fugitive dust control efficiencies used in the August 12, 2002 emission estimates are as follows:

1. Emission Point FH-005: Clamshell to Hopper

Control Method:
Side Enclosure (Wind Break)

Control Efficiency:
25 %

Basis:
The EPRI document suggests that fugitive emissions due to barge unloading (i.e., using clamshell buckets) can best be estimated using established emission factors for similar types of operations such as coal storage and transfer. Control efficiencies of 30 to 50 %, and 30 % are listed in Table 3-10 (Wind Erosion from Coal Storage Piles) of the EPRI reference for wind breaks.

The UARG reference indicates that barge unloading is similar to rail car unloading. Control efficiency for enclosure without a bag filter shown in Table 3.2.3-2 of the UARG reference is 70%.

Based on the above, the assumed control efficiency of 25 % for partial enclosure is considered to be a reasonable control efficiency estimate.

2. ***Emission Points FH-009, FH-012, FH-017, and FH-019: Conveyor Belt Transfers***

Control Method:
Enclosure with application of dust suppressant

Control Efficiency:
90 %

Basis:
Control efficiency of 99 % is shown in Table 3-16 (Coal Conveying Via Belt Conveyors) of the EPRI reference for total enclosure and application of water spray. Control efficiency for application of chemical spray shown in Table 3-16 is 85 %.

Control efficiencies for enclosure shown in Table 3.2.17-2 of the UARG reference range from 70 to 90 %. Control efficiency range for water spraying is 70 to 95 %.

Control efficiency for enclosure and dust suppressant application shown on Page 27, Subsection E of FDEP Title V Permit No. 0570040-002-AV is 95 %.

Based on the above, the assumed control efficiency of 90 % for enclosure and dust suppressant application is considered to be a reasonable control efficiency estimate.

3. ***Emission Point FH-011: Conveyor Belt Transfer***

Control Method:
Enclosure

Control Efficiency:
85 %

Basis:
Control efficiencies of 90, 85, and 70 % are listed in Table 3-16 (Coal Conveying Via Belt Conveyors) of the EPRI reference for enclosure.

Control efficiencies for enclosure shown in Table 3.2.17-2 of the UARG reference range from 70 to 90 %.

Based on the above, the assumed control efficiency of 85 % for enclosure is considered to be a reasonable control efficiency estimate.

4. ***Emission Points FH-021and FH-021a: Conveyor to Slag Storage Pile and Front-End Loader Transfer from Slag Storage Pile to Trucks***

Control Method:
Dust Suppressant

Control Efficiency:
70 %

Basis:
Control efficiencies of 70 and 85 % are listed in Table 3-16 (Coal Conveying Via Belt Conveyors) of the EPRI reference for water spray and chemical spray, respectively.
Control efficiencies for spraying shown in Table 3.2.17-2 of the UARG reference range from 70 to 95 %.

Control efficiency for dust suppressant shown on Page 27, Subsection E of FDEP Title V Permit No. 0570040-002-AV is 70 %.

Based on the above, the assumed control efficiency of 70 % for handling of material previously treated with a dust suppressant is considered to be a reasonable control efficiency estimate.

Items 2. and 3.

2. *After reviewing the results of a stack test conducted by Reed Minerals, which operates a slag screening and handling facility located at 5950 Route 41A South, Gibsonton, Florida, we believe have developed an emission factor that may be more appropriate to estimate particulate matter emissions than the continuous drop equation from AP-42. The material transferred during the test was coal slag similar to the type TEC personnel is proposing to handle. The controlled particulate matter emission factor for the process is 0.07 lbs./ton. Using the controlled emission factor, and an assumed efficiency of 95% for a medium efficiency scrubber (AP-42, Table B.2-3), EPC staff derived an uncontrolled particulate matter emission factor of 1.4 lbs./tons. It is EPC staff's opinion that this derived emission*

factor is more representative of the actual emissions that would be generated from their slag handling operation. As such, EPC staff requests that TEC re-calculate the potential emissions for this proposed activity using the 1.4 lbs./ton uncontrolled emission factor.

3. *Using this uncontrolled emission factor for each transfer point, along with control efficiencies listed in a Department of Energy guidance document (DOE/RG/10312-1, Vol 2) for estimating control efficiencies for coal handling, we estimate controlled potentials of around 60 tpy. So, unless TEC can show otherwise , we do not believe the slag handling operation qualifies as an "insignificant pollutant emitting activity". We have attached a copy of the summary page for the Reed Minerals stack test and our calculations for your review.*

TEC Response:
EPCHC suggests using an uncontrolled emission factor of 1.4 pounds per ton (lb/ton) per transfer point based on stack test data collected at the Reed Minerals facility located in Gibsonton, FL.

Based on the process description included with the stack test data provided by EPCHC the Reed Minerals facility employs a natural gas-fired fluid bed dryer to dry the received coal slag. The dried coal slag is then conveyed by a bucket elevator to screening equipment for sizing prior to transfer by elevators and conveyors to storage silos. Process equipment used for the screening, transfer, and storage of the dried coal slag is apparently vented to a wet scrubber (Multi-Element Model ME 76 Scrubber) for control of fugitive dust emissions. Average PM emissions from the Multi-Element Model ME 76 Scrubber based on the available stack test data is 4.883 pounds per hour (lb/hr).

The EPCHC uncontrolled emission factor of 1.4 lb/ton is based on a controlled emission factor of 0.07 lb/ton and an assumed control device (wet scrubber) efficiency of 95 %.

Based on a controlled PM emission rate of 4.883 lb/hr, the controlled emission factor of 0.07 lb/ton equates to a dried coal slag processing rate of 69.8 tons per hour (tph) and an uncontrolled PM emission rate of 97.7 lb/hr. This dried coal slag processing rate roughly agrees with the rate shown on the available stack test data (i.e., 69.2 tph). Using this data and Department of Energy (DOE) guidance for coal handling PM control efficiencies, EPCHC further estimates controlled emissions of approximately 60 tons per year (tpy) for the proposed transloading of coal slag at the F.J. Gannon Station.

TEC does not agree with EPC's analysis of controlled PM emissions for the proposed coal slag transloading operation for the following reasons:

- EPCHC is comparing PM emissions from a process that is significantly different than that proposed for the F.J. Gannon Station coal slag transloading operation. Reed Minerals processes that are controlled by the Multi-Element Model ME 76 Scrubber consist of screening, transfer, and storage of <u>dried</u> coal slag. These operations would be expected to generate much higher uncontrolled PM emissions than the proposed handling of <u>moist</u>

(i.e., 6.2 weight % water) coal slag at the F.J. Gannon Station. The coal slag transloading operations proposed for the F.J. Gannon Station also do not include screening or transfer by bucket elevator.

- The EPCHC uncontrolled emission factor of 1.4 lb/ton is based on PM stack test data for one emission point, the Multi-Element Model ME 76 Scrubber. This data was used to develop a controlled emission factor of 0.07 lb/ton using an assumed control device (wet scrubber) efficiency of 95 %. EPCHC then applies this uncontrolled emission factor to each transfer point (i.e., total of nine transfer points) proposed for the F.J. Gannon coal slag transloading operation. TEC does not consider the use of the Reed Minerals scrubber PM emissions data to be applicable to the proposed F.J. Gannon Station coal slag transloading operation. However, for consistency, the EPCHC emission factor should be derived in units of lb/ton/transfer point.

- The Multi-Element Model ME 76 Scrubber PM removal efficiency of 95 % is an estimate that has not been documented by stack testing. Inlet PM concentrations for the Reed Minerals Multi-Element Model ME 76 Scrubber would be expected to be relatively low since it is receiving essentially fugitive dust emissions. Scrubber PM removal efficiency will generally decrease with decreasing inlet loading and vice versa. For example, the estimate of uncontrolled PM emissions would be reduced by 50 % (from 1.4 to 0.70 lb/ton) if a scrubber efficiency of 90 % is assumed and by 75 % (from 1.4 to 0.35 lb/ton) if a scrubber efficiency of 80 % is assumed.

- Based on the proposed maximum coal slag annual throughput rate of 20,000 tpy and the EPCHC uncontrolled emission factor of 1.4 lb/ton per transfer point (total of nine transfer points), uncontrolled PM emissions are calculated to be 126 tpy (20,000 ton/yr x 1.4 lb/ton/point x 9 points x 1 ton/2,000 lb). EPC's estimate of 60 tpy for controlled PM emissions therefore represents an average transfer point control efficiency of only 52.4 %.

- Control efficiencies mentioned in the DOE reference appear to be reasonably comparable to those used in the August 12, 2002 emission estimates (see response to Item 1. above). For example, Table 4-2 (Estimated Control Efficiencies for Conveying and Transfer Operations) lists conveyor transfer station control efficiencies of 70 and 90 % for full enclosure, and 85 % for chemical spray. Table 4-3 (Estimated Control Efficiencies for Conveying and Transfer Operations) shows an estimated control efficiency of 50 % for wind guards and 80 to 90 percent for use of chemical wetting agents.

In summary, TEC does not believe comparing significantly different processes and control systems at the Reed Minerals Gibsonton facility is an appropriate method for developing PM emission estimates for the proposed F.J. Gannon Station coal slag transloading operation. The emission estimates provided in the August 12, 2002 use nationally accepted procedures from EPA's *Compilation of Air Pollutant Emission Factors*, AP-42, Fifth Edition. These EPA procedures are considered to provide reasonable estimates of PM/PM_{10} emissions due to the proposed F.J. Gannon coal slag transloading operation.

Item 4.
In addition, these emission units are already permitted to handle coal, and have unit specific 5% opacity limit pursuant to Rule 62-296.711, F.A.C. Rule 62-213.430(6)(b)1., F.A.C. does not allow an emission unit or activity to be considered insignificant if they would be subject to a unit-specific applicable requirement. It is, therefore, our opinion that the activity does not qualify for the classification.

TEC Response:
The materials handling requirements at rule 62-296.711, F.A.C, should not apply to the new slag handling activities at Gannon Station. The Reasonably Available Control Technology (RACT) rules, 62-296.700 through 62-296.712, F.A.C., apply to existing facilities or emissions units emitting particulate matter that are located in a particulate matter air quality maintenance area, not the addition of otherwise insignificant activities to existing RACT covered facilities. The slag loading/unloading and storage is a new activity, and the RACT rules apply only to existing activities at existing facilities.

Also, there is no New Source Performance Standard (NSPS) that applies to this discrete new activity, which is the slag loading/unloading and storage. The only "applicable requirement" that would appear to apply to this activity standing alone would be the general requirements in Rule 62-296.320(4)(b) and (c), F.A.C, and these subsections are expressly excluded from the definition of "unit-specific applicable requirement."

Therefore, if the handling activities otherwise qualify based on the estimated emissions and other factors discussed above, they should be deemed to be generically exempt from the requirement to obtain an air construction permit and should be deemed "insignificant activities" for purposes of the Title V permit.

If you have any questions, please contact Ms. Shelly Castro or me at (813) 641-5033.

Sincerely,

Laura R. Crouch
Manager - Air Programs
Environmental Affairs

EA/bmr/SSC140

c: Ms. Alice Harmon, EPCHC
Mr. Jerry Kissel - FDEP SW

Sheplak, Scott

From: Robert Kalch [kalch@epchc.org]
Sent: Tuesday, October 29, 2002 11:54 AM
To: Sheplak, Scott
Subject: RE: TEC

Mr. Sheplak,

Yes the information on the slag has been forwarded to Mr. Thomas W. Davis, P.E. and Ms. Shelly Castro.

Sincerely,
Rob Kalch

Sheplak, Scott

From: Sheplak, Scott
Sent: Tuesday, October 29, 2002 11:51 AM
To: 'Robert Kalch'
Cc: Sterlin Woodard; Linero, Alvaro
Subject: RE: TEC

Slag. Has the new technical info. from EPCHC been provided to the P.E. of record (Tom Davis) on the project?

NALCOAL binder. Jonathan Holtom is handling.

-----Original Message-----
From: Robert Kalch [mailto:kalch@epchc.org]
Sent: Tuesday, October 29, 2002 10:37 AM
To: Sheplak, Scott
Cc: Sterlin Woodard
Subject: TEC

Mr. Sheplak,

I just wanted to touch base with you concerning two TEC projects.

The first is the proposed slag handling operations at TEC, Gannon. Has TEC submitted any response yet? The second project is the NALCOAL binder. I received a copy of TEC's response. Who is the person handling this request?

As always your help is appreciated.

Sincerely,
Rob Kalch

Sheplak, Scott

From: Sheplak, Scott
Sent: Monday, September 16, 2002 10:40 AM
To: 'Robert Kalch'
Subject: RE: Comments on TEC Gannon Slag Handling

This technical information needs to be provided to the P.E. who certified the claim. Please provide to the P.E.

-----Original Message-----
From: Robert Kalch [mailto:kalch@epchc.org]
Sent: Thursday, September 12, 2002 6:02 PM
To: Sheplak, Scott
Subject: Comments on TEC Gannon Slag Handling

Mr. Sheplak,

Attached you will find an electronic copy of the comments on the slag handling operations at Gannon. A hard copy will be faxed to you in the morning and mailed as well.

If there are any questions, please contact me.

Sincerely,
Rob Kalch

ENVIRONMENTAL PROTECTION COMMISSION
HILLSBOROUGH COUNTY

Executive Director
Richard D. Garrity, Ph.D.

Administrative Offices,
Legal & Water Management Division
The Roger P. Stewart Environmental Center
1900 - 9th Ave. • Tampa, FL 33605
Ph. (813) 272-5960 • Fax (813) 272-5157
Air Management Fax 272-5605
Waste Management Fax 276-2256
Wetlands Management Fax 272-7144
1410 N. 21st Street • Tampa, FL 33605

September 12, 2002

Mr. Scott Sheplak, P.E.
Department of Environmental Protection, Bureau of Air Regulation
2600 Blair Stone Road
Mail Station 5505
Tallahassee, FL 32399-2400

Re: Hillsborough County - AP
DEP File No. 0570040-014-AV

Dear Mr. Sheplak:

Thank you for forwarding a copy of the slag handling correspondence dated July 5, 2002 and August 7, 2002 to EPC staff. After reviewing the information, EPC staff offers the following comments for your consideration:

1. We request that TEC personnel state the basis for the control efficiencies used in the calculations submitted on August 12, 2002.

2. After reviewing the results of a stack test conducted by Reed Minerals, which operates a slag screening and handling facility located at 5950 Route 41A South, Gibsonton, FL, we believe have developed an emission factor that may be more appropriate to estimate particulate matter emissions than the continuous drop equation from AP-42. The material transferred during the test was coal slag similar to the type TEC personnel is proposing to handle. The controlled particulate matter emission factor for the process is 0.07 lbs/ton. Using the controlled emission factor, and an assumed efficiency of 95% for a medium efficiency scrubber (AP-42, Table B.2-3), EPC staff derived an uncontrolled particulate matter emission factor of 1.4 lbs/ton. It is EPC staff's opinion that this derived emission factor is more representative of the actual emissions that would be generated from their slag handling operation. As such, EPC staff requests

that TEC re-calculate the potential emissions for this proposed activity using the 1.4 lbs/ton uncontrolled emission factor.

3. Using this uncontrolled emission factor for each transfer point, along with control efficiencies listed in a Department of Energy guidance document (DOE/RG/10312-1, Vol. 2) for estimating control efficiencies for coal handling, we estimate controlled potentials of around 60 tpy. So, unless TEC can show otherwise, we do not believe the slag handling operation qualifies as an "insignificant pollutant emitting activity". We have attached a copy of the summary page for the Reed Minerals stack test and our calculations for your review.

4. In addition, these emission units are already permitted to handle coal, and have unit - specific 5% opacity limit pursuant to Rule 62-296.711, F.A.C. Rule 62-213.430(6)(b)1., F.A.C. does not allow an emission unit or activity to be considered insignificant if they would be subject to a unit-specific applicable requirement. It is, therefore, our opinion that the activity does not qualify for the classification.

EPC staff wishes to thank you again for the opportunity to comment on this local project. If you have any questions, please feel free to contact myself or Rob Kalch at (813) 272-5530.

Sincerely,

Sterlin Woodard, P.E.
Assistant Director

rsk

cc: Shelly Castro, Environmental Affairs, TEC

TEC Gannon
Slag Handling

Transfer Rates	
tph	tpy
1500	20000

PM Emission Factor *	
1.4	lbs/ton

Transfer Points	Controls	Emissions lbs/hr	Emissions tpy
1. Clamshell to Dockside Hopper	4	2100	14
2. Hopper to Conveyor B	2	630	4.2
3. Conveyor B to Conveyor C	2	630	4.2
4. Conveyor C to Conveyor D2	2	630	4.2
5. Conveyor D2 to Conveyor M2	2	630	4.2
6. Conveyor M2 to Conveyor E2	2	630	4.2
7. Convetor E2 to Slag Storage	3	1575	10.5
8. Storage Pile to Trucks	4	2100	14
	SUM	8925.0	59.50

	Control Efficiencies	%
1	Moisture Content	0
2	Partial Enclosure	70
3	Variable Hght Stacker	25
4	None	NA

screening operation operating at 69.2 tph. See Reed Minerals file.
Control efficiencies from DOE/RG/10312-1(vol 2)

REED MINERALS
a harsco company

Assign to Mary

May 18, 1999

0570224

Via Certified Mail: Z 476 735 859

Mr. Sterlin Woodard
Air Management Division
Environmental Protection Commission
Hillsborough County
1410 N. 21st Street
Tampa, FL 33605

RE: Particle Study Submittal

Mr. Woodard:

Enclosed are two copies of Visible Emission/Stack Testing evaluations performed on the Reed Minerals Gibsonton, Florida facility Truck Loading Operation, Coal Slag Fluid Bed Dryer, and the Aggregate Screening, Storage and Transfer Facility. These evaluations are being submitted in reference to permits numbered: A029-260490, A029-255142, and A029-255143.

This data will also be utilized in the coming weeks as part of Reed Mineral's Operating Permit renewal application. Should you have any questions with regard to the enclosed evaluations please contact me at (717) 972-1160.

NEDS No. 224- 1, 2, 3
LETTER MAILED 6-16-99
ARMS 6-16-99
TESTTRAK
REVIEWED BY mc

Sincerely,

REED MINERALS
Harsco Corporation

Roy J. Osborne, REM
Environmental & Safety Manager

RJO/rjo
Enclosure(s)

cc: G. Maney
G. Carr
D. Webber

REED
a harsco company

ROY J. OSBORNE, REM
Manager, Safety & Environment
(717) 972-1160
(717) 877-0046 Mobile

Reed Minerals, Harsco Corporation
Mailing Address: P.O. Box 0515, Camp Hill, PA 17001-0515
1011 Mumma Road, Wormleysburg, PA 17043
Telephone (717) 763-4200 Fax (717) 763-6496
Email: rosborne@reedmin.com

1.0 INTRODUCTION

Southern Environmental Sciences, Inc. conducted air pollution emissions testing of the Reed Mineral Division Gibsonton Facility on April 6 and 7, 1999. Particulate emissions tests and visible emissions evaluations were conducted on the Coal Slag Fluid Bed Dryer and the Aggregate Screening, Storage and Transfer Facility. In addition a visible emissions evaluation was performed on the Backup Control System for Truck Loading. This facility is located at 5950 Route 41A South, Gibsonton, Florida. Testing was performed to determine if the plant was operating in compliance with requirements of the Florida Department of Environmental Protection (FDEP) and the Environmental Protection Commission of Hillsborough County (EPCHC).

2.0 SUMMARY OF RESULTS

The results of the compliance test indicate the facility was operating in compliance with all applicable emission limitations. Results of the particulate testing are summarized in Tables 1 and 2. The allowable particulate concentration for the Coal Slag Fluid Bed Dryer is 0.03 grains per dry standard cubic foot. The average measured particulate concentration was 0.0099 grains per dry standard cubic foot, well within the allowable limit. The allowable particulate concentration for the Aggregate Screening, Storage and Transfer Facility is 0.03 grains per dry standard cubic foot. The average measured particulate concentration was 0.0166 grains per dry standard cubic foot, well within the allowable limit.

Visible emissions from each of the three sources is limited to 5 percent opacity. Visible emissions evaluations were performed on each of the three sources. The maximum six minute average opacity on the coal slag fluid bed dryer and truck loading operation was zero percent, well within the maximum allowable limit. The maximum six minute average capacity on the Aggregate Screening, Storage and Transfer Facility was 1.0 percent, well within the allowable limit.

3.0 PROCESS DESCRIPTION

This facility processes coal slag residue from power plants into aggregates and abrasives used in the road building and sand blasting industry. Coal slag is conveyed from a loading bin to a natural gas fired fluid bed dryer. The dryed aggregate is coveyed by bucket elevator to screening equipment where it is sized prior to being transferred by elevators and conveyers to storage silos. The aggregates are conveyed to bulk tanker trucks or to a bagging operation for shipment. Dust generated during the drying operation is controlled by a Multi-Element Model ME 27 wet scrubber. Dust created during the screening, storage and transfer of the sized material is controlled by a Multi-Element Model ME 76 wet scrubber. Process rates during the test period were determined by plant personnel.

TABLE 1: PARTICULATE

Company: Reed Minerals
Source: Coal Slag Dryer

	Run 1	Run 2	Run 3
Date of Run	04/06/99	04/06/99	04/06/99
Process Rate (TPH)	70.8	70.8	70.8
Start Time (24-hr. clock)	0815	0946	0118
End Time (24-hr. clock)	0919	1051	1222
Vol. Dry Gas Sampled Meter Cond. (DCF)	51.963	52.620	50.812
Gas Meter Calibration Factor	0.993	0.993	0.993
Barometric Pressure at Barom. (in. Hg.)	30.10	30.10	30.08
Elev. Diff. Manom. to Barom. (ft.)	0	0	0
Vol. Gas Sampled Std. Cond. (DSCF)	50.487	50.433	48.357
Vol. Liquid Collected Std. Cond. (SCF)	2.607	4.493	4.644
Moisture in Stack Gas (% Vol.)	4.9	8.2	8.6 *
Molecular Weight Dry Stack Gas	30.00	30.00	30.00
Molecular Weight Wet Stack Gas	29.41	29.02	28.97
Stack Gas Static Press. (in. H2O gauge)	1.10	1.00	1.00
Stack Gas Static Press. (in. Hg. abs.)	30.18	30.17	30.15
Average Square Root Velocity Head	0.803	0.780	0.783
Average Orifice Differential (in. H2O)	2.020	2.077	1.901
Average Gas Meter Temperature (Deg. F)	85.6	93.1	96.4
Average Stack Gas Temperature (Deg. F)	108.3	110.8	108.6
Pitot Tube Coefficient	0.84	0.84	0.84
Stack Gas Vel. Stack Cond. (ft./sec.)	46.13	45.42	45.35
Effective Stack Area (sq. ft.)	9.07	9.07	9.07
Stack Gas Flow Rate Std. Cond. (DSCFM)	22,369	21,170	21,107
Stack Gas Flow Rate Stack Cond. (ACFM)	25,102	24,718	24,678
Net Time of Run (min.)	62.5	62.5	62.5
Nozzle Diameter (in.)	0.246	0.246	0.246
Percent Isokinetic	99.3	104.8	100.8
Scrubber Pressure Drop (in H20)	12.0	11.0	11.00
Scrubber Liquor Flow Rate (GPM)	250	250	250
Particulate Collected (mg.)	25.8	35.0	34.5
Particulate Emissions (lb./hr.)	1.512	1.942	1.991
Particulate Emissions (grains/DSCF)	0.0079	0.0107	0.0110

Avg. Particulate Emissions (lb./hr.)	1.815
Avg. Particulate Emissions (grains/DSCF)	0.0099

* Saturation moisture at stack conditions
Note: Standard conditions 68 Deg. F, 29.92 in. Hg

Company: Reed Minerals
Source: Aggregate Transfer, Storage, Screening Facility

	Run 1	Run 2	Run 2
Date of Run	04/07/99	4/07/99	04/07/99
Process Rate (TPH)	69.2	69 .2	69.2
Start Time (24-hr. clock)	0826	1010	1150
End Time (24-hr. clock)	0938	1124	1304
Vol. Dry Gas Sampled Meter Cond. (DCF)	44.876	44.237	44.153
Gas Meter Calibration Factor	0.993	0.993	0.993
Barometric Pressure at Barom. (in. Hg.)	30.24	30.24	30.22
Elev. Diff. Manom. to Barom. (ft.)	0	0	0
Vol. Gas Sampled Std. Cond. (DSCF)	43.850	42.747	42.262
Vol. Liquid Collected Std. Cond. (SCF)	1.961	2.291	2.320
Moisture in Stack Gas (% Vol.)	4.3	5.1	5.2
Molecular Weight Dry Stack Gas	30.00	30.00	30.00
Molecular Weight Wet Stack Gas	29.49	29.39	29.38
Stack Gas Static Press. (in. H2O gauge)	0.23	0.15	0.22
Stack Gas Static Press. (in. Hg. abs.)	30.26	30.25	30.24
Average Square Root Velocity Head	0.441	0.429	0.427
Average Orifice Differential (in. H2O)	1.173	1.136	1.111
Average Gas Meter Temperature (Deg. F)	83.9	89.9	94.8
Average Stack Gas Temperature (Deg. F)	89.0	92.8	95.9
Pitot Tube Coefficient	0.84	0.84	0.84
Stack Gas Vel. Stack Cond. (ft./sec.)	24.83	24.3	224.28
Effective Stack Area (sq. ft.)	25.30	25.30	25.30
Stack Gas Flow Rate Std. Cond. (DSCFM)	35,084	33,839	33,530
Stack Gas Flow Rate Stack Cond. (ACFM)	37,685	36,916	36,852
Net Time of Run (min.)	70.0	70.0	70.0
Nozzle Diameter (in.)	0.282	0.282	0.282
Percent Isokinetic	104.2	105.3	105.1
Scrubber Presure Drop (H20)	11.0	11.0	11.0
Scrubber Liquor Flow Rate (GPM)	800	800	800
Particulate Collected (mg.)	64.5	36.6	38.0
Particulate Emissions (lb./hr.)	6.825	3.834	3.990
Particulate Emissions (grains/DSCF)	0.0227	0.0132	0.0139

Avg. Particulate Emissions (lb./hr.)	4.883
Avg. Particulate Emissions (grains/DScF)	0.0166

Note: Standard conditions 68 Deg. F, 29.92 in. Hg

BEST AVAILABLE COP

VISIBLE EMISSIONS EVALUATION

COMPANY: Reed Minerals

UNIT: Aggregate Screening Storage + Transfer

ADDRESS: 5950 Route 41A South

Gibsonton, FL

PERMIT NO.: AO29-255143

COMPLIANCE? YES ☑ NO ☐

AIRS NO.:

EU NO.: 002

PROCESS RATE: 69.2 TPH

PERMITTED RATE: 75TPH

PROCESS EQUIPMENT: Aggregate Screening Storage + Transfer

CONTROL EQUIPMENT: Multi Element model ME76 Scrubber

OPERATING MODE: Normal

AMBIENT TEMP. (°F) START ~70 STOP ~70

HEIGHT ABOVE GROUND LEVEL START ~30' STOP ~30'

HEIGHT REL. TO OBSERVER START ~25' STOP ~25'

DISTANCE FROM OBSERVER START ~130' STOP ~130'

DIRECTION FROM OBSERVER START 325° STOP 325°

EMISSION COLOR: Gray

PLUME TYPE CONTIN. ☐ INTERMITTENT ☒

WATER DROPLETS PRESENT NO ☒ YES ☐

IS WATER DROPLET PLUME ATTACHED ☐ DETACHED ☐ NA

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START Stack exit STOP Stack exit

DESCRIBE BACKGROUND START Sky STOP Sky

BACKGROUND COLOR START STOP

SKY CONDITIONS START Clear STOP Clear

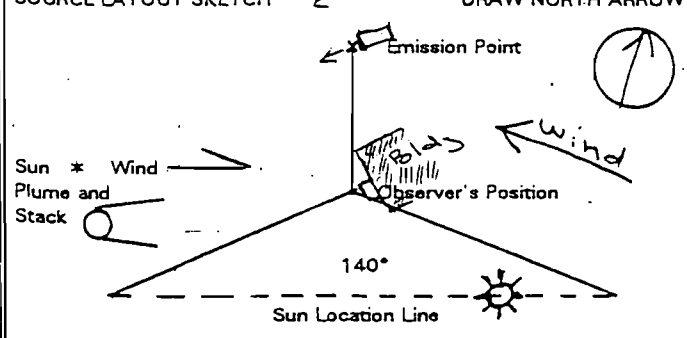
WIND SPEED (MPH) START 3-5 STOP 3-5

WIND DIRECTION START E STOP E

AVERAGE OPACITY FOR HIGHEST PERIOD 1.0%

RANGE OF OPAC. READINGS MIN. 0% MAX. 5%

SOURCE LAYOUT SKETCH — DRAW NORTH ARROW



COMMENTS

OBSERVATION DATE: 4/7/99 START TIME: 0830 STOP TIME: 0900

SEC MIN	0	15	30	45	SEC MIN	0	15	30	45
0	0	0	0	0	30				
1	0	0	5	5	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	5	5	5	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	5	5	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	5	0	0	0	51				
22	0	0	0	5	52				
23	5	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				

Observer: Byron Nelson

Certified by: EPA thru ETA Certified at: Tampa, FL

Date Certified: 2/24/99 Exp. Date: 8/24/99

I certify that all data provided to the person conducting the test was true and correct to the best of my knowledge:

Signature:

Title: Plant Superintendent

DATE 4/7/99 SAMPLING TIME : FROM 8:26 A.M. TO ____ P.M.

STATEMENT OF PROCESS WEIGHT

COMPANY:	Reed Minerals
MAILING ADDRESS	
SOURCE IDENTIFICATION	Aggregate Screening, Storage, Transfer facilities
SOURCE LOCATION	

DATA ON OPERATING CYCLE TIME

START OF OPERATION, TIME		
END OF OPERATION, TIME		
ELAPSED TIME		
IDLE TIME DURING CYCLE		
DESIGN PROCESS RATING	PROCESS WEIGHT RATE (INPUT)	75 TPH
	PRODUCT (OUTPUT)	

DATA ON ACTUAL PROCESS RATE DURING OPERATION CYCLE

MATERIAL	Coal Slag	RATE	Run #1 69.2 TPH
MATERIAL		RATE	Run #2 69.2 TPH
MATERIAL		RATE	Run #3 69.2 TPH
	AVERAGE PROCESS WEIGHT	RATE	
PRODUCT		RATE	
PRODUCT		RATE	
PRODUCT		RATE	

I certify that the above information is true and correct to the best of my knowledge.

Name (PLEASE PRINT) Danny Webber

Signature Danny Webber

Title Plant Superintendent

Sheplak, Scott

From: Robert Kalch [kalch@epchc.org]
Sent: Thursday, September 12, 2002 6:02 PM
To: Sheplak, Scott
Subject: Comments on TEC Gannon Slag Handling

Comments on Slag Handling.doc

Mr. Sheplak,

Attached you will find an electronic copy of the comments on the slag handling operations at Gannon. A hard copy will be faxed to you in the morning and mailed as well.

If there are any questions, please contact me.

Sincerely,
Rob Kalch

August 12, 2002

Mr. Scott Sheplak, P.E.
Department of Environmental Protection, Bureau of Air Regulation
2600 Blair Stone Road
Mail Station 5505
Tallahassee, FL 32399-2400

Re: Hillsborough County - AP
DEP File No. 0570040-014-AV

Dear Mr. Sheplak:

Thank you for forwarding a copy of the slag handling correspondence dated July 5, 2002 and August 7, 2002 to EPC staff. After reviewing the information, EPC staff offers the following comments for your consideration:

1. EPC staff request that TEC personnel state the basis for the control efficiencies used in the calculations submitted on August 12, 2002.

2. EPC staff has the results of a stack test of the screening and handling operations at the Reed Minerals facility located at 5950 Route 41A South, Gibsonton, FL. It appears the material transferred during the test was coal slag similar to the type TEC personnel is proposing to handle. The controlled particulate matter emission factor, utilizing a medium efficiency scrubber, for the process is 0.07 lbs/ton. Using the controlled emission factor, the process throughput rate, and an assumed efficiency of 95% for the scrubber (AP-42, Table B.2-3), EPC staff derived a particulate matter emission factor of 1.4 lbs/ton for the coal slag. It is EPC staff's opinion that this derived emission factor is more representative of the actual emissions from TEC. As such, EPC staff requests that TEC personnel calculate the potential emissions for this proposed activity using the 1.4 lbs/ton emission factor.

Using this emission factor for each transfer point along with control efficiencies listed in a Department of Energy guidance document (DOE/RG/10312-1, Vol. 2) for estimating control efficiencies for coal handling, we estimate controlled potentials of around 60 tpy. So, unless TEC can show otherwise, we do not believe the source qualifies as an "insignificant source". We have attached a copy of the summary page for the Reed Minerals stack test and our calculations for your review.

EPC staff wishes to thank you again for the opportunity to comment on this local project. If you have any questions, please feel free to contact myself or Rob Kalch at (813) 272-5530.

Sincerely,

Sterlin Woodard, P.E.
Assistant Director

rsk

cc: Shelly Castro, Environmental Affairs, TEC

Sheplak, Scott

From: Sheplak, Scott
Sent: Tuesday, August 13, 2002 2:15 PM
To: 'Robert Kalch'
Subject: RE: TEC - Gannon and Slag Handling

J. Campbell was copied on their calcs. dated August 7.

-----Original Message-----
From: Robert Kalch [mailto:kalch@epchc.org]
Sent: Tuesday, August 13, 2002 12:43 PM
To: Sheplak, Scott
Subject: TEC - Gannon and Slag Handling

Mr. Sheplak,

I just wanted to touch base with you concerning the proposed slag handling activities at TEC Gannon Station. Your email of July 25th indicated you had asked for calculations from TEC. Have they responded yet?

I went over to TEC to look at the type of enclosures on the transfer belts and hopper. The hopper really has no enclosures except for the hopper structure itself. The conveyors have half round corrugated pipe as covers on the belts. What did concern me though was the very powdery nature of the coal I saw in the coal piles. I will forward the inspection report to you after the other inspector reviews and signs off on it.

Sincerely,
Rob Kalch

TAMPA ELECTRIC
August 7, 2002

Mr. Scott M. Sheplak, P.E.
Bureau of Air Regulation
Florida Department of Environmental Protection
111 South Magnolia Avenue, Suite 4
Tallahassee, FL 32301

Via FedEx
Airbill No. 7919 0170 1489

Re: **Tampa Electric Company (TEC)**
F.J. Gannon Station
Title V Permit No. 0570040-014-AV
Request for Generic Exemption
Slag Storage

Dear Mr. Sheplak:

Pursuant to our telephone conversation on the afternoon of July 11, 2002, I have enclosed the additional information regarding the handling and storage of coal slag at F.J. Gannon Station as per your request. Specifically, the following is included:

- P.E. Certification
- Summary Page of Coal Slag Handling PM/PM_{10} Emissions Estimates
- Emission Inventory Worksheet for Fugitive PM - Material Transfer (Drops)
- Emission Inventory Worksheet for Fugitive PM_{10} - Material Transfer (Drops)
- Emission Inventory Worksheet for Fugitive PM - Truck Traffic on Paved Roads
- Emission Inventory Worksheet for Fugitive PM_{10} - Truck Traffic on Paved Roads

If you have any questions, please feel free to telephone Laura Crouch or me at (813) 641-5033.

Sincerely,

Shelly Castro
Associate Engineer
Environmental Affairs

EA/bmr/SSC129

Enclosures

c/enc: Mr. Jerry Kissel, FDEP SW
Mr. Scott Sheplak, FDEP
Ms. Alice Harman, EPCHC

ECT
Environmental Consulting & Technology, Inc.

August 2, 2002

Ms. Shelly Castro
Tampa Electric Company
6944 U.S. Highway 41 North
Apollo Beach, FL 33572-9200

Re: Tampa Electric Company
F. J. Gannon Station
Handling and Storage of Coal Slag

Dear Ms. Castro:

Tampa Electric Company (TEC) submitted correspondence to the Florida Department of Environmental Protection (FDEP) dated July 1, 2002 notifying the Department of TEC's plans to handle and store coal slag at its F.J. Gannon Station. The notification indicated that the coal slag handling and storage activities qualify for a permitting exemption pursuant to Rule 62-210.300(3)(b)1., F.A.C. and constitute an "insignificant activity" with respect to the Chapter 62-213, F.A.C. Title V operation permit program. In response to this notification, the Department requested that TEC submit a Professional Engineer certification regarding potential emission rates and applicability of Rule 62-210.300(3)(b)1., F.A.C.

As described in the July 1, 2002 correspondence to the Department, the planned coal slag handling and storage operations will consist of the unloading of coal slag from barges to a dockside hopper and subsequent transfer of the coal slag to a temporary storage pile using a series of belt conveyors. The coal slag will then be loaded into trucks using a front-end loader and transported off-site. The coal slag handling equipment that will be utilized is existing equipment that is currently used for solid fuel handling.

Emissions associated with the coal slag handling and storage operations will consist of fugitive particulate matter (PM and PM_{10}). Potential PM/PM_{10} emissions were estimated using applicable procedures from EPA's AP-42 document, *Compilation of Air Pollutant Emission Factors, Fifth Edition*. Specifically, potential PM/PM_{10} emissions from conveyor belt transfer points were estimated using procedures obtained from AP-42, Section 13.2.4, Aggregate Handling and Storage Piles. Potential PM/PM_{10} emissions due to truck traffic on paved plant roadways were estimated using procedures obtained from AP-42, Section 13.2.1, Paved Roads. Details of these potential PM/PM_{10} emission rate estimates are attached.

Coal slag operation potential PM/PM_{10} emission rates, using AP-42 procedures, are estimated to total 0.68 and 0.14 tons per year for PM and PM_{10}, respectively. These emission

3701 Northwest
98TH Street
Gainesville, FL
32606

(352)
332-0444

FAX (352)
332-6722

rate estimates are well below the 5.0 ton per year threshold for a generic emission unit permitting exemption specified in Rule 62-210.300(3)(b)1., F.A.C.

Please contact me at (352) 332-6230, Ext. 351 if there are any questions regarding this certification.

Sincerely,

ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.

Thomas W. Davis, P.E.
Principal Engineer

Professional Engineer Statement:

I, the undersigned, hereby certify that:

To the best of my knowledge, the emission estimates reported in this certification are true, accurate, and complete based upon reasonable techniques available for estimating emissions.

STATE OF FLORIDA PROFESSIONAL ENGINEER

Signature
Professional Engineer No. 36777

8/2/02
Date

Tampa Electric Company
F.J. Gannon Station
Coal Slag Handling PM/PM_{10} Emission Estimates

Emission Point Description	Emission Point ID	Potential Emission Rates			
		PM		PM_{10}	
		(lb/hr)	(tpy)	(lb/hr)	(tpy)
Barge to Clamshell (spillage)	FH-002	1.47	0.0098	0.69	0.0046
Clamshell to Hopper	FH-005	1.10	0.0073	0.52	0.0035
Hopper to Belt Conveyor B	FH-009	0.15	0.0010	0.07	0.0005
Conveyor B to Conveyor C	FH-011	0.22	0.0015	0.10	0.0007
Conveyor C to Conveyor D2	FH-012	0.15	0.0010	0.07	0.0005
Conveyor D2 to Conveyor M2	FH-017	0.15	0.0010	0.07	0.0005
Conveyor M2 to Conveyor E2	FH-019	0.15	0.0010	0.07	0.0005
Conveyor E2 to Slag Storage Pile	FH-021	0.44	0.0029	0.21	0.0014
Slag Storage Pile to Trucks (Front-End Loader)	FH-021a	0.44	0.0029	0.21	0.0014
Coal Slag Trucks (Empty)	FH-021b	3.29	0.2058	0.64	0.0402
Coal Slag Trucks (Full)	FH-021c	7.09	0.4429	1.38	0.0864
Totals		**14.6**	**0.68**	**4.0**	**0.14**

Source: ECT, 2002.

EMISSION INVENTORY WORKSHEET

FUG-PM

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FUGITIVE PM - MATERIAL TRANSFER (DROPS) — **Figure:**

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM - Coal Slag Handling (Drops)
Emission Control Method(s)/ID No.(s):	Moist material, enclosures
Emission Point ID:	FUG-PM

EMISSION ESTIMATION EQUATIONS

PM Emission (lb/hr) = 0.74 x 0.0032 x [(Wind Speed/5)$^{1.3}$ / (Material Moisture Content/2)$^{1.4}$] x Material Handled (ton/hr)

PM Emission (ton/yr) = 0.74 x 0.0032 x [(Wind Speed/5)$^{1.3}$ / (Material Moisture Content/2)$^{1.4}$] x Material Handled (ton/yr) x (1 ton/2,000 lb)

Source: Section 13.2-4, AP-42, January 1995.

INPUT DATA AND EMISSIONS CALCULATIONS

Mean Wind Speed: 8.6 mph

Material Moisture Content: 6.22 weight %

Material Transfer Point	Source ID	Material Transfer Rates (ton/hr)	Material Transfer Rates (ton/yr)	Uncontrolled Emission Factor (lb PM/ton)	Control Efficiency (%)	Controlled Emission Factor (lb PM/ton)	Potential PM Emission Rates (lb/hr)	Potential PM Emission Rates (tons)
Barge to Clamshell (spillage)	FH-002	1,500	20,000	0.000979	0.0	0.000979	1.47	0.0098
Clamshell to Hopper	FH-005	1,500	20,000	0.000979	25.0	0.000734	1.10	0.0073
Hopper to Belt Conveyor B	FH-009	1,500	20,000	0.000979	90.0	0.000098	0.15	0.0010
Conveyor B to Conveyor C	FH-011	1,500	20,000	0.000979	85.0	0.000147	0.22	0.0015
Conveyor C to Conveyor D2	FH-012	1,500	20,000	0.000979	90.0	0.000098	0.15	0.0010
Conveyor D2 to Conveyor M2	FH-017	1,500	20,000	0.000979	90.0	0.000098	0.15	0.0010
Conveyor M2 to Conveyor E2	FH-019	1,500	20,000	0.000979	90.0	0.000098	0.15	0.0010
Conveyor E2 to Slag Storage Pile	FH-021	1,500	20,000	0.000979	70.0	0.000294	0.44	0.0029
Slag Storage Pile to Trucks (Front-End Loader)	FH-021a	1,500	20,000	0.000979	70.0	0.000294	0.44	0.0029
						Totals	4.26	0.0284

SOURCES OF INPUT DATA

Parameter	Data Source
Mean Wind Speed, mph	Climate of the States (Tampa, FL), Third Edition, 1985.
Material Moisture Content	TEC, 2002.
Material Transfer Point Identification	TEC, 2002.
Material Transfer Rates	TEC, 2002.

NOTES AND OBSERVATIONS

Control Efficiencies: Side Enclosure (25%), Enclosure (85%), Enclosure w/Dust Suppressant Sprays (90%), Dust Suppressant (70%).

DATA CONTROL

Data Collected by:	S. Castro	Date:	8/02
Evaluated by:	T. Davis	Date:	8/02
Data Entered by:	T. Davis	Date:	8/02

EMISSION INVENTORY WORKSHEET

FUG-PM10

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FUGITIVE PM_{10} - MATERIAL TRANSFER (DROPS) — **Figure:**

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM_{10} - Coal Slag Handling (Drops)
Emission Control Method(s)/ID No.(s):	Moist material, enclosures
Emission Point ID:	FUG-PM_{10}

EMISSION ESTIMATION EQUATIONS

PM_{10} Emission (lb/hr) = 0.35 x 0.0032 x [(Wind Speed/5)$^{1.3}$ / (Material Moisture Content/2)$^{1.4}$] x Material Handled (ton/hr)

PM_{10} Emission (ton/yr) = 0.35 x 0.0032 x [(Wind Speed/5)$^{1.3}$ / (Material Moisture Content/2)$^{1.4}$] x Material Handled (ton/yr) x (1 ton/2,000 lb)

Source: Section 13.2-4, AP-42, January 1995.

INPUT DATA AND EMISSIONS CALCULATIONS

Mean Wind Speed: 8.6 mph

Material Moisture Content: 6.22 weight %

Material Transfer Point	Source ID	Material Transfer Rates (ton/hr)	Material Transfer Rates (tpy)	Uncontrolled Emission Factor (lb PM/ton)	Control Efficiency (%)	Controlled Emission Factor (lb PM/ton)	Potential PM_{10} Emission Rates (lb/hr)	Potential PM_{10} Emission Rates (tons)
Barge to Clamshell (spillage)	FH-002	1,500	20,000	0.000463	0.0	0.000463	0.69	0.0046
Clamshell to Hopper	FH-005	1,500	20,000	0.000463	25.0	0.000347	0.52	0.0035
Hopper to Belt Conveyor B	FH-009	1,500	20,000	0.000463	90.0	0.000046	0.07	0.0005
Conveyor B to Conveyor C	FH-011	1,500	20,000	0.000463	85.0	0.000069	0.10	0.0007
Conveyor C to Conveyor D2	FH-012	1,500	20,000	0.000463	90.0	0.000046	0.07	0.0005
Conveyor D2 to Conveyor M2	FH-017	1,500	20,000	0.000463	90.0	0.000046	0.07	0.0005
Conveyor M2 to Conveyor E2	FH-019	1,500	20,000	0.000463	90.0	0.000046	0.07	0.0005
Conveyor E2 to Slag Storage Pile	FH-021	1,500	20,000	0.000463	70.0	0.000139	0.21	0.0014
Slag Storage Pile to Trucks (Front-End Loader)	FH-021a	1,500	20,000	0.000463	70.0	0.000139	0.21	0.0014
						Totals	**2.01**	**0.0134**

SOURCES OF INPUT DATA

Parameter	Data Source
Mean Wind Speed, mph	Climate of the States (Tampa, FL), Third Edition, 1985.
Material Moisture Content	TEC, 2002.
Material Transfer Point Identification	TEC, 2002.
Material Transfer Rates	TEC, 2002.

NOTES AND OBSERVATIONS

Control Efficiencies: Side Enclosure (25%), Enclosure (85%), Enclosure w/Dust Suppressant Sprays (90%), Dust Suppressant (70%).

DATA CONTROL

Data Collected by: S. Castro — Date: 8/02

EMISSION INVENTORY WORKSHEET

FUG-PM

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FUGITIVE PM - TRUCK TRAFFIC ON PAVED ROADS

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM - Coal Slag Truck Traffic on Paved Roads
Emission Control Method(s)/ID No.(s):	Watering, As Necessary
Emission Point ID:	FUG-PM

EMISSION ESTIMATION EQUATIONS

PM Emission (lb/hr) = 0.082 x [(Silt Loading Factor/2)$^{0.65}$] x (Truck Weight/3)$^{1.5}$ x Vehicle Miles Traveled (VMT)/hr

PM Emission (ton/yr) = 0.082 x [(Silt Loading Factor/2)$^{0.65}$] x (Truck Weight/3)$^{1.5}$ x Vehicle Miles Traveled (VMT)/yr x (1 ton/2,000 lb)

Source: Section 13.2-1, AP-42, October 1997.

INPUT DATA AND EMISSIONS CALCULATIONS

Controlled Silt Loading Factor: 0.97 g/m^2

Truck Traffic Type	Source ID	Vehicle Miles Traveled (VMT/hr)	Vehicle Miles Traveled (VMT/yr)	Vehicle Weight (ton)	Control Efficiency (%)	Potential PM Emission Rates (lb/hr)	Potential PM Emission Rates (tpy)
Coal Slag Trucks (Empty)	FH-021b	2.841	355	24.0	90.0	3.3	0.21
Coal Slag Trucks (Full)	FH-021c	2.841	355	40.0	90.0	7.1	0.44
					Totals	**10.4**	**0.65**

SOURCES OF INPUT DATA

Parameter	Data Source
Controlled Silt Loading Factor	Based on factor for iron and steel production and overall 90% control efficiency, ECT, 2002.
Vehicle Miles Traveled, VMT	TEC, 2002.
Truck Weights, ton	TEC, 2002.
Control Efficiency	Estimated, ECT 2002.

NOTES AND OBSERVATIONS

Coal slag truck travel distance (one-way) is 1,500 ft.

Maximum hourly coal slag truck count is 10.

Maximum annual coal slag truck count is 1,250.

DATA CONTROL

Data Collected by:	S. Castro	**Date:**	8/02
Evaluated by:	T. Davis	**Date:**	8/02
Data Entered by:	T. Davis	**Date:**	8/02

EMISSION INVENTORY WORKSHEET

FUG-PM10

Tampa Electric Company - F.J. Gannon Station

EMISSION SOURCE TYPE

FUGITIVE PM_{10} - TRUCK TRAFFIC ON PAVED ROADS

FACILITY AND SOURCE DESCRIPTION

Emission Source Description:	Fugitive PM_{10} - Coal Slag Truck Traffic on Paved Roads
Emission Control Method(s)/ID No.(s):	Watering, As Necessary
Emission Point ID:	FUG-PM_{10}

EMISSION ESTIMATION EQUATIONS

PM_{10} Emission (lb/hr) = 0.016 x [(Silt Loading Factor/2)$^{0.65}$] x (Truck Weight/3)$^{1.5}$ x Vehicle Miles Traveled (VMT)/hr

PM_{10} Emission (ton/yr) = 0.016 x [(Silt Loading Factor/2)$^{0.65}$] x (Truck Weight/3)$^{1.5}$ x Vehicle Miles Traveled (VMT)/yr x (1 ton/2,000 lb)

Source: Section 13.2-1, AP-42, October 1997.

INPUT DATA AND EMISSIONS CALCULATIONS

Controlled Silt Loading Factor: 0.97 g/m^2

Truck Traffic Type	Source ID	Vehicle Miles Traveled (VMT/hr)	Vehicle Miles Traveled (VMT/yr)	Vehicle Weight (ton)	Control Efficiency (%)	Potential PM_{10} Emission Rates (lb/hr)	Potential PM_{10} Emission Rates (tpy)
Coal Slag Trucks (Empty)	FH-021b	2.841	355	24.0	90.0	0.6	0.040
Coal Slag Trucks (Full)	FH-021c	2.841	355	40.0	90.0	1.4	0.086
					Totals	**2.0**	**0.127**

SOURCES OF INPUT DATA

Parameter	Data Source
Controlled Silt Loading Factor	Based on factor for iron and steel production and overall 90% control efficiency, ECT, 2002.
Vehicle Miles Traveled, VMT	TEC, 2002.
Truck Weights, ton	TEC, 2002.
Control Efficiency	Estimated, ECT 2002.

NOTES AND OBSERVATIONS

Coal slag truck travel distance (one-way) is 1,500 ft.

Maximum hourly coal slag truck count is 10.

Maximum annual coal slag truck count is 1,250.

DATA CONTROL

Data Collected by:	S. Castro	**Date:**	8/02
Evaluated by:	T. Davis	**Date:**	8/02
Data Entered by:	T. Davis	**Date:**	8/02

Sheplak, Scott

From: Robert Kalch [kalch@epchc.org]
Sent: Thursday, July 18, 2002 11:01 AM
To: Sheplak, Scott
Subject: RE: TEC Gannon

Scott,

I am working on the letter TEC sent regarding the slag storage at Gannon. I will try to get something to you early next week.

Sincerely,
Rob Kalch

>>> "Sheplak, Scott" <Scott.Sheplak@dep.state.fl.us> 07/10/02 01:57PM >>>
Rob Kalch,

Who is reviewing TECO-Gannon's slag exemption request? TECO sent us a letter dated July 1 claiming that a slag operation is insignificant.

Hope all is well down there.

Sincerely,

Scott

-----Original Message-----
From: Robert Kalch [mailto:kalch@epchc.org]
Sent: Wednesday, July 10, 2002 10:53 AM
To: Sheplak, Scott
Subject: TEC Gannon

Mr. Sheplak,

I noted on the ARMS report I ran this morning that the TEC Gannon TV project (0570040-017-AV) has gone back to "completeness review". I assume TEC submitted a response to the incompletion letter dated May 15, 2002. Would you forward a copy of the response to Alice or myself if you have not already done so? As always, we appreciate the opportunity to co-review those projects which effect us locally.

Sincerely,
Rob Kalch

TAMPA ELECTRIC

RECEIVED
JUL 05 2002
BUREAU OF AIR REGULATION

July 1, 2002

Mr. Clair Fancy
Chief Bureau of Air Regulation
Florida Department of Environmental Protection
111 South Magnolia Drive, Suite 4
Tallahassee, FL 32301

Via Fed Ex
Airbill No. 7904 7115 9050

Re: Tampa Electric Company (TEC)
F.J. Gannon Station
Title V Permit No. 0570040-014-AV
Request for Generic Exemption
Slag Storage

Dear Mr. Fancy,

This purpose of this correspondence is to notify the Florida Department of Environmental Protection (DEP) that Tampa Electric Company (TEC) intends to utilize the fuel yard at F. J. Gannon Station (Gannon Station) to temporarily store slag from another electric utility. This slag is used as a material, with glassine properties, for blasting activities.

TEC is submitting the request for a generic exemption to ensure that this is included in Gannon Station's Title V Permit. TEC believes that this qualifies as a generic exemption per the Florida Administrative Code (F.A.C.) 62-210.300(3). TEC believes that this request does not need to be formally submitted until permit renewal per F.A.C. 62-210-300(3). However, in the interest of completeness and open disclosure TEC is informing the DEP with this letter.

The slag will be brought in by barge at infrequent intervals and stored in the fuel yard until needed by Reed Minerals. When the slag is needed, Reed Minerals will bring trucks into the storage area, load the slag and remove it from the site. This activity will occur on an infrequent basis, and it is estimated that the maximum amount of slag handled at the fuel storage area would be no more than 20,000 tons per year. Based on its glassine properties, the slag has minimal dust potential.

Attached is a block diagram with the illustrated transfer points. The slag is loaded into the hopper on the dock with the clamshell and is transferred onto the B conveyor. It is then transferred from the B conveyor to the C conveyor. From the C conveyor it moves to the D-2 conveyor through the T1structure (transfer structure 1). Finally, it is transferred from the D-2 conveyor to the E2 conveyor through the T2 structure (transfer structure 2). The E2 conveyor stacks the slag material in the North Yard. Once in the North Yard, the slag is the responsibility of Reed minerals. The trucking firm hired by Reed Minerals will load and haul the slag away.

TEC currently has an agreement with Reed Minerals to accept 20,000 tons, annually. TEC has agreed to accept the slag in approximately 5,000-ton allotments per shipment. Currently, TEC has received approximately 5,00 tons of the slag.

Given the properties of the slag and the expected amounts to be handled on-site, the slag handling activity will fall well below the 5.0 tons per year threshold for fugitive emissions of particulate matter. The slag will not emit lead or any hazardous air pollutants. There is no unit-specific requirement for slag handling, and the additional emissions from the activity will not cause the facility to exceed any major source thresholds, even in combination with emissions from all other insignificant emission sources. Therefore, the slag handling activity will quality for a generic exemption and constitute as an "insignificant activity."

Based on this information, TEC believes that this operation is exempt from permitting per F.A.C. 62-210.300(3) and requests written concurrence from the Department. TEC appreciates the Department's immediate consideration in this matter.

If you have any questions, please feel free to telephone Shelly Castro or me at (813) 641-5033.

Sincerely,

Shelly Castro for

Laura B. Crouch
Manager - Air Programs
Environmental Affairs

EA/bmr/SSC125

Enclosures

c/enc: Mr. Jerry Kissel, FDEP SW
Mr. Scott Sheplak, FDEP
Ms. Alice Harman, EPCHC

need calculation for STPY

P.E. certification

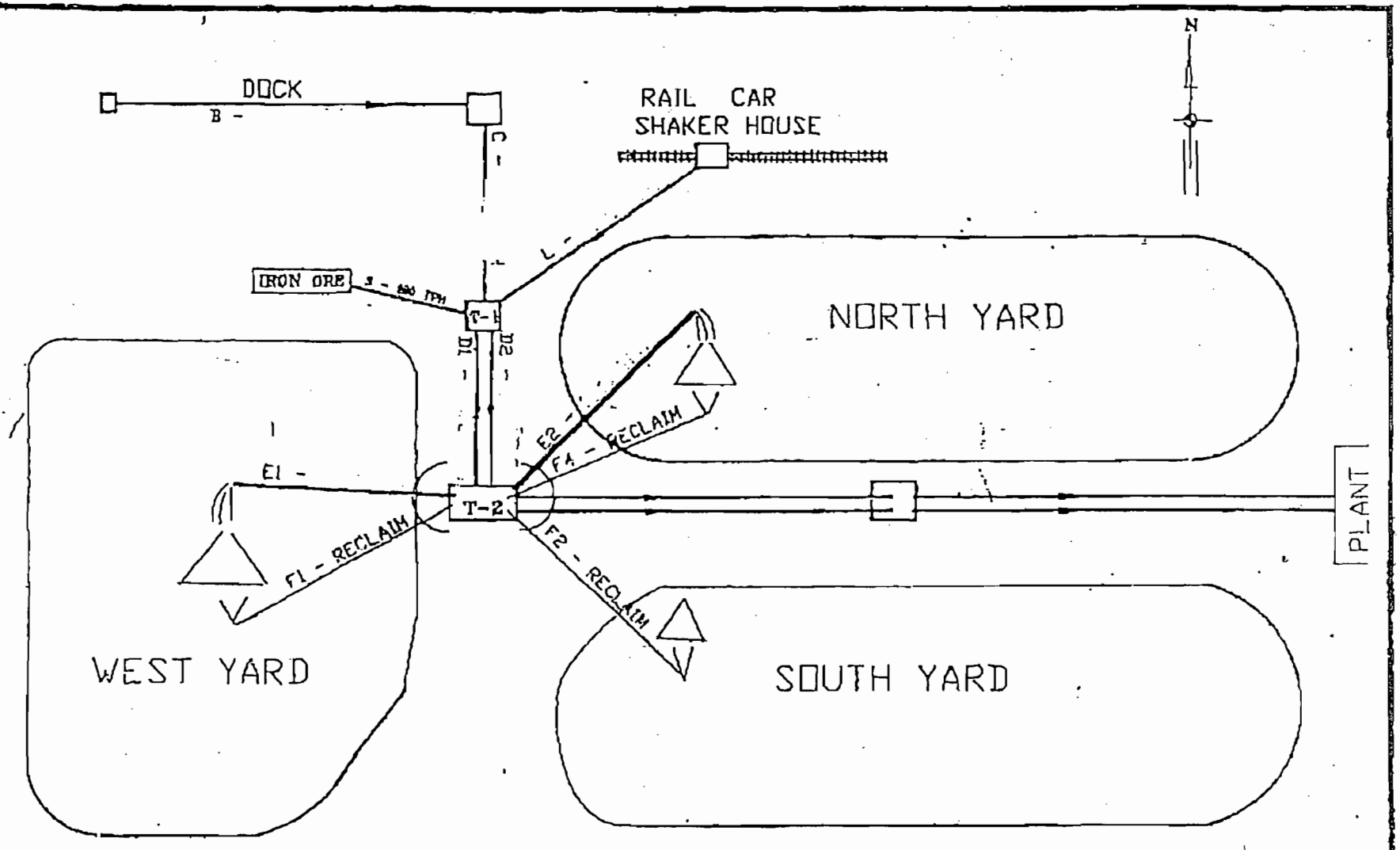
Attachment A
Responsible Official Certification

Responsible Official Certification

I have reviewed this letter of request for a generic permit exemption to transport and store slag at F.J. Gannon Station. I hereby certify that these documents are authentic and accurate to the best of my knowledge.

Date: 6/28/02

Signature: Karen Sheffield
General Manager
F.J. Gannon Station



Maximum Storage Capacities

(Adjusted for F-2 Reclaim Installation and Storm Water Containment Project)

TAMPA ELECTRIC
A TECO ENERGY COMPANY

GANNON STATION
COAL FIELD PLOT PLAN

DESIGNED BY	CHECKED BY	APPROVED BY
HJB	CH	
DATE	JOB NO.	
4/95	COALFLD6	
FILE NAME	DWG NO.	
	1 of 1	

REED MINERALS
a harsco company

MATERIAL SAFETY DATA SHEET

(Complies with 29 CFR 1910.1200)

SECTION I - GENERAL

Reed Minerals, Harsco Corporation
P.O. Box 0515
Camp Hill, PA 17001-0515
Emergency Telephone Number
(717) 763-4200

Product Name: RMS
CAS Number: 14464-46-1 (Cristobalite)
14808-60-7 (Quartz)
Particles not otherwise regulated.
Common Name: Slag, Coal
Date: February, 1998

SECTION II - INGREDIENTS

Slag, Coal	100% - 99.0%
Cristobalite	0% - 0.3%
Quartz	0% - 0.2%

		OSHA *PEL	ACGIH *TLV
Nuisance Particulate:	Total Particulate	15	10
	Respirable Particulate	5	3
Quartz:	Total Dust	(30 mg/m³ /% SiO_2+2)	N/A
	Respirable Dust:	(10 mg/m³ /% SiO_2+2)	0.10
Christobalite:	Total Dust:	(use 1/2 the value calculated from the count or mass formula for quartz)	N/A
	Respirable Dust:	(use 1/2 the value calculated from the count or mass formula for quartz)	0.05

* Values expressed as mg/m³

SECTION III - PHYSICAL DATA

Physical Form:	Solid (angular granules)
Boiling Temperature:	N/A
Melting Temperature:	Greater than 2300°F
Vapor Pressure/Density:	N/A
Evaporation Rate:	N/A
Specific Gravity:	2.7 g/cc (typical)
Water Solubility:	Negligible
Color:	Dark Green/Black
Odor:	None

- Over -

SECTION IV - FIRE AND EXPLOSION DATA

Product is nonflammable and nonexplosive.

SECTION V - REACTIVITY DATA

Product is stable under normal conditions of use, storage, and transportation.

SECTION VI - HEALTH HAZARD DATA

RMS aggregate may contain up to 0.3% cristobalite; one of the three major forms of silicon dioxide (crystalline silica). Quartz may be present up to 0.2%, tridymite has not been detected. RMS aggregate, as shipped, do not pose a significant health hazard and should be treated as a nuisance dust. The only significant route of exposure which could pose some level of health hazard is inhalation of respirable particles which may occur during use. As shipped, there are essentially no respirable particles in RMS aggregate. Contact with intact skin is not known to cause health effects. Eye contact may cause irritation but has no known toxic effects.

The International Agency for Research on Cancer (IARC) reviewed the evidence for the carcinogenicity of crystalline silicas in animals. One study utilized intrapleural injection of cristobalite with particles in the respirable range. Malignant lymphomas of the histiocytic type were observed in the treated rats.

Cristobalite and quartz are not identified as carcinogens by OSHA but are identified as probable carcinogens by the International Agency for Research on Cancer (IARC) and reasonably anticipated to be carcinogens by the United States Department of Health and Human Services' National Toxicology Program (NTP).

Respirable quartz tested for carcinogenicity in rats by chronic inhalation and in rats by single or repeated intratracheal instillation, produced a significant increase in the incidences of adenocarcinomas and squamous cell carcinomas of the lung. Based on this study and on those on other forms of crystalline silica, IARC considered the evidence for the carcinogenicity of crystalline silica in experimental animals to be sufficient.

In humans, overexposure to respirable crystalline silica is known to cause silicosis. Silicosis is a chronic disease characterized by the formation of scattered, rounded or stellate silica-containing nodules of scar tissue in the lungs, ranging in size from microscopic to 1.0 cm or more. This can cause symptoms of coughing, dyspnea, wheezing and nonspecific respiratory ailments. Some epidemiology studies have shown a potential connection with lung cancer in those professions with high exposures to respirable silica. Many other studies have failed to find such a connection; however, tobacco smoking and high dust exposure exhibited a synergistic relationship. Pre-existing lung conditions may aggravate the results of exposure to silica dust.

(RM 2/88)

RECEIVED AUG 24 1992

LABORATORY REPORT

LAB NUMBER: 2418 August 20, 1992

CLIENT: Reed Minerals

SAMPLE HISTORY:

SAMPLED BY:		DATE SAMPLED:	8-13-92
LOCATION:	West Alton	DATE RECEIVED:	8-14-92
DESCRIPTION:	Raw Coal Slag	DATE COMPLETED:	8-18-92

TESTS REQUIRED: FEDERAL TEST METHOD 1311 - Toxicity Characteristic Leaching Procedure

SAMPLE LOCATION: Rail Car

RESULTS:

ELEMENT TESTED	RESULTS	MAXIMUM ALLOWABLE	ICP DETECTION LIMITS
Arsenic	*BDL	5.0 ppm	0.02
Selenium	0.041 ppm	1.0 ppm	0.01
Chromium	*BDL	5.0 ppm	0.01
Cadmium	*BDL	1.0 ppm	0.003
Lead	*BDL	5.0 ppm	0.05
Barium	*BDL	100.0 ppm	0.002
Mercury	*BDL	0.2 ppm	**0.03
Silver	0.045 ppm	5.0 ppm	0.01

THIS MATERIAL IS NOT CONSIDERED TO BE A HAZARDOUS WASTE ACCORDING TO RCRA REGULATIONS FOR THE LEACHABILITY OF 8 HEAVY METALS.

* Below Detectable Limits

** The mercury level was below the detection limits of the ICP. Since the detection limits are well below the maximum allowable concentration and there is no reasons (per the submitting agency) to believe that mercury is a contaminant, it is reasonable to assume mercury is not at a level which will classify the product as a hazardous waste.

***There are no EPA limits for copper and zinc, local regulations may apply.

TEST PERFORMED BY: Denise M. Doezema

TEST REVIEWED BY: Gary L. Tinklenberg
Chemist

WRITTEN REPORT BY: B.A. Doezema Barbara A. Doezema

BEST AVAILABLE COPY

REED MINERALS

a harsco company

MATERIAL SAFETY DATA SHEET

(Complies with 29 CFR 1910.1200)

SECTION I - GENERAL

Reed Minerals, Harsco Corporation
P.O. Box 0515
Camp Hill, PA 17001-0515
Emergency Telephone Number:
(717) 766-4200

Product Name : Black Beauty® Abrasives
CAS Number : 68478-88-8
Particulates not otherwise regulated.
Common Name : Slag, Coal
Date : April, 1997

SECTION II - INGREDIENTS

Slag, Coal 90% - 100%

	OSHA *PEL	ACGIH *TLV
Nuisance Particulate		
Total Particulate	: 15	10
Respirable Particulate	: 5	3

*Values expressed as mg/m³

SECTION III - PHYSICAL DATA

Physical Form : Solid (angular granules)
Boiling Temperature : N/A
Melting Temperature : Greater than 2800° F
Vapor Pressure/Density : N/A
Evaporation Rate : N/A
Specific Gravity : 2.7 g/cc (typical)
Water Solubility : Negligible
Color : Black
Odor : None

SECTION IV - FIRE AND EXPLOSION DATA

Product is nonflammable and nonexplosive

SECTION V - REACTIVITY DATA

Product is stable under normal conditions of use, storage, and transportation.

Post-it® Fax Note 7671 | Date 4/25 | # of pages ▶ 2
To GREG Riley | From JASON
Co./Dept. | Co.
Phone # 630-7107 | Phone #
Fax # Same as 2 yrs | Fax # AGO

Post-it™ brand fax transmittal memo 7671 | # of pages ▶ 2
To Bill Coleman | From MIKE
Co. | Co.
Dept. | Phone #
Fax # | Fax #

SECTION VI - HEALTH HAZARD DATA

Low health risk by inhalation. Treat as a nuisance dust. Typical free silica less than 0.1%. This material is not a recognized carcinogen or cocarcinogen. Human toxic response has not been demonstrated for any route of entry. Mechanical irritation may occur to eyes, skin, or respiratory tract. Preexisting health conditions may be aggravated.

Carcinogenicity: NTP - No; IARC Monographs - No; OSHA Regulated - No.

FIRST AID

IN CASE OF:

1. Eye Contact - Immediately flush eyes thoroughly with water or an ophthalmic saline solution.
2. Skin Contact - Wash skin with soap and water if irritation occurs.
3. Inhalation - Remove affected person(s) to fresh air source.
4. Oral Intake - Rinse mouth out with water.

If symptoms persist, contact a physician or other medical personnel.

SECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURES

No special procedures required for clean-up. Wetting with water will reduce airborne dust. Uncontaminated product does not exceed Toxicity Characteristic Leaching Procedure (TCLP) limits and may be disposed of as an inert material in an appropriate solid waste landfill according to applicable Federal, State and Local regulations.

SECTION VIII - CONTROL MEASURES

Use appropriate NIOSH certified respiratory protection when exposure limits may be exceeded. Maintain sufficient ventilation to allow visual contact with work surfaces. Appropriate abrasive blaster's protective equipment is required, which may also include gloves, hood with protective lens, safety glasses, and hearing protection.

SECTION IX - SPECIAL PRECAUTIONS

Keep product dry and free of all contamination to assure free flow. Use an appropriate safety screen over fill hatch of blasting pot. Respirable dust may be generated during pressure abrasive cleaning operations.

- NOTE -

The opinions expressed herein are those of qualified experts within Harsco Corporation. Harsco believes that the information contained herein is current and accurate for the normal and intended use of this product as of the date of the Material Safety Data Sheet. Since the use of this information and of these opinions or the conditions of use of the product are not within the control of Harsco Corporation, it is the user's obligation to determine and observe the conditions of safe use and disposal of the product by their operations.

(RM 4/97)