

# **Statement of Basis**

**Tier I Operating Permit No. T1-050415**

**The Amalgamated Sugar Company LLC  
Twin Falls Facility**

**Facility ID No. 083-00001**

**Public Comment**

**Proposed  
Morrie Lewis  
Permit Writer**

The purpose of this Statement of Basis is to set forth the legal and factual basis for the Tier I operating permit terms and conditions including references to the applicable statutory or regulatory provisions for the terms and conditions as required by IDAPA 58.01.01.362.

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## ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
B&W	Babcock & Wilcox
Boiler MACT	40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters
CAA	Clean Air Act
CaO	calcium oxide
CAM	Compliance Assurance Monitoring
CEMS	continuous emission monitoring systems
CFR	Code of Federal Regulations
CMS	continuous monitoring systems
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
COMS	continuous opacity monitoring system
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
gph	gallons per hour
gpm	gallons per minute
gr	grain (1 lb = 7,000 grains)
HAP	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
ID No.	identification number
iwg	inches of water gauge
lb/hr	pounds per hour
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
MRRR	monitoring, recordkeeping and reporting requirements
MSP	monitoring system performance
NAAQS	National Ambient Air Quality Standard
NAICS	North American Industry Classification System
NESHAP	National Emission Standards for Hazardous Air Pollutants
ng/J	nanograms per joule
No.	number
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
O <sub>2</sub>	oxygen
PM	particulate matter
PM <sub>10</sub>	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct
PTE	potential to emit
PW	process weight rate
QA/QC	quality assurance and quality control
QIP	Quality Improvement Plan
Rules	Rules for the Control of Air Pollution in Idaho

SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
T/day	tons per day
T/hr	tons per hour
T/yr	tons per consecutive 12-calendar month period
T1	Tier I operating permit
TAP	toxic air pollutants
TASCO	The Amalgamated Sugar Company LLC – Twin Falls Facility
U.S.C.	United States Code
UTM	Universal Transverse Mercator
VOC	volatile organic compounds

## FACILITY INFORMATION AND APPLICABILITY

### ***Facility Description***

The Amalgamated Sugar Company LLC – Twin Falls Facility (TASCO) operates an existing beet sugar manufacturing plant located in Twin Falls.

### ***Applicability***

The Twin Falls Facility is classified as a major facility, as defined by IDAPA 58.01.01.008.10.c, because it emits or has the potential to emit SO<sub>2</sub>, NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM above the major source threshold of 100 T/yr. The facility is also classified as a major facility, as defined by Subsection 008.10.a, because it emits or has the potential to emit HAP above the major source thresholds of 10 T/yr for any single HAP and/or 25 T/yr for any combination of HAP. As a major facility, the Twin Falls Facility is required to apply for a Tier I operating permit pursuant to IDAPA 58.01.01.301.

IDAPA 58.01.01.362 requires that as part of its review of the Tier I application, DEQ shall prepare a technical memorandum (statement of basis) that sets forth the legal and factual basis for the draft Tier I operating permit terms and conditions including reference to the applicable statutory provisions or the draft denial. This document provides the basis for the draft Tier I operating permit for the Twin Falls Facility.

### ***Facility Permitting History***

The following permitting history information was derived from a review of the permit files available to DEQ, and includes permitting actions issued during the previous operating permit term from May 21, 2004 to present. Status is noted as active and in effect (A), superseded (S), or expired (E).

**Table 1 SUMMARY OF PERMITTING HISTORY**

<b>Issue Date</b>	<b>Permit Number</b>	<b>Project</b>	<b>Status</b>	<b>History Explanation</b>
March 19, 1981	13-1480-0001	Air pollution source permit which established requirements for the boilers and the pulp dryer.	E	Initial permit for existing sources.
January 1, 1984	1480-0001	Air pollution source permit which established emission limits and operating requirements and to incorporate existing requirements.	E	Revised permit 13-1480-0001.
December 17, 2002	9505-063-1 (083-00001)	Initial T1 operating permit.	S	Initial Title V operating permit.
May 21, 2004	T1-030415	Reopening T1 which incorporated revisions resulting from a contested case petition.	S	Revised and replaced permit 9505-063-1 (083-00001).  Will be superseded upon issuance of this permit renewal.
August 20, 2008	O-2008.0080	Applicability concurrence determining the use of anthracite coal in addition to coke as fuel was not a modification.	A	Applicability determination letter.
October 25, 2010	P-2010.0108 PROJ 60566	Initial PTC to replace the granulator system.	A	Initial permit.
Proposed	T1-050415	Renewal T1 which incorporated CAM and P-2010.0108 PROJ 60566 requirements.	A	Title V operating permit renewal.

## Process Description

This section lists the emissions units, describes the production or manufacturing processes, and provides the emissions inventory for this facility. The information presented was provided by the applicant in the permit application.

**Table 2 EMISSION UNITS, CONTROL DEVICE, AND DISCHARGE POINT INFORMATION**

Source Description	Control Equipment	Installation Date
<u>Foster Wheeler Boiler (S-B1)</u> Operational capacity: 220,000 lb/hr steam Fuels: coal	Baghouse (A-B1)	1973
<u>B&amp;W Boiler (S-B2)</u> Operational capacity: 250,000 lb/hr steam Fuels: coal, natural gas, combination of coal and gas	Baghouse (A-B2)	prior to 1970
<u>Keeler Boiler (S-B3)</u> Operational capacity: 80,000 lb/hr steam Fuels: natural gas	None	1968
<u>Pulp Dryer (S-D1)</u> PW input rate: 74.8 T/hr Fuels: coal, natural gas, combination of coal and gas	Cyclone and spray-impingement-type scrubber (A-D1A, A-D1B)	prior to 1970
<u>Pellet Cooler No. 1 (S-D2)</u> PW input rate: 8.3 T/hr	Cyclone (A-D2/3)	prior to 1970
<u>Pellet Cooler No. 2 (S-D3)</u> PW input rate: 8.3 T/hr		prior to 1970
<u>South Lime Kiln (S-K1)</u> Lime rock input capacity: 102 T/day Fuel input capacity: 9.2 T/day of fuel Fuels: coke, anthracite coal	Exhaust vent scrubber (A-K1/2)	prior to 1970
<u>North Belgian Lime Kiln (S-K2)</u> Lime rock input: 238 T/day Fuel input capacity: 21 T/day Fuels: coke, anthracite coal		prior to 1970
<u>Process Slaker (S-K4)</u> Operational capacity: 190 T/day CaO	Cyclone (A-K4)	1988
<u>Granulator System (P-W1A) with Baghouse (A-W1A)</u> Operational capacity: 110,230 lb/hr wet sugar and ≤ 1,200 lb/hr steam usage	None	2011
<u>Drying Granulator (S-W1) with Scrubber (A-W1)</u> Operational capacity: 45.8 T/hr		1951
<u>Cooling Granulator (S-W2) with Baghouse (A-W2)</u> Operational capacity: 45.8 T/hr		1962
<u>Pulp Dryer Material Handling (S-D4)</u> Operational capacity: 469 T/day	Baghouse (A-D4)	prior to 1970
<u>Lime Kiln Material Handling (S-K5)</u> Operational capacity: 370 T/day	Baghouse 1 (A-K5A) Baghouse 2 (A-K5B)	prior to 1970
<u>Main mill (S-O5)</u> Operational capacity: 105,000 gph juice	None	prior to 1970
<u>Sulfur stove (S-O6)</u> Operational capacity: 1.8 T/day sulfur	Sulfur tower (A-O6)	prior to 1970

Sugar beet processing operations consist of several steps, including diffusion, juice purification, evaporation, crystallization, dried pulp manufacturing, and sugar recovery from molasses.

Prior to removing sucrose from sugar beets by diffusion, the cleaned and washed beets are sliced into long, thin strips called cossettes. The cossettes are conveyed to a continuous diffuser, in which hot water is used to extract sucrose. The sugar-enriched water that flows from the outlet of the diffuser is called raw juice and contains between 13% to 18% sugar. The raw juice proceeds to the juice purification operation. The processed cossettes, or pulp, leaving the diffuser is conveyed to the dried pulp manufacturing operation.

In the juice purification stage, non-sucrose impurities in the raw juice are removed so that the pure sucrose can be crystallized. First, the juice passes through screens to remove any small cossette particles. The juice is then heated to 80-85°C (176-185°F) and proceeds to the liming system. In the liming system tank, milk of lime [ $\text{Ca}(\text{OH})_2$  aqueous solution] is added to the juice to absorb or adhere to the impurities. The juice is then sent to the first carbonation tank where carbon dioxide ( $\text{CO}_2$ ) gas is bubbled to precipitate the lime as insoluble calcium crystals. Lime kilns are used to produce the  $\text{CO}_2$  and the lime, which are both used in carbonation; the lime is converted to milk of lime in a lime slaker. After filtration, the juice is softened. Then a small amount of sulfur dioxide ( $\text{SO}_2$ ) is added to the juice to inhibit reactions that lead to darkening of the juice. Burning elemental sulfur in a sulfur stove produces the  $\text{SO}_2$  or it is purchased in liquid form. Following the addition of  $\text{SO}_2$ , the juice (known as thin juice) proceeds to the evaporators.

The evaporation process, which increases the sucrose concentration in the juice by removing water, is performed in a series of five evaporators. Steam from boilers is used to heat the first evaporator, and the steam from the water evaporated in the first evaporator is used to heat the second evaporator, and so on through the five evaporators. After evaporation, the percentage of sucrose in the “thick juice” is 65% to 75%. Some of this thick juice is sent to storage tanks. Most of the thick juice is combined with crystalline sugars produced later in the process and dissolved in the high melter. The mixture is then filtered, yielding a clear liquid known as standard liquor, which proceeds to the crystallization operation.

Sugar is crystallized by low-temperature pan boiling. The standard liquor is boiled in vacuum pans until it becomes supersaturated. To begin crystal formation, the liquor is “seeded” with finely milled sugar. When the crystals reach the desired size, the mixture of liquor and crystals, known as massecuite or fillmass, is discharged to the mixer. From the mixer, the massecuite is poured into high-speed centrifugals, in which the liquid is centrifuged into the outer shell, and the crystals are left in the inner centrifugal basket. The sugar crystals are washed with pure hot water, and then sent to the granulator / cooling system. After cooling, the sugar is screened and then either packaged or stored in large silos for future packaging.

The liquid that was separated from the sugar crystals in the centrifugals is called syrup. This syrup serves as feed liquor for the second boiling step and is introduced back into a second set of vacuum pans. The crystallization/centrifugation process is repeated once again, resulting in the production of molasses.

The molasses produced in the third boiling step can be used in the production of livestock feed. This molasses can be further desugarized using the separator process. The products of the separator process are “extract” (the high sugar fraction) and – “concentrated separator by-product” (CSB, the low sugar fraction). The extract can be stored in tanks or immediately processed in the sugar operation, like thick juice. The CSB is used as livestock feed in a liquid form or is added to the wet pulp.

Wet pulp from the diffusion process is another product of sugar beet processing. Some of the wet pulp is sold as cattle feed directly. However, most of the wet pulp is mechanically pressed to reduce the moisture content from about 95% to 75%. After pressing, the pulp may be sold as cattle feed or sent to the dryer. Before entering the rotary drum dryer, CSB or molasses is added to the pressed pulp. The pressed pulp is then dried by hot air in a horizontal rotating drum known as a pulp dryer. The pulp dryer can be fired by natural gas or coal. The resulting product is typically pelletized and is sold as livestock feed. The remainder of the dried pulp is sold as livestock feed in an unpelletized form.

## APPLICATION SCOPE AND CHRONOLOGY

### *Application Scope*

This permit is a renewal of Tier I Operating Permit No. T1-030415, issued May 21, 2004.

This permit also incorporates the following:

- Compliance Assurance Monitoring (CAM).
- P-2010.0108 PROJ 60566, issued on October 25, 2010.

### *Application Chronology*

**Table 3 APPLICATION CHRONOLOGY**

Date	Description
June 23, 2005	DEQ received an application for permit renewal.
August 16, 2005	DEQ determined that the application was complete.
April 23, 2007	DEQ received a revised permit application.
July 23, 2007	DEQ received information, including emissions estimates and Boiler MACT applicability.
February 4, 2008	DEQ made available a draft permit and statement of basis for applicant review.
March 14, 2008	DEQ received comments from the applicant on the draft permit.
November 18, 2008	DEQ met with the applicant to address comments on the draft permit.
June 30, 2009	DEQ received a draft permit with formatting updates.
July 8, 2009	DEQ made available a draft permit for applicant review.
August 10, 2009	DEQ received comments from the applicant on the draft permit.
November 12, 2009	DEQ requested information regarding the CAM plan.
November 16, 2009	DEQ made available a draft permit and statement of basis for applicant review.
December 17, 2009	DEQ received a revised CAM plan.
January 6, 2010	DEQ received comments from the applicant on the draft permit.
October 25, 2010	DEQ issued PTC No. P-2010.0108 PROJ 60566 to replace the granulator system.
November 1, 2010	DEQ requested information regarding the revised CAM plan.
November 12, 2010	DEQ met with the applicant to discuss the CAM plan and O&M requirements.
December 1, 2010	DEQ requested information concerning the revised CAM plan.
December 17, 2010	DEQ received a revised CAM plan and O&M documents.
January 3, 2011	DEQ met with the applicant to discuss proposed revisions to the CAM plan.
February 3, 2011	DEQ met with the applicant to discuss proposed revisions to the CAM plan.
February 24, 2011	DEQ received a revised CAM plan.
April 28, 2011	DEQ received information regarding the CAM plan and inspection data for the main mill and sulfur stove.
May 6 – June 23, 2011	DEQ made available a revised draft permit for applicant review, which incorporated PTC No. P-2010.0108 PROJ 60566, revised CAM requirements, and addressed applicant comments.
May 16, 2011	DEQ received comments from the applicant on the draft permit and statement of basis.
May 25, 2011	DEQ requested information regarding proposed CAM averaging periods.
Proposed	DEQ provided a public comment period on the proposed action.
Proposed	DEQ issued the final permit and statement of basis.

## **TECHNICAL REVIEW**

### ***Emissions Inventory***

Emission inventories were provided in the application; including the emissions of federally-regulated criteria pollutants, hazardous air pollutants (HAP), and state-regulated toxic air pollutants (TAP). The emission inventories submitted have not altered the classification or applicability status of the plant or of existing affected facilities at the plant (refer to the Regulatory Review section for additional information).

The emission inventories for this facility are included in Appendix A. Included are facility-wide emission estimates and the emission increases estimated from the replacement of the granulator system (PTC No. P-2010.0108 PROJ 60566).

## **REGULATORY REVIEW**

### ***Attainment Designation (40 CFR 81.313)***

This facility is located in Twin Falls County, which is designated as attainment or unclassifiable for PM<sub>2.5</sub>, PM<sub>10</sub>, SO<sub>2</sub>, NO<sub>2</sub>, CO, and ozone. Refer to 40 CFR 81.313 for additional information. The attainment designation has not changed since the previous operating permit term from May 21, 2004.

### ***Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)***

The Twin Falls Facility is classified as a major facility as defined in IDAPA 58.01.01.008.10, because the facility emits or has the potential to emit a regulated air pollutant in an amount greater than or equal to 100 T/yr, the facility emits or has the potential to emit a single regulated HAP in excess of 10 T/yr, and the facility emits or has the potential to emit a combination of regulated HAP in excess of 25 T/yr.

Because the facility has a fossil-fuel boiler of more than 250 MMBtu/hr heat input, the boiler house (which includes the Foster Wheeler Boiler, B&W Boiler, and Keeler Boiler) is a designated facility as defined in IDAPA 58.01.01.006.30, and fugitive emissions are required to be included when determining the major facility classification in accordance with IDAPA 58.01.01.008.10.c.i.

### ***PSD Classification (40 CFR 52.21)***

The facility is classified as an existing major stationary source as defined in 40 CFR 52.21(b), because the boiler house steam plant (which includes the Foster Wheeler Boiler, B&W Boiler, and Keeler Boiler) has a fossil-fuel boiler of more than 250 MMBtu/hr heat input.

### ***NSPS Applicability (40 CFR 60)***

The facility is subject to the requirements of 40 CFR 60 Subpart D – New Source Performance Standards for Fossil Fuel Fired Steam Generators constructed after August 17, 1971, and Subpart A – General Provisions.

- The Foster Wheeler Boiler is an affected facility subject to NSPS requirements.

### ***NESHAP Applicability (40 CFR 61)***

The facility is not subject to any NESHAP standards in 40 CFR 61.

## CAM Applicability (40 CFR 64)

Based upon criteria pollutant emission estimates provided (refer to Appendix A for additional information), the Foster Wheeler Boiler, B&W Boiler, and Pulp Dryer emissions units have been determined to be subject to the requirements of 40 CFR 64 - Compliance Assurance Monitoring.

**Table 4 SUMMARY OF CAM REQUIREMENTS**

Emissions Unit	Pollutant	Control Devices	Limits	Indicators <sup>a</sup>	Monitoring Approach <sup>b</sup>	Indicator Range
Foster Wheeler Boiler	PM	Baghouse (A-B1)	0.10 lb/MMBtu <sup>c</sup> 0.100 gr/dscf at 8% O <sub>2</sub> <sup>d</sup>	Opacity	COMS	≤ 15% (6-minute average of 10-second readings)
B&W Boiler	PM	Baghouse (A-B2)	<u>Coal only</u> 0.100 gr/dscf at 8% O <sub>2</sub> <sup>d</sup>  <u>Coal and natural gas</u> 0.100*X+0.011*Y gr/dscf at 8% O <sub>2</sub> <sup>d,e</sup>  <u>Natural gas only</u> 0.015 gr/dscf at 3% O <sub>2</sub> <sup>d</sup>	Opacity	Method 9	≤ 15% (weekly reading of 6-minute average)
				O <sub>2</sub> Content	Concentration Monitor	≥ 2% O <sub>2</sub> (daily average of 15-minute readings)
				Pressure Drop	Magnehelic	≥ 0.8 iwg (daily average of 15-minute readings)
Pulp Dryer	PM	Scrubber (A-D4), North Stack (P-D1A)  and  Scrubber (A-D4), South Stack (P-D1B)	E = 0.02518(PW)0.67 (for PW<60,000) <sup>f</sup>  E = 23.84(PW)0.11-40 (for PW≥60,000) <sup>f</sup>	Water Flow <sup>g</sup>	Flow meter <sup>g</sup>	100-550 gpm (daily average of 15-minute readings) <sup>g</sup>
				Pressure Drop <sup>g</sup>	Magnehelic <sup>g</sup>	2.0-6.0 iwg (daily average of 15-minute readings) <sup>g</sup>
				Inspection & Maintenance <sup>g</sup>	Annual scheduled downtime <sup>g</sup>	(not applicable)

- a) Indicators of emission control performance for the relevant control device, designed in accordance with 40 CFR 64.3(a)(2).  
b) Monitoring approach established in accordance with 40 CFR 64.6(c). Abbreviations: COMS = continuous opacity monitoring system, CMS = continuous monitoring system.  
c) PM standard established in 40 CFR 60.42(a)(1).  
d) PM standard established in IDAPA 58.01.01.677 for existing fuel-burning equipment.  
e) For combinations of fuels, the allowable emission shall be determined by proportioning the gross heat input and emission standards for each fuel, in accordance with IDAPA 58.01.01.678.  
f) PM emission limitation established in IDAPA 58.01.01.703 for other processes based on process weight rate.  
g) Each indicator, monitoring approach, and indicator range is applied to the Pulp Dryer North and South scrubbers individually.

40 CFR 64 ..... Compliance Assurance Monitoring

40 CFR 64.2 ..... Applicability.

*In accordance with 40 CFR 64.2(a), except for backup utility units that are exempt under 40 CFR 64.2(b)(2), the requirements of this part shall apply to a pollutant-specific emissions unit at a major source that is required to obtain a part 70 or 71 permit if the unit satisfies all of the following criteria:*

- *The unit is subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof), other than an emission limitation or standard that is exempt under 40 CFR 64.2(b)(1);*
- *The unit uses a control device to achieve compliance with any such emission limitation or standard; and*
- *The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source. For purposes of this paragraph, “potential pre-control device emissions” shall have the same meaning as “potential to emit,” as defined in §64.1, except that emission reductions achieved by the applicable control device shall not be taken into account.*

The facility is a major source that is required to obtain a Part 70 permit (T1 operating permit); refer to the Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70) section for additional information.

The Foster Wheeler Boiler, B&W Boiler, and Pulp Dryer emissions units each have applicable PM emission limitations and standards (as specified in Table 4), use control devices to achieve compliance with the relevant PM limitations and standards (as specified in Table 4), and have pre-control device PM emissions equal to or greater than 100 percent of the amount required for a source to be classified as a major source. Exemption under 40 CFR 64.2(b) has not been requested or demonstrated by the applicant, and NSPS Subpart D emission limitations and standards were proposed by EPA before November 15, 1990 pursuant to section 111 of the Act (refer to the NSPS Applicability (40 CFR 60) section for additional information concerning applicable NSPS emission limitations and standards).

*40 CFR 64.3 ..... Monitoring design criteria.*

*In accordance with 40 CFR 64.3(a), to provide a reasonable assurance of compliance with emission limitations or standards for the anticipated range of operations at a pollutant-specific emissions unit, monitoring shall meet the following general criteria:*

- *The owner or operator shall design the monitoring to obtain data for one or more indicators of emission control performance for the control device, any associated capture system and, if necessary to satisfy 40 CFR 64.3(a)(2), processes at a pollutant-specific emissions unit. Indicators of performance may include, but are not limited to, direct or predicted emissions (including visible emissions or opacity), process and control device parameters that affect control device (and capture system) efficiency or emission rates, or recorded findings of inspection and maintenance activities conducted by the owner or operator.*
- *The owner or operator shall establish an appropriate range(s) or designated condition(s) for the selected indicator(s) such that operation within the ranges provides a reasonable assurance of ongoing compliance with emission limitations or standards for the anticipated range of operating conditions. Such range(s) or condition(s) shall reflect the proper operation and maintenance of the control device (and associated capture system), in accordance with applicable design properties, for minimizing emissions over the anticipated range of operating conditions at least to the level required to achieve compliance with the applicable requirements. The reasonable assurance of compliance will be assessed by maintaining performance within the indicator range(s) or designated condition(s). The ranges shall be established in accordance with the design and performance requirements in this section and documented in accordance with 40 CFR 64.4. If necessary to assure that the control device and associated capture system can satisfy this criterion, the owner or operator shall monitor appropriate process operational parameters (such as total throughput where necessary to stay within the rated capacity for a control device). In addition, unless specifically stated otherwise by an applicable requirement, the owner or operator shall monitor indicators to detect any bypass of the control device (or capture system) to the atmosphere, if such bypass can occur based on the design of the pollutant-specific emissions unit.*
- *The design of indicator ranges or designated conditions may be:*
  - *Based on a single maximum or minimum value if appropriate (e.g., maintaining condenser temperatures a certain number of degrees below the condensation temperature of the applicable compound(s) being processed) or at multiple levels that are relevant to distinctly different operating conditions (e.g., high versus low load levels).*
  - *Expressed as a function of process variables (e.g., an indicator range expressed as minimum to maximum pressure drop across a venturi throat in a particulate control scrubber).*
  - *Expressed as maintaining the applicable parameter in a particular operational status or designated condition (e.g., position of a damper controlling gas flow to the atmosphere through a by-pass duct).*
  - *Established as interdependent between more than one indicator.*

The permittee has proposed monitoring the indicators of performance for the Foster Wheeler Boiler, B&W Boiler, and Pulp Dryer control devices as specified in Table 4, including direct emissions (opacity and visible emissions), process parameters (oxygen content), control device parameters affecting control device efficiency (baghouse differential pressure, scrubber water flow), and inspection and maintenance activities (scrubber inspection and maintenance).

The proposed indicators have been designed to provide a reasonable assurance of compliance with the relevant PM emission limits and standards for the anticipated range of operating conditions and to meet the required general criteria.

- For the Foster Wheeler Boiler Baghouse, the opacity indicator range of 15% (Table 4) was established based upon visible emissions data from performance tests conducted September 26, 2006 through September 27, 2006. Although the data provided may have supported establishing a lower opacity excursion threshold, the permittee has expressed concern that a lower threshold may result in an unacceptable number of excursions and corresponding corrective actions.

Because monitoring will be conducted on a continuous basis and the proposed opacity excursion threshold is below the opacity standard (NSPS Subpart D) established to ensure compliance with the PM emission standard (NSPS Subpart D), it was considered reasonable to establish 15% as the excursion threshold. A higher indicator range was not supported by the data provided, and the permittee has agreed to the excursion threshold established at this time.<sup>1</sup>

- For the B&W Boiler Baghouse, the opacity indicator range of less than 15% (Table 4) was established based upon weekly visible emissions data from the periods December 27, 2005 through March 17, 2008 and September 1, 2010 through June 13, 2011. Although the data provided may have supported establishing a lower opacity excursion threshold, the permittee has expressed concern that a lower threshold may result in an unacceptable number of excursions and corresponding corrective actions.

Because the proposed opacity excursion threshold is below applicable opacity limits (SIP), and because corrective actions have historically been undertaken when recorded visible emissions measurements exceeded 15% opacity (e.g., bag replacement, flow transmitter replacement, boiler tuning, etc.), it was considered reasonable to establish 15% as the excursion threshold. A higher indicator range was not supported by the data provided, and the permittee has agreed to the excursion threshold established at this time.<sup>6</sup>

- For the B&W Boiler Baghouse, the oxygen content indicator range of 2% O<sub>2</sub> (Table 4) was established based upon daily %O<sub>2</sub> data from the periods January 5, 2007 through December 31, 2007 and September 1, 2010 through June 13, 2011.

**Table 5 REVISIONS TO CONTROL DEVICE INDICATOR RANGES**

Emissions Unit	Indicator	Proposed		Superseded	
		Permit Condition	Indicator Range	Permit Condition	Indicator Range
B&W Boiler	Pressure Drop	4.4	≥ 0.8 iwg	3.4	1.0-10.0 iwg
Pulp Dryer	Water Flow	6.4	100-550 gpm	5.2	100-500 gpm
	Pressure Drop	6.4	2.0-6.0 iwg	5.2	3.0-6.6 iwg
	Nozzle Pressure	(not applicable)		5.2	20-60 psig
	Total Dissolved Solids	(not applicable)		5.2	40,000 mg/L
	Suspended Particulate	(not applicable)		5.2	7,000 mg/L

- a) Superseded indicator range was established in Tier I Operating Permit 9505-063-1 issued December 17, 2002.  
b) Indicator range listed is applicable to each scrubber stack.

- For the B&W Boiler Baghouse, the pressure drop indicator range of ≥ 0.8 (Table 4) was established based upon daily pressure drop data from the period September 1, 2010 through June 13, 2011. The proposed

<sup>1</sup> Response to “CAM - response to excursions or exceedances” email, TASC0, April 28, 2011.

pressure drop range is within the existing/superseded indicator ranges established in the initial Tier I operating permit.<sup>2</sup>

From review of available data, including excess emissions reports and inspection reports submitted over the reference period of September 21, 2007 through February 13, 2009, no exceedances resulting from normal operation within the proposed range were reported.

The pressure drop monitoring requirement was established to ensure proper operation of the baghouse control device and to ensure compliance with the PM standard. Performance testing was also required (in part) for verification of the proposed indicator ranges.<sup>3</sup> Based upon review of available information it was considered reasonable to establish  $\geq 0.8$  iwg as the excursion threshold at this time.

- For the Pulp Dryer Scrubbers, the water flow indicator range of 100-550 gpm (Table 4) was established based upon weekly inspection data from the periods September 21, 2007 through February 13, 2009, and scrubber ranges established under a previous permitting action.
  - For the North scrubber flow rate, the minimum recorded measurement submitted was 223 gpm, the average was 408 gpm, and the maximum was 490 gpm.
  - For the South scrubber flow rate, the minimum recorded measurement submitted was 160 gpm, the average was 402 gpm, and the maximum was 522 gpm.

As shown in Table 5, variations have been proposed to the scrubber water flow range initially established in Tier I Operating Permit 9505-063-1. From review of available data, including excess emissions reports and inspection reports submitted over the reference period of September 21, 2007 through February 13, 2009, no exceedances resulting from normal operation within the proposed range were reported.<sup>4</sup>

The existing/superseded indicator ranges listed in Table 5 were established in the initial Tier I operating permit.<sup>5</sup> Pressure drop and water flow monitoring requirements were established to ensure proper operation of the scrubber control device and to ensure compliance with the process weight rate PM emission limitation. Performance testing was also required (in part) for verification of the proposed indicator ranges.<sup>5</sup> Based upon review of available information it was considered reasonable to establish 100 gpm and 550 gpm as the excursion thresholds at this time.

- For the Pulp Dryer Scrubbers, the pressure drop indicator ranges of 2.0-6.0 iwg (Table 4) were established based upon weekly inspection data from the periods September 21, 2007 through February 13, 2009.
  - For the North scrubber pressure drop, the minimum recorded measurement submitted was 1.8 iwg, the average was 3.2 iwg, and the maximum was 4.0 iwg.
  - For the South scrubber pressure drop, the minimum recorded measurement was 1.8 iwg, the average of all recorded measurements submitted was 3.2 iwg, and the maximum was 4.0 iwg.

As shown in Table 5, variations have been proposed to the scrubber pressure drop range initially established in Tier I Operating Permit 9505-063-1. From review of available data, including excess emissions reports and inspection reports submitted over the reference period of September 21, 2007 through February 13, 2009, no exceedances resulting from normal operation within the proposed range were reported.<sup>5</sup>

The existing/superseded indicator ranges listed in Table 5 were established in the initial Tier I operating permit.<sup>6</sup> Pressure drop and water flow monitoring requirements were established to ensure proper operation of the scrubber control device and to ensure compliance with the process weight rate PM emission limitation.

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<sup>2</sup> Permit Conditions 3.4 and 5.2 (for the baghouse and for the scrubber, resp.) of T1 Operating Permit 9505-063-1 issued December 17, 2002 to TASC0 Twin Falls Facility. Refer to discussion provided in Technical Basis for Tier I Operating Permit 9505-063-1, DEQ, December 6, 2002.

<sup>3</sup> B&W Boiler performance test report, November 9, 2003. During the accepted performance test, the reported pressure drop was 5.9 iwg.

<sup>4</sup> A single exceedance was noted on November 10, 2008 attributed to an upset condition. Inspection reports reviewed over the permit term were dated January 23, 2007; January 13, 2005; and December 3, 2003.

<sup>5</sup> Pulp Dryer performance test report, November 9, 2005. During the accepted performance test, the reported pressure drop was 4.3 iwg and the flow rate was 502 gpm.

Performance testing was also required (in part) for verification of the proposed indicator ranges.<sup>7</sup> Based upon review of available information it was considered reasonable to establish 2.0 and 6.0 as the excursion thresholds at this time.

- For the Pulp Dryer Scrubbers, spray nozzle pressure, total dissolved solids, and suspended particulate monitoring were removed and replaced with approved CAM requirements; refer to the Permit Conditions Review section for additional discussion provided for Permit Conditions 6.1 and 6.4 – 6.10.
- DEQ has included requirements to notify and submit a proposed permit modification to address monitoring changes in accordance with 40 CFR 64.7(e) if compliance data supports modifying any excursion threshold.
- With regard to detection of bypass, except in the case of COMS, during normal operation when an emissions unit is operating (B&W Boiler) the control device cannot be bypassed. Because the proposed monitoring approaches may not provide an immediate response to a bypass condition in the case of the B&W Boiler Baghouse, the requirement to record instances of manual bypass of the control device was included (Permit Condition 4.6). This requirement was not included for the Pulp Dryer Scrubbers because the permittee indicated that these control devices cannot be bypassed.
- With regard to detection of bypass, because continuous operation is required for the COMS, the established opacity excursion threshold is also expected to provide indication of bypass. Semi-annual reporting of monitoring system performance (MSP) reports is required in accordance with NSPS requirements 40 CFR 60.7(c) (Permit Condition 2.34) and 40 CFR 60.45(g) (Permit Condition 3.7) and additional monitoring for the purposes of CAM was not required. Review of COMS system performance summaries submitted for 2010 reported monitor downtime of 1.49% and 1.10% for the two respective semi-annual compliance periods.<sup>6</sup>

*In accordance with 40 CFR 64.3(b), the owner or operator shall design the monitoring to meet the following performance criteria:*

- *Specifications that provide for obtaining data that are representative of the emissions or parameters being monitored (such as detector location and installation specifications, if applicable).*
- *For new or modified monitoring equipment, verification procedures to confirm the operational status of the monitoring prior to the date by which the owner or operator must conduct monitoring under this part as specified in §64.7(a). The owner or operator shall consider the monitoring equipment manufacturer's requirements or recommendations for installation, calibration, and start-up operation.*
- *Quality assurance and control practices that are adequate to ensure the continuing validity of the data. The owner or operator shall consider manufacturer recommendations or requirements applicable to the monitoring in developing appropriate quality assurance and control practices.*
- *Specifications for the frequency of conducting the monitoring, the data collection procedures that will be used (e.g., computerized data acquisition and handling, alarm sensor, or manual log entries based on gauge readings), and, if applicable, the period over which discrete data points will be averaged for the purpose of determining whether an excursion or exceedance has occurred.*
  - *At a minimum, the owner or operator shall design the period over which data are obtained and, if applicable, averaged consistent with the characteristics and typical variability of the pollutant-specific emissions unit (including the control device and associated capture system). Such intervals shall be commensurate with the time period over which a change in control device performance that would require actions by owner or operator to return operations within normal ranges or designated conditions is likely to be observed.*
  - *For all pollutant-specific emissions units with the potential to emit, calculated including the effect of control devices, the applicable regulated air pollutant in an amount equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source, for each*

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<sup>6</sup> COMS system performance summaries submitted for the periods 1/1/10-6/30/10 and 7/1/10-12/31/10, TASC0 Twin Falls Facility.

*parameter monitored, the owner or operator shall collect four or more data values equally spaced over each hour and average the values, as applicable, over the applicable averaging period as determined in accordance with paragraph (b)(4)(i) of this section. The permitting authority may approve a reduced data collection frequency, if appropriate, based on information presented by the owner or operator concerning the data collection mechanisms available for a particular parameter for the particular pollutant-specific emissions unit (e.g., integrated raw material or fuel analysis data, noninstrumental measurement of waste feed rate or visible emissions, use of a portable analyzer or an alarm sensor).*

- *For other pollutant-specific emissions units, the frequency of data collection may be less than the frequency specified in paragraph (b)(4)(ii) of this section but the monitoring shall include some data collection at least once per 24-hour period (e.g., a daily inspection of a carbon adsorber operation in conjunction with a weekly or monthly check of emissions with a portable analyzer).*

*In accordance with 40 CFR 64.3(c), in designing monitoring to meet the requirements in paragraphs (a) and (b) of this section, the owner or operator shall take into account site-specific factors including the applicability of existing monitoring equipment and procedures, the ability of the monitoring to account for process and control device operational variability, the reliability and latitude built into the control technology, and the level of actual emissions relative to the compliance limitation.*

*In accordance with 40 CFR 64.3(d)(1), if a continuous emission monitoring system (CEMS), continuous opacity monitoring system (COMS) or predictive emission monitoring system (PEMS) is required pursuant to other authority under the Act or state or local law, the owner or operator shall use such system to satisfy the requirements of this part.*

*In accordance with 40 CFR 64.3(d)(2), The use of a CEMS, COMS, or PEMS that satisfies any of the following monitoring requirements shall be deemed to satisfy the general design criteria in paragraphs (a) and (b) of this section, provided that a COMS may be subject to the criteria for establishing indicator ranges under paragraph (a) of this section:*

- *Section 51.214 and appendix P of part 51 of this chapter;*
- *Section 60.13 and appendix B of part 60 of this chapter;*
- *Section 63.8 and any applicable performance specifications required pursuant to the applicable subpart of part 63 of this chapter;*
- *Part 75 of this chapter;*
- *Subpart H and appendix IX of part 266 of this chapter; or*
- *If an applicable requirement does not otherwise require compliance with the requirements listed in the preceding paragraphs (d)(2)(i) through (v) of this section, comparable requirements and specifications established by the permitting authority.*

*In accordance with 40 CFR 64.3(d)(3), the owner or operator shall design the monitoring system subject to this paragraph (d) to:*

- *Allow for reporting of exceedances (or excursions if applicable to a COMS used to assure compliance with a particulate matter standard), consistent with any period for reporting of exceedances in an underlying requirement. If an underlying requirement does not contain a provision for establishing an averaging period for the reporting of exceedances or excursions, the criteria used to develop an averaging period in (b)(4) of this section shall apply; and*
- *Provide an indicator range consistent with paragraph (a) of this section for a COMS used to assure compliance with a particulate matter standard. If an opacity standard applies to the pollutant-specific emissions unit, such limit may be used as the appropriate indicator range unless the opacity limit fails to meet the criteria in paragraph (a) of this section after considering the type of control device and other site-specific factors applicable to the pollutant-specific emissions unit.*

The proposed indicators have been designed to provide a reasonable assurance of compliance with the relevant PM emission limits and standards for the anticipated range of operating conditions, and to meet the required performance criteria.

Because each of the emissions units applicable to CAM have the potential to emit greater than 100% of the amount required for a source to be classified as a major source, collection of four or more data values equally spaced over each hour over the applicable averaging period were required for every indicator monitored (with the exception of visible emissions inspection of the B&W Boiler), in accordance with 40 CFR 64.3(b)(4)(ii).

For the B&W Boiler, a weekly frequency was approved for visible emissions inspection monitoring. The proposed measurement frequency has been approved in accordance with 40 CFR 64.3(b)(4)(ii), taking into account that multiple indicators were proposed for this control device, that the other indicators meet the recommended measurement frequency, and that Method 9 observation is not conducive to measurement at the recommended frequency. It is understood that such monitoring could not be conducted on a continuous basis, based on the need to have a certified observer and adequate conditions present at the time of monitoring, and the permittee has maintained that weekly observation has been adequate based upon historical performance.<sup>7</sup>

Because the Foster Wheeler Boiler COMS is required by NSPS Subpart D, it has been utilized for the purposes of CAM in accordance with 40 CFR 64.3(d)(1). Because the COMS is subject to Section 60.13 (Permit Condition 2.34) and Appendix B of Part 60, it was deemed to satisfy general and performance criteria in accordance with 40 CFR 64.3(d)(2)(ii) and was considered presumptively acceptable monitoring in accordance with 40 CFR 64.4(b)(2).

Approved averaging times were established as follows:

- For the Foster Wheeler Boiler Baghouse opacity indicator, use of NSPS Subpart D methodology (6-minute averaging period of 10-second continuous opacity measurements) been approved to assess excursions.
- For the B&W Boiler Baghouse opacity indicator, use of EPA reference Method 9 (6-minute averaging period of 15-second observations) has been approved to assess excursions.
- For the remaining B&W Boiler Baghouse indicators (oxygen content and pressure drop), a daily average of 15-minute readings has been approved to assess excursions. The permittee has documented that the characteristics and typical variability in performance of the B&W Boiler (including the control device and associated capture system) is on the order of days or longer.<sup>12</sup> Degradation in boiler or baghouse performance has been detected on the order of days or weeks, while boiler operating scenarios (e.g., Beet Slice, Juice Run, Separator, and Extract) may occur over a period of months.
- For the Pulp Dryer Scrubbers indicators (water flow and pressure drop), a daily average of 15-minute readings was proposed and has been approved to assess excursions.

Specifications for obtaining data and QA/QC practices to ensure data validity include NSPS requirements for the Foster Wheeler Boiler Baghouse COMS, manufacturer's recommendations for the B&W Boiler Baghouse differential pressure and oxygen monitors, and manufacturer's recommendations for the Pulp Dryer scrubber water flow meter and differential pressure monitors.

Permit Conditions 2.32, 3.10, 4.4, and 6.4 include the requirements of this section.

*40 CFR 64.4 ..... Submittal requirements.*

*In accordance with 40 CFR 64.4(a), the owner or operator shall submit to the permitting authority monitoring that satisfies the design requirements in §64.3. The submission shall include the following information:*

- *The indicators to be monitored to satisfy §§64.3(a)(1)–(2);*
- *The ranges or designated conditions for such indicators, or the process by which such indicator ranges or designated conditions shall be established;*
- *The performance criteria for the monitoring to satisfy §64.3(b); and*

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<sup>7</sup> Response to “CAM - response to excursions or exceedances” email, TASC0, April 28, 2011.

- *If applicable, the indicator ranges and performance criteria for a CEMS, COMS or PEMS pursuant to §64.3(d).*

*In accordance with 40 CFR 64.4(b), as part of the information submitted, the owner or operator shall submit a justification for the proposed elements of the monitoring. If the performance specifications proposed to satisfy §64.3(b)(2) or (3) include differences from manufacturer recommendations, the owner or operator shall explain the reasons for the differences between the requirements proposed by the owner or operator and the manufacturer's recommendations or requirements. The owner or operator also shall submit any data supporting the justification, and may refer to generally available sources of information used to support the justification (such as generally available air pollution engineering manuals, or EPA or permitting authority publications on appropriate monitoring for various types of control devices or capture systems). To justify the appropriateness of the monitoring elements proposed, the owner or operator may rely in part on existing applicable requirements that establish the monitoring for the applicable pollutant-specific emissions unit or a similar unit. If an owner or operator relies on presumptively acceptable monitoring, no further justification for the appropriateness of that monitoring should be necessary other than an explanation of the applicability of such monitoring to the unit in question, unless data or information is brought forward to rebut the assumption. Presumptively acceptable monitoring includes:*

- *Presumptively acceptable or required monitoring approaches, established by the permitting authority in a rule that constitutes part of the applicable implementation plan required pursuant to title I of the Act, that are designed to achieve compliance with this part for particular pollutant-specific emissions units;*
- *Continuous emission, opacity or predictive emission monitoring systems that satisfy applicable monitoring requirements and performance specifications as specified in §64.3(d);*
- *Excepted or alternative monitoring methods allowed or approved pursuant to part 75 of this chapter;*
- *Monitoring included for standards exempt from this part pursuant to §64.2(b)(1)(i) or (vi) to the extent such monitoring is applicable to the performance of the control device (and associated capture system) for the pollutant-specific emissions unit; and*
- *Presumptively acceptable monitoring identified in guidance by EPA. Such guidance will address the requirements under §§64.4(a), (b), and (c) to the extent practicable.*

*In accordance with 40 CFR 64.4(c)(1), except as provided in paragraph (d) of this section, the owner or operator shall submit control device (and process and capture system, if applicable) operating parameter data obtained during the conduct of the applicable compliance or performance test conducted under conditions specified by the applicable rule. If the applicable rule does not specify testing conditions or only partially specifies test conditions, the performance test generally shall be conducted under conditions representative of maximum emissions potential under anticipated operating conditions at the pollutant-specific emissions unit. Such data may be supplemented, if desired, by engineering assessments and manufacturer's recommendations to justify the indicator ranges (or, if applicable, the procedures for establishing such indicator ranges). Emission testing is not required to be conducted over the entire indicator range or range of potential emissions.*

*In accordance with 40 CFR 64.4(c)(2), the owner or operator must document that no changes to the pollutant-specific emissions unit, including the control device and capture system, have taken place that could result in a significant change in the control system performance or the selected ranges or designated conditions for the indicators to be monitored since the performance or compliance tests were conducted.*

*In accordance with 40 CFR 64.4(d), if existing data from unit-specific compliance or performance testing specified in paragraph (c) of this section are not available, the owner or operator:*

- *Shall submit a test plan and schedule for obtaining such data in accordance with paragraph (e) of this section; or*
- *May submit indicator ranges (or procedures for establishing indicator ranges) that rely on engineering assessments and other data, provided that the owner or operator demonstrates that factors specific to the type of monitoring, control device, or pollutant-specific emissions unit make compliance or performance testing unnecessary to establish indicator ranges at levels that satisfy the criteria in §64.3(a).*

*In accordance with 40 CFR 64.4(e), if the monitoring submitted by the owner or operator requires installation, testing, or other necessary activities prior to use of the monitoring for purposes of this part, the owner or operator shall include an implementation plan and schedule for installing, testing and performing any other appropriate activities prior to use of the monitoring. The implementation plan and schedule shall provide for use of the monitoring as expeditiously as practicable after approval of the monitoring in the part 70 or 71 permit pursuant to §64.6, but in no case shall the schedule for completing installation and beginning operation of the monitoring exceed 180 days after approval of the permit.*

*In accordance with 40 CFR 64.4(f), if a control device is common to more than one pollutant-specific emissions unit, the owner or operator may submit monitoring for the control device and identify the pollutant-specific emissions units affected and any process or associated capture device conditions that must be maintained or monitored in accordance with §64.3(a) rather than submit separate monitoring for each pollutant-specific emissions unit.*

*In accordance with 40 CFR 64.4(g), if a single pollutant-specific emissions unit is controlled by more than one control device similar in design and operation, the owner or operator may submit monitoring that applies to all the control devices and identify the control devices affected and any process or associated capture device conditions that must be maintained or monitored in accordance with §64.3(a) rather than submit a separate description of monitoring for each control device.*

The permittee has submitted proposed monitoring to meet the specified performance criteria. Refer to the discussion provided above for 40 CFR 64.3 for additional information.

**Table 6 SUMMARY OF CAM PERMIT CONTENTS**

<b>64.6(c) Minimum Requirements</b>				<b>Permit Conditions</b>
<i>Does the permit specify:</i>	<b>Yes</b>	<b>No</b>	<b>NA</b>	
1. <b>Indicator(s)</b> to be monitored?	X			3.10, 4.4, 6.4
2. <b>Means</b> or <b>device</b> to be used to measure the indicator(s)?	X			3.10, 4.4, 6.4
3. <b>Performance requirements</b> established to satisfy § 64.3(b) or (d)?	X			2.32, 3.11, 3.13, 4.5, 4.8, 6.5, 6.8
4. Means by which the owner or operator will <b>define</b> an <b>exceedance</b> or <b>excursion</b> ?	X			3.10, 4.4, 6.4
5. <b>Obligation</b> to conduct the monitoring and fulfill the other obligations specified in §§ <b>64.7 through 64.9</b> ?	X			3.12, 3.14, 3.15, 4.7, 4.9, 4.10, 6.7, 6.9, 6.10
6. <b>Minimum data availability</b> requirement? ( <i>if applicable</i> )	X			2.32 (2.34 for COMS)
<b>64.6(d) Enforceable Schedule</b>				<b>Comments</b>
<i>Does the permit specify:</i>	<b>Yes</b>	<b>No</b>	<b>NA</b>	
7. An <b>enforceable schedule</b> for any required installation, testing, or final verification of operational status? ( <i>if applicable</i> )			X	
<b>64.6(e) Submittal Disapproved by Permitting Authority</b>				<b>Comments</b>
<i>Does the permit specify:</i>	<b>Yes</b>	<b>No</b>	<b>NA</b>	
8. At a minimum, monitoring that satisfies § <b>70.6(a)(3)(i)(B)</b> if the permitting authority disapproved the proposed monitoring? ( <i>if applicable</i> )			X	
9. A <b>compliance schedule</b> for the source owner to submit an acceptable plan if the permitting authority disapproved the proposed monitoring? ( <i>if applicable</i> )			X	

40 CFR 64.6 ..... Approval of monitoring.

*In accordance with 40 CFR 64.6(a), based on an application that includes the information submitted in accordance with §64.5, the permitting authority shall act to approve the monitoring submitted by the owner or operator by confirming that the monitoring satisfies the requirements in §64.3.*

*In accordance with 40 CFR 64.6(b), in approving monitoring under this section, the permitting authority may condition the approval on the owner or operator collecting additional data on the indicators to be monitored for a pollutant-specific emissions unit, including required compliance or performance testing, to confirm the ability of the monitoring to provide data that are sufficient to satisfy the requirements of this part and to confirm the appropriateness of an indicator range(s) or designated condition(s) proposed to satisfy §64.3(a)(2) and (3) and consistent with the schedule in §64.4(e).*

*In accordance with 40 CFR 64.6(c), if the permitting authority approves the proposed monitoring, the permitting authority shall establish one or more permit terms or conditions that specify the required monitoring in accordance with §70.6(a)(3)(i) of this chapter. At a minimum, the permit shall specify:*

- *The approved monitoring approach that includes all of the following:*
  - *The indicator(s) to be monitored (such as temperature, pressure drop, emissions, or similar parameter);*
  - *The means or device to be used to measure the indicator(s) (such as temperature measurement device, visual observation, or CEMS); and*
  - *The performance requirements established to satisfy §64.3(b) or (d), as applicable.*
- *The means by which the owner or operator will define an exceedance or excursion for purposes of responding to and reporting exceedances or excursions under §§64.7 and 64.8 of this part. The permit shall specify the level at which an excursion or exceedance will be deemed to occur, including the appropriate averaging period associated with such exceedance or excursion. For defining an excursion from an indicator range or designated condition, the permit may either include the specific value(s) or condition(s) at which an excursion shall occur, or the specific procedures that will be used to establish that value or condition. If the latter, the permit shall specify appropriate notice procedures for the owner or operator to notify the permitting authority upon any establishment or reestablishment of the value.*
- *The obligation to conduct the monitoring and fulfill the other obligations specified in §§64.7 through 64.9 of this part.*
- *If appropriate, a minimum data availability requirement for valid data collection for each averaging period, and, if appropriate, a minimum data availability requirement for the averaging periods in a reporting period.*

*In accordance with 40 CFR 64.6(d), if the monitoring proposed by the owner or operator requires installation, testing or final verification of operational status, the part 70 or 71 permit shall include an enforceable schedule with appropriate milestones for completing such installation, testing, or final verification consistent with the requirements in §64.4(e).*

*In accordance with 40 CFR 64.6(e), If the permitting authority disapproves the proposed monitoring, the following applies:*

- *The draft or final permit shall include, at a minimum, monitoring that satisfies the requirements of §70.6(a)(3)(i)(B);*
- *The permitting authority shall include in the draft or final permit a compliance schedule for the source owner to submit monitoring that satisfies §§64.3 and 64.4, but in no case shall the owner or operator submit revised monitoring more than 180 days from the date of issuance of the draft or final permit; and*
- *If the source owner or operator does not submit the monitoring in accordance with the compliance schedule as required in paragraph (e)(2) of this section or if the permitting authority disapproves the monitoring submitted, the source owner or operator shall be deemed not in compliance with part 64, unless the source owner or operator successfully challenges the disapproval.*

The approved CAM plan relies upon existing monitoring techniques, and the permittee has confirmed that monitoring devices have been installed as proposed in the CAM submittal dated February 23, 2011 and in accordance with manufacturer's recommendations and applicable requirements.

*40 CFR 64.7 ..... Operation of approved monitoring.*

*In accordance with 40 CFR 64.7(a), the owner or operator shall conduct the monitoring required under this part upon issuance of a part 70 or 71 permit that includes such monitoring, or by such later date specified in the permit pursuant to §64.6(d).*

*In accordance with 40 CFR 64.7(b), at all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.*

*In accordance with 40 CFR 64.7(c), except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.*

*In accordance with 40 CFR 64.7(d), response to excursions or exceedances.*

- Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.*
- Determination of whether the owner or operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.*

*In accordance with 40 CFR 64.7(e), documentation of need for improved monitoring. After approval of monitoring under this part, if the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the part 70 or 71 permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.*

Permit Conditions 3.12, 4.7, and 6.7 include the requirements of this section.

*40 CFR 64.8 ..... Quality improvement plan (QIP) requirements.*

*In accordance with 40 CFR 64.8(a), based on the results of a determination made under §64.7(d)(2), the Administrator or the permitting authority may require the owner or operator to develop and implement a QIP. Consistent with §64.6(c)(3), the part 70 or 71 permit may specify an appropriate threshold, such as an*

accumulation of exceedances or excursions exceeding 5 percent duration of a pollutant-specific emissions unit's operating time for a reporting period, for requiring the implementation of a QIP. The threshold may be set at a higher or lower percent or may rely on other criteria for purposes of indicating whether a pollutant-specific emissions unit is being maintained and operated in a manner consistent with good air pollution control practices.

In accordance with 40 CFR 64.8(b)(1), the owner or operator shall maintain a written QIP, if required, and have it available for inspection.

In accordance with 40 CFR 64.8(b)(2), the plan initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the owner or operator shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate:

- Improved preventive maintenance practices.
- Process operation changes.
- Appropriate improvements to control methods.
- Other steps appropriate to correct control performance.
- More frequent or improved monitoring (only in conjunction with one or more steps under paragraphs (b)(2)(i) through (iv) of this section).

In accordance with 40 CFR 64.8(c), if a QIP is required, the owner or operator shall develop and implement a QIP as expeditiously as practicable and shall notify the permitting authority if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.

In accordance with 40 CFR 64.8(d), following implementation of a QIP, upon any subsequent determination pursuant to §64.7(d)(2) the Administrator or the permitting authority may require that an owner or operator make reasonable changes to the QIP if the QIP is found to have:

- Failed to address the cause of the control device performance problems; or
- Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

In accordance with 40 CFR 64.8(e), implementation of a QIP shall not excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.

An approved CAM plan has been established by this permitting action, and a QIP has not been required by DEQ at this time.

Permit Condition 3.15, 4.10, and 6.10 include the requirements of this section.

It may be noted that during the development of appropriate CAM indicator ranges for the boilers, it was considered whether it might be appropriate to establish different indicator ranges for different boiler load operating scenarios (e.g., ranges separately established for Beet Slice, Juice Run, Separator, and Extract). Although the data analyzed did not clearly indicate whether there would be a benefit to such an approach, it may be worth further investigation at such time a quality improvement plan is considered.

40 CFR 64.9 ..... Reporting and recordkeeping requirements.

In accordance with 40 CFR 64.9(a)(1), on and after the date specified in §64.7(a) by which the owner or operator must use monitoring that meets the requirements of this part, the owner or operator shall submit monitoring reports to the permitting authority in accordance with §70.6(a)(3)(iii) of this chapter.

In accordance with 40 CFR 64.9(a)(2), a report for monitoring under this part shall include, at a minimum, the information required under §70.6(a)(3)(iii) of this chapter and the following information, as applicable:

- *Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;*
- *Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and*
- *A description of the actions taken to implement a QIP during the reporting period as specified in §64.8. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.*

*In accordance with 40 CFR 64.9(b)(1), the owner or operator shall comply with the recordkeeping requirements specified in §70.6(a)(3)(ii) of this chapter. The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to §64.8 and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).*

*In accordance with 40 CFR 64.9(b)(2), instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.*

Permit Conditions 3.14, 4.9, and 6.9 include the requirements of this section.

### **MACT Applicability (40 CFR 63)**

Based upon HAP emission estimates provided (refer to Appendix A for additional information), the Twin Falls Facility is a major source of HAP, and has been determined to be subject to the requirements of 40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters (Boiler MACT). TASCOS has certified that an initial notification pursuant to the requirements of 40 CFR 63, Subpart DDDDD was submitted on March 10, 2005 for the Twin Falls Facility.

The United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) vacated the Boiler MACT regulations in their entirety on July 30, 2007.<sup>8</sup> EPA proposed boiler standards for major sources on June 4, 2010,<sup>9</sup> and final standards were promulgated March 21, 2011 (with an effective date of May 20, 2011, and compliance date for affected existing boilers of March 21, 2014).<sup>10</sup> Although boilers at the Twin Falls Facility are required to comply with applicable Boiler MACT requirements on or before the compliance date, such requirements have not been incorporated into the Title V operating permit at this time for the following reasons:

- certain portions of these emission standards have been proposed for reconsideration by EPA,<sup>11</sup>
- effective dates of the final rule have been delayed by EPA pending the outcome of judicial and EPA review,<sup>12</sup>
- it has been requested by TASCOS that these requirements not be included in the operating permit until such rule uncertainties have been resolved.

<sup>8</sup> Natural Resources Defense Council (NRDC) v. EPA, 489 F. 3d. 1250, United States Court of Appeals, District of Columbia Circuit, June 8, 2007.

<sup>9</sup> National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers, 75 FR 32006-32073, Proposed, June 4, 2010.

<sup>10</sup> National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers, 75 FR 31896-31935, Final, March 21, 2011.

<sup>11</sup> National Emission Standards for Hazardous Air Pollutants; Notice of Reconsideration, 75 FR 15266-15267, Proposed, March 21, 2011.

<sup>12</sup> Industrial, Commercial, and Institutional Boilers and Process Heaters and Commercial and Industrial Solid Waste Incineration Units, 76 FR 28662-28664, Final, May 18, 2011.

Incorporation of Boiler MACT requirements into the operating permit should be revisited on or before issuance of the next operating permit renewal.

### ***Permit Conditions Review***

This section describes the applicable requirements for this major facility. Where applicable, monitoring, recordkeeping and reporting requirements (MRRR) follow the applicable requirement and state how compliance with the applicable requirement is to be demonstrated. Requirements and MRRR have been summarized and paraphrased to minimize the length of this document, and permit requirements should be referenced from the actual permit.

This section is divided into several subsections. The first subsection lists the requirements that apply facility wide. The next subsection lists the emissions units- and emissions activities-specific applicable requirements. The final subsection contains the general provisions that apply to all major facilities subject to Idaho DEQ's Tier I operating permit requirements.

Where substantive changes have been made to permit conditions, the existing permit condition have been provided for reference (*italicized, from Tier I Operating Permit No. T1-030415*).

It may be noted that the permittee has provided notification that existing sugar granulators were permanently shut down to accommodate installation of the new granulator system, in accordance with the notification requirement in Permit Condition 5 of PTC No. P-2010.0108 PROJ 60566.<sup>13</sup> For this reason, this permit condition was not incorporated into this operating permit.

### ***MRRR***

Immediately following each applicable requirement (permit condition) is the periodic monitoring regime upon which compliance with the underlying applicable requirement is demonstrated. A periodic monitoring regime consists of monitoring, recordkeeping and reporting requirements for each applicable requirement. If an applicable requirement does not include sufficient monitoring, recordkeeping and reporting to satisfy IDAPA 58.01.01.322.06, 07, and 08, then the permit must establish adequate monitoring, recordkeeping and reporting sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit. This is known as "gap-filling".

The discussion of each permit condition includes the legal and factual basis for the permit condition. If a permit condition was changed due to facility draft or public comments, a description of why and how the condition was changed is provided.

For each permit condition, certification of compliance is required on an annual basis, which includes making a reasonable inquiry to determine if each requirement was met during the reporting period.

### ***State Enforceability***

An applicable requirement that is not required by the federal CAA and has not been approved by EPA as a SIP-approved requirement is identified as a "State-only" requirement and is enforceable only under state law. State-only requirements are not enforceable by the EPA or citizens under the CAA. State-only requirements are identified in the permit within the citation of the legal authority for the permit condition.

### ***Federal Enforceability***

Unless identified as "State-only", all applicable requirements, including MRRR, are state and federally enforceable. It should be noted that while a violation of a MRRR is a violation of the permit, it is not necessarily a violation of the underlying applicable requirement (e.g. emissions limit).

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<sup>13</sup> "PTC P-2010.0108 Project No. 60566 – Granulator System Replacement Project" notification of shut down, TASC0, June 16, 2011.

### **Permit Conditions 2.1 – 2.4 (Existing Permit Conditions 1.1 – 1.4)**

Permit Condition 2.1 incorporates requirements for the control of fugitive dust in accordance with IDAPA 58.01.01.650-651.

MRRR include the following (Permit Conditions 2.2-2.4):

- Inspect sources of fugitive emissions on a monthly basis.
- Take corrective action when appropriate.
- Monitor and record the frequency and methods used to control fugitive dust emissions.
- Record fugitive dust complaints received, fugitive dust inspections, and corrective actions.

### **Permit Conditions 2.5 and 2.6 (Existing Permit Conditions 1.5 and 1.6)**

Permit Condition 2.5 incorporates “state-only” requirements for the control of odors in accordance with IDAPA 58.01.01.775-776.

MRRR include the following (Permit Condition 2.6):

- Maintain records of all odor complaints received and the corrective action taken in response to the complaint;
- Take appropriate corrective action when appropriate.
- Record corrective actions.

### **Permit Conditions 2.7 – 2.10 (Existing Permit Conditions 1.7, 1.8, and 11.6)**

*1.8 In addition to the specific requirements in Permit Conditions 3.7 and 5.6, the permittee shall conduct a monthly facility-wide inspection of all potential sources of visible emissions during daylight hours and under normal operating conditions. The visible emissions inspection shall consist of a see/no see evaluation for each potential source. If any visible emissions are present from any point of emission, the permittee shall either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is greater than 20% for a period or periods aggregating more than three minutes in any 60-minute period, the permittee shall take all necessary corrective actions and report the exceedances in its annual compliance certification and in accordance with IDAPA 58.01.01.130-136. The permittee shall maintain records of the results of each visible emission inspection and each opacity test when conducted. The records shall include, at a minimum, the date and results of each inspection and test and a description of the following: the permittee’s assessment of the conditions existing at the time visible emissions are present (if observed), any corrective action taken in response to the visible emissions, and the date corrective action was taken.*

*11.6 In the event that no visible emissions are detected from the main mill vents and sulfur stove during the first year after issuance of this permit, the permittee may waive the monitoring requirements of Permit Condition 1.8 for these sources, for the remainder of the permit duration.*

Permit Condition 2.7 incorporates visible emissions limits in accordance with IDAPA 58.01.01.625.

MRRR include the following (Permit Conditions 2.8 – 2.10):

- Inspect potential sources of visible emissions on a monthly basis.
- Take appropriate corrective actions to eliminate the visible emissions and perform Method 9 opacity testing when appropriate.
- Maintain records of inspection, opacity tests, and corrective actions.
- Report exceedances.

Permit Condition 2.10 provides a continuation of the exemption from monthly monitoring of visible emissions from the main mill vents and the sulfur stove. Data was provided which supported that no visible emissions were detected during the first year of the permit term for Tier I Operating Permit No. T1-030415.<sup>14</sup> Resumption of monitoring may be required by DEQ upon notification. Permit conditions were also updated to reflect the language in current use for the sake of permitting consistency, including the COMS exception. No other substantive change was intended.

**Permit Conditions 2.11 – 2.15 (Existing Permit Condition 1.9)**

Permit Conditions 2.11 – 2.13 incorporate excess emission event requirements in accordance with IDAPA 58.01.01.130-136.

MRRR include the following for upset/breakdown/safety events and excess emissions events (Permit Conditions 2.12 – 2.15):

- Take appropriate action.
- Provide notification of the event.
- Report the event.
- Maintain records of the event.

The existing permit conditions were updated to include additional language from Section 133.01.a for clarification, and to reflect the language in current use for the sake of permitting consistency. No substantive change was intended.

**Permit Conditions 2.16, 2.17, 3.9, 4.1, and 5.1 (Existing Permit Conditions 1.16, 1.17, 2.23 and 2.24)**

Permit Conditions 2.16, 2.17, 3.9, 4.1, and 5.1 incorporate fuel burning equipment particulate matter standards for new, minor, and existing sources in accordance with IDAPA 58.01.01.676-677.

- Fuel-burning equipment includes the Foster Wheeler Boiler, B&W Boiler, and the Keeler Boiler

For MRRR, refer to discussion related to each boiler under Permit Condition 3.9, 4.1, and 5.1.

**Permit Conditions 2.18 – 2.20 (Existing Permit Conditions 1.18 and 1.19)**

Permit Condition 2.18 incorporates sulfur content specifications for fuels in accordance with IDAPA 58.01.01.725.

MRRR include the following (Permit Conditions 2.19 – 2.20):

- Record sulfur content of each fuel oil and coal shipment received.

The existing permit conditions were revised to combine the fuel sulfur content limits into a single permit condition. Permit conditions were also updated to reflect the language in current use for the sake of permitting consistency.

The applicant also requested inclusion of the fuel sulfur content limit exemption compliance option, which requires demonstration of equivalent SO<sub>2</sub> emissions and DEQ approval.

**Permit Condition 2.21 (Existing Permit Condition 1.12)**

This permit condition incorporates open burning requirements in accordance with IDAPA 58.01.01.600-623.

The rule citations and the existing permit condition were updated to reflect the language in current use for the sake of permitting consistency. No substantive change was intended.

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<sup>14</sup> Monthly visible emissions observation logs for the sulfur stove and main mill vents during the 2004/2005 campaign (inclusive of 9/20/04-3/14/05), TASC0 Twin Falls Facility.

**Permit Condition 2.22 (Existing Permit Condition 1.13)**

This permit condition incorporates National Emission Standards for Asbestos in accordance with 40 CFR 61, Subpart M.

The existing permit condition was updated to reflect the language in current use for the sake of permitting consistency. No substantive change was intended.

**Permit Condition 2.23 (Existing Permit Condition 1.14)**

This permit condition incorporates accidental release prevention requirements in accordance with 40 CFR 68.

The existing permit condition was updated for clarification purposes. No substantive change was intended.

**Permit Condition 2.24**

This permit condition incorporates standards for refrigerants and their substitutes in accordance with 40 CFR 68.

**Permit Condition 2.25**

This permit condition incorporates the requirement to properly maintain and operate treatment and control equipment.

**Permit Conditions 2.26 – 2.28 (Existing Permit Conditions 1.15 and 1.20)**

Permit Conditions 2.26 – 2.28 incorporate test method and test procedures in accordance with IDAPA 58.01.01.157.

MRRR include the following (Permit Conditions 2.26, 2.28):

- Notify of intent to test.
- Submit proposed testing for approval.
- Report test results.
- Use recommended test methods unless otherwise approved.

The existing permit conditions were updated for clarification purposes and to reflect the language in current use for the sake of permitting consistency. No substantive change was intended.

Refer also to discussion under Permit Condition 4.12 for compliance testing required for the B&W Boiler.

**MRRR Permit Condition 2.29 (Existing Permit Condition 1.11)**

This permit condition incorporates a generally applicable MRRR to maintain sufficient records to assure compliance with all of the terms and conditions of the permit.

The existing permit condition was updated to reflect the language in current use for the sake of permitting consistency. No substantive change was intended.

**MRRR Permit Condition 2.30 (Existing Permit Condition 1.10)**

This permit condition establishes generally applicable MRRR for submittal of reports, certifications, and notifications.

The existing requirements for annual and semi-annual reporting period and compliance certification were relocated to General Provisions 14.22 and 14.25. No substantive change was intended.

**Permit Condition 2.31 – 2.33 (Existing Permit Condition 1.21)**

*1.21 The permittee shall develop an O&M manual for the appropriate emissions control device(s) for each of the following sources: (a) the B&W Boiler, (b) the pulp dryer, (c) the pellet coolers, (d) the lime kilns, (e) the process slaker, (f) the cooling granulator, (g) pulp dryer material handling, (h) lime kiln material handling. The permittee shall develop each O&M manual within the one year of issuance of Tier I Operating Permit No. 083-00001, dated December 17, 2002.*

1.21.1 After the initial O&M manual development, the permittee shall update the control device monitoring program in the O&M manuals as necessary after each DEQ-approved performance test, or as otherwise deemed necessary by the permittee.

1.21.2 The O&M manuals shall address the operation, maintenance, and repair of applicable control device(s) for each source to ensure good working order and operation as efficiently as practicable. The manuals shall include, at a minimum, a general description of the control device(s); normal operating conditions and procedures; startup, shutdown, and maintenance procedures; upset conditions and corrective action procedures; methods of preventing malfunctions; appropriate corrective actions to be taken; and provisions for annual inspections during planned maintenance outages. The permittee shall keep records of maintenance activities for a period of five years, in accordance with Permit Condition 1.11.

1.21.3 The O&M manuals shall include a control device monitoring program that establishes control device operating parameters to be monitored, their acceptable operating ranges where applicable, corrective action levels, monitoring equipment and procedures, monitoring frequency, and frequency of recordkeeping. The monitoring parameters shall include, but are not limited to, any specific control device monitoring parameter(s) required under any permit condition in this permit, unless DEQ approves their removal from this permit condition. The control device monitoring program shall be developed by the permittee based on performance test results, vendor data, and/or other supporting documentation.

1.21.4 The O&M manual shall be maintained onsite and shall be made available to DEQ representatives upon request.

1.21.5 Whenever an operating parameter is outside the operating range specified by the control device monitoring program in an O&M manual, the permittee shall take corrective action as expeditiously as practicable to bring the operating parameter back within the operating range. Deviations from the operating range may not by themselves be considered deviations from applicable emissions standards, unless DEQ determines that the frequency, duration, or magnitude of the deviations indicates that additional action is required.

These permit conditions establish and incorporate operating, maintenance, and MRRR for emission control equipment. The existing permit conditions were updated for clarification purposes, based on changes to control device information and incorporation of CAM requirements. O&M manuals were developed as required by this permit condition. Refer to Appendix B for copies of the O&M manuals. O&M requirements related to the B&W Boiler baghouse and the Pulp Dryer scrubber are MRRR for CAM.

Existing Permit Conditions 6.2, 7.3, and 8.2 required operation and maintenance of the pellet coolers cyclone, the lime kilns scrubber, the process slaker cyclone, the Pulp Dryer Material Handling Baghouse, and the Lime Kiln Building Material Handling Baghouse in accordance with O&M manual requirements. With the exception of the Pulp Dryer Material Handling Baghouse and the Lime Kiln Building Material Handling Baghouse, these requirements were consolidated into Permit Condition 2.33.

The Pulp Dryer Material Handling Baghouse, Lime Kiln Building Material Handling Baghouse, and granulator system baghouse were determined to be inherent process equipment rather than control devices.<sup>15,16</sup> In these determinations, it was considered that the primary purpose of the equipment was not to control air pollution, and that the equipment would be installed if no air quality regulations were in place. It was noted that there are cost savings associated with product captured by these baghouses. It was also considered that existing facility-wide monitoring and periodic visible emissions inspection requirements (Permit Conditions 2.7 – 2.9) were adequate to ensure proper maintenance and operation of these baghouses. As a result, the O&M and monitoring requirements for these baghouses were not considered necessary and were not included in the revised permit condition.

Because monitoring parameters were required within other permit conditions (Permit Condition 2.31, 7.2, 8.2 – 8.4, and 9.2) for the remaining control devices (pellet coolers cyclone, lime kilns scrubber, and process slaker

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<sup>15</sup> Section 5D Request for Change in Permit Conditions – Item 9, Amalgamated Sugar/Twin Falls – Title V Renewal Application 2005 (revised 6/05), TASC0, June 23, 2005.

<sup>16</sup> Refer to Statement of Basis for PTC No. P-2010.0108 PROJ 60566, Idaho DEQ, October 25, 2010 and "Comments on Draft PTC P-2010.0108" letter to DEQ, TASC0, October 21, 2010 for additional discussion.

cyclone), existing Permit Conditions 1.21.3 and 1.21.5 were considered duplicative and were not included in the revised permit condition.

Refer to discussion under Existing Permit Conditions 11.2, 11.3, and 11.4 for additional information.

**Permit Condition 2.34 (Existing Permit Conditions 2.7 – 2.22)**

This permit condition incorporates federal requirements in accordance with 40 CFR 60, Subpart A, including the following MRRR:

- Notify of commencement of construction or reconstruction, of initial startup, of any physical or operational change that may increase emissions,
- Record startups, shutdowns, malfunctions, and periods during which monitoring devices are inoperative.
- Record measurements, calibrations, adjustments, maintenance, and required information.
- Perform any performance testing required.
- Report performance testing results.
- Notify of CMS performance demonstrations.
- Report excess emissions and monitoring systems performance semiannually.
- Record CEMS subhourly measurements.

The existing permit conditions were updated to include additional language from NSPS Subpart A for clarification, and to reflect the language in current use for the sake of permitting consistency. No substantive change was intended.

**Permit Condition 2.35**

This permit condition incorporates federal requirements by reference in accordance with IDAPA 58.01.01.107.

**Permit Conditions 3.1 – 3.7 (Existing Permit Conditions 2.1 – 2.6)**

These permit conditions incorporate federal NSPS requirements and MRRR in accordance with 40 CFR 60, Subpart D (refer to the NSPS Applicability (40 CFR 60) section for additional information).

The rule citations and the existing permit conditions were updated for clarification purposes only. No substantive change was intended.

The applicant has requested the exclusion of NSPS language referencing a 1,500 ppm span value, because the Foster Wheeler Boiler SO<sub>x</sub> CEMS has historically operated with a span value of 1,000 ppm.<sup>17</sup> To accommodate this request, the NSPS requirement was cited in this permit condition along with language providing for DEQ approval of alternate span values if appropriate.

Similarly, the applicant has requested the exclusion of NSPS language referencing CEMS measurement on a dry basis, because the Foster Wheeler Boiler CEMS have historically measured on a wet basis.<sup>18</sup> To accommodate this request, the NSPS requirement was cited in this permit condition along with language providing for DEQ approval of alternate procedures for measurement on a wet basis if appropriate.

**Permit Condition 3.8 and 3.10 – 3.15 (Existing Permit Condition 2.23, 2.24, 2.26, and 2.27)**

*2.26 The pressure drop across the baghouse shall be kept within the range from 1.0 to 10.0 inches of water column.*

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<sup>17</sup> Draft Tier I Operating Permit No. T1-050415 Applicant Review Comments, TASC0, May 16, 2011.

<sup>18</sup> Draft Tier I Operating Permit No. T1-050415 Applicant Review Comments, TASC0, May 16, 2011.

- *Deviations from the allowable operating range of the pressure drop across the baghouse may not by themselves be considered deviations from applicable emissions standards (i.e., Permit Conditions 2.1 and 2.41), unless DEQ determines that the frequency, duration, or magnitude of the deviations indicate additional action is required. Failure to take corrective action may be considered a violation of this permit condition, if appropriate. All deviations shall be reported in accordance with the General Provisions 13.24 and 13.25, and Permit Condition 1.9, if applicable.*

2.27 *The permittee shall install, operate, calibrate, and maintain a monitoring device to continuously measure the pressure drop across the baghouse. The pressure drop shall be recorded weekly and the records maintained in accordance with Permit Condition 1.11. In the event the monitoring device becomes inoperable, it shall be repaired or replaced as soon as practicable.*

Permit Condition 3.8 incorporates fuel-burning equipment particulate matter standards for existing sources in accordance with IDAPA 58.01.01.677. The existing Permit Condition 2.23 was updated for clarification purposes. No substantive change was intended.

- Fuel-burning equipment includes the Foster Wheeler Boiler

MRRR for CAM include the following (Permit Conditions 3.10 – 3.15):

- Continuous opacity monitoring
- Take corrective action upon detecting any excursion or exceedance (opacity)
- Recordkeeping and reporting of excursions and exceedances

Refer to the CAM Applicability (40 CFR 64) section for additional information concerning CAM requirements.

Existing Permit Conditions 2.26 and 2.27 were determined to be duplicative in nature and were removed (replaced with CAM requirements) for the following reasons:

- The continuous opacity monitoring indicator range established in Permit Condition 3.10 was below the applicable NSPS and SIP opacity limits, was designed to ensure compliance with applicable PM limits (CAM), and provides a direct measurement of emissions.
- COMS was required under CAM to ensure proper maintenance and operation of the baghouse control device.
- Deviations of the indicator range in existing Permit Condition 2.26 were not directly linked to deviations of any emissions standard (i.e., PM or opacity).
- Corrective action is required under CAM when deviations (excursions) are detected (Permit Condition 3.12).
- No reasoning was found in prior permit statements of basis to support why pressure drop monitoring would otherwise be required.

It may be noted that the permittee has expressed concern with regard to boiler performance during startup, shutdown, and malfunction events.<sup>19</sup> Specifically, because the Foster Wheeler Boiler is not equipped to burn natural gas, there is little or no ability to control emissions during startup. The baghouse has historically been bypassed during startup events to keep it from being clogged with soot. Diesel fuel oil is used to accelerate ignition of the coal during startup events, and the permittee has requested explicit acknowledgement of this practice within the permit condition since the boiler has historically been operated in this manner. During malfunctions and shutdown the baghouse can generally be kept on line. TASCOS has developed an Excess Emission Procedure to address these events (and corresponding excursions and/or exceedances, as applicable).

**Permit Condition 3.9 (Existing Permit Condition 2.25)**

This permit condition limits the fuel type for combustion in the Foster Wheeler Boiler.

The existing permit condition was updated for clarification purposes only. No substantive change was intended.

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<sup>19</sup> Email, "RE: CAM - response to excursions or exceedances," TASCOS, April 28, 2011.

No specific monitoring was required for this permit condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

**Permit Condition 4.1 and 4.4 – 4.11 (Existing Permit Condition 3.1, 3.4, 3.5, 3.7 – 3.9)**

3.4 *The pressure drop across the baghouse shall be kept within the range from 1.0 to 10.0 inches of water column.*

3.5 *The permittee shall, at all times, maintain and operate the baghouse in accordance with Permit Condition 3.4 and the O&M manual, or as efficiently as practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.*

3.7 *The permittee shall conduct weekly visible emissions observations during daylight hours and under normal operating conditions while combusting coal or a combination of coal and natural gas. If any level of visible emissions is present, a certified visible emissions reader shall perform a visible emissions reading in accordance with the procedures contained in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded. If visible emissions are not present, the permittee shall observe the emissions point for at least six minutes to document that there are no visible emissions. The results of each weekly evaluation shall be recorded, including, but not limited to, the date of observation, time of observation, equipment/emission point observed, and presence of any visible emissions, and opacity reading if visible emissions were present. The record shall be maintained in accordance with Permit Condition 1.11.*

*If opacity is greater than 20% for a period or periods aggregating more than three minutes in any 60-minute period, the permittee shall take all necessary corrective actions and report the exceedances in its annual compliance certification and in accordance with IDAPA 58.01.01.130-136.*

*During a week that a compliance test required by Permit Condition 3.7 is scheduled, the weekly visible emissions evaluation shall be performed during the compliance test. Results of the visible emissions evaluation shall be submitted with the compliance test report.*

3.8 *The permittee shall install, operate, calibrate, and maintain a monitoring device to continuously measure the pressure drop across the baghouse. The pressure drop shall be recorded weekly and the records maintained in accordance with Permit Condition 1.11. In the event the monitoring device becomes inoperable, it shall be repaired or replaced as soon as practicable.*

Permit Condition 4.1 incorporates fuel-burning equipment particulate matter standards for existing sources in accordance with IDAPA 58.01.01.677-678.

- Fuel-burning equipment includes the B&W Boiler

MRRR for CAM include the following (Permit Conditions 4.4 – 4.10):

- Visible emissions inspection monitoring
- Oxygen content monitoring
- Pressure drop monitoring
- Take corrective action upon detecting any excursion or exceedance (opacity, oxygen concentration, scrubber pressure drop, and/or control device bypass)
- Recordkeeping and reporting of excursions and exceedances

Refer to the CAM Applicability (40 CFR 64) section for additional information concerning CAM requirements.

Additional MRRR includes the following (Permit Condition 4.11):

- Annual inspection and maintenance of the baghouse to ensure proper maintenance and operation of the baghouse control device.

Existing Permit Conditions 3.4 and 3.5 were determined to be duplicative in nature and were removed (replaced with CAM requirements) for the following reasons:

- The baghouse pressure drop indicator range established in Permit Condition 4.4 was narrower or more stringent than the range established in existing Permit Condition 3.4, and was required under CAM to ensure compliance with applicable PM emission limits (CAM).
- Monitoring of baghouse pressure drop and opacity were required under CAM to ensure proper maintenance and operation of the baghouse control device.
- O&M requirements have been included (Permit Conditions 2.31-2.36).
- No reasoning was found in prior permit statements of basis to support why pressure drop monitoring would otherwise be required.

Existing Permit Condition 3.7 was determined to be duplicative in nature and was removed and replaced with CAM requirements for the following reasons:

- The opacity indicator range established in Permit Condition 4.4 was lower or more stringent than the applicable SIP visible emissions limit in existing Permit Condition 3.8.

Existing Permit Condition 3.8 was determined to be duplicative in nature and was removed and replaced with CAM requirements for the following reasons:

- The permittee has verified the pressure drop monitoring device has been installed.
- Continuous monitoring, maintenance, and calibration of the pressure drop monitoring device is required under CAM (Permit Condition 4.7).

#### **Permit Conditions 4.2 and 4.3 (Existing Permit Conditions 3.2 and 3.3)**

Permit Condition 4.2 limits the fuel type for combustion in the B&W Boiler.

MRRR includes the following (Permit Condition 4.3):

- Monitoring and recording changes in boiler fuel

The existing permit condition was updated for clarification purposes only. No substantive change was intended.

#### **Permit Condition 4.12 (Existing Permit Condition 3.6)**

*3.6 A compliance test shall be conducted within the one year of issuance of Tier I Operating Permit No. 083-00001, dated December 17, 2002, to demonstrate compliance with Permit Condition 3.1. Testing shall be conducted in accordance with IDAPA 58.01.01.157, Permit Condition 1.20, and the following:*

- *The permittee shall conduct a PM compliance test using the test outlined in 40 CFR 60, Appendix A, Method 5, or such comparable and equivalent method approved in accordance with IDAPA 58.01.01.157. Test methods and procedures shall comply with IDAPA 58.01.01.157.*
- *Prior to conducting the test, the permittee shall address the required averaging period in accordance with IDAPA 58.01.01.679 and the altitude correction in IDAPA 58.01.01.680.*
- *A visible emissions evaluation shall be performed during each compliance test. The visible emissions evaluation shall be conducted in accordance with the procedures contained in IDAPA 58.01.01.625.*
- *The permittee shall monitor and record the heat input rate of the boiler, coal feed rate in tons per hour, and the pressure drop across the baghouse during each test.*
- *For the coal used during the source test, the permittee shall record the coal's high heating value and coal's analysis results, including ash content.*

- If the PM measured in the initial compliance test is less than or equal to 75% of the emissions standard in Permit Condition 3.1, no further testing shall be required during the term of this permit. If the PM measured during the initial compliance test is greater than 75%, but less than or equal to 90% of the emission standard in Permit Condition 3.1, a second test shall be required in the third year of this permit term. If the PM measured during the initial compliance test is greater than 90% of the emission standard in Permit Condition 3.1, the permittee shall conduct a compliance test annually.
- The permittee shall record and maintain information required under Permit Condition 3.7 in accordance with Permit Condition 1.11.

With consideration given to current DEQ policy,<sup>20</sup> emissions units with an existing emission limitation and with PTE exceeding 49.9 TPY are generally required to re-test during the next permit term.

**Table 7 PERFORMANCE TESTING REQUIREMENTS**

Emissions Unit	Emission Rate (as Tested)	Emission Limit	Estimated PM <sub>10</sub> (PM) PTE <sup>a</sup>	Percentage of Limit <sup>b</sup>	Recommended Frequency	Required Next Term?
Foster Wheeler Boiler			69 (69)			No
B&W Boiler	0.0706 gr/dscf <sup>b</sup>	0.10 gr/dscf	143 (143)	70.6%	every 2 yr, <sup>c</sup> or within 3 yr of last test <sup>d</sup>	Yes
Pulp Dryer	5.8 lb/hr <sup>b</sup>	45.1 lb/hr <sup>b</sup>	261 (208)	12.9%	every 2 yr, <sup>c</sup> or within 5 yr of last test <sup>e</sup>	Yes

- a) Refer to Appendix A for additional information concerning emission inventories
- b) Based on the most recent documented performance test report.
- c) Two-year frequency was based on guidance and estimated potential emissions falling within the range of 100 – 999.9 T/yr.
- d) Three-year frequency was based on guidance and the most recent test result falling within the range of 50 – 80% of the applicable limit.
- e) Five-year frequency was based on guidance and the most recent test result falling within the range of less than 50% of the applicable limit.

For the Foster Wheeler Boiler, with consideration given to continuous monitoring of opacity emissions, additional testing to demonstrate compliance with the NSPS PM limit or the PM standard for fuel-burning equipment was not required during this permit term.

For the B&W Boiler and the Pulp Dryer, it was considered reasonable at this time to require testing using the minimum recommended test frequency. The permittee has requested a reduced periodic performance testing frequency, with consideration given to the relevant compliance history and to the considerable resources involved in conducting stack testing.<sup>21</sup> Although a tiered approach to testing not been included in the permit condition requirements (e.g., subsequent testing frequency established based upon each subsequent test result), it is expected that the required testing frequency will be revisited with regard to the next permit cycle at the time of the next permit renewal.

**Permit Condition 5.1 (Existing Permit Condition 4.1)**

This permit condition incorporates fuel-burning equipment particulate matter standards in accordance with IDAPA 58.01.01.676-677.

- Fuel-burning equipment includes the Keeler Boiler

The existing permit condition was updated for clarification purposes only. No substantive change was intended.

No specific monitoring was required for this permit condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

<sup>20</sup> Guidance for Requiring Source Tests in Air Permits, Doc ID AQ-IG-P001, rev. 1, Idaho DEQ, April 16, 2007.

<sup>21</sup> Draft Tier I Operating Permit No. T1-050415 Applicant Review Comments, TASC0, May 16, 2011 and June 23, 2011.

**Permit Condition 5.2 (Existing Permit Condition 4.2)**

This permit condition limits the fuel type for combustion in the Keeler Boiler.

The existing permit condition was updated for clarification purposes only. No substantive change was intended.

No specific monitoring was required for this permit condition. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

**Permit Conditions 6.1 and 6.4 – 6.10 (Existing Permit Conditions 5.1 – 5.3, 5.8 – 5.11, 6.2, 7.3, and 11.2)**

5.2 *The permittee shall operate each scrubber within the specified operating range for each control device operating parameter specified below.*

- *The water flow of each scrubber shall be maintained within the range from 100 to 500 gallons per minute.*
- *The pressure drop across each scrubber shall be maintained within the range from 3 to 6.6 inches of water column.*
- *The water pressure on the spray nozzles in each scrubber shall be maintained within the range of 20 to 60 pounds per square inch.*
- *The total dissolved solids content of the scrubber water shall not exceed 40,000 milligrams per liter.*
- *The total suspended solids content of the scrubber water shall not exceed 7,000 milligrams per liter.*

5.3 *The permittee shall, at all times, maintain and operate each cyclone and each scrubber in accordance with Permit Condition 5.2 and the O&M manual, or as efficiently as practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.*

5.8 *The permittee shall install, operate, calibrate, and maintain monitoring devices to continuously measure the scrubber water flow rate, pressure drop across the scrubber, and water pressure on the spray nozzles. The flow rate, pressure drop, and nozzle pressure shall be recorded weekly and the records maintained in accordance with Permit Condition 1.11. In the event the monitoring device(s) becomes inoperable, it/they shall be repaired or replaced as soon as practicable.*

5.9 *The permittee shall collect a representative sample of recirculated water from the scrubber monthly from the start of the beet campaign to January, and biweekly from January to the end of each campaign. The concentration of suspended particulate and total dissolved solids in the recirculated water sample shall be analyzed and recorded. The result shall be expressed in microgram solids per liter of water.*

5.10 *All the records shall be recorded and maintained in accordance with Permit Condition 1.11. The permittee shall record the starting and ending dates of each campaign.*

6.2 *The permittee shall, at all times, maintain and operate each cyclone in accordance with the O&M manual, or as efficiently as practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.*

7.3 *The permittee shall, at all times, maintain and operate the exhaust vent scrubber in accordance with Permit Condition 7.2 and the O&M manual, or as efficiently as practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.*

8.2 *The permittee shall, at all times, maintain and operate the cyclone in accordance with the O&M manual, or as efficiently as practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.*

11.2 *The permittee shall, at all times, maintain and operate each baghouse in accordance with the O&M manual, or as efficiently as practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.*

Permit Condition 6.1 incorporates process weight particulate matter standards in accordance with IDAPA 58.01.01.703.

MRRR for CAM include the following (Permit Conditions 6.4 – 6.10):

- Water flow rate monitoring
- Pressure drop monitoring
- Annual inspection and maintenance of each cyclone and scrubber.
- Take corrective action upon detecting any excursion or exceedance (opacity, oxygen concentration, scrubber pressure drop, and/or control device bypass)
- Recordkeeping and reporting of excursions and exceedances

Refer to the CAM Applicability (40 CFR 64) section for additional information concerning CAM requirements.

Existing Permit Conditions 5.3, 5.8, 5.10, 6.2, 7.3, 9.3, 10.3, and 11.2 were determined to be duplicative in nature and were removed. O&M requirements required under existing Permit Condition 5.3, 5.8, 6.2, 7.3, 9.3, 10.3, and 11.2 are included in Permit Conditions 2.31-2.36, and general recordkeeping requirements under existing Permit Condition 5.10 are included in Permit Condition 2.29.

Requirements related to monitoring of spray nozzle pressure, total dissolved solids content, and suspended particulate content in existing Permit Conditions 5.2, 5.9, and 5.10 were removed and replaced with approved CAM requirements. The applicant has maintained that monitoring of two indicators (scrubber water flow and pressure drop) was sufficient for the purposes of CAM and to ensure proper maintenance and operation of the scrubber control devices. No reasoning was found in prior permit statements of basis to support why monitoring of spray nozzle pressure, total dissolved solids content, and suspended particulate content required under existing Permit Condition 5.2 would be necessary in addition to the approved CAM indicators (Permit Condition 6.4). Refer to Table 5 and the CAM Applicability (40 CFR 64) section for additional discussion.

#### **Permit Condition 6.2 (Existing Permit Condition 5.7)**

This permit condition requires process weight monitoring in the Pulp Dryer.

The existing permit condition was updated for clarification purposes only. No substantive change was intended.

An approved method for the Pulp Dryer Material Input Rate Calculation can be referenced in Appendix B to Air Quality Tier I Operating Permit No. 9505-063-1, issued December 17, 2002.

#### **Permit Condition 6.3 (Existing Permit Condition 5.6)**

This permit condition requires visible emissions inspection monitoring for the Pulp Dryer.

The existing permit condition was updated for clarification purposes only. No substantive change was intended.

#### **Permit Condition 6.11 (Existing Permit Conditions 5.4 and 5.5)**

5.4 *A compliance test shall be conducted within the one year of issuance of Tier I Operating Permit No. 083-00001, dated December 17, 2002, to demonstrate compliance with Permit Condition 5.1. Testing shall be conducted in accordance with IDAPA 58.01.01.157, Permit Condition 1.20, and the following:*

- *The permittee shall conduct a PM compliance test using the test outlined in 40 CFR 60, Appendix A, Method 5, or such comparable and equivalent method approved in accordance with IDAPA 58.01.01.157. Test methods and procedures shall comply with IDAPA 58.01.01.157.*
- *A visible emissions evaluation shall be performed during each compliance test. The visible emissions evaluation shall be conducted in accordance with the procedures contained in IDAPA 58.01.01.625.*
- *For the pulp dryer, the process weight input (tons per hour) shall be calculated using the methodology described in Appendix B of this permit, Pulp Dryer Material Input Rate Calculation, or as otherwise approved in writing by DEQ. Parameters and operating data used to calculate the process weight input must also be recorded for each compliance test run. These parameters and operating data include total dried pulp produced (tons per day), dried pulp moisture content (percent by weight), pressed pulp moisture content (percent by weight), fuel heating value (Btu/lb), fuel input per ton of dried pulp (therms per ton), quantity of additives (percent of dry substance per ton of dry pulp), solids content of the additives, and throughput to the dryer (percent).*
- *The permittee shall collect a representative sample of recirculated water from the scrubber during each compliance test. The total concentration of total dissolved solids and suspended solids of the recirculated water sample shall be analyzed and recorded and expressed in microgram solids per liter of water.*
- *For each scrubber, the permittee shall record the pressure drop across the scrubber, water flow of the scrubber, and water pressure of sprays.*
- *If the PM measured during in the initial compliance test is less than or equal to 75% of the emission standards in Permit Condition 5.1, no further testing shall be required during this term of this permit. If the PM measured during the initial compliance test is greater than 75%, but less than or equal to 90%, of the emission standard in Permit Condition 5.1, a second test shall be required in the third year of the permit term. If the PM measured during the initial compliance test is greater than 90% of the emission standard in Permit Condition 5.1, the permittee shall conduct a compliance test annually.*
- *The permittee shall record and maintain information required under Permit Condition 5.4 in accordance with Permit Condition 1.11.*

5.5 *The permittee may conduct additional compliance tests during the permit term to revise the operating parameters in Permit Condition 5.2, and/or parameters developed under Permit Condition 5.4, so long as the compliance tests conform to all requirements of this permit.*

For the Pulp Dryer it was considered reasonable at this time to require testing using the minimum recommended test frequency. Refer to additional discussion provided under Permit Condition 4.12.

**Permit Conditions 7.1 and 7.2 (Existing Permit Conditions 6.1 and 6.3)**

Permit Condition 7.1 incorporates process weight particulate matter standards in accordance with IDAPA 58.01.01.703.

MRRR include the following (Permit Condition 7.2):

- Annual inspection and maintenance of the pellet coolers cyclone.

**Permit Conditions 8.1 – 8.4 (Existing Permit Conditions 7.1, 7.2, 7.4, and 7.5)**

Permit Condition 8.1 incorporates process weight particulate matter standards in accordance with IDAPA 58.01.01.702.

MRRR include the following (Permit Conditions 8.2 – 8.4):

- Water pressure range for the lime kilns scrubber.
- Installation, operation, calibration, and maintenance of the scrubber pressure drop monitoring device.
- Annual inspection and maintenance of the lime kilns scrubber.

**Permit Conditions 9.1 and 9.2 (Existing Permit Conditions 8.1 and 8.3)**

Permit Condition 9.1 incorporates process weight particulate matter standards in accordance with IDAPA 58.01.01.702.

MRRR include the following (Permit Condition 9.2):

- Annual inspection and maintenance of the process slaker cyclone.

**Permit Conditions 10.1 and 10.2 (Existing Permit Conditions 9.1 – 9.5, 10.1 – 10.7)**

9.1 *No person shall emit to the atmosphere from any process or process equipment operating prior to October 1, 1979, PM in excess of the amount shown by the following equations, where E is the allowable emission from the entire source in lb/hr, and PW is the process weight in lb/hr:*

- a. *If PW is less than 9,250 lb/hr,*

$$E = 0.045(PW)^{0.60}$$

- b. *If PW is equal to or greater than 17,000 lb/hr,*

$$E = 1.12(PW)^{0.27}$$

9.2 *The water flowrate to the Rotoclone scrubber shall be maintained within the range of 10 to 20 gallons per minute.*

9.3 *The permittee shall, at all times, maintain and operate the scrubber in accordance with Permit Condition 9.2 and the O&M manual, or as efficiently as practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.*

9.4 *The permittee shall install, operate, calibrate, and maintain a monitoring device to continuously measure the water flowrate to the Rotoclone scrubber. The water flowrate shall be recorded weekly and the records maintained in accordance with Permit Condition 1.11. In the event the monitoring device(s) becomes inoperable, it/they shall be repaired or replaced as soon as practicable.*

9.5 *At least once each year during a planned maintenance outage, or as needed during operation, the scrubber shall be inspected for physical degradation that could affect the performance of the control device. The permittee shall make all necessary repairs to the scrubber to ensure efficient operation.*

10.1 *No person shall emit to the atmosphere from any process or process equipment operating prior to October 1, 1979, PM in excess of the amount shown by the following equations, where E is the allowable emission from the entire source in pounds per hour, and PW is the process weight in pounds per hour:*

- a. *If PW is less than 17,000 lb/hr,*

$$E = 0.045(PW)^{0.60}$$

- b. *If PW is equal to or greater than 17,000 lb/hr,*

$$E = 1.12(PW)^{0.27}$$

10.2 *The water pressure on the nozzles in the scrubber shall be maintained within the range of 60 to 80 pounds per square inch.*

10.3 *The permittee shall, at all times, maintain and operate the scrubber in accordance with Permit Condition 10.2 and the O&M manual, or as efficiently as practicable. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.*

10.4 *A compliance test shall be conducted within the one year of issuance of Tier I Operating Permit No. 083-00001, dated December 17, 2002, to demonstrate compliance with Permit Condition 10.1. Testing shall be conducted in accordance with IDAPA 58.01.01.157, Permit Condition 1.20, and the following:*

- *The permittee shall conduct a PM compliance test using the test outlined in 40 CFR 60, Appendix A, Method 5, or such comparable and equivalent method approved in accordance with IDAPA 58.01.01.157. Test methods and procedures shall comply with IDAPA 58.01.01.157.*
- *A visible emissions evaluation shall be performed during each compliance test. The visible emissions evaluation shall be conducted in accordance with the procedures contained in IDAPA 58.01.01.625.*
- *The permittee shall monitor and record the throughput of the cooling granulator water pressure on the nozzles in pounds per square inch.*
- *The permittee shall record and maintain information required under Permit Condition 10.3 in accordance with Permit Condition 1.11.*

*10.5 The permittee shall monitor and record the throughput to the cooling granulator once per day when operating. All records shall be maintained in accordance with Permit Condition 1.11.*

*10.6 The permittee shall install, operate, calibrate, and maintain a monitoring device to continuously measure the water pressure on the nozzles in the scrubber. The water pressure shall be recorded weekly and the records maintained in accordance with Permit Condition 1.11. In the event the monitoring device becomes inoperable, it shall be repaired or replaced as soon as practicable.*

*10.7 At least once each year during a planned maintenance outage, or as needed during operation, the scrubber shall be inspected for physical degradation that could affect the performance of the control device. The permittee shall make all necessary repairs to the scrubber to ensure efficient operation.*

Permit Condition 10.1 establishes the opacity limit for the granulator system in accordance with IDAPA 58.01.01.700-703.

Permit Condition 10.2 incorporates process weight particulate matter standards in accordance with IDAPA 58.01.01.702.

MRRR include the following:

- Visible emissions inspection monitoring (facility-wide Permit Conditions 2.7 – 2.9)

No specific monitoring was required for Permit Condition 10.2. As with all permit conditions, the permittee must certify compliance with this condition annually, which includes making a reasonable inquiry to determine if this requirement was met during the reporting period.

This permit section was updated incorporate the requirements of PTC No. P-2010.0108 PROJ 60566, a permit modification which replaced the existing drying granulator and cooling granulator emissions units with a new granulator system.

Existing Permit Conditions 9.1 – 10.7 were conditions established for the existing drying granulator and cooling granulator emissions units, and were removed.

### **Permit Conditions 11.1 and 11.2 (Existing Permit Conditions 11.1 and 11.5)**

Permit Condition 11.1 incorporates process weight particulate matter standards in accordance with IDAPA 58.01.01.702.

MRRR include the following (Permit Condition 11.2):

- Annual inspection and maintenance of the Pulp Dryer Material Handling and Lime Kiln Material Handling Baghouses.

### **Existing Permit Conditions 11.3 and 11.4**

*11.3 Within one year of permit issuance, the permittee shall install, operate, calibrate, and maintain monitoring devices to continuously measure the pressure drop across the baghouses. After the monitoring devices are operable, the pressure drops shall be recorded weekly and the records maintained in accordance with Permit Condition 1.11. In the event that a monitoring device becomes inoperable, it shall be repaired or replaced as soon as practicable.*

11.4 Within six months of installation of the baghouse monitoring devices required by Permit Condition 11.3, the permittee shall develop proposed pressure drop ranges for the baghouses. The proposal shall be submitted to DEQ as an administrative amendment request, per IDAPA 58.01.01.381, to incorporate the pressure drop ranges as an operating limit in the Tier I operating permit. This proposal shall include monitoring data and any other documentation necessary to substantiate that the proposed pressure drop ranges will ensure compliance with Permit Conditions 1.7 and 11.1.

The permittee has requested removal of existing Permit Conditions 11.3 and 11.4 control device monitoring requirements for the material handling baghouse and the pulp dryer material handling baghouse.<sup>22</sup> Based upon information provided in the application and EPA guidance,<sup>23</sup> the Pulp Dryer Material Handling Baghouse and the Lime Kiln Building Material Handling Baghouse were determined to be inherent process equipment rather than control devices.<sup>24</sup> In these determinations it was considered that the primary purpose of the equipment was not to control air pollution, and that the equipment would be installed if no air quality regulations were in place. It was noted that there are cost savings associated with product captured by these baghouses. In addition, existing facility-wide monitoring and periodic visible emissions inspection requirements (Permit Conditions 2.7 – 2.9) were considered adequate to ensure proper maintenance and operation of these baghouses. As a result, the O&M and monitoring requirements for the baghouses were not considered necessary and were removed from this permit condition.

### **Permit Condition 12**

This permit condition identifies insignificant activities on the basis of size or production rate in accordance with IDAPA 58.01.01.317.01(b)(i).

### **Permit Conditions 13.1 and 13.2 (Existing Permit Conditions 12.1 – 12.3)**

12.2 The grain-loading standard (0.1 gr/dscf) in Section 1.1 of existing Permit No. 1020-0001 issued on February 14, 1984 does not apply to the pulp dryers under Section 5 of this permit.

These permit conditions grant a permit shield pursuant to IDAPA 58.01.01.325 with regard to the applicability determinations made when the initial Title V permit was issued. Refer to the Non-Applicable Requirements for Which a Permit Shield is Requested section for additional information concerning these determinations.

Because the grain loading standard referenced in existing Permit Condition 12.2 was not incorporated into this permit and the underlying permit is no longer active, this permit condition has been removed.

### **Permit Conditions 14.1, 14.2, and 14.3**

The duty to comply general provision incorporates the requirement to comply with all of the permit terms and conditions in accordance with IDAPA 58.01.01.322.15.a and 40 CFR 70.6(a)(6)(i).

The duty to halt or reduce activity general provision incorporates the requirement that needing to halt or reduce an activity cannot be used as a defense in an enforcement action in accordance with IDAPA 58.01.01.322.15.b and 40 CFR 70.6(a)(6)(ii).

The duty to supplement or correct application general provision incorporates the requirement to submit supplementary facts or corrected information upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application in accordance with IDAPA 58.01.01.315.01 and 40 CFR 70.5(b).

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<sup>22</sup> Section 5D, item 9 of The Amalgamated Sugar Company Twin Falls Tier I Operating Permit Application, TASCO, June 23, 2005.

<sup>23</sup> “Criteria for Determining Whether Equipment is Air Pollution Control Equipment or Process Equipment,” David Solomon, Acting Group Leader Integrated Implementation Group, Office of Air Quality Planning and Standards, November 27, 1995.

<sup>24</sup> Section 5D Request for Change in Permit Conditions – Item 9, Amalgamated Sugar/Twin Falls – Title V Renewal Application 2005 (revised 6/05), TASCO, June 23, 2005.

### **Permit Conditions 14.4 and 14.5**

The reopening for cause general provisions incorporate the requirements for revising, reopening, revoking, reissuing, or terminating permits for cause in accordance with IDAPA 58.01.01.322.15.c, IDAPA 58.01.01.386, 40 CFR 70.7(f), and 40 CFR 70.6(a)(6)(iii).

Permit conditions are not stayed if a request for permit action or notification of noncompliance is filed, in accordance with IDAPA 58.01.01.322.15.d, and 40 CFR 70.6(a)(6)(iii).

### **Permit Condition 14.6**

The property rights general provision incorporates the requirement that property rights or exclusive privilege are not conveyed by this permit, in accordance with IDAPA 58.01.01.322.15.e, and 40 CFR 70.6(a)(6)(iv).

### **Permit Conditions 14.7 and 14.8**

The duty to provide information general provisions incorporate the requirement to furnish information requested in accordance with Idaho Code §39-108, IDAPA 58.01.01.122, IDAPA 58.01.01.322.15.f, and 40 CFR 70.6(a)(6)(v).

A claim of confidentiality is required when confidential information is submitted in accordance with Idaho Code §9-342A, IDAPA 58.01.01.322.15.g, IDAPA 58.01.01.128, and 40 CFR 70.6(a)(6)(v).

### **Permit Condition 14.9**

The severability general provision incorporates the provision that if any permit requirement is held to be invalid, all unaffected requirements remain in effect and enforceable in accordance with IDAPA 58.01.01.322.15.h and 40 CFR 70.6(a)(5).

### **Permit Conditions 14.10 and 14.11**

The changes requiring permit revision or notice general provisions incorporate the requirement that necessary permits must be obtained before construction or modification of a stationary source, facility, major facility, or major modification in accordance with IDAPA 58.01.01.200-223, IDAPA 58.01.01.322.15.i, IDAPA 58.01.01.380-386, 40 CFR 70.4(b)(12), (14), (15), and 70.7(d), (e).

Changes not addressed or prohibited require permit revision if such changes are subject to any of the requirements specified in IDAPA 58.01.01.209.05 and 40 CFR 70.4(b)(14) and (15); or if such changes are administrative amendments, minor permit modifications, or significant permit modifications specified in IDAPA 58.01.01.381-383. Off-permit or Section 502(b)(10) changes made with notification to DEQ are authorized in accordance with IDAPA 58.01.01.384 or IDAPA 58.01.01.385.

### **Permit Conditions 14.12 and 14.13**

The federal and state enforceability general provisions incorporate the provision that all terms and conditions not specifically cited as “state-only” are enforceable by DEQ in accordance with state law and are enforceable by the United States or any other person in accordance with federal law, in accordance with IDAPA 58.01.01.322.15.j, IDAPA 58.01.01.322.15.k, Idaho Code §39-108, and 40 CFR 70.6(b)(1) and (2).

Those permit conditions cited as “state-only” are enforceable in accordance with state law, in accordance with Idaho Code §39-108, IDAPA 58.01.01.322.15.k, and 40 CFR 70.6(b)(1) and (2).

### **Permit Condition 14.14**

The inspection and entry general provision incorporates the requirement to allow DEQ or an authorized representative to have access to the premises, to records, and to inspection, in accordance with Idaho Code §39-108, IDAPA 58.01.01.322.15.l, and 40 CFR 70.6(c)(2).

### **Permit Condition 14.15**

The new requirements during permit term general provision incorporates the requirement to comply with all applicable requirements that become effective during the permit term on a timely basis, in accordance with IDAPA 58.01.01.322.10, IDAPA 58.01.01.314.10.a.ii, 40 CFR 70.6(c)(3) citing 70.5(c)(8).

#### **Permit Condition 14.16**

The fees general provision incorporates the requirement to pay annual registration fees to DEQ in accordance with IDAPA 58.01.01.387 through IDAPA 58.01.01.397 and 40 CFR 70.6(a)(7).

#### **Permit Condition 14.17**

The certification general provision incorporates the requirement to certify all documents submitted to DEQ as true, accurate, and complete in accordance with IDAPA 58.01.01.123 and to comply with IDAPA 58.01.01.124, in accordance with IDAPA 58.01.01.322.15.o, 40 CFR 70.6(a)(3)(iii)(A), and 40 CFR 70.5(d).

#### **Permit Conditions 14.18 and 14.19**

The renewal general provisions incorporate the requirement to submit an application for renewal of the permit 6-18 months before expiration in accordance with IDAPA 58.01.01.313.03 and 40 CFR 70.5(a)(1)(iii).

The permit continuation general provision incorporates the provision that all permit terms and conditions remain in effect until a renewal permit has been issued in accordance with IDAPA 58.01.01.322.15.p and 40 CFR 70.7(b).

#### **Permit Condition 14.20**

The permit shield general provision incorporates the provision that compliance with the terms and conditions of the permit shall be deemed compliance with applicable and non-applicable requirements specifically cited in the permit as of the date of permit issuance, provided that certain criteria are met as specified in accordance with IDAPA 58.01.01.122, IDAPA 58.01.01.325, IDAPA 58.01.01.381.04, IDAPA 58.01.01.382.04, IDAPA 58.01.01.383.05, IDAPA 58.01.01.384.03, IDAPA 58.01.01.385.03, IDAPA 58.01.01.322.15.m, and Idaho Code §39-112, and 40 CFR 70.6(f).

#### **Permit Condition 14.21**

The compliance schedule general provision incorporates requirements to comply with the compliance schedule, to continue to comply with existing requirements, and to comply with new requirements on a timely basis in accordance with IDAPA 58.01.01.322.10, IDAPA 58.01.01.314.9, IDAPA 58.01.01.314.10, 40 CFR 70.6(c)(3) and (4).

#### **Permit Condition 14.22**

The compliance certification general provision incorporates the requirement to submit compliance certifications for each emissions unit to DEQ and the EPA as specified in accordance with IDAPA 58.01.01.322.11, 40 CFR 70.6(c)(5)(iii), 40 CFR 70.6(c)(5)(iv), and 62 Fed. Reg. 54900 and 54946.

#### **Permit Condition 14.23**

The false statements general provision incorporates the requirement to not make false statements as specified in accordance with IDAPA 58.01.01.125.

#### **Permit Condition 14.24**

The no tampering general provision incorporates the requirement to not render inaccurate any monitoring device or method in accordance with IDAPA 58.01.01.126.

#### **Permit Condition 14.25**

The semiannual monitoring reports general provision incorporates the requirement to submit reports of required monitoring, including the information specified on the basis specified in accordance with IDAPA 58.01.01.322.15.q, IDAPA 58.01.01.322.08.c, 40 CFR 70.6(a)(3)(iii).

#### **Permit Condition 14.26**

The reporting deviations and excess emissions general provision incorporates the requirement to promptly report all deviations and excess emissions as specified in accordance with IDAPA 58.01.01.130-136, IDAPA 58.01.01.322.08.c, IDAPA 58.01.01.322.15.q, IDAPA 58.01.01.135, and 40 CFR 70.6(a)(3)(iii).

### **Permit Condition 14.27**

The emissions trading general provision incorporates the provision that permit revision shall not be required under approved economic incentives, marketable permits, emissions trading, and other similar programs as specified in accordance with IDAPA 58.01.01.322.05.b and 40 CFR 70.6(a)(8).

### **Permit Condition 14.28**

The emergency general provision incorporates the provision that an “emergency” as defined in IDAPA 58.01.01.008 constitutes an affirmative defense to an action brought for noncompliance with a technology-based emissions limitation if criteria are met as specified in accordance with IDAPA 58.01.01.332 and 40 CFR 70.6(g).

### ***Non-Applicable Requirements for Which a Permit Shield is Requested***

This section of the permit lists the regulations for which the facility has requested, and DEQ proposes to grant, a permit shield pursuant to IDAPA 58.01.01.325. The findings on which this shield is based are presented below:

#### **Requirements for Which a Permit Shield Will Be Granted**

With regard to Permit Condition 13.1 (existing Permit Condition 12.1), as discussed in the Technical Basis memorandum for Tier I Operating Permit No. 9505-063-1 issued on December 17, 2002, it was determined that the Pulp Dryer and lime kilns were not fuel-burning equipment in accordance with the definition in IDAPA 58.01.01.006. Available information does not support revisiting this determination at this time.

With regard to Permit Condition 13.2 (existing Permit Condition 12.3), as discussed in the Technical Basis memorandum for Tier I Operating Permit No. 9505-063-1 issued on December 17, 2002, it was determined that the B&W Boiler was constructed or modified before August 17, 1971 and that Subpart D was not applicable to this emissions unit. Available information does not support revisiting this determination at this time.

With regard to existing Permit Condition 12.2 (referencing permit condition in Section 1.1 of 13-1480-0001 issued March 19, 1981), because the referenced permit has expired, this determination was considered irrelevant and was removed.

### ***Insignificant Emissions Units Based on Size or Production Rate***

No emissions unit or activity subject to an applicable requirement may qualify as an insignificant emissions unit or activity. As required by IDAPA 58.01.01.317.01.b, insignificant emissions units based on size or production rate must be listed in the permit application. Table 12.1 in the permit lists each insignificant emission unit identified in the permit application and cites the relevant regulatory authority. Activities which qualify as insignificant based on size or production qualify under one of the following criteria:

- (5) combustion source, less than 5 MMBtu/hr, exclusively using natural gas, butane, propane, and/or LPG
- (18) space heaters and hot water heaters using natural gas, propane or kerosene and generating <5 MMBtu/hr.
- (19) tanks, vessels, and pumping equipment, with lids or other appropriate closure for storage or dispensing of aqueous solutions of inorganic salts, bases and acids (excluding  $\geq 99\%$   $\text{H}_2\text{SO}_4$  or  $\text{H}_3\text{PO}_4$ ,  $\geq 70\%$   $\text{HNO}_3$ ,  $\geq 30\%$   $\text{HC1}$ , or more than one liquid phase where the top phase is  $>1\%$  VOC).
- (30) an emission unit or activity with PTE less than or equal to the significant emission rate ( $\text{PM}=25$  T/yr,  $\text{PM}_{10}=15$  T/yr) and actual emissions less than or equal to 10% of the levels contained in the definition of significant ( $\text{PM}=2.5$  T/yr,  $\text{PM}_{10}=1.5$  T/yr) and no more than 1 T/yr of any HAP.

Emission estimates and calculations supporting insignificant activity applicability under IDAPA 58.01.01.317.01.b.i(30) were included in the application with regard to the flume slaker, pellet cooler fan vents, pebble lime handling, and sugar baghouse handling.<sup>25</sup>

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<sup>25</sup> Appendix E – Proposed Insignificant Activities to the Update of the Renewal for Tier I Operating Permit Application - T1-030415, TASC0 – Twin Falls Facility, April 23, 2007; and email, “Draft Tier I Operating Permit No. T1-050415,” TASC0, June 23, 2011.

## **PUBLIC AND EPA REVIEW**

### ***Public Comment Period***

As required by IDAPA 58.01.01.364, a public comment period was made available to the public from **date to date**. During this time, comments **were / were not** submitted in response to DEQ's proposed action.

### ***EPA Review of Proposed Permit***

As required by IDAPA 58.01.01.366, DEQ provided the proposed permit to EPA Region 10 for its review and comment on **date** via e-mail.

## **APPENDIX A – EMISSION INVENTORIES**

Point Source Emission Summary - Boiler House  
 2005 Tier I Permit Renewal (revised 4/20/07)

SECTION 3D. Point Source Emissions - Boiler House

NO.	Source	POLLUTANT	Max lb/hr	Avg. lbs./hr.	TONS/YR
S-B1	FW BOILER (Beet)	PM	28.6	28.6	69
		PM10	28.6	28.6	69
		SO2	344.0	344.0	826
		CO	58.2	58.2	140
		NOx	200	200	479
		VOC	0.7	0.7	1.7
S-B2	B&W BOILER (beet)	PM	60.6	60.6	143
		PM10	60.6	60.6	143
		SO2	474.0	474.0	1115
		CO	6.7	6.7	17
		NOx	220.0	0.0	4
		VOC	0.8	0.8	2
S-B3	Keeler BOILER (beet)	PM	2.16	2.16	5.18
		PM10	2.16	2.16	5.18
		SO2	0.06	0.06	0.14
		CO	8.36	8.36	20.06
		NOx	27.84	27.84	66.82
		VOC	0.5	0.5	1

Point Source Emission Summary - Pulp Dryers  
 2005 Tier I Permit Renewal (revised 4/20/07)

SECTION 3D. EMISSIONS - PULP DRYING AND PELLETIZING

NO.	SOURCE	POLLUTANT	Max lb/hr	Avg. lbs./hr.	TONS/YR
S-D1	PULP DRYER	PM	48	48	208
		PM10	60	60	261
		CO	187	187	819
		SO2	34	34	145
		NOx	45	45	194
		VOC	3	3	15
S-D2	PELLET COOLER NO.1 - PELLETS	PM	2.66	2.66	6.7
		PM10	1.33	1.33	3.3
S-D3	PELLET COOLER NO.2 - PELLETS	PM	2.66	2.66	6.7
		PM10	1.33	1.33	3.3
S-D4	PULP DRYER MATERIAL - PELLETS/SHREDS	PM	(1)	(1)	1.6
		PM10	(1)	(1)	1.6

POINT SOURCE EMISSION SUMMARY -LIME KILN SECTION  
2005 TIER I PERMIT RENEWAL (REVISED 4/20/07)

SECTION 3D. EMISSIONS - LIME KILN AND CO2 PRODUCTION

NO.	SOURCE	POLLUTANT	MAX LBS/HR.	MAX LBS/DAY	TONS/YR (1)
S-K1	SOUTH KILN	PM	(2)	8.16	1.49
		PM10	(2)	8.16	1.49
		SO2	(2)	7.36	1.34
		CO	(2)	3,611	659
		NOx	(2)	15.81	0.26
		VOC	(2)	0.55	0.10
S-K2	NORTH KILN	PM	(2)	19.04	3.78
		PM10	(2)	19.04	3.78
		SO2	(2)	24.57	4.5
		CO	(2)	8,425	1537.6
		NOx	(2)	36.89	6.73
		VOC	(2)	1.26	0.23
S-K4	PROCESS SLAKER	PM	(2)	15.96	2.91
		PM10	(2)	15.96	2.91
S-K5	MATERIAL HANDLING	PM	(2)	1.55	0.28
		PM10	(2)	1.55	0.28

(1) Annual production rates are based on 365 days of operation.

(2) Hourly production data cannot be determined, because of a batch process with significant hourly variability.

**EMISSIONS - SUGAR WAREHOUSE AND SHIPPING  
2005 PERMIT RENEWAL**

NO.	SOURCE	POLLUTANT	EMISSIONS		ESTIMATED EMISSIONS
			LBS/HR	LBS/DAY	TONS/YR
S-W1	DRYING GRANULATOR # 1 - SUGAR	PM	24	566	39
		PM10	24	566	39
S-W2	COOLING GRANULATOR # 2 - SUGAR	PM	24	566	2
		PM10	24	566	2

**EMISSIONS - OTHER SOURCES**

**2005 Permit Renewal**

NO.	SOURCE	POLLUTANT	EMISSIONS		ESTIMATED EMISSIONS
			LBS/HR	LBS/DAY	TONS/YR
F-01	COAL UNLOADING	PM	(1)	59	8
		PM10	(1)	30	4
F-02	COAL STORAGE - COAL HANDLING	PM	(1)	50	7
		PM10	(1)	25	3
	- VEHICLE TRAFFIC	PM	(1)	3.0	1
		PM10	(1)	1.5	0
	- ACTIVE/INACTIVE COAL PILE	PM	(1)	30	5
		PM10	(1)	15	3
F-03	COAL LOADING	PM	(1)	25	3
		PM10	(1)	13	2

SECTION 3D. EMISSIONS - OTHER SOURCES

NO.		POLLUTANT	lbs/h	tons/y
S-05	MAIN MILL	VOC	29.1	127.4
S-06	SULFUR STOVE	SO2	2.6	11.2

## HAP PTE Emissions Estimates Twin Falls Facility

### Individual Emissions

Hazardous Air Pollutant (HAP)	Foster Wheeler Boiler	B & W Boiler		Keeler	Dryer	Dryer	Kilns	Main Mill	Constituent Totals (tons / year)
	Coal (tons / year)	Coal (tons / year)	Nat. Gas (tons / year)	Nat. Gas (tons / year)	Coal (tons / year)	Nat Gas (tons / year)	(tons / year)	(tons / year)	
Acetaldehyde	0.030	0.04	-	-	5.89	-	0.0E+00	4.17	10.13
Acrolein	0.015	0.02	-	-	2.85	-	0.0E+00	0.10	2.98
Formaldehyde	0.013	0.01	0.00	0.0343	2.89	0.00	0.0E+00	0.04	2.99
Methanol					3.95			78.55	82.51
Arsenic	0.022	0.03	0.00	0.0001	0.01	2.19E-06	2.3E-03		0.06
Benzene	0.069	0.08	0.00	0.0010	0.03	2.30E-05	0.0E+00		0.18
Beryllium	0.001	0.00	0.00	0.0000	0.00	1.31E-07	1.2E-04		0.00
Cadmium	0.003	0.00	0.00	0.0005	0.00	1.20E-05	7.5E-02		0.08
Chromium	0.014	0.02	0.00	0.0006	0.01	1.53E-05	1.4E-03		0.04
Cyanide	0.132	0.16	-	-	0.05	-	1.4E-02		0.35
Hydrochloric Acid	16.65	2.75	-	-	0.11	-	0.0E+00		19.51
Hydrogen Fluoride	2.44	4.37	-	-	0.13	-	0.0E+00		6.94
Lead	0.022	0.03	0.00	0.0002	0.01	5.48E-06	2.3E-03		0.06
Manganese	0.026	0.03	0.00	0.0002	0.01	4.16E-06	2.7E-03		0.07
Mercury	0.0004	0.002	0.00	0.0001	0.000	2.85E-06	2.2E-03		0.0053
Nickel	0.015	0.02	0.00	0.0010	0.006	2.30E-05	1.5E-03		0.04
Selenium	0.069	0.08	0.00	0.0000	0.027	2.63E-07	7.2E-03		0.18
Toluene	0.013	0.01	0.00	0.0016	0.005	3.72E-05	0.0E+00		0.03
Xylenes	0.002	0.00	-	-	0.001	-			0.01
PAH and other HAPs	0.199	0.23	0.00	0.8246	0.08	1.97E-02	0.0E+00		1.35

**Grand Total 127.51**

1. PAH and Other HAP emission factors are listed in the Fuel E\_Factors sheet and include the following

2,4-Dinitrotoluene, 2-Chloroacetophenone, Acetophenone, Antimony Compounds, Benzyl chloride, Bis(2-ethylhexyl)phthalate (DEHP), Bromoform, Carbon disulfide, Chlorobenzene, Chloroform, Cobalt Compounds, Cumene, Dimethyl sulfate, Ethyl benzene, Ethyl chloride (Chloroethane), Ethylene dibromide (Dibromoethane), Ethylene dichloride (1,2-Dichloroethane), Hexane, Isophorone, Methyl bromide (Bromomethane), Methyl chloride (Chloromethane), Methyl chloroform (1,1,1-Trichloroethane), Methyl hydrazine, Methyl Methacrylate, Methyl tert butyl ether, Methylene chloride (Dichloromethane), Phenol, Propionaldehyde, Styrene, Tetrachloroethylene (Perchloroethylene), Vinyl Acetate and PAH Compounds



DEQ AIR QUALITY PROGRAM  
 1410 N. Hilton, Boise, ID 83706  
 For assistance, call the  
**Air Permit Hotline - 1-877-5PERMIT**

**PERMIT TO CONSTRUCT APPLICATION**

Revision 3  
 4/5/2007

Please see instructions on page 2 before filling out the form.

Company Name:	The Amalgamated Sugar Company LLC		
Facility Name:	Twin Falls		
Facility ID No.:	083-00001		
Brief Project Description:	Replace sugar granulator system.		

**SUMMARY OF EMISSIONS INCREASE (PROPOSED PTE - PREVIOUSLY MODELED PTE) - POINT SOURCES**

1. Emissions units	2. Stack ID	3.											
		PM <sub>10</sub>		SO <sub>2</sub>		NO <sub>x</sub>		CO		VOC		Lead	
		lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Point Source(s)													
New Sugar Granulator System	P-W1A	0.60	2.42										
name of the emissions unit2													
name of the emissions unit3													
name of the emissions unit4													
name of the emissions unit5													
name of the emissions unit6													
name of the emissions unit7													
name of the emissions unit8													
name of the emissions unit9													
name of the emissions unit10													
name of the emissions unit11													
name of the emissions unit12													
name of the emissions unit13													
name of the emissions unit14													
name of the emissions unit15													
name of the emissions unit16													
name of the emissions unit17													
name of the emissions unit18													
name of the emissions unit19													
name of the emissions unit20													
name of the emissions unit21													
<b>(insert more rows as needed)</b>													
<b>Total</b>		0.60	2.42										

## **APPENDIX B – O&M MANUALS**

**Operations & Maintenance  
Manual for:**

**B&W Boiler Baghouse**



**The Amalgamated Sugar Company  
Twin Falls Facility**

**December 12, 2003**

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## Introduction

In accordance with Permit Condition 3.10 of the Tier I Operating Permit (#083-00001), this Operations & Maintenance Manual (O&M Manual) outlines procedures that, when implemented, will ensure that the B&W Boiler Baghouse operates as efficiently as practicable. The O&M Manual includes the following:

- 1) Introduction
- 2) General Description of the Control Equipment
- 3) Normal Operating Conditions
- 4) Upset Conditions and Corrective Procedures
- 5) Boiler Start-up, Shutdown procedures
- 6) Control Device Monitoring Program
- 7) Maintenance Procedures
  - a. Routine Inspections and Maintenance
  - b. Annual Maintenance
- 8) Record keeping
- 9) Appendix A – Excess Emissions Procedures
- 10) Appendix B - Equipment Codes

## General Description of the Control Equipment

### B&W Boiler Baghouse (Unit Number A-B2)

Particulate emissions from the B&W Boiler are controlled using a Joy Baghouse. The baghouse was installed in 1974 as a retrofit project. The baghouse is located east of the boiler house. Flue gas is ducted from the boiler outlet through the baghouse to the stack. A bypass duct and damper is used to bypass the baghouse. The baghouse may be bypassed when:

- During the startup of the boiler.
- Since the B&W is fired by coal, natural gas, or a combination of fuels, it is necessary to bypass the baghouse when the boiler is fired with natural gas.
- In an emergency situation (such as a tube leak, baghouse blinded, etc.).

## Normal Operating Conditions

Contaminated air entering the baghouse under negative pressure is distributed using an inlet baffle. The inlet baffle decreases inlet gas velocity, which improves distribution and reduces the impact of high velocity particles on filter bags.

Air flows from the bottom inside of the filter bag to the top outside of the filter bag effectively filtering particulate matter from the flow. As the bag porosity decreases from the build up of filtered particulates (filter cake), the differential pressure increases across the baghouse collector. The filter bags are periodically cleaned with reverse air that removes the collected dust allowing it to drop into a hopper. Dust removal is also enhanced with acoustic horns, which are located in the area between the filter bag columns. The dust is removed from the hoppers using air lock rotary gates and mixed with water, which is hydraulically conveyed to a settling pond. High quality water is utilized to slurry the water to the settling ponds. The source of the slurry water can be either condensate or surface water from Rock Creek.

## **Upset Conditions and Corrective Procedures**

The Company takes its environmental responsibilities very seriously. Upsets that can lead to excess emissions from the boiler stack are a very serious matter and must be managed quickly and efficiently. The following information should be used for properly responding to upset conditions that can lead to an excess emission:

**Cause:** An upset condition has the potential to occur when one or more of the following conditions occur:

- 1) One or more bags have ruptured. This allows flyash to enter the clean air side of the baghouse and exhaust to the stack.
- 2) One or more bags have slipped off the mounting thimble.
- 3) Boiler tube leak that has the potential to blind the bag from excessive moisture.
- 4) Baghouse cleaning system has failed and collected dust is not removed properly.
- 5) Baghouse air lock system has failed.
- 6) Baghouse dust conveying system has failed.

**Detection:** An upset condition that leads to potential excess emissions from the stack can be detected by Boiler House Operators during operation checks, shift inspections or during routine VE observations.

During normal operation of the B&W boiler, monthly baghouse inspections are scheduled to verify the proper operation of the baghouse.

**Note:** A leak large enough to cause a visual emission cannot be reliably detected by monitoring baghouse differential pressure. Visual emission (VE) measurements should be used for confirming that upset conditions are causing excess emissions.

### **Corrective Action**

**Reporting:** Upset conditions that lead to visible emissions from the boiler stack must be immediately reported to the Shift Supervisor or the Boiler Foreman. TASC0 has several certified opacity readers. It is the responsibility of the supervisor that has been notified of the visible emissions to contact a certified reader. The facility Environmental Manager must be notified of any visible emissions events. All excess emissions will be reported in accordance with IDAPA 58.01.01 Rule 135.02. All other emissions observations will be recorded in the VE Log maintained on site.

## **Boiler Startup and Shutdown Procedures**

The following startup procedure is currently on file with IDEQ and will be strictly followed for all boiler startups including scheduled and unscheduled events.

### **B&W Boiler Start-Up Procedure**

The following operating procedure will be followed in the event that a boiler start up is required for either scheduled or non-scheduled startups:

- 1) The boiler will start up in the normal fashion fueled by natural gas. The baghouse system will be bypassed to protect the bags from the high moisture conditions that are characteristic of natural gas operation.
- 2) After the boiler is brought up to temperature and placed in service, the bags in the baghouse will be pre-coated with Harborlight or an equivalent material. After pre-coating, coal will be introduced into the boiler as the primary fuel.
- 3) Natural gas fueling of the boiler may be discontinued after coal combustion is stable.
- 4) The baghouse will be placed in service after stable coal firing conditions are established (20 to 60 minutes after coal fuel is introduced into the firebox). In general, the bypass is closed as soon as the boiler is brought up to temperature.

### **B&W Boiler Shut Down Procedures**

During shut down, the baghouses remain on-line until the fuel transfer is made from coal back to natural gas. This is done to ensure that particulate removal

continues during the entire shutdown procedure. The fuel transfer to natural gas is initiated when the steam load is too low to maintain stable combustion conditions with coal firing. The baghouse is only by-passed after given sufficient time to clear all the flyash from the ducts. Visible emissions are not considered an issue during boiler shut down.

## Control Device Monitoring Program

The Tier I air permit requires that the baghouse systems be monitored to ensure optimal operations and to detect any upset conditions that may lead to an excess emissions. The monitoring requirements for the baghouse servicing the B & W boiler are outlined below:

### Monitoring Procedures and Equipment

The baghouse system is monitored using several different methods. These are listed below along with a description of the method.

**Differential Pressure Drop Monitoring:** Differential pressure drop (DPD) is required to be monitored by the Tier I permit. DPD is measured by permanently mounted manometers (in the boiler control room).

**Note:** A leak large enough to cause a visual emission cannot normally be detected by monitoring baghouse differential pressure. VE's should be used for determining if upset conditions exist that can lead to an excess emissions event.

**Visual Emissions:** Permit condition 3.7 requires that weekly visible emissions observations be performed on the B&W boiler stack while combusting coal or a combination of coal and natural gas. The Factory Environmental Manager conducts see/no see VE inspections weekly. **If a visible plume is present, notify the shift supervisor and boiler foreman immediately and take corrective action to resolve the problem! (See the "Upset Conditions and Corrective Action" Section)**

## Maintenance Procedures

Maintenance is an important component of proper operation of emission control equipment. TASC0 has identified the following daily monthly and annual tasks to be completed to ensure proper operation of the baghouses

### **Routine Inspections and Maintenance**

To ensure optimal efficiency of emission control equipment, the following inspection tasks will be completed on regular basis (generally every hour):

1. Inspect roto gates and rams. Check that rams activate and operate smoothly and properly. Roto gates need to cycle properly and remove flyash from the hopper.
2. Inspect and clean flumes as necessary. Remove any material build up that may lead to system plugging. Insure that water flow is adequate to remove ash from the system.
3. Inspect reverse air fan. Ensure that the fan is running smoothly and that the system is cycling and functioning properly.
4. Inspect solenoid valves. Check that that the solenoid valves are timed and operating smoothly.
5. Inspect air horns, and related devices. Check to ensure that the air horns are operating during the cleaning cycles.

### **Annual Maintenance:**

In order to keep the emissions control equipment in optimal operating condition, the following monthly and annual maintenance will be performed:

**Schedule:** Annual maintenance on the baghouses can only be performed when the equipment is out of service. The following time periods provide general opportunities to perform annual maintenance on equipment. Actual dates of equipment shutdown and availability are determined by the operational needs for the equipment and the actual length of the various operating periods:

#### Oct- February

All equipment is in service during the beet campaign period. Annual maintenance is not performed during this period of time.

#### February – March

All equipment is in service during Juice run. Annual maintenance is not performed during this period of time.

#### March – May

During the separator only run, scheduled maintenance is performed on the B&W.

A 2-Day plant wide shutdown is usually scheduled during this time period.

May – Oct.

All equipment is in service during Juice and Extract run. Annual maintenance is not performed during this period of time.

### **Annual Maintenance List**

Annual maintenance presents the opportunity to conduct basic maintenance and system changes to resolve root cause issues. The following tasks have been identified as important annual inspection/maintenance items:

- 1) **Baghouse Housing.** Check for corrosion, warped panels and other damage that may lead to an air leak. Repair as necessary.
- 2) **Tube Sheets.** Tube sheets need to be properly aligned, with no warp or corroded holes. They need to be in good operating condition. Repair as necessary if discrepancies are discovered.
- 3) **Filter Bag Connection Hardware.** The hardware used to attach the filter bag needs to be in good condition and serviceable. Replace as necessary to ensure the filter bag will be attached properly.
- 4) **Filter Bags.** Inspect filter bags and reject any that appear to have a hole, are damaged from abrasion or have lost strength because of heat excursion.
- 5) **Dampers and Air Rams.** Ensure that air rams and dampers operate smoothly. Also check to ensure that dampers are positioned and seal properly.
- 6) **Hopper.** Check for corrosion, warped panels and other damage that may lead to an air leakage or retention of dust. Hopper walls need to smoothly convey dust to the air lock system. Repair as necessary.
- 7) **Door Seals.** Check door seals to ensure that they are in good repair and will seal properly. Replace as necessary
- 8) **Inlet Baffle.** Inspect the baffle to ensure that they are in proper position. Also check for damage from abrasion and panel warp. Repair as necessary.
- 9) **Air Locks.** Inspect airlocks to ensure that they are sealed, sequencing properly and operate smoothly. Repair as necessary.
- 10) **Air Horns.** Inspect to ensure proper operation. Horns must be timed properly and develop the designed energy to remove dust. Check horn diaphragms to ensure that wear is within manufactures tolerances.

- 11) Reverse Air Fans.** Inspect reverse air fans to ensure that they provide sufficient air flow. Check bearings, and fan blades for wear and repair or replace as necessary.
- 12) Duct work and insulation.** Check for corrosion, warped panels and other damage that may lead to an air leak. Ensure that insulation is replaced after maintenance and that it is serviceable condition. Repair as necessary
- 13) Bypass Louvers.** Inspect bypass louvers to ensure proper damper seal. Check for corrosion, warped panels and other damage that may lead to air leakage past the damper.
- 14) Stack.** Inspect gas path and breech to stack for corrosion, cracking and other damaged. Clean the stack breech and ductwork and repair as necessary.

## Record Keeping

Record Keeping is a specific requirement in the Tier I permit. Record keeping is important to demonstrate that operational information and maintenance is completed as required in the Air Permit. As a minimum the following information will be collected and retained for up to five years:

Operations:

- 1) The baghouse pressure drop will be recorded at least once per week during baghouse operation and archived in facility files.

Maintenance:

1. All Baghouse Maintenance Performed.
2. The maintenance records for all equipment associated with the B&W baghouse can be found in the Equipment ID Database. The equipment ID numbers can be found in Appendix B.
3. All calibration information for baghouse control instrumentation

## **Appendix “A”**

### **Excess Emission Procedures on File With The Idaho Department of Environmental Quality**

## **Excess Emission Procedure (IDAPA 58-01-01-133.02)**

The Amalgamated Sugar Company (TASCO) Twin Falls Facility does not intend or anticipate any emission in excess of prescribed emission standards during normal operation of the boiler systems. However, in the event that start up of this equipment leads to an excess emission, the following procedures will be implemented:

### **B&W Boiler Start-Up**

#### **A Emission Unit**

B&W Boiler (S-B1)

#### **Air Pollution Control Equipment**

B&W Baghouse (None during startup or when switching between gas and coal).

#### **B Air pollutants likely to be emitted in excess of applicable standards during start up**

The visible emissions from the unit may exceed the opacity limit.

#### **C Estimated amount of excess emissions expected to be released during start-up**

Visible emissions data during startup are not available. Particulate emissions during the startup cannot be quantified.

#### **D Expected duration of each excess emission event**

Occasionally, the visible emissions may exceed the opacity limit during the first few hours of startup.

#### **E Explanation of why excess emissions are unavoidable**

The baghouse must be bypassed during the startup of the boiler since the boiler is first fired on natural gas and then switched to coal. The moisture from the natural gas igniters and the main burners would seal off the opening on the cloth of the bags, rendering the bags useless.

When switching from coal to gas, the moisture in the existing gas from the combustion of the natural gas would combine with the SO<sub>2</sub> released during the combustion of the coal. This would tend to create acidic conditions which would deteriorate the cloth of the bags.

Therefore, the baghouse must be bypassed when operating on natural gas only and during the switching from coal to natural gas. In general, the baghouse bypass is closed prior to the introduction of coal to the boiler.

**F Number of times start up excess emission events is expected to occur**

The scheduled start-up of the boiler is generally as follows:

B&W Boiler- two times per year, one at the beginning of the beet campaign operation during the Fall months and once after the annual maintenance period of the boiler.

Unscheduled start-ups are difficult to predict, but in recent years average approximately twice during the calendar year.

**G For Scheduled maintenance, the owner or operator shall also document detailed explanations of why.**

This is a start up procedure and does not address scheduled maintenance situations.

**H Explanation of why the control equipment and the emission unit cannot be modified or redesigned to eliminate or reduce the excess emissions which occur during the start-up.**

The baghouses that service the boilers cannot be used during start-up because high moisture content of the flue gas significantly and permanently deteriorates the performance of the bags (see Section E above). Although the particulate control industry has significantly improved bag performance in recent years, this issue has not been adequately addressed. High moisture condition during start up and operational upsets (such as boiler tube leaks) continue to be an issue.

**I Procedures to be followed to minimize excess emissions at all times during start-up**

**B&W Boiler Start-Up Procedure**

The following operating procedure will be followed in the event that a boiler start up is required:

1. The boiler will start up in the normal fashion fueled by natural gas. The baghouse system will be bypassed to protect the bags from the high moisture conditions that are characteristic of natural gas operation.

2. Before coal is introduced as the primary fuel, the baghouse will be pre-coated with a suitable material to protect the bags from moisture when the flue is first introduced after coal fueling is stable.
3. After the boiler is brought up to temperature and placed in service (nominally up to 24 hours) coal will be introduced to establish stable combustion conditions using coal as the primary fuel.
4. Natural gas fueling of the boiler may be discontinued after coal combustion is stable.
5. The baghouse will be placed back in service after stable coal firing conditions are established (20 to 60 minutes after coal fuel is introduced in to the firebox).

## **APPENDIX B**

### **Equipment Codes for Equipment Associated with the B&W Baghouse**



**Operations & Maintenance  
Manual for:  
Cooling Granulator Baghouse**



**The Amalgamated Sugar Company  
Twin Falls Facility**

**March 2009**

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## I, Introduction

In accordance with Permit Condition 1.21 of the Tier I Operating Permit (#083-00001), this Operations & Maintenance Manual (O&M Manual) outlines procedures that when implemented will ensure that the Cooling Granulator Baghouse operates as efficiently as practicable. The O&M Manual includes the following:

- 1) Introduction
- 2) General Description of the Control Equipment
- 3) Normal Operating Conditions
- 4) Upset Conditions and Corrective Procedures
- 5) Start-up and Shutdown Procedures
- 6) Control Device Monitoring Program
- 7) Maintenance Procedures
  - a. Daily Inspections and Maintenance
  - b. Annual Maintenance
- 8) Record keeping

## II. General Description of the Control Equipment

The baghouse (by Donaldson) is a dry type pulse-jet baghouse. The exhaust air from the cooling granulator is conveyed to the baghouse by the cooling granulator ID fan. Sugar dust is filtered by several banks of bags. At regular intervals the bags are cleaned by a pulse of compressed air and the collected sugar dust is returned to the process. In the future air streams from other sugar warehouse dust collectors may be included as inputs to this baghouse. The technical specifications are listed below.

The filtered air is vented to atmosphere from the baghouse. Appendix A contains a general schematic of the baghouse layout. Appendix B contains drawings of the baghouse and other pertinent information.

### Cooling Granulator Baghouse Specifications

Manufacturer:	Donaldson Company, Inc.
Number of Bags:	180
Type of Bags:	Oleophobic, Anti-Static
Maximum Operating Temperature:	Ambient (N/A)
Flow Rate:	~17,000 acfm
Air to Cloth Ratio:	6.9:1
Dust Removal:	Pulse Jet

### **III. Normal Operating Conditions and Procedures**

Operation of the Cooling Granulator Baghouse is based on manufacturer's recommendation, visible emission observations, and operating experience. The baghouse operates during Beet Campaign, Juice Campaign, and Extract Campaign. The induced draft fan is adjusted to optimize the amount of cooling needed for the granulator. The filtered exhaust air is vented to the atmosphere.

### **IV, Upset Conditions and Corrective Procedures**

The Twin Falls facility is committed to minimizing upsets and eliminating excess emissions events as quickly as possible. For each excess emissions event, the facility promptly notifies IDEQ and prepares written reports in accordance with IDAPA 58.01.01.130 thru 136.

### **V. Startup and Shutdown Procedures**

The following startup procedure will be followed for all Cooling Granulator startups including scheduled and unscheduled events.

#### **Cooling Granulator Start-Up Procedure**

The following operating procedure will be followed in the event that start-up of the Cooling Granulator is necessary for either scheduled or non-scheduled events:

- 1) The baghouse will be placed in service with full design air flow.
- 2) The Cooling Granulator will be started up in the normal manner by introducing processed sugar from the spinner deck.
- 3) As the Cooling Granulator reaches maximum design throughput rates, operators will begin monitoring required parameters.

#### **Cooling Granulator Shut Down Procedures**

During shut down, the baghouse remains on-line until the Cooling Granulator has shutdown and all process sugar has cleared the system. The baghouse can then be shut down.

### **VI, Control Device Monitoring Program**

The Tier I air permit requires the baghouse to be monitored to ensure optimal operations and to detect any upset conditions that may lead to excess emissions. The

monitoring requirements for the baghouse servicing the Cooling Granulator are outlined below:

### **Monitoring Procedures and Equipment**

The baghouse rotagate operation is observed daily and is connected to alarms that will shut down the sugar end if not addressed within a given time frame.

Baghouse ID fan operation is observed daily. Baghouse exhaust is observed daily by maintenance personnel. A supervisor is contacted if sugar is observed exiting the stack.

Visible emissions (VE) evaluation of the baghouse exhaust is conducted by a certified visual emissions inspector using see/no-see criteria in accordance with the air permit once per month. The results are documented in the VE observation log.

## **VII. Maintenance and Malfunction Prevention Procedures**

Maintenance is an important component of proper operation of emission control equipment. Periodic maintenance also prevents malfunctions. TASC0 has identified the following daily and annual tasks to be completed to ensure proper operation of the baghouse.

### **Daily Inspections and Maintenance**

To ensure optimal efficiency of emission control equipment, the following inspection tasks will be completed and recorded on Food Safety Inspection sheets each day:

- 1) Visually inspect all components to ensure they are working properly including:
  - ID fan operating
  - rotagate operating
  - pulse air operating
- 2) Check the purge system air pressure at the supply header. The pressure should read at least 60 psi.
- 3) Observe if any visible emissions are coming from the stack.

Maintenance is recorded through the Equipment Maintenance Database. See Section VIII for details.

## **Annual Maintenance**

In order to keep the emissions control equipment in optimal operating condition, the following periodic and annual maintenance will be performed:

**Schedule:** Annual maintenance on the Baghouse can only be performed when the equipment is out of service. The following time periods provide general opportunities to perform annual maintenance on equipment. Actual dates of equipment shutdown and availability are determined by the operational needs for the equipment and the actual length of the operating period:

### September/October – February/March

All equipment is in service during the beet campaign period. Annual maintenance is not performed during this period of time.

### February/March – June/July

All equipment is in service during the juice campaign. Annual maintenance is not performed during this period of time.

### June/July – July/August

The annual sugar end shutdown is generally scheduled during this time frame. All annual maintenance is scheduled for this period.

### July/August – September/October

All equipment is in service during the extract campaign. Annual maintenance is not performed during this period of time.

## **Annual Maintenance List**

Annual maintenance presents the opportunity to conduct basic maintenance and system changes to resolve root cause issues. The following tasks have been identified as important annual inspection/maintenance items:

- 1) **Baghouse Housing.** Check for corrosion, warped panels and other damage that may lead to an air leak. Repair as necessary.
- 2) **Baghouse filters.** Replace all filters annually.
- 3) **Service and Calibrate all Instrumentation.** Inspect and service all baghouse system instrumentation which includes, as a minimum, checking pressure gauges and changing air line desiccant.

- 4) **Inspect Air Handling Equipment.** Inspect ID fan and pulse air delivery units for proper function. Repair or replace as necessary.
- 5) **Inspect Stack and Explosion Panels.** Check for corrosion, warped sections and other damage that may lead to poor performance. Repair as necessary.
- 6) **Door Seals.** Check baghouse access door seals to ensure that they are in good repair and will seal properly.
- 7) **Duct Work.** Check for corrosion, warped sections or panels and other damage that may lead to an air leak. Repair as necessary

## VIII. Record Keeping

Maintenance and monitoring records for the Cooling Granulator Baghouse shall be maintained in accordance with the Tier I Operating Permit. The following is a summary of the records, which will be maintained:

- Visible emissions evaluations using see/no-see criteria will be conducted monthly on the baghouse vents and logged.
- The sugar throughput to the Cooling Granulator will be monitored and recorded once per day. (The records will be maintained in accordance with permit condition 1.11.)
- Appendix C contains Equipment Codes for equipment associated with the baghouse. These codes allow access to the Equipment Maintenance Database. All maintenance activities are recorded on the database. Annual baghouse maintenance records will be maintained in the facility database.
- Food Safety Inspection sheets (Daily Inspections) are maintained on site.

# Appendix A

## General Schematic of the Baghouse

# Appendix B

## Drawings and Other Information

## Appendix C

# Equipment Codes Associated with the Baghouse

**Operations & Maintenance  
Manual for:  
Pulp Dryer Material Handling Baghouse**



**The Amalgamated Sugar Company  
Twin Falls Facility**

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## **Introduction**

In accordance with Permit Condition 11.4 of the Tier I Operating Permit, this Operations & Maintenance Manual (O&M Manual) outlines procedures that when implemented will ensure that the Pulp Dryer Material Handling Baghouse operates as efficiently as practicable. The O&M Manual includes the following:

- 1) Introduction
- 2) General Description of the Control Equipment
- 3) Normal Operating Conditions
- 4) Upset Conditions and Corrective Procedures
- 5) Baghouse Start-up, Shutdown procedures
- 6) Control Device Monitoring Program
- 7) Maintenance Procedures
  - a. Daily Inspections and Maintenance
  - b. Annual Maintenance
- 8) Record keeping

## **General Description of the Control Equipment**

The baghouse is a common housing Micropul pulse jet that was installed prior to 1969. The baghouse was installed to recover product from pulp dryer operations. The collected product is added to the shreds and sold as livestock feed.

## **Normal Operating Conditions**

Air containing significant amounts of product enters the baghouse under negative pressure and is distributed using an inlet baffle. The inlet baffle decreases inlet gas velocity, which improves distribution and reduces the impact of high velocity particles on filter bags.

Air flows from around the outside of the bag, filtering product from the flow. As the bag builds up with product (filter cake), the differential pressure increases across the baghouse. The bags are periodically cleaned with pulsejet air that breaks up the filter cake and allows the collected product to drop to the hopper. Pulse air to the inside of the bag and shutting off the fan to equalize pressure helps dust to fall in the cyclone.

The dust is removed from the hoppers using air lock rotary gates, collected and sent to the pulp warehouse and is sold as livestock feed.

## **Upset Conditions and Corrective Procedures**

The Company takes its environmental responsibilities very seriously. Upsets that can lead to excess emissions from the Pulp Dryer Material handling baghouse are a very serious matter and must be managed quickly and efficiently. The following information should be used for properly responding to upset conditions that can lead to an excess emission:

**Cause** An upset condition has the potential to occur when one or more of the following conditions occur:

- 1) One or more bags has ruptured. This allows collected product to enter the clean air side of the baghouse and exhaust to the stack.
- 2) One or more bags have become disengaged from the mounting mechanism.
- 3) Moisture excursion that has the potential to blind the bags from excessive moisture (this is an unlikely scenario for this baghouse).
- 4) Baghouse cleaning system has failed and collected product is not removed properly.
- 5) Baghouse air lock system has failed.
- 6) Baghouse dust conveying system has failed.

**Detection.** An upset condition that could lead to a possible excess emission from the baghouse outlets can be detected by Pulp Dryer Operators during operation checks and shift inspections or during routine VE observations.

**Corrective Action** Operators must implement corrective action immediately when a condition is discovered that may lead to an excess emission. If improper operation of the baghouse is determined then the baghouse system must be removed from service until the problem has been corrected.

**Reporting.** Upset conditions that lead to visible emissions from the baghouse must be immediately reported to the Shift Supervisor or the Pulp Dryer foreman. TASC0 has several certified opacity readers. It is the responsibility of the supervisor that has been notified of the visible emissions to contact a certified reader. The facility Environmental Manager must be notified of any visible emissions events. All excess emissions will be reported in accordance with

IDAPA 58.01.01 Rule 135.02. All other emissions observations will be recorded in the VE Log maintained on site.

## **Pulp Dryer Material Handling Baghouse Startup and Shutdown Procedures**

### **Start-Up and Shutdown Procedure**

Operator should read and become familiar with the principles of operation including start up and shutdown of the baghouse presented in the Mikropul O&M Manual. The following is an abbreviated summary of these procedures. These procedures must be followed for either scheduled or non-scheduled startups or shutdowns:

#### **Baghouse Startup**

**Pre-start Check.** Perform a pre-start check to ensure the baghouse will operate properly:

##### Compressed Air System

- 1) Check for leaks in the compressed air system.
- 2) Ensure that **DRY** air at 90 to 120 PSIG is available.
- 3) Open main air valve momentarily to ensure that solenoid and diaphragm valves are operating correctly.

##### Timer Circuit

- 1) Ensure that line voltage is within 10% of specified range.
- 2) Apply power to timer and listen to ensure that solenoid valves are cycling properly.

##### Auxiliary Equipment

- 1) Check for proper operation of exhaust fan, conveyor, and air locks.
- 2) Wait for the production equipment to be placed in service.
- 3) When the production equipment has been placed in service initiate cleaning cycles by starting the timer and valving in compressed air.

#### **Startup Procedure**

- 1) Apply power to all auxiliary equipment (except fan).
- 2) Energize timer and valve in compressed air.
- 3) Introduce gases to the baghouse by opening damper and starting fan

#### **Baghouse Shutdown**

- 1) After pulp production equipment shutdown, cycle timers for 15 to 30 minutes to remove all product from the baghouses.
- 2) Shutdown timer and compressed air systems
- 3) Shut down fans and auxiliary equipment.

## **Control Device Monitoring Program**

The Tier II air permit requires that the pulp dryer material handling baghouse be monitored to ensure optimal operations and to detect any upset conditions that may lead to an excess emissions. The monitoring requirements for the baghouses servicing the pulp dryer material handling equipment are outlined below:

### **Monitoring Procedures and Equipment**

The baghouse system is monitored using several different methods. These are listed below along with a description of the method.

#### **Differential Pressure Drop Monitoring.**

The Tier I permit requires that TASC0 install monitoring devices and submit operating ranges (Draft Permit dated September 15, 2003).

**Note:** A leak large enough to cause a visual emission cannot normally be detected by monitoring baghouse differential pressure. Visual Emission measurements should be used for determining if upset conditions exist that can lead to an excess emission.

**Visual Emissions** Visual emissions observations of the baghouse are conducted by on a monthly basis. The findings are documented in a log. If emissions are detected, then corrective action is implemented immediately to resolve the problem. All corrective actions are recorded in the log book and maintained at the facility site.

## **Maintenance Procedures**

Maintenance is an important component of proper operation of emission control equipment. TASC0 has identified the following daily monthly and annual tasks to be completed to ensure proper operation of the baghouse.

### **Daily Inspections and Maintenance**

To ensure optimal efficiency of emission control equipment, the following inspection tasks will be completed each daily:

1. Shut down dust collector fan down to equalize the pressure to allow the dust to fall from the bags.
2. Knock dust down out of the tank to the rotogate.
3. Check dust collector fan, rotogate and discharge scroll.

4. Inspect air locks. Check that air locks are operating properly. They need to cycle properly and remove product from the hopper.
5. Inspect Pulsejet Cleaning System. Ensure that clean, dry air is available. Listen to solenoids and airflow at the manifold for irregularities. Ensure that solenoids are timed and cycling properly. Watch air gauge for air pressure recovery time after solenoid has fired.

### **Annual Maintenance:**

In order to keep the emissions control equipment in optimal operating condition, the following monthly and annual maintenance will be performed:

**Schedule** Annual maintenance on the pulp dryer material handling baghouse can only be performed when the equipment is out of service. Actual dates of equipment shutdown and availability are determined by the operational needs for the equipment and the length of the beet campaign:

#### September-February/March:

All equipment is in service during the beet campaign period. Annual maintenance is not performed during this time frame.

#### February/March – August:

The equipment is out of service and is available for maintenance.

### **Annual Maintenance List**

Annual maintenance presents the opportunity to conduct basic overhaul and system changes to resolve root cause issues. The following tasks have been identified as important annual inspection/maintenance items. After the baghouse has been properly disabled and locked out, proceed as follows:

- 1) Inspect Baghouse Housing.** Check for corrosion, warped panels, stress cracking, and other damage that may lead to an air leak. Clean the baghouse ceiling and walls. Repair as necessary.
- 2) Inspect Filter Bags.** Inspect filter bags for holes or worn areas in the finish that can lead to possible future filter bag failure. Clean or replace filter bags as necessary. Note location of filter bags that are blinded off, bridged with product or have product in bags.
- 3) Inspect Venturis and Blow Pipe Holes** Venturis and blowpipe holes must be clean and free from abrasion damage (see attached BHA seminar handout). For bags that were blinded, check to make sure blowholes are

clear and unplugged. If all filter bags in a row are bridged or plugged then check the solenoid for that row.

- 4) **Inspect Bag Cages** Inspect bag cages for bent, broken, or worn wire. Repair or replace as necessary.
- 5) **Filter Bag Connection Hardware** The hardware used to attach the filter bag needs to be in good condition and serviceable. Replace as necessary to ensure the filter bag will be attached properly.
- 6) **Filter Bags** Inspect filter bags and reject any that appear to have a hole, are damaged from abrasion or have lost strength because of heat excursion.
- 7) **Air Dampers and Air Rams.** Ensure that air rams and dampers operate smoothly.
- 8) **Pulsejet Cleaning System.** Inspect the pulsejet cleaning system. Ensure that solenoids are cycling correctly and timed according to the guidelines suggested in the attached BHA Guidance Document. Dismantle and repair solenoids as necessary.
- 9) **Hopper.** Check for corrosion, warped panels and other damage that may lead to an air leakage or retention of pulp dust. Hopper walls need to smoothly convey dust to the air lock system. Repair as necessary.
- 10) **Door Seals.** Check door seals to ensure that they are in good repair and will seal properly. Replace as necessary
- 11) **Inlet Baffle.** Inspect the baffle to ensure that they are in proper position. Also check for damage from abrasion and panel warp. Repair as necessary.
- 12) **Air Locks.** Inspect airlocks to ensure that they are sealed, sequencing properly and operate smoothly. Repair as necessary.
- 13) **Duct Work and Insulation.** Check for corrosion, warped sections or panels and other damage that may lead to an air leak. Ensure that insulation is replaced after maintenance and that it is serviceable condition. Repair as necessary

## Record Keeping

Record Keeping is a specific requirement in the Tier I permit. Record keeping is important to demonstrate that operational information and maintenance is completed as required in the Air Permit. As a minimum the following information will be collected and retained for up to five years:

## Operations

- 1) Note: instrumentation to monitor the pressure drop across the baghouse will be installed within 12 months of the issuance of the permit (as per the September 2003 draft permit).
- 2) Visible emissions using see/no see criteria in accordance with the air permit will be conducted at least once per month on the baghouse vents.

Maintenance: The following records for the pulp dryer material handling baghouse must be kept and archived at the facility:

1. All baghouse maintenance performed.
2. All calibration information for the baghouse control instrumentation

## **Appendix A**

### **Equipment Codes for the Pulp Dryer Material Handling Baghouse**



**Operations & Maintenance  
Manual for:  
Pulp Dryer Pellet Cooler Cyclone**



**The Amalgamated Sugar Company  
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## Introduction

In accordance with Permit Condition 6.3 of the Tier I Operating Permit, this Operations & Maintenance Manual (O&M Manual) outlines procedures that, when implemented, will ensure that the Pellet Mill Cooler Cyclone operates at optimal efficiency. The O&M Manual includes the following:

- 1) Introduction
- 2) General Description of the Control Equipment
- 3) Normal Operating Conditions
- 4) Upset Conditions and Corrective Procedures
- 5) Pellet Mill Start-up, Shutdown procedures
- 6) Control Device Monitoring Program
- 7) Maintenance Procedures
  - a. Daily Inspections and Maintenance
  - b. Annual Maintenance
- 8) Record keeping

The baghouse manufacturer has provided the Company with an O&M Manual (attached) that was used as a guide for preparing this document.

## General Description of the Control Equipment

Particulate Emissions from the pellet cooling system for the two pellet mills are controlled using a cyclone.

## Normal Operating Conditions

## Upset Conditions and Corrective Procedures

The Company takes its environmental responsibilities very seriously. Upsets that can lead to excess emissions from the pellet mill cooler are a very serious matter and must be managed quickly and efficiently. The following information should be used for properly responding to upset conditions that can lead to an excess emission:

**Reporting** Upset conditions that lead to a visible emission from the pellet coolers must be immediately reported to the Shift Supervisor or the Pulp Dryer

Foreman. TASC0 has several certified opacity readers. It is the responsibility of the supervisor that has been notified of the visible emissions to contact a certified reader. The facility Environmental Manager must be notified of any visible emissions events. All excess emissions will be reported in accordance with IDAPA 58.01.01 Rule 135.02. All other emissions observations will be recorded in the VE Log maintained on site..

## **Pellet Mill Cyclone Startup and Shutdown Procedures**

### **Start-Up and Shutdown Procedure**

:

#### **Cyclone Startup**

**Pre-start Check** Perform a pre-start check to ensure the cyclone will operate properly:

- 1) Startup Procedure
  
- 2) Shutdown Procedure

## **Control Device Monitoring Program**

Permit condition 6.2 of the Tier I operating permit requires that the permittee operate the cyclone according to the O&M Manual. No control device is installed on the cyclone or required to be installed in the permit.

### **Monitoring Procedures and Equipment**

#### **Daily Inspections and Maintenance:**

1. Shut north and south Pellet Cooler Vent Fans Down, Clean out pulp and discard down the chute.
2. Check pellet cooler cyclone and rotogate.

**Schedule** Annual maintenance on the cyclone can only be performed when the equipment is out of service. The following time periods provide general opportunities to perform annual maintenance on equipment. Actual dates of

equipment shutdown and availability are determined by the operational needs for the equipment and the length of the beet campaign:

### September- February

All equipment is in service during the beet campaign period. Annual maintenance is not performed during this period of time.

### February – August

The equipment is out of service and available for maintenance.

## **Annual Maintenance:**

In order to keep the emissions control equipment in optimal operating condition, the following monthly and annual maintenance will be performed:

1. Repair Cooling Vent fans.
2. Repair air locks on Cyclones.
3. Repair Cyclone Scroll.
4. Check and repair cyclones and ducts.

## **Record Keeping**

Record Keeping is a specific requirement in the Tier I permit. Record keeping is important to demonstrate that operational information and maintenance is completed as required in the Air Permit. As a minimum the following information will be collected and retained for up to five years:

### Operations

- 1) Visible emissions using see/ no see, criteria will be conducted monthly on the pellet cooler vents.

Maintenance The following records for the pellet mill cyclone must be kept and archived at the facility:

- 1) All cyclone maintenance performed.

## Appendix A

### Equipment Codes for the Pellet Cooler Cyclone

**Operations & Maintenance  
Manual for:  
Pulp Dryer Wet Scrubbers**



**The Amalgamated Sugar Company  
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## Introduction

In accordance with Permit Condition 5.12 of the Tier I Operating Permit (#083-0001), this Operations & Maintenance Manual (O&M Manual) outlines procedures that, when implemented, will ensure that the Pulp Dryer Wet Scrubbers operate at optimal efficiency. The O&M Manual includes the following:

- 1) Introduction
- 2) General Description of the Control Equipment
- 3) Normal Operating Conditions
- 4) Upset Conditions and Corrective Procedures
- 5) Pulp Dryer Start-up, Shutdown Procedures
- 6) Control Device Monitoring Program
- 7) Maintenance Procedures
  - a. Daily Inspections and Maintenance
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## General Description of the Control Equipment

### Pulp Dryer Scrubbers

Emissions from the direct coal fired pulp dryer system are controlled using wet impingement style scrubbers. Exhaust gasses from the dryer are split into two streams. Each stream passes through a cyclone and a spray-impingement type scrubber in series. Recirculated water from the flume system is utilized for scrubbing. Appendix A contains a schematic of the pulp dryer scrubber system.

## Normal Operating Conditions

The direct-fired pulp dryer uses coal as the primary source of fuel to dry the pulp. A significant amount of pulp is also incidentally combusted in the dryer drum. The resulting combustion gases combine with moisture from the pulp and are directed to a close-coupled cyclone/wet scrubber. In the cyclone approximately 40% of the flue gas is recycled back to the dryer as combustion air. The remaining flue gas passes to the wet scrubber impingement zone for treatment with flume water prior to discharge from the stack. Differential pressure across the impingement zone is set by raising and lowering the water level in the tubs. The treated flue gas is dewatered using cyclonic turning vanes in the final ductwork section of the stack.

Scrubber water is supplied from the flume water system. Scrubber water is recycled in a holding tank. A slipstream of flume water is removed from the scrubber and sent to the flume system. The water then enters the plant settling pond(s) and the clarified water is returned to the flume system.

Control parameters may be adjusted as necessary to maintain optimal system performance.

## Upset Conditions and Corrective Procedures

The Company takes its environmental responsibilities very seriously. Upsets that can lead to excess emissions from the pulp dryer stacks are a very serious matter and must be managed quickly and efficiently. The following information should be used for properly responding to upset conditions that can lead to an excess emission:

**Cause** An upset condition has the potential to occur when one or more of the following conditions occur:

- 1) **Water tub level is too low.** This will usually cause low differential pressure across the scrubber impingement zone, reduced liquid to gas contact, and reduced scrubber performance.
- 2) **Loss of Scrubber Water Flow.** This condition can be caused by a loss of Scrubber Water Recirculation pumps or by scale blockage of the tub water return line. In either case, liquid to gas contact with the combustion air is compromised and scrubber performance is reduced.
- 3) **Scrubber Differential Pressure too High.** This condition is usually caused by scale build up in the Ventura area of the impingement zone. In severe cases, the scrubber will need to be removed from service to clean the Ventura.
- 4) **Dramatic Fluctuations of Pressed Pulp Feed to Drum.** The pulp dryer system functions most efficiently during in steady state operation with stable feed rates. Dramatically changing total input feed rates as a result of sudden process variations can lead to mass imbalances in the drum that can result in upset scrubber conditions. Operators routinely monitor feed rates very closely.
- 5) **Dramatic Fluctuations of Pressed Pulp Moisture.** The pulp dryer system functions most efficiently during in steady state operation with stable pressed pulp moisture content. Dramatically changing moisture content (such as loss of a pulp press) can lead to combustion control imbalances in the drum that can result in upset scrubber conditions. The operators routinely monitor moisture content and number of pulp presses in operation very closely

### **Detection**

An upset condition that leads to a possible excess emission from the pulp dryer stack is primarily detected by Pulp Dryer Operators during board operation checks and shift inspections..

### **Corrective Action**

Operators must implement corrective action immediately when a condition is discovered that may lead to an excess emissions event. If the situation is not resolved quickly with corrective action, then the scrubber and pulp dryer must be removed from service until the problem has been corrected. Exhausting untreated pulp dryer combustion air to atmosphere is not allowed by the air permit and is not an acceptable mode of operation.

### **Reporting**

Upset conditions that lead to a visible emission from the pulp dryer stack must be immediately reported to the Shift Supervisor or the Pulp Dryer Foreman. TASCO has several certified opacity readers. It is the responsibility of the supervisor that has been notified of the visible emissions to contact a certified reader. The facility Environmental Manager must be notified of any visible emissions events. All excess emissions will be reported in accordance with IDAPA 58.01.01 Rule 135.02. All other emissions observations will be recorded in the VE Log maintained on site.

## **Pulp Dryer System Startup and Shutdown Procedures**

The following startup procedure will be followed for all pulp dryer startups including scheduled and unscheduled events.

### **Pulp Dryer Start-Up Procedure**

The following operating procedure will be followed in the event that a Pulp Dryer start up is required for either scheduled or non-scheduled startups:

- 1) The wet scrubber system will be placed in service with full design scrubber water flow.
- 2) The pulp dryer will be started up in the normal manner by heating with natural gas, introducing coal as the primary fuel and introducing pressed pulp.
- 3) Natural gas fueling of the dryer may be discontinued after coal combustion is stable.
- 4) As the pulp dryer reaches maximum design input rates, the scrubber will be placed into process control modes that ensure maximum particulate capture rates. The critical operating parameters are scrubber differential pressure, scrubber water flow

- and scrubber tub levels.
- 5) After extended operation of the scrubber system a significant build up of scale can occur on all wetted scrubber surfaces. Restart of the scrubber system after a short shutdown (or thermal cycling) can lead to significant blockage of water lines from defoliated scale. Operators must make every effort to clear these lines as necessary to ensure adequate scrubber water flow and liquid gas contact in the impingement zone.

### **Pulp Dryer Shut Down Procedures**

During dryer shut down, the scrubbers remain on-line until the drums have been completely removed from service. The scrubber can then be removed from service after all pulp has cleared the drum.

## **Control Device Monitoring Program**

The Tier I air permit requires that the wet scrubber systems be monitored to ensure optimal operations and to detect any upset conditions that may lead to an excess emissions. The monitoring requirements for the scrubbers servicing the pulp dryer system is outlined below:

### **Monitoring Procedures and Equipment**

The wet scrubber system is monitored using several different methods. These are listed below along with a description of the method.

**Differential Pressure Drop Monitoring.** Differential pressure drop (DPD) is required to be monitored by the Tier I permit. DPD across the scrubber is measured by electronically using a DP cell.

**Visual Emissions** Visual emissions of the pulp dryer stacks are conducted by two independent inspections. The Factory Environmental Manager conducts see/no see VE inspections weekly. The findings will be documented in the Visible Emissions log that is maintained on site.

## **Maintenance Procedures**

Maintenance is an import component of proper operation of emission control equipment. TASC0 has identified the following daily and annual tasks to be completed to ensure proper operation of the pulp dryer scrubbers.

### **Daily Inspections and Maintenance**

To ensure optimal efficiency of emission control equipment, the following inspection tasks will be completed each hour:

1. Check Recirculation Water Pump Packing – grease every 6 hours during operation.
2. Check Recirculation Water Gear Box Oil Levels.
3. Inspect Scrubber Water Filters. Ensure that the filters are not plugged and are operating properly.
4. Check Operating Parameters for Scrubber system. Check scrubber airflow, tub water levels, Surge tank water level, and impingement water sprays.

### **Annual Maintenance:**

In order to keep the emissions control equipment in optimal operating condition, the following monthly and annual maintenance will be performed:

**Schedule.** Annual maintenance on the wet scrubbers can only be performed when the equipment is out of service. The following time periods provide general opportunities to perform annual maintenance on equipment. Actual dates of equipment shutdown and availability are determined by the operational needs for the equipment as well as the actual operating time of the beet campaign:

#### September- February/March

All equipment is in service during the beet campaign period. Annual maintenance is not performed during this period of time.

#### March/April – August

The equipment is out of service and available for maintenance.

### **Annual Maintenance List**

Annual maintenance presents the opportunity to conduct basic maintenance and system changes to resolve root cause issues. The following tasks have been identified as important annual inspection/maintenance items:

- 1) **Scrubber Housing.** Check for corrosion, warped panels and other damage that may lead to an air leak. Repair as necessary.
- 2) **Scrubber Tub.** Remove all scale and thoroughly clean all surfaces. Check for corrosion, warped panels and other damage that may lead to an air leak. Repair as necessary.

- 3) **Scrubber Spray Headers and Nozzles.** Dismantle and clean all scrubber water supply headers and nozzles.
- 4) **Service and Calibrate all Instrumentation.** Inspect, service, and calibrate all scrubber system instrumentation including as a minimum the DP cells, scrubber water flow meters, air flow meters, level and temperature sensors.
- 5) **Service Scrubber Water Recirculation Pumps.** Inspect and service the scrubber water Recirculation pump.
- 6) **Inspect Stacks** Check for corrosion, warped sections and other damage that may lead to poor performance. Ensure that turning vanes are in alignment and good repair. Repair as necessary.
- 7) **Door Seals** Check door seals to ensure that they are in good repair and will seal properly.
- 8) **Duct Work and Insulation.** Check for corrosion, warped sections or panels and other damage that may lead to an air leak. Ensure that insulation is replaced after maintenance on the recirculation duct and that it is serviceable condition. Repair as necessary

## Record Keeping

Record Keeping is a specific requirement in the Tier I permit. Record keeping is important to demonstrate that operational information and maintenance is completed as required in the Air Permit. As a minimum the following information will be collected and retained for up to five years:

### Operations

- 1) The scrubber vessel pressure drop will be monitored continuously and recorded at least once per week during pulp dryer operation and archived in facility files.
- 2) The water flow to the scrubbers will be monitored continuously and recorded at least once per week during pulp dryer operation and archived in facility files.
- 3) The water pressure of the sprays (at the pump) will be monitored continuously and recorded at least once per week during pulp dryer operation and archived in facility files.
- 4) Permit condition 5.9 requires that the scrubber water must be sampled monthly from September to December (when the dryer is operating) and biweekly from January until the end of each campaign. The samples shall be analyzed for TSS and TDS and the results recorded and archived in facility files.

Maintenance. The following records for the wet scrubber must be kept and archived at the facility:

1. All Scrubber Maintenance Performed.
2. All calibration information for scrubber control instrumentation
3. Appendix B contains the Equipment codes for equipment associated with the pulp dryer scrubber. All maintenance records for the equipment described are maintained on a database that can be accessed utilizing the equipment codes.
4. Appendix C contains a general outline of the operation and maintenance of the dryer scrubbers and a copy of the maintenance checklist utilized at the TASCO Twin Falls facility.

## APPENDIX A

### General Schematic of the Pulp Dryer and Scrubbers at the TASCOTWIN Falls Facility

## APPENDIX B

### Equipment Codes

## APPENDIX C

### Operation and Maintenance Checklists



**Operations & Maintenance  
Manual for:**

**Pulp Dryer Wet Scrubbers**



**The Amalgamated Sugar Company  
Twin Falls Facility**

**December 12, 2003**

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## Introduction

In accordance with Permit Condition 5.12 of the Tier I Operating Permit (#083-0001), this Operations & Maintenance Manual (O&M Manual) outlines procedures that, when implemented, will ensure that the Pulp Dryer Wet Scrubbers operate at optimal efficiency. The O&M Manual includes the following:

- 1) Introduction
- 2) General Description of the Control Equipment
- 3) Normal Operating Conditions
- 4) Upset Conditions and Corrective Procedures
- 5) Pulp Dryer Start-up, Shutdown Procedures
- 6) Control Device Monitoring Program
- 7) Maintenance Procedures
  - a. Daily Inspections and Maintenance
  - b. Annual Maintenance
- 8) Record keeping

## General Description of the Control Equipment

### Pulp Dryer Scrubbers

Emissions from the direct coal fired pulp dryer system are controlled using wet impingement style scrubbers. Exhaust gasses from the dryer are split into two streams. Each stream passes through a cyclone and a spray-impingement type scrubber in series. Recirculated water from the flume system is utilized for scrubbing. Appendix A contains a schematic of the pulp dryer scrubber system.

## Normal Operating Conditions

The direct-fired pulp dryer uses coal as the primary source of fuel to dry the pulp. A significant amount of pulp is also incidentally combusted in the dryer drum. The resulting combustion gases combine with moisture from the pulp and are directed to a close-coupled cyclone/wet scrubber. In the cyclone approximately 40% of the flue gas is recycled back to the dryer as combustion air. The remaining flue gas passes to the wet scrubber impingement zone for treatment with flume water prior to discharge from the stack. Differential pressure across the impingement zone is set by raising and lowering the water level in the tubs. The treated flue gas is dewatered using cyclonic turning vanes in the final ductwork section of the stack.

Scrubber water is supplied from the flume water system. Scrubber water is recycled in a holding tank. A slipstream of flume water is removed from the scrubber and sent to the flume system. The water then enters the plant settling pond(s) and the clarified water is returned to the flume system.

Control parameters may be adjusted as necessary to maintain optimal system performance.

## Upset Conditions and Corrective Procedures

The Company takes its environmental responsibilities very seriously. Upsets that can lead to excess emissions from the pulp dryer stacks are a very serious matter and must be managed quickly and efficiently. The following information should be used for properly responding to upset conditions that can lead to an excess emission:

**Cause** An upset condition has the potential to occur when one or more of the following conditions occur:

- 1) **Water tub level is too low.** This will usually cause low differential pressure across the scrubber impingement zone, reduced liquid to gas contact, and reduced scrubber performance.
- 2) **Loss of Scrubber Water Flow.** This condition can be caused by a loss of Scrubber Water Recirculation pumps or by scale blockage of the tub water return line. In either case, liquid to gas contact with the combustion air is compromised and scrubber performance is reduced.
- 3) **Scrubber Differential Pressure too High.** This condition is usually caused by scale build up in the Ventura area of the impingement zone. In severe cases, the scrubber will need to be removed from service to clean the Ventura.
- 4) **Dramatic Fluctuations of Pressed Pulp Feed to Drum.** The pulp dryer system functions most efficiently during in steady state operation with stable feed rates. Dramatically changing total input feed rates as a result of sudden process variations can lead to mass imbalances in the drum that can result in upset scrubber conditions. Operators routinely monitor feed rates very closely.
- 5) **Dramatic Fluctuations of Pressed Pulp Moisture.** The pulp dryer system functions most efficiently during in steady state operation with stable pressed pulp moisture content. Dramatically changing moisture content (such as loss of a pulp press) can lead to combustion control imbalances in the drum that can result in upset scrubber conditions. The operators routinely monitor moisture content and number of pulp presses in operation very closely

### **Detection**

An upset condition that leads to a possible excess emission from the pulp dryer stack is primarily detected by Pulp Dryer Operators during board operation checks and shift inspections..

### **Corrective Action**

Operators must implement corrective action immediately when a condition is discovered that may lead to an excess emissions event. If the situation is not resolved quickly with corrective action, then the scrubber and pulp dryer must be removed from service until the problem has been corrected. Exhausting untreated pulp dryer combustion air to atmosphere is not allowed by the air permit and is not an acceptable mode of operation.

### **Reporting**

Upset conditions that lead to a visible emission from the pulp dryer stack must be immediately reported to the Shift Supervisor or the Pulp Dryer Foreman. TASC0 has several certified opacity readers. It is the responsibility of the supervisor that has been notified of the visible emissions to contact a certified reader. The facility Environmental Manager must be notified of any visible emissions events. All excess emissions will be reported in accordance with IDAPA 58.01.01 Rule 135.02. All other emissions observations will be recorded in the VE Log maintained on site.

## **Pulp Dryer System Startup and Shutdown Procedures**

The following startup procedure will be followed for all pulp dryer startups including scheduled and unscheduled events.

### **Pulp Dryer Start-Up Procedure**

The following operating procedure will be followed in the event that a Pulp Dryer start up is required for either scheduled or non-scheduled startups:

- 1) The wet scrubber system will be placed in service with full design scrubber water flow.
- 2) The pulp dryer will be started up in the normal manner by heating with natural gas, introducing coal as the primary fuel and introducing pressed pulp.
- 3) Natural gas fueling of the dryer may be discontinued after coal combustion is stable.
- 4) As the pulp dryer reaches maximum design input rates, the scrubber will be placed into process control modes that ensure maximum particulate capture rates. The critical operating parameters are scrubber differential pressure, scrubber water flow

- and scrubber tub levels.
- 5) After extended operation of the scrubber system a significant build up of scale can occur on all wetted scrubber surfaces. Restart of the scrubber system after a short shutdown (or thermal cycling) can lead to significant blockage of water lines from defoliated scale. Operators must make every effort to clear these lines as necessary to ensure adequate scrubber water flow and liquid gas contact in the impingement zone.

### **Pulp Dryer Shut Down Procedures**

During dryer shut down, the scrubbers remain on-line until the drums have been completely removed from service. The scrubber can then be removed from service after all pulp has cleared the drum.

## **Control Device Monitoring Program**

The Tier I air permit requires that the wet scrubber systems be monitored to ensure optimal operations and to detect any upset conditions that may lead to an excess emissions. The monitoring requirements for the scrubbers servicing the pulp dryer system is outlined below:

### **Monitoring Procedures and Equipment**

The wet scrubber system is monitored using several different methods. These are listed below along with a description of the method.

**Differential Pressure Drop Monitoring.** Differential pressure drop (DPD) is required to be monitored by the Tier I permit. DPD across the scrubber is measured by electronically using a DP cell.

**Visual Emissions** Visual emissions of the pulp dryer stacks are conducted by two independent inspections. The Factory Environmental Manager conducts see/no see VE inspections weekly. The findings will be documented in the Visible Emissions log that is maintained on site.

## **Maintenance Procedures**

Maintenance is an import component of proper operation of emission control equipment. TASC0 has identified the following daily and annual tasks to be completed to ensure proper operation of the pulp dryer scrubbers.

### **Daily Inspections and Maintenance**

To ensure optimal efficiency of emission control equipment, the following inspection tasks will be completed each hour:

1. Check Recirculation Water Pump Packing – grease every 6 hours during operation.
2. Check Recirculation Water Gear Box Oil Levels.
3. Inspect Scrubber Water Filters. Ensure that the filters are not plugged and are operating properly.
4. Check Operating Parameters for Scrubber system. Check scrubber airflow, tub water levels, Surge tank water level, and impingement water sprays.

### **Annual Maintenance:**

In order to keep the emissions control equipment in optimal operating condition, the following monthly and annual maintenance will be performed:

**Schedule.** Annual maintenance on the wet scrubbers can only be performed when the equipment is out of service. The following time periods provide general opportunities to perform annual maintenance on equipment. Actual dates of equipment shutdown and availability are determined by the operational needs for the equipment as well as the actual operating time of the beet campaign:

#### September- February/March

All equipment is in service during the beet campaign period. Annual maintenance is not performed during this period of time.

#### March/April – August

The equipment is out of service and available for maintenance.

### **Annual Maintenance List**

Annual maintenance presents the opportunity to conduct basic maintenance and system changes to resolve root cause issues. The following tasks have been identified as important annual inspection/maintenance items:

- 1) **Scrubber Housing.** Check for corrosion, warped panels and other damage that may lead to an air leak. Repair as necessary.
- 2) **Scrubber Tub.** Remove all scale and thoroughly clean all surfaces. Check for corrosion, warped panels and other damage that may lead to an air leak. Repair as necessary.

- 3) **Scrubber Spray Headers and Nozzles.** Dismantle and clean all scrubber water supply headers and nozzles.
- 4) **Service and Calibrate all Instrumentation.** Inspect, service, and calibrate all scrubber system instrumentation including as a minimum the DP cells, scrubber water flow meters, air flow meters, level and temperature sensors.
- 5) **Service Scrubber Water Recirculation Pumps.** Inspect and service the scrubber water Recirculation pump.
- 6) **Inspect Stacks** Check for corrosion, warped sections and other damage that may lead to poor performance. Ensure that turning vanes are in alignment and good repair. Repair as necessary.
- 7) **Door Seals** Check door seals to ensure that they are in good repair and will seal properly.
- 8) **Duct Work and Insulation.** Check for corrosion, warped sections or panels and other damage that may lead to an air leak. Ensure that insulation is replaced after maintenance on the recirculation duct and that it is serviceable condition. Repair as necessary

## Record Keeping

Record Keeping is a specific requirement in the Tier I permit. Record keeping is important to demonstrate that operational information and maintenance is completed as required in the Air Permit. As a minimum the following information will be collected and retained for up to five years:

### Operations

- 1) The scrubber vessel pressure drop will be monitored continuously and recorded at least once per week during pulp dryer operation and archived in facility files.
- 2) The water flow to the scrubbers will be monitored continuously and recorded at least once per week during pulp dryer operation and archived in facility files.
- 3) The water pressure of the sprays (at the pump) will be monitored continuously and recorded at least once per week during pulp dryer operation and archived in facility files.
- 4) Permit condition 5.9 requires that the scrubber water must be sampled monthly from September to December (when the dryer is operating) and biweekly from January until the end of each campaign. The samples shall be analyzed for TSS and TDS and the results recorded and archived in facility files.

Maintenance. The following records for the wet scrubber must be kept and archived at the facility:

1. All Scrubber Maintenance Performed.
2. All calibration information for scrubber control instrumentation
3. Appendix B contains the Equipment codes for equipment associated with the pulp dryer scrubber. All maintenance records for the equipment described are maintained on a database that can be accessed utilizing the equipment codes.
4. Appendix C contains a general outline of the operation and maintenance of the dryer scrubbers and a copy of the maintenance checklist utilized at the TASCO Twin Falls facility.

## APPENDIX A

### General Schematic of the Pulp Dryer and Scrubbers at the TASCOTWIN Falls Facility

## APPENDIX B

### Equipment Codes

## APPENDIX C

### Operation and Maintenance Checklists



**Operations & Maintenance  
Manual for:  
Drying Granulator Rotoclone**



**The Amalgamated Sugar Company  
Twin Falls Facility**

**December 12, 2003**

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## **Introduction**

In accordance with Permit Condition 9.3 of the Tier I Operating Permit (#083-00001), this Operations & Maintenance Manual (O&M Manual) outlines procedures that when implemented will ensure that the Drying Granulator Rotoclone operates as efficiently as practicable. The O&M Manual includes the following:

- 1) Introduction
- 2) General Description of the Control Equipment
- 3) Normal Operating Conditions
- 4) Upset Conditions and Corrective Procedures
- 5) Drying Granulator Rotoclone Start-up, Shutdown Procedures
- 6) Control Device Monitoring Program
- 7) Maintenance Procedures
  - a. Daily Inspections and Maintenance
  - b. Annual Maintenance
- 8) Record keeping

## **General Description of the Control Equipment**

The drying granulator is a rotary drum dryer that is used to dry wet sugar from the white centrifugals. Hot filtered air is utilized to dry the wet sugar and the exhaust air is routed to a Rotoclone.

The Rotoclone (American Air Filter – Type W) is a combination exhaust fan and wet type dust collector. A scrubber solution (either thin juice or a dilute sugar/water solution) is sprayed upon specially shaped fan blades and dust is trapped when it impacts the wet blades.

The scrubber solution and the dust are separated from the air stream in a small cyclone and the air is returned to the main air stream in a small diameter duct. The solution and the sugar dust are drained off from the Rotoclone. The collected sugar dust and solution are returned to the process.

## **Normal Operating Conditions**

The rotary drying granulator removes moisture from processed sugar before it is cooled and sent to the storage silos for conditioning. The air vented through the drying Granulator and then into the "Rotoclone" where it is sprayed with a scrubber solution (either thin juice or a dilute sugar solution) to recover the sugar dust and return it to the process. During Beet Campaign, thin juice is used as the scrubbing solution, while during inter-campaign a dilute sugar solution is utilized to collect the sugar dust. The saturated sugar solution is returned to the process. Treated air from the dust box is vented to the atmosphere.

## **Upset Conditions and Corrective Procedures**

The Company takes its environmental responsibilities very seriously. Upsets that can lead to excess emissions from the Rotoclone are a very serious matter and must be managed quickly and efficiently. The following information should be used for properly responding to upset conditions that can lead to an excess emission:

**Cause** An upset condition has the potential to occur when one or more of the following conditions occur:

- 1) Spray nozzles plug.
- 2) The brix of the scrubber solution is too high.
- 3) Thin Juice/scrubber solution supply has been interrupted.

### **Detection**

An upset condition that leads to a possible excess emission from the Dust Box is detected by Operators during operational checks and shift inspections. Monthly visible emissions observations may also aid in determining upset conditions.

### **Corrective Action**

Operators must implement corrective action immediately when a condition is discovered that may lead to excess emissions. If the situation is not resolved quickly with corrective action, then the Rotoclone and Drying granulator must be removed from service until the problem has been corrected. Exhausting untreated sugar dust to atmosphere is not allowed by the air permit or is not an acceptable mode of operation.

### **Reporting**

Upset conditions that lead to a visible emission from the Dust Box must be immediately reported to the Shift Supervisor or the Sugar End Foreman. TASCO has several certified opacity readers. It is the responsibility of the supervisor that has been notified of the visible emissions to contact a certified reader. The facility Environmental Manager must be notified of any visible emissions events. All excess emissions will be reported in accordance with

IDAPA 58.01.01 Rule 135.02. All other emissions observations will be recorded in the VE Log maintained on site.

## **Drying Granulator Rotoclone Startup and Shutdown Procedures**

The following startup procedure will be followed for all Drying Granulator startups including scheduled and unscheduled events.

### **Drying Granulator Start-Up Procedure**

The following operating procedure will be followed in the event that a Drying Granulator start up is required for either scheduled or non-scheduled events:

- 1) The Rotoclone will be placed in service with full design scrubber solution flow.
- 2) The Drying Granulator will be started up in the normal manner. Appendix B for more detailed information on the operation of the Drying Granulator and the Rotoclone.
- 3) As the Drying Granulator reaches maximum design throughput rates, operators will begin monitoring the flow to the Rotoclone.
- 4) During juice and extract runs, the RDS of the scrubber solution will also be monitored and recorded on the labnet.

### **Drying Granulator Shut Down Procedures**

During shut down, the Rotoclone remains on-line until the Drying Granulator has shutdown and all dried process sugar has cleared the system. The Rotoclone can then be shut down.

## **Control Device Monitoring Program**

The Tier I air permit requires that the Rotoclone be monitored to ensure optimal operations and to detect any upset conditions that may lead to an excess emissions. The monitoring requirements for the Rotoclone servicing the Drying Granulator is outlined below:

### **Monitoring Procedures and Equipment**

The Dust Box is monitored using by monitoring the flow of scrubber solution (in gpm) to the Rotoclone.

**Flow to the Rotoclone.** The flow to the Rotoclone is required to be monitored in accordance with the Tier I permit (September 2003 draft permit). The flows are recorded and archived at the factory.

**Visual Emissions** Visual emissions of the Dust Box are conducted by the Factory Environmental Manager conducts see/no see VE inspections on a monthly basis. The results are and documented in a compliance log.

## **Maintenance Procedures**

Maintenance is an import component of proper operation of emission control equipment. TASC0 has identified the following daily and annual tasks to be completed to ensure proper operation of the Rotoclone.

### **Daily Inspections and Maintenance**

To ensure optimal efficiency of emission control equipment, the following inspection tasks will be completed each hour:

1. Check flow to the Rotoclone. The flow to the Rotoclone needs to be checked to ensure that scrubber solution is flowing through the system.
2. Check Supply Tank Level. This needs to be done during Juice/Extract runs only.

### **Annual Maintenance:**

In order to keep the emissions control equipment in optimal operating condition, the following monthly and annual maintenance will be performed:

**Schedule** Annual maintenance on the Dust Box can only be performed when the equipment is out of service. The following time periods provide general opportunities to perform annual maintenance on equipment. Actual dates of equipment shutdown and availability are determined by the operational needs for the equipment and the actual length of the individual operating periods:

#### September - February /March

All equipment is in service during the beet campaign period. Annual maintenance is not performed during this period of time.

#### February/March-May

All equipment is in service during Juice run. Annual maintenance is not performed during this period of time.

## June-July

The six week sugar end shutdown is generally scheduled during this time and all annual maintenance is done when the sugar end is shutdown.

## Mid July to August

All equipment is in service during Extract run. Annual maintenance is not performed during this period of time.

### **Annual Maintenance List**

Annual maintenance presents the opportunity to conduct basic maintenance and system changes to resolve root cause issues. The following tasks have been identified as important annual inspection/maintenance items:

- 1) **Rotoclone Housing.** Check for corrosion, warped panels and other damage that may lead to an air leak. Repair as necessary.
- 2) **Rotoclone Tub.** Thoroughly clean all surfaces. Check for corrosion, warped panels and other damage that may lead to an air leak. Repair as necessary.
- 3) **Rotoclone Spray Nozzles** Dismantle and clean all Rotoclone spray nozzles. Inspect nozzles for wear and replace any that are not in good operating condition.
- 4) **Service and Calibrate all Instrumentation.** Inspect, service, and calibrate all Rotoclone system instrumentation including as a minimum the Flowmeter and the brixing tank temperature controls.
- 5) **Inspect Stacks** Check for corrosion, warped sections and other damage that may lead to poor performance. Repair as necessary.
- 6) **Door Seals** Check door seals to ensure that they are in good repair and will seal properly.
- 7) **Duct Work.** Check for corrosion, warped sections or panels and other damage that may lead to an air leak. Repair as necessary

### **Record Keeping**

Record Keeping is a specific requirement in the Tier I permit. Record keeping is important to demonstrate that operational information and maintenance is completed as

required in the Air Permit. As a minimum the following information will be collected and retained for up to five years:

Operations

- 1) The flow of scrubber solution (either thin juice or the dilute sugar solution) be monitored continuously and recorded at least once per day during Drying Granulator operation and archived in facility files.

Maintenance The following records for the Rotoclone must be kept and archived at the facility:

1. All Rotoclone Maintenance Performed. Appendix C contains the equipment codes for equipment associated with the Rotoclone. All maintenance activities can be accessed utilizing the Equipment Database.
2. All calibration information for Rotoclone control instrumentation.

**Appendix A**  
**General Schematic of the Drying Granulator and the**  
**Rotoclone System**

**Appendix B**  
**Manufacturer's information and Detailed Operating**  
**Instructions (Including troubleshooting)**

## **Appendix C Equipment Codes**

**Operations & Maintenance  
Manual for:**

**Process Slaker Cyclone**



**The Amalgamated Sugar Company  
Twin Falls Facility**

**December 12, 2003**

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## Introduction

In accordance with Permit Condition 8.3 of the Tier I Operating Permit, this Operations & Maintenance Manual (O&M Manual) outlines procedures that, when implemented, will ensure that the Process Slaker Cyclone operates at optimal efficiency. The O&M Manual includes the following:

- 1) Introduction
- 2) General Description of the Control Equipment
- 3) Normal Operating Conditions
- 4) Upset Conditions and Corrective Procedures
- 5) Process Slaker Start-up, Shutdown procedures
- 6) Control Device Monitoring Program
- 7) Maintenance Procedures
  - a. Daily Inspections and Maintenance
  - b. Annual Maintenance
- 8) Record keeping

## General Description of the Control Equipment

Particulate Emissions from the Process Slaker are controlled using a cyclone. Appendix A contains the manufacturer's specification sheet for the vent fan servicing the cyclone.

## Normal Operating Conditions

The Process Slaker produces milk of lime for the juice clarification system. The moisture laden gases produced during slaking are vented through the slaker cyclone. Particulates collected in the cyclone are collected and stored for later use.

## Upset Conditions and Corrective Procedures

The Company takes its environmental responsibilities very seriously. Upsets that can lead to excess emissions from the process slaker cyclone are a very serious matter and must be managed quickly and efficiently. The following information should be used for properly responding to upset conditions that can lead to excess emissions:

**Reporting** Upset conditions that lead to a visible emission from the process slaker cyclone must be immediately reported to the Shift Supervisor or the Lime

Kiln Foreman. The facility Environmental Manager must be notified of any visible emissions events. All excess emissions will be reported in accordance with IDAPA 58.01.01 Rule 135.02. All other emissions observations will be recorded in the VE Log maintained on site.

## **Process Slaker Cyclone Startup and Shutdown Procedures**

### **Start-Up and Shutdown Procedure**

#### **Cyclone Startup**

**Pre-start Check.** Perform a pre-start check to ensure the cyclone will operate properly:

- 1) **Startup Procedure.** Prior to startup of the process slaker, the fan on the cyclone will be started and all other operational requirements will be at full design capacity.
- 2) **Shutdown Procedure.** During shut down, the Slaker Cyclone remains on-line until the slaker system has shutdown and all slaked lime has cleared the system. The cyclone can then be shut down.

## **Control Device Monitoring Program**

Permit condition 8.2 of the Tier I operating permit requires that the permittee operate the cyclone according to the O&M Manual. No control device is installed on the cyclone or required to be installed in the permit.

### **Monitoring Procedures and Equipment**

#### **Daily Inspections and Maintenance:**

During normal rounds, the lime kiln crew will observe the cyclone and respond to any observed problems. Detailed information about maintenance requirements can be found in the manufacturer's specification sheets (Appendix A).

**Schedule** Annual maintenance on the cyclone can only be performed when the equipment is out of service. The following time periods provide general opportunities to perform annual maintenance on equipment. Actual dates of equipment shutdown and availability are determined by the operational needs for the equipment and the length of the beet campaign:

### September- February/March

All equipment is in service during the beet campaign period. Annual maintenance is not performed during this period of time.

### February/March – August

The equipment is out of service and available for maintenance.

### **Annual Maintenance:**

In order to keep the emissions control equipment in optimal operating condition, the following monthly and annual maintenance will be performed:

1. Repair air locks on Cyclones.
2. Repair Cyclone Scroll.
3. Check and repair cyclones and ducts.

### **Record Keeping**

Record Keeping is a specific requirement in the Tier I permit. Record keeping is important to demonstrate that operational information and maintenance is completed as required in the Air Permit. As a minimum the following information will be collected and retained for up to five years:

#### Operations

- 1) Visible emissions observations using see/ no see criteria will be conducted monthly on the process slaker cyclone vent. The results of the VE observations will be recorded in the VE observation log and maintained according to Permit Condition 1.11

#### Maintenance

The following records for the process slaker cyclone must be kept and archived at the facility:

- 1) All cyclone maintenance performed. Appendix A contains equipment codes for the process slaker cyclone. These equipment codes allow access to the Equipment Maintenance database. Records of all maintenance activities associated with the process slaker cyclone can be found on this data base. The records will be maintained according to Permit Condition 1.11.

# Appendix A

## Manufacturer's Specification Sheet

## Appendix B

# Equipment Codes for the Process Slaker Cyclone

**Operations & Maintenance  
Manual for:  
Limekiln Exhaust Vent Scrubber**



**The Amalgamated Sugar Company  
Twin Falls Facility**

**December 12, 2003**

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<b>IX. Annual Maintenance</b>	<b>Pg 6</b>
<b>X. Record keeping</b>	<b>Pg 7</b>

## **Introduction**

In accordance with Permit Condition 7.3 of the Tier I Operating Permit (#027-00010), this Operations & Maintenance Manual (O&M Manual) outlines procedures that when implemented will ensure that the Lime Kiln Slaker Wet Scrubber operate at optimal efficiency. The O&M Manual includes the following:

- 1) Introduction
- 2) General Description of the Control Equipment
- 3) Normal Operating Conditions
- 4) Upset Conditions and Corrective Procedures
- 5) Lime Kiln Exhaust Vent Scrubber Start-up, Shutdown Procedures
- 6) Control Device Monitoring Program
- 7) Maintenance Procedures
  - a. Daily Inspections and Maintenance
  - b. Annual Maintenance
- 8) Record keeping

## **General Description of the Control Equipment**

The limekiln(s) exhaust fan scrubber utilizes flume water to scrub the particulate matter from the exhaust vent fans from the North and South Lime Kilns. The exhaust gas exits the top of the kilns and is conveyed to the scrubber. A series of sprays scrub the exhaust gas and the gas then goes through a series of baffles to reduce the velocity of the gas and allow as much of the water and PM as possible to drop out of the gas stream. The scrubber water then exits the scrubber and is returned to the flume system.

## **Normal Operating Conditions**

The "A" and "B" lime slakers produce milk of lime for the juice clarification system. The gases produced during slaking are gathered in a common header and vented through a spray header style wet scrubber to remove any particulate matter produced in the slakers. The treated gas leaving the scrubber is ducted to a fan that exhausts to atmosphere.

## **Upset Conditions and Corrective Procedures**

The Company takes its environmental responsibilities very seriously. Upsets that can lead to excess emissions from the lime kiln exhaust vent scrubber system are a very serious matter and must be managed quickly and efficiently. The following information should be used for properly responding to upset conditions that can lead to an excess emission:

**Cause** An upset condition has the potential to occur when one or more of the following conditions occur:

- 1) Spray header or nozzles plug.
- 2) Water supply is unavailable
- 3) Nozzles plug
- 4) Clemens filter plugs
- 5) Dampers not operating properly.

### **Detection**

An upset condition that leads to possible excess emissions from the exhaust vent scrubber system is primarily detected by Lime Kiln Operators during board operation checks and shift inspections. Periodic visible emissions observations may also be used as an indication for upset conditions.

### **Corrective Action**

Operators must implement corrective action immediately when a condition is discovered that may lead to an excess emission. If the situation is not resolved quickly with corrective action, the dampers will have to be closed until the problem is resolved. Exhausting untreated exhaust fan vent gases to the atmosphere is not allowed by the air permit or is not an acceptable mode of operation.

## **Lime Kiln Exhaust Vent Scrubber System Startup and Shutdown Procedures**

The following startup procedure will be followed for all limekiln startups including scheduled and unscheduled events.

### **Lime Kiln Exhaust Vent Start-Up Procedure**

The following operating procedure will be followed in the event that a lime kiln start up is required for either scheduled or non-scheduled events:

- 1) The wet scrubber system will be placed in service with full design water flow.
- 2) Prior to the startup of the beet campaign, the allowable damper

openings (%) will be put into the operating manual.

### **Lime Kiln Exhaust Vent Scrubber Shut Down Procedures**

During shut down, the lime kiln exhaust scrubber remains on-line until the lime kilns have shutdown. The scrubber can then be shut down.

## **Control Device Monitoring Program**

The Tier I air permit requires that the lime kiln exhaust scrubber system be monitored to ensure optimal operations and to detect any upset conditions that may lead to excess emissions.

### **Monitoring Procedures and Equipment**

**Scrubber Header Pressure.** Scrubber header pressure readings are collected once per shift by limekiln operators and logged in the limekiln control room. The data from the logs is entered in the database and weekly reports are sent to the Factory Environmental Manager.

**Visual Emissions** Upset conditions that lead to visible emissions from the exhaust vent scrubber must be immediately reported to the Shift Supervisor or the Lime Kiln Foreman. TASC0 has several certified opacity readers. It is the responsibility of the supervisor that has been notified of the visible emissions to contact a certified reader. The facility Environmental Manager must be notified of any visible emissions events. All excess emissions will be reported in accordance with IDAPA 58.01.01 Rule 135.02. All other emissions observations will be recorded in the VE Log maintained on site

## **Maintenance Procedures**

Maintenance is an import component of proper operation of emission control equipment. TASC0 has identified the following daily and annual tasks to be completed to ensure proper operation of the Lime Kiln scrubber.

### **Daily Inspections and Maintenance**

To ensure optimal efficiency of emission control equipment, the following inspection tasks will be completed each hour:

1. Check Header Pressure Header pressure needs to be checked to ensure that water is flowing through the system. If pressure is above the acceptable range of pressure, clean nozzles and headers as necessary to ensure water flow to the scrubber.

2. Check Clemens Filters. The Y-strainer needs to be checked routinely and the filter checked to ensure that water is flowing through the system.
3. Check Nozzles. The spray bars and the nozzles need to be checked regularly to ensure that they are operating properly. The bars are labeled A,B, C, and D. The shift that corresponds with the labeled bar is responsible for pulling that bar once per shift rotation, i.e., when the shift is on their day shift, the bar must be pulled during that rotation.

### **Annual Maintenance:**

In order to keep the emissions control equipment in optimal operating condition, the following monthly and annual maintenance will be performed:

**Schedule** Annual maintenance on the wet scrubber can only be performed when the equipment is out of service. The following time periods provide general opportunities to perform annual maintenance on equipment. Actual dates of equipment shutdown and availability are determined by the operational needs for the equipment:

#### September- February/March

All equipment is in service during the beet campaign period. Annual maintenance is not performed during this period of time.

#### February/March – August

The equipment is out of service and available for maintenance.

### **Annual Maintenance List**

Annual maintenance presents the opportunity to conduct basic maintenance and system changes to resolve root cause issues. The following tasks have been identified as important annual inspection/maintenance items:

- 1) **Scrubber Housing.** Check for corrosion, warped panels and other damage that may lead to an air leak. Repair as necessary.
- 2) **Scrubber Spray Headers and Nozzles.** Dismantle and clean all scrubber water supply headers and nozzles.
- 3) **Clemens Filter.** Check for corrosion, proper orifice opening, and y-strainer operation. Repair as necessary.

- 4) **Service and Calibrate all Instrumentation** Inspect, service, and calibrate all scrubber system instrumentation including as a minimum the pressure sensors and temperature sensors.
- 5) **Inspect Stacks** Check for corrosion, warped sections and other damage that may lead to poor performance. Ensure that turning vanes are in alignment and good repair. Repair as necessary.
- 6) **Door Seals** Check door seals to ensure that they are in good repair and will seal properly.
- 7) **Duct Work** Check for corrosion, warped sections or panels and other damage that may lead to an air leak. Repair as necessary

## **Record Keeping**

Record Keeping is a specific requirement in the Tier I permit. Record keeping is important to demonstrate that operational information and maintenance is completed as required in the Air Permit. As a minimum the following information will be collected and retained for up to five years:

### Operations

- 1) The scrubber vessel pressure readings will be monitored continuously and recorded at least once per week during exhaust vent system operation and archived in facility files.

Maintenance The following records for the wet scrubber must be kept and archived at the facility:

1. All Scrubber Maintenance Performed.
2. All calibration information for scrubber control instrumentation

**Appendix A**  
**General Schematic of the Lime Kiln(s) Exhaust Vent**  
**Scrubber**

**Appendix B**  
**Equipment Codes for Lime Kiln Material Handling**  
**Baghouses**

**APPENDIX C – FOSTER WHEELER BOILER CEM  
STANDARD OPERATING PROCEDURES**

FOSTER WHEELER BOILERCEMSTANDARD OPERATING PROCEDURE

**A. Source Operator - The Amalgamated Sugar Company LLC (TASCO)  
2320 Orchard Drive East  
Twin Falls, Idaho 83301**

Contact: **Gary Pool, Plant Manager**  
Telephone: **(208)733-4104**

**B. Descriptions of CEM -**

1. Opacity –

Stack gases pass between a transmissometer and reflector whereby the opacity is gauged via a 4 – 20 MA signal to a digital read out located on the Foster Wheeler control panel. The opacity is read in %. The opacity is also collected in a data logging program located in the Boiler House. This data is also posted on the lab net and a hard copy of the daily data is filed in the main environmental files. Data has been recorded on a circular chart located in the boiler house control room. Data are now recorded in the plant data historian.

2. SO<sub>2</sub> and NO<sub>x</sub> -

The SO<sub>2</sub> and NO<sub>x</sub> continuous monitors are extractive systems whereby a sample is drawn from the stack gases and measured in part per million using photometric analysis. The PPM along with the O<sub>2</sub> reading are then used to calculate pounds per million BTU in a data logging system located in the Boiler House. This data is also posted on the lab net and a hard copy of the daily data is filed in the main environmental files. (A digital readout, instantaneous, of the initial concentrations, in ppm, is located in the boiler house control room.)

3. O<sub>2</sub> -

The O<sub>2</sub> probe is an INSITU type. An O<sub>2</sub> sample is with drawn from the stack and analyzed on a wet basis in percentage. This value is used to calculate the emission rates for SO<sub>2</sub> and NO<sub>x</sub>. This data is posted on the lab net and a hard copy of the daily data is filed in the main environmental files.

All read outs are located on the Foster Wheeler boilers control panel. Data logging is located in the Boiler House and recorded on the lab net. A hard copy of the daily data is filed in the main environmental files.

**C. All sensors are located in the breeching after the baghouse and prior to the stack (see attached diagram)**

**QUALITY ASSURANCE PLAN  
FOR THE  
FORSTER WHEELER BOILER  
CONTINUOUS EMISSIONS MONITOR  
TWIN FALLS FACTORY 2008**

**1. Daily Report:**

Boiler House Responsibilities:

EVERY MORNING, a daily report will be generated and placed in the CEM REPORT file kept in the Boiler House. The Boiler House operator will SIGN HIS NAME and SHIFT DESIGNATION (i.e. 1A) on this report.

Boiler House Foreman or Senior Operator Responsibilities:

Review all daily reports – weekend reports may be reviewed on Monday. Make corrections and new copies of the reports, if needed. Submit all reports to the Superintendent's Clerk Verify that any Excess Emissions reports were properly generated and processed.

Shift Mechanical Supervisor Responsibilities:

Provide assistance to the boiler house and instrument personnel as required to avoid excess emissions events. This assistance can include either mechanical assistance or personnel to inspect the baghouse and change out filter bags.

Shift Supervisor Responsibilities:

Review lab net data at least once per shift.

Superintendent's Clerk or Substitute Clerk Responsibilities:

Monday through Friday – fax the computer generated reports to Corporate Engineering in Nampa (attn: Dean DeLorey). The original report will be filed in the main environmental file. A copy will be sent to the Environmental Manager, Gary Lowe. Reports from the weekend will be combined with the Monday report.

Environmental Manager Responsibilities:

Review all coal analyses and shipments. Review daily information and compile for the Quarterly Air Report. Verify that Calibrations are being done on a timely basis. Schedule CGAs as necessary.

**2. Excess Emissions Reports:**

Responsibilities of the Boiler House and Shift Supervisor:

If an excess emissions event occurs, notify the appropriate person – Gary Lowe, Gary Pool, Vince Rosen or Jorge DeVarona. If the exceedence occurs when none of the above people are on site, they must be notified by telephone. Keep calling until you speak to a live person. The notification should be done as soon as possible, but no later than 12 hours after the exceedence begins. In the event that none of these people are available, the Shift Supervisor will have to notify the authorities about the exceedence (See Excess Emissions Reporting procedure). Fill out an excess emissions report. Keep one copy in the boiler house and send one copy of the report to the Environmental Manager.

Responsibilities of the Superintendent's Clerk or Substitute Clerk:

The original report will be filed in the main Environmental file. The excess emissions report will be faxed to Corporate Engineering in Nampa (attn: Dean DeLorey). Make a copy of the report for the Environmental Manager.

Responsibilities of the Environmental Manager or Highest Ranking supervisor on site:

Notify the authorities of the exceedence (within 24 hours of the beginning of the incident – See April 24, 2002 letter for procedure and contacts). Provide whatever assistance is required by the Boiler House Operators and the instrument personnel.

The Environmental Manager will do the required reporting to IDEQ and EPA. This Reporting consists of a written report within seven (7) days of the reported incident and the inclusion of the Excess Emissions Report in the Quarterly report.

**3. Training**

Boiler House Foreman Responsibilities:

Ensure that each Boiler House Operator and Assistant Operator is properly trained on:

- how to determine if an emission level is out of compliance
- when to notify the Shift Supervisor
- how to fill out the necessary sections of the Excess Emissions report.

The Environmental Manager will assist in the training whenever needed. The trainer, trainee, shift and date of training will be filed in the Boiler House.

Ensure that personnel know how to inspect and replace baghouse bags properly. This includes monitoring the plant data historian and watching for “spikes” that indicate problems with the baghouse. By monitoring this chart and inspecting the baghouse in a timely manner, most opacity excursions can be avoided.

**4. Maintenance and Inspection:**

Boiler House Foreman Responsibilities:

Routinely inspect, maintain, and record any work performed on the baghouse. Monitor the data recorded on the lab net. When the ppm SO<sub>2</sub> or NO<sub>x</sub> is in the red zone, notify the shift instrument personnel or the instrument supervisor as appropriate. Immediate action must be taken to validate the accuracy of the instrument in question, whether or not the emissions are above limits.

Instrument Supervisor and Instrument Personnel:

Perform daily calibration drift (CD) tests on each of the instruments (SO<sub>2</sub>, NO<sub>x</sub>, O<sub>2</sub>, and opacity). Record the results of these checks in the Daily Log Book. The procedure for each of these tests is contained in the Standard Operating Procedures of this manual. The Instrument Supervisor and the Instrument Personnel shall be familiar with the criteria for corrective action. If the results of a CD test indicate corrective action is necessary, make the correction and record the actions in the Calibration Log Book.

Document any repairs done to an instrument or to related equipment (i.e. sample lines) in the Maintenance Log. Inform the Boiler Operator and the Instrument Supervisor of the repairs.

When the ppm SO<sub>2</sub> or NO<sub>x</sub> is in the red zone, immediate action must be taken to validate the accuracy of the instrument in question. This needs to be done whether or not the emissions are above limits.

A performance audit will be performed once during each calendar quarter of boiler operation. This audit will consist of a Cylinder Gas Audit (CGA). These audits cannot be closer than two (2) months apart, even though the audits may fall in separate quarters. Results from these audits will be recorded in the Calibration Log Book.

**DATA LOGGING PROCEDURE  
FOR THE  
FOSTER WHEELER BOILER  
CONTINUOUS EMISSIONS MONITOR  
TWIN FALLS FACTORY – 2006**

**1. Opacity**  
CEM Steps

- A. Collect a sample every 10 seconds (each 10 second reading will be considered to have a duration of 10 seconds).
- B. All 10 second opacity reading are averaged over six minutes and are shown on the computer screen.

Boiler House Responsibilities:

- A. Determine if any of the 6 minute average opacity readings exceed the limits. If so, notify the Shift Supervisor and follow the directions given in the "Excess Emissions Reporting" sections of this manual.
- B. Record the hourly average % Opacity in the Boiler House Log Sheet.

**2. SO<sub>2</sub> and O<sub>2</sub>**  
CEM Steps

- A. Analyze the stack gas for ppm SO<sub>2</sub> and % O<sub>2</sub> every cycle (approximately 15 minutes).
- B. Calculate pounds SO<sub>2</sub> per MMBtu

$$= ppmSO_2 \times 1,775 \times 10^{-6} \frac{(20.9)}{20.34 - \%O_2}$$

(Calculation done to nearest 0.1)

- C. Average all 15 minute readings each running hour and log.
- D. Posts the last three hourly readings on the computer screen. This data is also posted on the lab net and a hard copy is kept in the main environmental file.

Boiler House Responsibilities:

- A. Monitor the readings and determine if the SO<sub>2</sub> reading exceeds the limits. If so, notify the Shift Supervisor and follow the directions given in the "Excess Emissions Reporting" section of this manual.
- B. Record the hourly average of the lbs SO<sub>2</sub> per MMBTU on the Boiler House daily log sheet.

**3. NO<sub>x</sub> and O<sub>2</sub>**  
CEM Steps

- A. Collect and analyze the stack gas for ppm NO<sub>x</sub> and %O<sub>2</sub> every cycle (approximately every 15 minutes).
- B. Calculate pounds NO<sub>x</sub> per MMBtu

$$= ppmNO \times 1,276 \times 10^{-6} \frac{(20.9)}{20.34 - \%O_2}$$

(Calculation done to the nearest 0.01)

- C. Average all 15 minute readings each running hour and log. This data is also reported on the lab net and a hard copy of the data is filed in the main environmental files.

Boiler House Responsibilities

- A. Monitor the data and determine if the NO<sub>x</sub> reading exceeds the limits. If so, notify the Shift Supervisor and follow the directions given in the "Excess Emissions Reporting" section of this manual.
- B. Record the hourly average on the Boiler House daily log sheet.

**FOSTER WHEELER BOILER**  
**CEM EQUATIONS**  
September 2002 – PJB

$$\text{SO}_2(\text{lb}/\text{MBTU}) = (\text{SO}_2 \text{ ppm}) * (0.001768 \text{ factor to get lb}/\text{MBTU}) * 20.9 / (20.34 - \% \text{O}_2)$$

$$\text{NO}_x(\text{lb}/\text{MBTU}) = (\text{NO}_x \text{ ppm}) * (0.001271 \text{ factor to get lb}/\text{MBTU}) * 20.9 / (20.34 - \% \text{O}_2)$$

Example #1: NO<sub>x</sub>=400ppm  
                  %O<sub>2</sub>=5%

$$400 * 0.001271 * 20.9 / (20.34 - 5.0) = \underline{0.69}$$

In Compliance

Example #2: NO<sub>x</sub>=380ppm (diluted from example above)  
                  %O<sub>2</sub>=8.5% (higher than example above)

$$380 * 0.001271 * 20.9 / (20.34 - 8.5) = \underline{0.85}$$

Out of compliance – due to higher O<sub>2</sub> reading

**EXCESS EMISSIONS REPORTING  
FOR THE  
FOSTER WHEELER BOILER  
CONTINUOUS EMISSIONS MONITOR  
TWIN FALLS FACTORY – 2008**

**When to follow the procedures detailed in the Quality Assurance – Excess Emissions Report**

<b>Pollutant</b>	<b>Limits (Not to exceed)</b>
<b>Opacity</b>	<b>20% opacity, maximum, except for 6 minutes in any 60 minute period (no greater than 27%)[see memorandum below]</b>
<b>SO<sub>2</sub></b>	<b>1.2 lbs/million Btu of heat input (3 hour average) [stay below 1.25 per Idaho DEQ]</b>
<b>NO<sub>x</sub></b>	<b>0.70 lbs/million Btu of heat input (3 hour average) [stay below 0.71]</b>

For more detail, see the January 16, 2008 memorandum outlining procedure.

**THE AMALGAMATED SUGAR COMPANY LLC  
TWIN FALLS FACILITY**

**INTERCOMPANY CORRESPONDENCE**

**TO:** Rex Christensen and Boiler Operators  
**FROM:** Gary Lowe  
**DATE:** January 16, 2008  
**RE:** Reportable emissions from the Foster Wheeler

This is a revision of a 2006 memo on the same subject. This memo updates the contact personnel.

<u>Pollutant</u>	<u>Limits (Not to exceed)</u>
Opacity	20.4% average opacity during any six-minute period, except that <u>one</u> 6-minute average per hour of up to 27.4% need not be reported.
Sulfur Dioxide	1.24 lbs/million Btu of heat input (three-hour average)
NO <sub>x</sub>	0.70 lbs/million Btu of heat input (three hour average)

If any of these limits are exceeded, the following procedure must be followed:

1. Notify the appropriate person – Gary Lowe, Gary Pool, Vince Rosen, or Jorge DeVarona. If the limits are exceeded when none of the above people are on site, they must be notified by telephone. Keep calling until you speak to a live person. The notification should be done as soon as possible, but no later than 12 hours after the limits have been exceeded. In the event that none of these people are available, the Shift Supervisor will have to notify the authorities about the emissions. (See attached procedure and telephone number.)
2. Fill out an excess emissions report.
3. Keep one copy of the report for your records and send one copy of the report to Gary Lowe.

If you have any questions, please feel free to call.

**Cc:** Gary Pool, Vince Rosen, and Jorge DeVarona – Twin Falls  
Bob Braun, Corporate Engineering – Boise

## FOSTER WHEELER BOILER EXCESS EMISSIONS REPORTING

### I. SO<sub>2</sub>

Anytime the three-hour average SO<sub>2</sub> (lbs/MMBtu) exceeds 1.24 lbs/hr, the Shift Supervisor will notify the appropriate personnel (See also the memorandum dated 11/11/2008). If none of the people are available, the Shift Supervisor will notify the Idaho Department of Environmental Quality (IDEQ) by telephone day or night at (208) 736-2190 and state that, "The lbs SO<sub>2</sub> per million Btu from the Foster Wheeler Boiler at the Amalgamated Sugar Company facility in Twin Falls, Idaho has exceeded 1.2". In lieu of notifying IDEQ via telephone, they may also be notified by fax. The fax number is (208) 736-2194. A copy of the form (AQ-C9) is attached. **Note:** if a calibration error causes a high three-hour reading, IDEQ need not be called.

Example: If the three-hour lbs SO<sub>2</sub> per million Btu exceeds 1.24, the supervisor will call IDEQ and notify them of the exceedence. If the three-hour CEM reading is at or above 1.25 lbs/MMBtu at 8:00 a.m. and is continuous for the entire day above 1.24, the supervisor does not need to call again until the emissions drop below 1.24 and then rise again above 1.24.

The Supervisor will note:

- The time the call to IDEQ was made (or the time the fax was sent)
- The value of the SO<sub>2</sub> lb per million Btu
- If a message was left on the answering machine or the name of the person that was contacted at IDEQ
- The boiler house operator, with the assistance of the Shift Supervisor, must completely fill out the upset log.

### II. Opacity

Anytime an opacity reading exceeds 20.4% in a 6 (six) minute period in one hour (except for one reading of 6 minutes that does not exceed 27.4%), the Shift Supervisor will notify the appropriate personnel (See the memorandum dated 11/11/2008). If none of the people are available, the Shift Supervisor will notify the Idaho Department of Environmental Quality (IDEQ) by telephone day or night at (208) 736-2190 and state that "The opacity on the Foster Wheeler Boiler at the Amalgamated Sugar Company facility in Twin Falls, Idaho exceeded 20% for more than 6 (six) minutes". In lieu of notifying DEQ by telephone, they may be notified via fax as described in the SO<sub>2</sub> paragraph above. **Note:** if maintenance or a calibration error causes a high six-minute reading, IDEQ need not be called.

The Supervisor will note:

- The time the call to IDEQ was made (or the time the fax was sent)
- The value of the opacity exceedence
- If a message was left on the answering machine or the name of the person that was contacted at IDEQ
- The boiler house operator, with the assistance of the Shift Supervisor, must completely fill out the upset log.

### III. NO<sub>x</sub>

Anytime the three-hour average NO<sub>x</sub> (lbs/MmBtu) exceeds 0.70 lbs/hr, the Shift Supervisor will notify the appropriate personnel (See memorandum dated 11/11/2008.) If none of the appropriate personnel are available, the Shift Supervisor will notify the Idaho

Department of Environment Quality (IDEQ) by telephone day or night at (208) 736-2190 and state that, "The lbs NO<sub>x</sub> per million Btu from the Foster Wheeler Boiler at the Amalgamated Sugar Company facility in Twin Falls, Idaho, has exceeded 0.70." In lieu of notifying DEQ by telephone, they may be notified via fax as described in the SO<sub>2</sub> paragraph. **Note:** if a calibration error causes a high three-hour reading, IDEQ need not be called.

The Supervisor will note:

- The time the call to IDEQ was made (or the time the fax was sent)
- The value of the NO<sub>x</sub> lb per million Btu
- If a message was left on the answering machine or the name of the person that was contacted at IDEQ
- The boiler house operator, with the assistance of the Shift Supervisor, must completely fill out the upset log.

**FACSIMILE**

Date: \_\_\_\_\_

# Pages: 1

To: Steve VanZandt	From: Gary Lowe
Co./Dept.: IDEQ - Twin Falls Regional Office	Co./Dept: The Amalgamated Sugar Company
Phone #: 736-2190	Phone #: 733-4104
Fax #: 736-2194	Fax #: 735-5432

This fax form is provided for your convenience and is the recommended notification method.

**Event Type:**     **Startup**     **Shutdown**     **Scheduled Maintenance**  
*(per IDAPA 58.01.01.133.01: notify DEQ no later than 2 hours prior to the start of event)*

**Upset**     **Breakdown**     **Safety Measure**  
*(per IDAPA 58.01.01.134.02: notify DEQ no later than 24 hours after the beginning of event)*

**Facility Name:**    The Amalgamated Sugar Company LLC, Twin Falls facility

**Physical Address:**    2320 Orchard Drive East

**City:**    Twin Falls, Idaho

**Event Start Date:**    \_\_\_\_\_    **Event Start Time:**    \_\_\_\_\_

**Event End Date:**    \_\_\_\_\_    **Event End Time:**    \_\_\_\_\_

**Indicate the specific location of the excess emissions event.**

**List emissions unit(s) &/or control equipment involved.**

**Describe cause(s) of excess emissions (to the extent known).**  
 (applicable only for upset, breakdown, or safety measures)

THE AMALGAMATED SUGAR COMPANY  
TWIN FALL FACILITY  
CONTACT REPORT

Project: \_\_\_\_\_

Contact:	Date/ Time:
Address/ Phone Number	
Subject:	

Actions:
----------

## EXAMPLE EPA PROTOCOL GAS INVENTORY FOR CEMS

(Inventory update 12/20/02)

**Table I.**

**Gases with valid expiration dates, to be used for official calibrations & cylinder gas audits.**

Gas Type	Cylinder Number	Concentration	Cylinder Pressure	Expiration Date
SO <sub>2</sub>	FF-20604	882 PPM		09 Dec 05
SO <sub>2</sub>	FF-25546	386 PPM		13 Nov 03
NO <sub>x</sub>	FF-25613	574 PPM		14 Nov 03
NO <sub>x</sub>	FF-25549	252 PPM		14 Nov 03
O <sub>2</sub>	FF-24086	8.36%		04 May 04
O <sub>2</sub>	FF-24097	4.23%		06 May 04

**Table II.**

**Gases with past due expiration dates, to be used for internal nonofficial calibration checks.**

Gas Type	Cylinder Number	Concentration	Cylinder Pressure	Expiration Date
NO <sub>x</sub>	FF-8770	557 PPM		26 Jan 02

**Notes Reminders:**

- 1.) Do not use cylinders that are below 150 psig.
- 2.) Use only stainless steel regulators, tubing, and fittings in both NO<sub>x</sub> and SO<sub>2</sub> service.

**Table III.**

**Expired cylinders that should be brought to Receiving for return.**

Gas Type	Cylinder Number	Concentration	Cylinder Pressure	Expiration Date
SO <sub>2</sub>				
NO <sub>x</sub>				

## Calibration Drift – Calibration Gases

### Calibration Gases

Daily calibration drifts along with cylinder gas audits will be conducted with calibration gases. QA/QC procedures for these gases will be as follows:

### Daily Calibration Drift checks

Once per day the CEMS will be automatically checked for Calibration Drift (CD). The CD check will involve challenging the CEMS at 2 levels; zero (or low level) and a high level. These levels are defined as follows:

Zero = <0.25% of instrument span

Low level = 0 to 20% of instrument span

High level = 50-100% of instrument span

(Ref: ODEQ, Continuous Monitoring Manual, page B-8)

NO<sub>x</sub> will be used for zero gas during SO<sub>2</sub> zero check and SO<sub>2</sub> will be used as zero gas during NO<sub>x</sub> zero check. Nitrogen may also be used as a zero gas on either SO<sub>2</sub> or NO<sub>x</sub> analyzers.

Oxygen (O<sub>2</sub>) will also be checked in the daily CD check for zero (or low level) and a high level value. Zero value will be supplied by either SO<sub>2</sub> calibration gas, NO<sub>x</sub> calibration gas or a separate cylinder of nitrogen (N<sub>2</sub>).

For daily CD and CEMS will be set up to automatically calibrate itself each morning and record the noted drift. Drift correction will remain a manual operator initiated action.

There are two options in calibration gases:

- 1.) EPA Traceability Protocol #1 Gas.
- 2.) Certified Mixture or equivalent gas with a manufacture's tolerance not to exceed  $\pm 2\%$ .

If option 2 above is chosen, the calibration gas value will need to be verified. For verification a modification to EPA Method 6C, Section 6.1.2. will be performed as follows:

### Calibration gas value verification procedure summary:

- 1.) Calibration gas mixture must have a manufacture's tolerance not to exceed  $\pm 2\%$ .
- 2.) Analyze gas mixture in triplicate by running gas through the CEMS three times.
- 3.) Record the three analytical results and calculate an average value for the data sheet.
- 4.) Each of the individual analytical results needs to be within the following tolerances of the triplicate set average; if not, discard the entire set and repeat the triplicate analysis:
  - a. 5% or 5 ppm (whichever is greater) for SO<sub>2</sub> (Ref. EPA Method 6C, Sec. 6.1.2.).
  - b. 5% or 0.2% by volume (whichever is greater) for O<sub>2</sub> (Ref. EPA Method 3A, Sec. 6.1.)and

- c. 10% or 10 ppm (whichever is greater) for NO<sub>x</sub> (Ref. EPA Method 7E, Sec. 6.13).
- 5.) Correct the triplicate set average using equation 6C-1. If the corrected average of the triplicate analyses is within 5% of the manufacturer's cylinder tag value, you can use the tag value or you may proceed to step #6 and calculate a new corrected value.
- 6.) If the average of the corrected triplicate analysis is not within the 5% tolerance conduct at least three additional analyses until the results of six consecutive runs agree within 5% of 5 ppm (0.2% by volume for O<sub>2</sub> analyzer, whichever is greater) of their average. Then correct this average value using equation 6-C1. This corrected value can now be used for the cylinder gas value.

Equation 6C-1

$$C_{gas} = (\bar{C} - C_o) * \frac{C_{ms}}{C_m - C_o}$$

Where:  $C_{gas}$  = New corrected cylinder gas value.

$\bar{C}$  = Average gas concentration indicated by CEM analyzer (dry basis, ppm).

$C_o$  = Average of initial and final system calibration bias check responses for the zero gas, ppm.

$C_m$  = Average of initial and final system calibration bias check responses for the upscale calibration gas, ppm.

$C_{ms}$  = Actual concentration of the upscale calibration gas, ppm.

**Note:** Equation 6C-1 was referenced from EPA Method 6C.

**Note:** Values for  $C_m$  and  $C_o$  shall be determined by challenging the analyzer with EPA Traceability Protocol #1 Gas immediately prior to certifying daily calibration gas.

SO<sub>2</sub> Span –

The technician pushes the light switch which automatically moves the SO<sub>2</sub> optical calibration filter up into the light beam. Record the value, then adjust as necessary to the correct span check value.

NO<sub>x</sub> Zero –

At the NO<sub>x</sub> zero, the technician pushes “hold” button, allows analyzer to zero. Technician will record that value in the daily calibration log book and adjust as necessary.

NO<sub>x</sub> Span –

The technician will manually put the NO<sub>x</sub> optical filter into the light beam. Record the value, then adjust as necessary to the correct span check value.

## O<sub>2</sub> Zero and Span –

1. Induce flow of calibration \* gas through the analyzer by removing the cap from the calibration port, and connecting a know cylinder to the calibration port. The flow rate should normally be 3 to 6 SCFH.
2. Compare readout with cylinder analysis. If readout concurs with cylinder analysis, the instrument is in calibration.
3. If the display reading is lower or higher in O<sub>2</sub> than the correct value see Section 3 of operator manual for calibration instructions.

\* Recommended calibration gas for oxygen ranges is 2% O<sub>2</sub>

## F-2. CGA – Cylinder Gas Audits

The cylinder gas audits will be performed during each quarter that the Foster Wheeler boiler is in operation. Official audits must be two months apart. Any time the boiler has been shut down for maintenance, a CGA must be performed within 5 days of the projected start up of the boiler.

### 1. Cylinder Gas Audit (CGA) –

A CGA consists of challenging the CMS three times with each audit standard: an independent “zero” and two independent upscale Certified Standards (at approximately 1 and 0.5 times the permitted emission standard). **Audit standards used must not be the same ones used for daily checks or calibration.** Standards which are acceptable include those from the National Institute of Standards and Technology- Standard Reference Materials (NIST-SRMs), gas vendor Certified Reference Material (CRM), or a Primary Standard gas which is traceable to NIST-SRMs or CRMs using EPA's Revised Treceability Protocol No. 1 (DEQ Lab can provide copy).

CGA audit samples shall be introduced into the CEMS operating in the normal sampling mode to include as much of the system as possible (e.g. at or as close as possible to the sampling probe penetrates the stack wall for introduction of audit gases).

Results of each audit shall be available to DEQ for review.

NSPS sources with SO<sub>2</sub>, NO<sub>x</sub>, or TRS CEMs must audit the pollutant channel and the diluent (O<sub>2</sub> or CO<sub>2</sub>) CEMs because the emission standard is based on both the pollutant and diluent CEMS.

## F-4 System Audit –

The instrument supervisor will perform a system audit during the plant pre-campaign test out.

A written report will be sent to the Plant Manager and the Environmental Manager.

G. Routine Maintenance –

All maintenance performed on the CEMS must be recorded in the CEM maintenance log book. (See attached sheets for daily, yearly maintenance check lists for opacity, SO<sub>2</sub>, NO<sub>x</sub> and O<sub>2</sub> CEMS., these sheets are located in the Boiler House Control Room.)

H. See pgs. A1 and A2

I. Spare Parts –

The storeroom will keep a minimum on-hand spare parts as listed on the spare parts lists attached.

- 1.) Opacity – see attached purchase order 8-02611, 1992
- 2.) SO<sub>2</sub> – see attached pgs. 5-1 thru 5-10
- 3.) NO<sub>x</sub> – see attached pgs. 5-1 thru 5-10

J. All maintenance on the CEM equipment must be recorded in the CEM maintenance log book, signed and dated.

All calibration draft tests and corrections values must be noted and logged into the CEM calibration log book, signed and dated.

K. The CEM calibration log book will be located in the boiler house control room. All records must be kept for five years.

L. Manufactures and Model

- 1.) Opacity – USI Model 500C
- 2.) SO<sub>2</sub> – Dupont 460 (New Ametek)
- 3.) NO<sub>x</sub> – Dupont 461 (New Ametek)
- 4.) O<sub>2</sub> – Thermox Model WDG-INSTITN

M. Equipment in systems

- 1.) Opacity – (see figure 1-2)
- 2.) SO<sub>2</sub> and NO<sub>x</sub> – (see pg. 2-3, 2-5/2-6)
  - a. Stack Probe – Dupont 460/461
  - b. Sample line tubing – Teflon
  - c. Sample analyzer and housing – Dupont 460/461
  - d. Data Logger – Edge PC with TASCOS software
- 3.) O<sub>2</sub> –

- a. Probe – Ametek
- b. Control Unit – Ametek Model WDG
- c. Remote calibration Unit - Ametek

N. Calibration Procedures – (all automated except opacity).

1. Opacity

A daily calibration is performed as follows:

- a. Opacity is manually put into zero and span check. Values are recorded in daily calibration log book. Adjust as necessary utilizing manufactures recommendations (see instruction manual).

2. SO<sub>2</sub> and NO<sub>x</sub> –

A daily calibration is performed as follows:

- a. SO<sub>2</sub> zero – At the SO<sub>2</sub> zero the technician pushes “hold” button, allows analyzer to zero. Technician will record that value in the daily calibration log book.

**TRAINING ON THE  
FOSTER WHEELER BOILER  
CONTINUOUS EMISSIONS MONITOR (CEM)**

DATE	SHIFT	TRAINER	TRAINEE *

\* Your signature indicates that you have received training on the Foster Wheeler Boiler Continuous Emissions Monitoring (CEM) equipment. This training included:

1. What the opacity, SO<sub>2</sub>, and NO<sub>x</sub> values on the computer screen mean.
2. How often and where to record these values.
3. How to determine if any of these values exceed the allowable limits.
4. Who to call in case of an exceedence.
5. What to look for in case of an exceedence.
6. Where to locate Excess Emissions Report forms.
7. How to fill out an Excess Emissions Report form.
8. How to print out Daily Reports and where to file them.
9. How to properly inspect, change, and record baghouse replacements.