STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by:

United States Sugar Corporation
111 Ponce DeLeon Avenue
Clewiston, FL 33440
Authorized Representative:
Mr. Neil Smith, V.P. of Sugar Processing Operations

Air Permit No. PSD-FL-346A
Project No. 0510003-038-AC
Clewiston Sugar Mill and Refinery
New White Sugar Dryer
Revised PM/PM_{10} Standards

Enclosed is Final Air Permit No. PSD-FL-346A, which revises the PM/PM_{10} emissions standards for the new white sugar dryer. This unit operates at the existing Clewiston Sugar Mill and Refinery (SIC Nos. 2061 and 2062), which is located at the intersection of W.C. Owens Avenue and State Road 832 in Hendry County, Florida. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty (30) days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Trina L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

Attachments

JK/tlv/jfk

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit package (including the Final Permit) was sent by electronic mail (return receipt requested) before the close of business on 12/22/06 to the persons listed:

Mr. Neil Smith, USSC*
Mr. Don Griffin, USSC
Mr. Peter Briggs, USSC
Mr. David Buff, Golder Associates Inc.
Mr. Ron Blackburn, SD Office
Mr. Gregg Worley, EPA Region 4

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Mary S. Harvey (Clerk) 12/22/06 (Date)

Florida Department of Environmental Protection

Memorandum

TO: Joseph Kahn, Director - Division of Air Resource Management

THROUGH: Trina Vielhauer, Chief - Bureau of Air Regulation

FROM: Jeff Koerner, Air Permitting North Section

DATE: December 20, 2006

SUBJECT: Final Air Permit No. PSD-FL-346A
Project No. 0510003-038-AC
U.S. Sugar Corporation, Clewiston Sugar Mill and Refinery
New White Sugar Dryer – Revision of PM/PM_{10} Standard

Attached for your review are the following items to revise the air construction permit for the recently installed fluidized bed white sugar dryer. This new unit is designed to remove moisture from refined sugar prior to storage in a conditioning silo. No fuel is combusted. Low-pressure steam supplies the heat necessary for drying. Sugar particles in the exhaust stream are removed with a set of four cyclone collectors followed by a wet atomizing venturi-type scrubber. Sugar captured by the cyclones is transferred to storage. Sugar captured by the scrubber water is recycled back to the refining process. The original project was subject to PSD preconstruction review and a determination of the Best Available Control Technology (BACT) for particulate matter (PM) and particulate matter less than 10 microns in diameter (PM_{10}).

After completing construction, emissions tests showed low PM_{10} emissions, but unexpectedly higher total PM emissions. Investigations indicate that large water droplets containing dissolved sugar are being re-entrained into the exhaust gas stream. Observations and estimation techniques indicate that the entrained droplets quickly settle to the ground and substantially remain on plant property near the discharge vent. Subsequent equipment modifications have improved performance and reduced PM emissions by approximately half, but total PM emissions remain relatively high due to the large droplets. The draft permit includes the following changes: retain the current standard of "4.2 lb/hour" as the PM_{10} standard with compliance demonstrated by EPA Method 201A; add a new PM standard of "15 lb/hour" with compliance demonstrated by EPA Method 5; install a drain in the silencer ductwork to prevent re-entraining water droplets; reduce the maximum sugar concentration of the recycled scrubber water; conduct new compliance tests; and submit a report summarizing the additional improvements.

I recommend your approval of the attached final permit revision for this project.

Attachments

JK/tlv/jfk

FINAL DETERMINATION

PERMITTEE

United States Sugar Corporation
111 Ponce DeLeon Avenue
Clewiston, FL 33440

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation, Air Permitting North Program
2600 Blair Stone Road, MS #5505
Tallahassee, Florida, 32399-2400

PROJECT

Air Permit No. PSD-FL-346A
Project No. 0510003-038-AC
U.S. Sugar Corporation, Clewiston Sugar Mill
New White Sugar Dryer - Revision of PM/PM_{10} Standard

This modification revises the original PM/PM_{10} emissions standards for the new white sugar dryer. This unit operates at the existing Clewiston Sugar Mill and Refinery (SIC Nos. 2061 and 2062) located at the intersection of W.C. Owens Avenue and State Road 832 in Hendry County, Florida.

NOTICE AND PUBLICATION

The Department distributed an "Intent to Issue Permit" package on November 7, 2006. The Public Notice was published in the Clewiston News on November 16, 2006. The Bureau of Air Regulation received the proof of publication on December 11, 2006.

COMMENTS/PETITIONS

No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed. Only the applicant provided comments on the draft permit. On the placard page, the applicant noted that only the PM standard was being revised and not the PM_{10} standard. In response, the Department notes that the original particulate matter emissions standard is actually being separated into two standards: one for PM emissions and one for PM_{10} emissions. No change to the draft permit was made in response to this comment.

CONCLUSION

Only minor revisions were made to correct typographical errors, etc. The final action of the Department is to issue the permit with the minor changes described above.

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

PERMITTEE

United States Sugar Corporation
111 Ponce DeLeon Avenue
Clewiston, FL 33440
Authorized Representative:
Mr. Neil Smith, V.P. of Sugar Processing Operations

Clewiston Sugar Mill and Refinery
Air Permit No. PSD-FL-346A
Project No. 0510003-038-AC
Revised PM/PM_{10} Standards
Permit Expires: December 31, 2007

FACILITY AND LOCATION

The United States Sugar Corporation operates the existing Clewiston sugar mill and refinery (SIC Nos. 2061, 2062), which is located at the intersection of W.C. Owens Avenue and State Road 832 in Hendry County, Florida. Sugarcane is harvested from nearby fields and transported to the mill by train. In the mill, sugarcane is cut into small pieces and passed through a series of presses to squeeze juice from the cane. The juice undergoes clarification, separation, evaporation, and crystallization to produce raw, unrefined sugar. In the refinery, raw sugar is decolorized, concentrated, crystallized, dried, conditioned, screened, packaged, stored, and distributed as refined sugar.

STATEMENT OF BASIS

This modification revises the original PM/PM_{10} emissions standards and is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to perform the proposed work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

CONTENTS

Joseph Kahn, Director
Division of Air Resource Management

12/22/2006
Effective Date

PROJECT DESCRIPTION

The United States Sugar Corporation installed new White Sugar Dryer No. 2 (EU-029) to support the existing refinery operations. Particulate matter emissions are controlled by a set of four high efficiency cyclone collectors in parallel followed by a wet atomizing venturi-type scrubber. Initial testing shows water droplets containing dissolved sugar in the exhaust stream. This permit modification revises the permit and requires following actions: retain the current standard of "4.2 lb/hour" as the PM_{10} standard with compliance demonstrated by EPA Method 201A; add a new PM standard of "15 lb/hour" with compliance demonstrated by EPA Method 5; install a drain in the silencer ductwork to prevent re-entraining water droplets; reduce the maximum sugar concentration of the recycled scrubber water; conduct new compliance tests; and submit a report detailing the costs of several possible additional improvements. Based on the cost information and addition test data, the Department may modify this permit to reduce the particulate matter emissions standards.

REGULATORY CLASSIFICATION

Title III: The existing facility is a potential major source of hazardous air pollutants (HAP).

Title IV: The existing facility has no units subject to the acid rain provisions of the Clean Air Act.

Title V: The existing facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The existing facility is a PSD-major facility as defined in Rule 62-212.400, F.A.C.

APPENDICES

The following Appendices are attached as part of this permit.

Appendix A. Citation Formats

Appendix B. General Conditions

Appendix C. Common Requirements

RELEVANT DOCUMENTS

The permit application and additional information received to make it complete are not a part of this permit; however, the information is specifically related to this permitting action and is on file with the Department.

1. Permitting Authority: The permitting authority for this project is the Florida Department of Environmental Protection's Bureau of Air Regulation. The mailing address is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department's South District Office at 2295 Victoria Avenue, Suite 364, Fort Myers, Florida, 33901-3381.

3. Citation Formats: Appendix A identifies the methods used to cite rules, regulations, and permits.

4. General Conditions: The permittee shall comply with the general conditions specified in Appendix B.

5. Common Requirements: Common regulatory requirements are specified in Appendix C.

6. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

7. Source Obligation:

   (a) Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.

   (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   (c) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

8. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

9. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning

construction or modification. [Rule 62-4.030 and Chapters 62-210 and 62-212, F.A.C.]

10. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Department's South District Office. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

A. White Sugar Dryer No. 2 (EU-029)

This section of the permit addresses the following new emissions unit.

ID	Emission Unit Description
029	The new white sugar dryer will be a fluidized bed-type dryer/cooler with a rated capacity of 85 tons per hour of refined sugar. After wet refined sugar is centrifuged, the dryer will be used to drive off remaining moisture. Sugar with a moisture content of approximately 1.5% by weight will enter the dryer between 120° - 140° F and be suspended in a fluidized bed with jets of hot, conditioned air. A maximum of 11,000 pounds per hour of low pressure steam (12 psig) from the existing mill boilers will supply heat for the process. Sugar will exit the dryer with a moisture content of approximately 0.03% by weight and a temperature between 92° F - 102° F. The refined sugar is then transferred to the conditioning silos. No fuel will be fired and no other new equipment is being added. Particulate matter emissions from the dryer will be controlled by a set of four high efficiency cyclone collectors in parallel followed by a wet scrubber. Exhaust at 110° F will leave a stack approximately ~~78~~ 82 feet above ground level with a with a volumetric flow rate of 92,000 acfm. The rectangular stack will be 7.0 feet by 6.0 feet. The scrubber pressure drop and scrubber water recirculation flow rate will be continuously monitored.

{Permitting Note: The particulate matter emissions standards for the new dryer are established pursuant to Rule 62-212.400, F.A.C (BACT).}

EQUIPMENT

1. New White Sugar Dryer No. 2: The permittee is authorized to construct a new fluidized bed white sugar dryer/cooler (BMA or equivalent) with a rated capacity of 85 tons per hour. Jets of hot conditioned air will be used in the dryer to suspend sugar in a fluidized bed to drive off excess moisture. Low pressure steam will be used to heat the conditioned air; no fuel will be fired. [Design]

2. Air Pollution Control Equipment: To comply with the standards of this permit, the permittee shall install the following air pollution control equipment.

   a. *Cyclone Collectors*: In accordance with the manufacturer's recommendations, the permittee shall install, operate, and maintain a set of four high efficiency cyclone collectors (Entoleter, LLC Model 6600 or equivalent) in parallel with a design removal efficiency of at least 99% of the particulate loading from the new white sugar dryer. The design control efficiency is based on the following inlet conditions: inlet temperature of 110° F; inlet flow rate of 92,000 acfm; inlet dust loading of 14 grains per dscf of inlet gas (11,760 lb/hour); and a pressure drop across the cyclone collectors of 4 - 6 inches of water column.

   b. *Wet Scrubber*: In accordance with the manufacturer's recommendations, the permittee shall install, operate, and maintain a wet scrubber (Entoleter, LLC Centrifield Vortex Model 1500 or equivalent) with a design removal efficiency of at least 96% of the particulate loading from the new cyclone collectors. The design control efficiency is based on the following inlet conditions: inlet temperature of 113° F; inlet flow rate of 92,000 acfm; inlet dust loading of 0.14 grains per dscf of inlet gas (118 lb/hour); a scrubber water recirculation flow rate of 500 gpm; a scrubber make-up water flow rate of 12 gpm; and a pressure drop of 8 - 10 inches of water column.

   The combined design removal efficiency of the two particulate control devices shall be no less than 99.96% based on the above conditions.

   [Design; Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

PERFORMANCE REQUIREMENTS

3. Permitted Capacity: The maximum design capacity of the new sugar dryer is 85 tons per hour of sugar. [Design; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

4. Wet Scrubber: The owner or operator shall maintain 3-hour block averages of the scrubber water recirculation rate (gpm) and pressure drop across the wet scrubber (inches of water column) above the 3-hour averages established during a satisfactory compliance test for particulate matter conducted at permitted capacity. If either monitored parameter drops below the specified level, the permittee shall investigate, take corrective actions to regain the specified operating level, and record the incident in a written log. Operation outside of the specified operating range for any monitored parameter is not a violation of this permit, in and of itself. However, continued operation outside of the specified operating range for any monitored parameter without taking corrective action may be considered circumvention of the air pollution control equipment. *{Permitting Note: For informational purposes, the nominal operating ranges are 500 gpm and 8 - 10 inches of water column.}* [Design; Rule 62-4.070(3), F.A.C.]

EMISSIONS STANDARDS

5. Particulate Matter: As determined by EPA Method 201A stack test, particulate matter emissions less than 10 microns (PM_{10}) shall not exceed 0.005 grains per dscf and 4.2 pounds per hour based on the average of three test runs. As determined by EPA Method 5 stack test, particulate matter emissions shall not exceed 15.0 pounds per hour based on the average of three test runs. [Design; Rule 62-212.400(BACT), F.A.C.]

6. Visible Emissions: Excluding water vapor, visible emissions from the wet scrubber stack shall not exceed 10% opacity. [Rule 62-212.400(BACT), F.A.C.]

TESTING REQUIREMENTS

7. Compliance Stack Tests – Revised: The permittee shall conduct initial stack tests to demonstrate compliance with the particulate matter emissions standards within 90 days after issuance of this final permit and after installing the drain(s) in the ductwork with the silencer vanes to remove collected water. The permittee shall conduct one series of three, 1-hour test runs to demonstrate compliance with the PM_{10} and visible emissions standards. The permittee shall conduct two series of three, 1-hour test runs to demonstrate compliance with the PM and visible emissions standards. For the PM tests, one series shall be conducted at a recirculation flow rate of 500 gpm and the second series shall be conducted at a recirculation flow rate of 750 gpm. The permittee shall also conduct subsequent stack tests to demonstrate compliance with the particulate matter emissions standards during the 12-month period prior to the expiration date of any air operation permit. Tests shall be conducted in accordance with EPA Method 201A (PM_{10}), EPA Method 5 (PM), EPA Methods 1 - 4 (as necessary to support EPA Methods 201A and 5), and EPA Method 9 (visible emissions). The EPA test methods and procedures are specified in Appendix A of 40 CFR 60 and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. In accordance with Rule 62-297.310(2), F.A.C., all tests shall be conducted at permitted capacity. The Department may require the permittee to repeat some or all of these initial stack tests after major replacement or major repair of any air pollution control or process equipment. [Rules 62-204.800, 62-212.400(BACT) and 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8; 40 CFR 60, Appendix A]

MONITORING REQUIREMENTS

8. Cyclone Collectors: In accordance with the manufacturer's recommendations, the permittee shall install, calibrate, operate and maintain a manometer (or equivalent) to monitor the pressure differential across each cyclone collector. *{Permitting Note: The design pressure differential for the cyclone collectors is 4 - 6*

inches of water column. Although no periodic records of the pressure differential are required, the devices shall be properly maintained and functional to provide operational data for evaluating problems.} [Rule 62-4.070(3), F.A.C.]

9. Wet Scrubber Parameters: In accordance with the manufacturer's recommendations, the permittee shall install, calibrate, operate and maintain devices to continuously monitor and record the wet scrubber water recirculation rate (gpm) and the pressure differential across the wet scrubber (inches of water column). Data shall also be reduced to 3-hour block averages. Records shall be maintained on site and made available upon request. [Design; Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

RECORDS AND REPORTS

10. Stack Test Reports: In addition to the information required in Rule 62-297.310(8), F.A.C., each stack test report shall also include the following information: sugar processing rate through the dryer (tons per hour); the air flow rate; the scrubber water recirculation rate (gpm); the scrubber water sugar content in brix; and the pressure differential across the wet scrubber (inches of water column). In addition, the permittee shall record and report the pressure differential across each cyclone collector at the beginning and end of each test run. The stack test report shall clearly indicate the 3-hour averages of the wet scrubber water recirculation rate and pressure differential and that these operating parameters will be complied with based on a 3-hour block average. [Rule 62-4.070(3), F.A.C.]

ADDITIONAL REQUIREMENTS – PM/PM10 REVISION

11. Drain: Within 30 days of issuance of this final permit, the permittee shall install a drain(s) in the ductwork with the silencer vanes to remove collected water. The permittee shall notify the Bureau of Air Regulation and the Compliance Authority when the drain is installed. [Rule 62-4.070(3), F.A.C.]

12. Sugar Content of Recirculating Scrubber Water: Within 30 days of issuance of this final permit, the scrubber system shall be reset to operate so that fresh makeup water will be added to maintain a maximum sugar content of 15 brix in the recirculated scrubber water. [Rule 62-4.070(3), F.A.C.]

13. Additional Report: In conjunction with the required PM/PM_{10} stack test report, the permittee shall provide individual cost estimates based on bids and a detailed description of the necessary work for: redesigning and modifying the cyclone system (possibly adding a cyclone) to accept all of the dryer exhaust; moving the I.D.fan from after the scrubber to between the cyclones and the scrubber; and removing the mitered elbow and installing a properly sized vertical duct at the scrubber outlet. Based on the cost information and additional test data, the Department may modify this permit to reduce the particulate matter emissions standards. [Rules 62-4.070(3) and 62-212.400(PSD), F.A.C.]

B. Miscellaneous Particulate Sources (EU-015, 016, 018, 019, 020, 022, and 029)

This section of the permit addresses the following emissions units.

EU No.	Emissions Unit Description
015	VHP sugar dryer with baghouse (S-11)
016	White sugar dryer No. 1 with baghouse (S-10)
018	Vacuum Systems: Screening/distribution vacuum with baghouse (S-1); 100 lb bagging vacuum with baghouse (S-2); 5 lb bagging vacuum with baghouse (S-3)
019	Six conditioning silos with baghouses (S-7, S-8, and S-9)
020	Screening/distribution and powdered sugar/starch bins with baghouses (S-5 and S-6)
022	Packaging baghouse (S-4)
029	White sugar dryer No. 2 with wet scrubber (S-13)

MODIFIED CONDITION

Condition 2 (Section III, Subsection F) in Permit No. PSD-FL-272A is changed to:

2. Production Restrictions: No more than 2000 tons of refined sugar per day and no more than 730,000 tons of refined sugar per consecutive 12 months shall be packaged at this facility. In addition, no more than 2250 tons of refined sugar per day and no more than 803,000 tons of refined sugar per consecutive 12 months shall be loaded out from this facility. [Applicant Request; Rules 62-210.200 (PTE) and 62-212.400(12), F.A.C., F.A.C.; Air Permit No. PSD-FL-346A]

All other conditions in Permit No. PSD-FL-272A shall remain unchanged.

Filename: PSD-FL-346A - Sugar Dryer - Final Permit

SECTION 4. APPENDICES

Contents

SECTION 4. APPENDIX A

Citation Formats

The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.

REFERENCES TO PREVIOUS PERMITTING ACTIONS

Old Permit Numbers

Example: Permit No. AC50-123456 or Air Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located
"2222" represents the specific facility ID number
"001"identifies the specific permit project
"AC" identifies the permit as an air construction permit
"AF" identifies the permit as a minor federally enforceable state operation permit
"AO" identifies the permit as a minor source air operation permit
"AV" identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the Prevention of Significant Deterioration of Air Quality
"FL" means that the permit was issued by the State of Florida
"317" identifies the specific permit project

RULE CITATION FORMATS

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CFR 60.7 or §60.7]

Means: Title 40, Part 60, Section 7

SECTION 4. APPENDIX B

General Conditions

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology (Yes);
    b. Determination of Prevention of Significant Deterioration (Yes); and
    c. Compliance with New Source Performance Standards (Not Applicable).

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Common Requirements

Unless otherwise specified by permit, the following conditions apply to all emissions units and activities at this facility.

Definitions

1. Excess Emissions: Emissions of pollutants in excess of those allowed by any applicable air pollution rule of the Department, or by a permit issued pursuant to any such rule or Chapter 62-4, F.A.C. The term applies only to conditions which occur during startup, shutdown, soot-blowing, load changing or malfunction. [Rule 62-210.200(106), F.A.C.]

2. Shutdown: The cessation of the operation of an emissions unit for any purpose. [Rule 62-210.200(231), F.A.C.]

3. Startup: The commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions. [Rule 62-210.200(246), F.A.C.]

4. Malfunction: Any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner. [Rule 62-210.200(160), F.A.C.]

Emissions and Controls

5. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

6. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

7. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

8. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

9. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

10. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]

11. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. [Rule 62-296.320(4)(b)1, F.A.C.]

12. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as confining, containing, covering, and/or applying water to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

13. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three

complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

14. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

15. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

16. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

    a. *Required Sampling Time.* Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.

    b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

    c. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

    [Rule 62-297.310(4), F.A.C.]

17. Determination of Process Variables

    a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

    b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

    [Rule 62-297.310(5), F.A.C.]

18. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.

19. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]

20. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

21. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

    1. The type, location, and designation of the emissions unit tested.
    2. The facility at which the emissions unit is located.
    3. The owner or operator of the emissions unit.
    4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
    5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
    6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
    7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
    8. The date, starting time and duration of each sampling run.
    9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
    10. The number of points sampled and configuration and location of the sampling plane.
    11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
    12. The type, manufacturer and configuration of the sampling equipment used.
    13. Data related to the required calibration of the test equipment.
    14. Data on the identification, processing and weights of all filters used.
    15. Data on the types and amounts of any chemical solutions used.
    16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
    17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
    18. All measured and calculated data required to be determined by each applicable test procedure for each run.
    19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
    20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.
    21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

22. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. Information recorded and stored as an electronic file shall be made available within at least three days of a request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]

23. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

UNITED STATES SUGAR CORPORATION

111 Ponce de Leon Ave.
Clewiston, Florida 33440-1207
Telephone 863/983-8121
Fax 863/902-2729

Monday, December 4, 2006

Mr. Ron Blackburn
Florida Department of Environmental Protection
Post Office Box 2549
Fort Myers, Florida 33902-2549

RE: United States Sugar Corporation, Clewiston
Hendry County, Florida
File No. 0510003-038-AC

Gentlemen:

We are enclosing Affidavit of Publication certifying that the "Public Notice of Intent to Issue Air Permit" of reference was published in the legal section of the November 16, 2006 issue of *The Clewiston News.*

Please advise if there is anything further we need provide in this respect.

Sincerely,

UNITED STATES SUGAR CORPORATION

Neil Smith
Vice President and General Manager
Sugar Manufacturing

NS:lp
Enclosure

cc: Jeffery Koerner
David Buff
Peter Briggs
Donald Griffin

DEP ROUTING AND TRANSMITTAL SLIP

TO: (NAME, OFFICE, LOCATION)

1. JEFF KOERNER - DARM
2. MAIL STATION 5500

PLEASE PREPARE REPLY FOR:

_____ SECRETARY'S SIGNATURE

_____ DIV/DIST DIR SIGNATURE

_____ MY SIGNATURE

_____ YOUR SIGNATURE

_____ DUE DATE: _____

ACTION/DISPOSITION:

_____ DISCUSS WITH ME

_____ COMMENTS/ADVISE

_____ REVIEW AND RETURN

_____ SET UP MEETING

_____ FOR YOUR INFORMATION

_____ HANDLE APPROPRIATELY

_____ INITIAL AND FORWARD

_____ SHARE WITH STAFF

__√__ FOR YOUR FILES

COMMENTS:

U. S. SUGAR CORPORATION
CLEWISTON MILL
0510003-038-AC

FROM: Ronald Blackburn/South District Date: 12/08/06 Phone: SC 748-6975

The Clewiston News

Published Weekly — Clewiston, Florida

AFFIDAVIT OF PUBLICATION

State of Florida
County of Hendry

Before the undersigned authority, personally appeared Jose Zaragoza, who on oath says he is Editor of the Clewiston News, a weekly newspaper published at Clewiston in Hendry County, Florida,

that the attached copy of advertisement being a Notice

in the matter public notice of intent to issue air permit
RAL# 175251

in the _____ court, was published in said newspaper in the issue(s)

of November 16, 2006

Affiant further says that the said Clewiston News is a newspaper published at Clewiston, in said Hendry County, continuously published in said Hendry County, Florida, each week, and has been entered as periodicals matter at the post office in Clewiston, in said Hendry County, Florida, for a period of one year next preceding the first publication says that he has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Jose Zaragoza

Sworn to and subscribed before me this 29 day of NOV, 06

Notary Public

Ideybis Gonzalez
Commission #DD341238
Expires: Jul 26, 2008
Bonded Thru
Atlantic Bonding Co., Inc

RECEIVED - D.E.P.
DEC 08 2006
SOUTH DISTRICT

Florida Department of Environmental Protection
Project No. 0510003-038-AC / Draft Air Permit No. PSD-FL-346A
United States Sugar Corporation, Clewiston Sugar Mill and Refinery
Hendry County, Florida

pplicant: The applicant for this project is the United States Sugar Corporation. The applicant's authorized representative is Mr. Neil Smith, V.P. of Sugar Processing Operations. The applicant's mailing address is the Clewiston Sugar Mill and Refinery, 111 Ponce DeLeon Avenue, Clewiston, FL 33440.

cility Location: The United States Sugar Corporation operates an existing sugar mill and refinery in Clewiston at the intersection of W.C. Owens Avenue and State Road 832 in Hendry County, Florida.

oject: The existing Clewiston sugar mill and refinery is a major facility in accordance with Rule 62-212.400, F.A.C., the regulatory program for the Prevention of Significant Deterioration (PSD) of Air Quality. In accordance with a PSD preconstruction review permit, the applicant installed a new white sugar dryer designed to remove moisture from refined sugar prior to storage in a conditioning silo. No fuel is combusted. Low-pressure steam supplies the heat necessary for drying. Sugar particles in the exhaust stream are removed with a set of four cyclone collectors followed by a wet atomizing venturi-type scrubber. Sugar captured by the cyclones is transferred to storage. Sugar captured by the scrubber water is recycled back to the refining process. The original project was subject to PSD preconstruction review and a determination of the Best Available Control Technology (BACT) for particulate matter (PM) and particulate matter less than 10 microns in diameter (PM10).

ter completing construction, emissions tests showed low PM10 emissions, but unexpectedly higher total PM emissions. Investigations indicate that large water droplets containing dissolved sugar are being re-entrained in the exhaust gas stream. Observations and estimation techniques indicate that the entrained droplets quickly settle to the ground and substantially remain on plant property. Subsequent equipment modifications have improved performance and reduced PM emissions by approximately half, but total PM emissions remain higher than expected due to the droplets.

e Department intends to revise the air permit as follows: retain the current standard of "4.2 lb/hour" as the PM10 standard with compliance demonstrated by EPA Method 201A; add a new PM standard of "15 lb/hour" with compliance demonstrated by EPA Method 5; install a drain in the silencer ductwork to prevent re-entraining water droplets; reduce the maximum sugar concentration of the recycled scrubber water; conduct new compliance tests; and submit a report to summarizing the costs of possible additional improvements to reduce emissions. The regulations only require an air quality modeling for PM10 emissions. Because *there has been no change in PM10 emissions, the applicant's original analysis* provided reasonable assurance that the project will comply with all applicable air quality regulations and will not cause or contribute to a violation of the state and federal Ambient Air Quality Standard for PM10.

ermitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114 and fax number is 850/921-9533.

roject File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m. Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. A copy of the complete project file is also available at the Department's South District Office at 2295 Victoria Avenue, Suite 364, Fort Myers, Florida 33902-3381. The South District's telephone number is 239/332-6975.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the Draft Permit for a period of thirty (30) days from the date of publication of the Public Notice. Written comments must be post-marked, and all e-mail or facsimile comments must be received by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address, email or facsimile. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish notice of the time, date, and location in the Florida Administrative Weekly and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the Draft Permit, the Permitting Authority will issue a Revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen (14) days of publication of the attached Public Notice or within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when each petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.
175251 CGS 11/16/2006

Adams, Patty

From: Harvey, Mary
Sent: Wednesday, November 08, 2006 9:56 AM
To: Adams, Patty
Subject: FW: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

From: Peter Briggs [mailto:pbriggs@ussugar.com]
Sent: Wednesday, November 08, 2006 9:55 AM
To: Harvey, Mary
Subject: RE: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Tuesday, November 07, 2006 2:52 PM
To: Neil Smith; Peter Briggs; Don Griffin; dave_buff@golder.com; Blackburn, Ron; WORLEY.GREGG@EPAMAIL.EPA.GOV
Cc: Koerner, Jeff; Adams, Patty; Gibson, Victoria
Subject: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

Adams, Patty

From: Harvey, Mary
Sent: Wednesday, November 08, 2006 8:45 AM
To: Adams, Patty
Subject: FW: RE: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

From: Lisa Pickron [mailto:lpickron@ussugar.com]
Sent: Wednesday, November 08, 2006 7:22 AM
To: Harvey, Mary
Subject: Read: RE: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

Your message

To: lpickron@ussugar.com
Subject:

was read on 11/8/2006 7:22 AM.

Adams, Patty

From: Harvey, Mary
Sent: Wednesday, November 08, 2006 8:44 AM
To: Adams, Patty
Subject: FW: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

From: Don Griffin [mailto:dgriffin@ussugar.com]
Sent: Wednesday, November 08, 2006 7:42 AM
To: Harvey, Mary
Subject: RE: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

received

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Tuesday, November 07, 2006 4:32 PM
To: Harvey, Mary; Neil Smith; Peter Briggs; Don Griffin
Cc: Koerner, Jeff; Adams, Patty
Subject: RE: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

From: Harvey, Mary
Sent: Tuesday, November 07, 2006 2:52 PM
To: 'NSMITH@USSUGAR.COM'; 'PBRIGGS@USSUGAR.COM'; 'DGRIFFIN@USSUGAR.COM'
Cc: Koerner, Jeff; Adams, Patty; Gibson, Victoria
Subject: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

DEP, Bureau of Air Regulation

Adams, Patty

From: Harvey, Mary
Sent: Tuesday, November 07, 2006 4:08 PM
To: Adams, Patty
Subject: FW: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

From: Buff, Dave [mailto:DBuff@GOLDER.com]
Sent: Tuesday, November 07, 2006 3:32 PM
Subject: Read: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

Your message

To: DBuff@GOLDER.com
Subject:

was read on 11/7/2006 3:32 PM.

Adams, Patty

From: Harvey, Mary
Sent: Tuesday, November 07, 2006 4:07 PM
To: Adams, Patty
Subject: FW: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

From: Blackburn, Ron
Sent: Tuesday, November 07, 2006 4:06 PM
To: Harvey, Mary
Subject: Read: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

Your message

To:	'NSMITH@USSUGAR.COM'; 'PBRIGGS@USSUGAR.COM'; 'DGRIFFIN@USSUGAR.COM'; 'dave_buff@golder.com'; Blackburn, Ron; 'WORLEY.GREGG@EPAMAIL.EPA.GOV'
Cc:	Koerner, Jeff; Adams, Patty; Gibson, Victoria
Subject:	United States Sugar Corporation Permit #0510003-038-AC-DRAFT
Sent:	11/7/2006 2:52 PM

was read on 11/7/2006 4:06 PM.

Adams, Patty

From: Harvey, Mary
Sent: Tuesday, November 07, 2006 4:07 PM
To: Adams, Patty
Subject: FW: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

From: Blackburn, Ron
Sent: Tuesday, November 07, 2006 4:06 PM
To: Harvey, Mary
Subject: Read: United States Sugar Corporation Permit #0510003-038-AC-DRAFT

Your message

To:	'NSMITH@USSUGAR.COM'; 'PBRIGGS@USSUGAR.COM'; 'DGRIFFIN@USSUGAR.COM'; 'dave_buff@golder.com'; Blackburn, Ron; 'WORLEY.GREGG@EPAMAIL.EPA.GOV'
Cc:	Koerner, Jeff; Adams, Patty; Gibson, Victoria
Subject:	United States Sugar Corporation Permit #0510003-038-AC-DRAFT
Sent:	11/7/2006 2:52 PM

was read on 11/7/2006 4:06 PM.

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

November 7, 2006

(Sent by Electronic Mail – Return Receipt Requested)

Mr. Neil Smith, V.P. of Sugar Processing Operations
United States Sugar Corporation
Clewiston Sugar Mill and Refinery
111 Ponce DeLeon Avenue
Clewiston, FL 33440

Re: Draft Air Permit No. PSD-FL-346A
Project No. 0510003-038-AC
U.S. Sugar Corporation, Clewiston Sugar Mill and Refinery
New White Sugar Dryer No. 2 – Revised PM/PM_{10} Standards

Dear Mr. Smith:

On July 3, 2006, U.S. Sugar submitted an application to revise the PM/PM_{10} emissions standards for the new white sugar dryer at the Clewiston sugar mill and refinery, which is located at the intersection of W.C. Owens Avenue and State Road 832 in Hendry County, Florida. We received additional information on September 21st regarding improvements and test results. The Department intends to revise the permit as indicated in the enclosed documents: "Technical Evaluation and Preliminary Determination", "Draft Permit", "Written Notice of Intent to Issue Air Permit", and "Public Notice of Intent to Issue Air Permit".

The "Technical Evaluation and Preliminary Determination" summarizes the Bureau of Air Regulation's technical review of the application and provides the rationale for making the preliminary determination to issue a draft permit. The proposed "Draft Permit" includes the specific conditions that regulate the emissions units covered by the proposed project. The "Written Notice of Intent to Issue Air Permit" provides important information regarding: the Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation. The "Public Notice of Intent to Issue Air Permit" is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project.

If you have any questions, please contact the Project Engineer, Jeff Koerner, at 850/921-9536.

Sincerely,

Trina L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

TV/jfk

Enclosures

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

In the Matter of an
Application for Air Permit by:

United States Sugar Corporation
Clewiston Sugar Mill and Refinery
111 Ponce DeLeon Avenue
Clewiston, FL 33440

Authorized Representative:
Mr. Neil Smith, V.P. of Sugar Processing Operations

Draft Air Permit No. PSD-FL-346A
Project No. 0510003-038-AC
New White Sugar Dryer No. 2
Revised PM/PM_{10} Standards
Hendry County, Florida

Facility Location: U.S. Sugar Corporation operates an existing sugar mill and refinery in Clewiston at the intersection of W.C. Owens Avenue and State Road 832 in Hendry County, Florida.

Project: The applicant proposes revised standards for particulate matter (PM) and particulate matter less than 10 microns in diameter (PM_{10}) for the new white sugar dryer based on the control system as installed and the corrective measures taken to date. Details of the project are provided in the application and the enclosed "Technical Evaluation and Preliminary Determination".

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. A copy of the complete project file is also available at the Department's South District Office at 2295 Victoria Avenue, Suite 364, Fort Myers, Florida 33902-3381. The South District's telephone number is 239/332-6975.

Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "Public Notice of Intent to Issue Air Permit" (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at the address or phone number listed above. Pursuant to Rule 62-110.106(5), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within seven (7) days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the Draft Permit for a period of thirty (30) days from the date of publication of the Public Notice. Written comments must be post-marked, and all e-mail or facsimile comments must be received by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address, email or facsimile. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is

sufficient interest for a public meeting, it will publish notice of the time, date, and location in the Florida Administrative Weekly and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the Draft Permit, the Permitting Authority will issue a Revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen (14) days of publication of the attached Public Notice or within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when each petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

Trina L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this "Written Notice of Intent to Issue Air Permit" package (including the Public Notice, the Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by electronic mail with a return receipt requested before the close of business on 11/7/06 to the persons listed below.

Mr. Neil Smith, U.S. Sugar (nsmith@ussugar.com)
Mr. Peter Briggs, U.S. Sugar (pbriggs@ussugar.com)
Mr. Don Griffin, U.S. Sugar (dgriffin@ussugar.com)
Mr. David Buff, Golder Associates (dave_buff@golder.com)
Mr. Ron Blackburn, SD Office (blackburn_r@dep.state.fl.us)
Mr. Gregg Worley, EPA Region 4 (worley.gregg@epamail.epa.gov)

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

(Clerk) 11/7/06 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Project No. 0510003-038-AC / Draft Air Permit No. PSD-FL-346A
United States Sugar Corporation, Clewiston Sugar Mill and Refinery
Hendry County, Florida

Applicant: The applicant for this project is the United States Sugar Corporation. The applicant's authorized representative is Mr. Neil Smith, V.P. of Sugar Processing Operations. The applicant's mailing address is the Clewiston Sugar Mill and Refinery, 111 Ponce DeLeon Avenue, Clewiston, FL 33440.

Facility Location: The United States Sugar Corporation operates an existing sugar mill and refinery in Clewiston at the intersection of W.C. Owens Avenue and State Road 832 in Hendry County, Florida.

Project: The existing Clewiston sugar mill and refinery is a major facility in accordance with Rule 62-212.400, F.A.C., the regulatory program for the Prevention of Significant Deterioration (PSD) of Air Quality. In accordance with a PSD preconstruction review permit, the applicant installed a new white sugar dryer designed to remove moisture from refined sugar prior to storage in a conditioning silo. No fuel is combusted. Low-pressure steam supplies the heat necessary for drying. Sugar particles in the exhaust stream are removed with a set of four cyclone collectors followed by a wet atomizing venturi-type scrubber. Sugar captured by the cyclones is transferred to storage. Sugar captured by the scrubber water is recycled back to the refining process. The original project was subject to PSD preconstruction review and a determination of the Best Available Control Technology (BACT) for particulate matter (PM) and particulate matter less than 10 microns in diameter (PM_{10}).

After completing construction, emissions tests showed low PM_{10} emissions, but unexpectedly higher total PM emissions. Investigations indicate that large water droplets containing dissolved sugar are being re-entrained in the exhaust gas stream. Observations and estimation techniques indicate that the entrained droplets quickly settle to the ground and substantially remain on plant property. Subsequent equipment modifications have improved performance and reduced PM emissions by approximately half, but total PM emissions remain higher than expected due to the droplets.

The Department intends to revise the air permit as follows: retain the current standard of "4.2 lb/hour" as the PM_{10} standard with compliance demonstrated by EPA Method 201A; add a new PM standard of "15 lb/hour" with compliance demonstrated by EPA Method 5; install a drain in the silencer ductwork to prevent re-entraining water droplets; reduce the maximum sugar concentration of the recycled scrubber water; conduct new compliance tests; and submit a report to summarizing the costs of possible additional improvements to reduce emissions. The regulations only require an air quality modeling for PM_{10} emissions. Because there has been no change in PM_{10} emissions, the applicant's original analysis provided reasonable assurance that the project will comply with all applicable air quality regulations and will not cause or contribute to a violation of the state and federal Ambient Air Quality Standard for PM_{10}.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114 and fax number is 850/921-9533.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. A copy of the complete project file is also available at the Department's South District Office at 2295 Victoria Avenue, Suite 364, Fort Myers, Florida 33902-3381. The South District's telephone number is 239/332-6975.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed

(Public Notice to be Published in the Newspaper)

under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the Draft Permit for a period of thirty (30) days from the date of publication of the Public Notice. Written comments must be post-marked, and all e-mail or facsimile comments must be received by the close of business (5:00 p.m.), on or before the end of this 30-day period by the Permitting Authority at the above address, email or facsimile. As part of his or her comments, any person may also request that the Permitting Authority hold a public meeting on this permitting action. If the Permitting Authority determines there is sufficient interest for a public meeting, it will publish notice of the time, date, and location in the Florida Administrative Weekly and in a newspaper of general circulation in the area affected by the permitting action. For additional information, contact the Permitting Authority at the above address or phone number. If written comments or comments received at a public meeting result in a significant change to the Draft Permit, the Permitting Authority will issue a Revised Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen (14) days of publication of the attached Public Notice or within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when each petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

PROJECT

Project No. 0510003-038-AC
Air Permit No. PSD-FL-346A
Clewiston Sugar Mill and Refinery
ARMS Facility ID No. 0510003
New White Sugar Dryer No. 2 (EU-029)
Revision of PM/PM_{10} Standards

COUNTY

Hendry County, Florida

APPLICANT

United States Sugar Corporation
Clewiston Sugar Mill and Refinery
111 Ponce DeLeon Avenue
Clewiston, Florida 33440

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
Air Permitting North Program
2600 Blair Stone Road, MS #5505
Tallahassee, FL 32399-2400

November 6, 2006

1. GENERAL PROJECT INFORMATION

General Facility Information

The United States Sugar Corporation (U.S. Sugar) operates the existing Clewiston sugar mill (SIC No. 2061) and refinery (SIC No. 2062), which are located at the intersection of W.C. Owens Avenue and State Road 832 in Hendry County, Florida. The existing sugar mill and refinery are regulated according the following classifications:

Title III: The existing facility is identified as a potential major source of hazardous air pollutants (HAP).

Title IV: The existing facility operates no units subject to the acid rain provisions of the Clean Air Act.

Title V: The existing facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The existing facility is a PSD-major facility as defined in Rule 62-212.400, F.A.C.

Project Request

In accordance with Permit No. PSD-FL-346, U.S. Sugar installed cyclone dust collectors in combination with an Entoleter Centrifield wet atomizing venturi scrubber to control particulate matter emissions from a new fluidized bed sugar dryer. After completing construction, U.S. Sugar encountered a variety of problems with the installed particulate matter control system. Although PM_{10} emissions were low, PM emissions were much higher than expected. Based on investigations, recommendations by technical experts, corrective actions, and additional testing, U.S. sugar requests the following revised standards as BACT for particulate matter emissions:

- Opacity $\leq$ 10% based on a 6-minute average, as determined by EPA Method 9 (unchanged)
- $PM_{10} \leq$ 0.005 grains per dscf and 4.2 lb/hour, as determined by EPA Method 201A (revised to include only PM_{10} emissions)
- PM $\leq$ 15 lb/hour, as determined by EPA Method 5 (added to include particles greater than PM_{10})

U.S. Sugar believes that all reasonable and cost effective corrective actions have been taken to mitigate particulate matter emissions.

2. DEPARTMENT REVIEW

Original Project

In February of 2005, the Department issued Permit No. PSD-FL-346 to construct a new fluidized bed white sugar dryer to remove moisture from refined sugar prior to storage in a conditioning silo. No fuel is combusted. Low-pressure steam supplies the necessary heat. Due to the large volume of sugar being processed and the fluidized bed system, a significant portion of sugar particles will carryover into the dryer exhaust. Sugar particles in the exhaust stream are removed with a set of four cyclone collectors followed by a wet atomizing venture-type scrubber. Sugar captured by the cyclones is transferred to storage. Sugar captured by the scrubber water is recycled back to the refining process. The project resulted in only a small increase in the maximum daily sugar production (from 2200 to 2250 tons per day) due to other restrictions in the refining process such as the granular carbon regenerative furnace.

The original project was subject to PSD preconstruction review for PM/PM_{10} emissions. Based on an overall control efficiency of 99.96%, the following standards were determined to represent the Best Available Control Technology (BACT) for the project.

PM $\leq$ 0.005 grains per dscf and 4.2 lb/hour, as determined by EPA Method 5

Opacity $\leq$ 10% based on a 6-minute average, as determined by EPA Method 9

The standards could be achieved by either a fabric filter collector or a wet scrubbing system. In making this determination, the Department considered the following: overall control efficiency, the nature of the particulate

matter emitted (sugar), the application of the control equipment (sugar dryer), and the fact that there is an economic incentive to recover and recycle the sugar.

U.S. Sugar's existing sugar dryer controlled by a fabric filter showed excessive wear on the front rows of bags due to the abrasive particles as well as caking and bridging of the bags due to moisture. These issues lead to frequent down times and high operating costs. As a result, U.S. Sugar elected to install a set of four high-efficiency Entoleter cyclone collectors followed by an Entoleter Centrifield Vortex wet scrubber. A process flow diagram of the installed equipment is provided at the end of this report.

Initial Construction and Testing

During installation of this system, it was discovered that the actual air flow through the dryer would be approximately 92,000 acfm and not the original design flow rate of 104,500 acfm. To increase the velocity and pressure drop across the scrubber, Entoleter added a blanking plate (shroud) at the bottom of the vane cage of the scrubber to block approximately 25% of this area. In addition, it was determined that the outlet of the cyclones were too small creating very high pressure drops. Entoleter recommended bypassing 25% of the dryer exhaust around the cyclones directly to the wet scrubber.

In December of 2005, initial particulate matter (PM) compliance tests were conducted in accordance with EPA Method 5. The results are provided in Table B-1 at the end of this report. Individual test runs ranged from 0.005 to 0.027 grains/dscf (3.65 to 19.23 lb/hour) and the 3-run average was 0.014 grains/dscf (9.9 lb/hour) showing non-compliance. In addition to the large range of emissions, the tests indicated that 99% of the captured PM came from the probe wash and not the filter, which is unusual.

U.S. Sugar entered into a Consent Order with the South District Office regarding the failed compliance test. The Consent Order allows operation of the sugar dryer until the end of 2006 to investigate, take corrective actions, and demonstrate compliance. U.S. Sugar believes the problems are flaws in the design and has filed a lawsuit against Entoleter.

Subsequent Investigations

After the December compliance test, blanking plates were also added to the radial liquid separator to increase the velocity at this point. In addition, the scrubber water flow rate was increased from 500 to 750 gpm. In May of 2006, U.S. Sugar conducted two series of nine, half-hour test runs to evaluate total particulate matter (PM) emissions, particulate matter emissions less than 10 microns in diameter (PM_{10}), and the scrubber performance. These results are also provided in Table B-1 at the end of this report. In summary:

- Individual PM test runs conducted with EPA Method 5 ranged from 0.026 to 0.044 grains/dscf (18.61 to 32.55 lb/hour) and the 3-run average was 0.031 grains/dscf (22.7 lb/hour), again showing non-compliance. The probe wash contributed 99% to the total PM emissions.
- Individual PM_{10} test runs conducted with EPA Method 201A ranged from 0.0013 to 0.0032 grains/dscf (0.94 to 2.37 lb/hour) and the 3-run average was 0.0019 grains/dscf (1.3 lb/hour). For the PM_{10} tests, the probe wash contributed only 57% to the PM_{10} emissions. These test runs indicate that PM_{10} emissions are being controlled below the permitted emissions standards.

It is noted that some of the test runs were conducted at 50% of the maximum sugar processing rate. However, some of these test runs show very high PM emission rates. The dryer is designed to operate at a continuous flow rate of approximately 90,000 acfm regardless of the sugar processing rate. This means that a low process rate will create a less dense bed of fluidized sugar, which more readily entrains sugar in the exhaust.

Test Port Locations

The new white sugar dryer with cyclones and wet scrubber are located inside the refinery building. The test ports are installed between the wet scrubber outlet and the I.D. fan. This location provides the necessary upstream and downstream duct lengths as required by the test methods. After the I.D. fan, there is 40 feet of horizontal duct inside the building. However, there are silencer vanes within this ductwork to minimize noise

levels inside the building. These vanes present disturbances and test ports cannot be added in this area. The exhaust exits a horizontal vent in the side of the building that is 82 feet above ground level. There is a visible liquid discharge down the side of the refinery building from the outlet vent. Observations show little or no visible emissions (5% opacity or less).

Test Results Evaluation by Winkler APC, LLC

U.S. Sugar hired Winkler APC, LLC to analyze the test data and provide a technical opinion as to the cause. The consultant believes that water droplets from the wet scrubber are being carried over with the exhaust gas leaving the scrubber. The droplets contain dissolved sugar and are being captured by the Method 5 sampling probe as evidenced by the high contribution of PM from the probe wash. The Method 201A sampling train prevents large droplets from entering, so the reported PM_{10} emissions test results appear more consistent with emissions expected from a high-energy wet scrubber such as the Entoleter. Collecting a single large droplet containing dissolved sugar in the Method 5 sampling train would results in very high PM emissions.

The consultant estimated that the majority of water droplets are 200 microns in size from the gas atomized venturi wet scrubber operating with a pressure drop of 10 inches of water column. Particles of this size would have a terminal settling velocity of 2.2 feet per second. The discharge vent is located in the side of the refinery building and 82 feet above ground level. This means that the droplets will fall to the ground approximately 40 feet from the refinery building assuming no influence by wind. It would take a steady 27 mph wind to drive some of the droplets far enough to fall outside U.S. Sugar's property.

Investigation by Innovative Scrubber Solutions, Inc.

U.S. Sugar hired David Taub of Innovative Scrubber Solutions, Inc. to inspect the scrubber during operation and provide his analysis of the control equipment as installed. Mr. Taub was a former Vice President of Entoleter and very familiar with the scrubber design. He noted several issues with the wet scrubber system as installed:

- The cyclone manifolds should have been installed sloping to the back to better balance the pressure drop.
- Bypassing 25% of the dryer exhaust directly to the wet scrubber should have no effect on the scrubber operation or its emissions.
- An initial review of the test results indicates possible droplet carryover from the wet scrubber.
- A mitered elbow was installed on the outlet of the scrubber which results in a velocity of 60 feet per second. A side tangential duct should have been installed on the separator tank to maintain an outlet velocity of 45 feet per second. The higher velocity and turbulence caused by the mitered elbow may be cooling the exhaust and generating liquid droplets due to condensation.
- From a visible inspection during operation, the existing mist eliminator appears to be functioning properly. This may mean that water vapor is condensing prior to the test ports. If this is the case, then adding a chevron mist eliminator before the test ports would not be effective in removing droplets.
- The blanking plate retrofit to the bottom of the vane cage allows water to spill out of the bottom and bypass the cloud. This can decrease the amount of water entering the cloud and adversely affect the cleaning action on the inside of the scrubber as well as particle removal efficiency.
- The scrubber water recycle rate was increased from 500 gpm to 750 gpm in an effort to improve removal performance. However, too much water could result in larger drops, the formation of a watery cloud, and poor particle removal.
- From a visible inspection during operation, the vane cage did not appear to be functioning properly. The wet scrubber is designed to form an atomized droplet cloud, which collects the sugar particles. The cloud did not appear in the top portion of the vane cage. In the bottom section, it would only appear about one-third of the time and when present appeared watery.

Based on his inspection, Mr. Taub recommended the following modifications to improve performance: remove the retrofit blanking plate and bottom row of vanes in the vane cage to allow proper formation of the atomized droplet cloud; install a drain on the bottom of the duct with the silencer vanes to remove the captured liquid, prevent re-entrainment of the water into the gas stream, and stop the liquid from coating the side of the refinery building; and reduce the solids content of the recycled scrubber water to prevent captured particle from being re-entrained.

In addition, the consultant indicates that it may be possible to extend the existing outlet duct to conduct new tests. The consultant believes there is a reasonable chance of demonstrating compliance at the new port locations, assuming the silencer removes the entrained water droplets and the drain removes the liquid from the ductwork. If problems continue, other, more drastic options include: redesigning the cyclone system (possibly adding a cyclone) to accept all of the dryer exhaust; moving the I.D. fan from after the scrubber to between the cyclones and the scrubber; and removing the mitered elbow and installing a properly sized vertical duct at the scrubber outlet.

Corrective Actions Taken

In July, U.S. Sugar took the following corrective actions: removed the retrofit blanking plate and bottom row of vanes in the vane cage; and reduced the solids content of the recycled scrubber water from 50 to 15 brix. The wet scrubber now shows continuous, proper formation of the atomized droplet cloud. In August, U.S. Sugar conducted a series of six test runs in accordance with EPA Method 5. PM emissions ranged from 0.011 to 0.022 grains/dscf (6.91 to 14.09 lb/hour) and the 3-run average was 0.016 grains/dscf (10.6 lb/hour). Although the test results did not show compliance with the original emission standard of 0.005 grains per dscf (4.2 lb/hour), it did show a 50% reduction in particulate matter emissions from the tests conducted in May.

U.S. Sugar considered extending the exhaust duct an additional 40 feet outside of the building to provide new test ports after the silencer vanes with the proper upstream and downstream duct lengths. In addition, the cross sectional area of the new ductwork could be increased to reduce the velocity and promote fall out of the water droplets. However, additional structural support would be necessary for the new duct, which would be more than 6 feet tall by 7 feet wide. The total cost was estimated to be $80,000 to $100,000, which is about one-third of the cost of the entire cyclone/wet scrubber system for the sugar dryer. This was considered too costly with an unknown benefit and was not pursued.

Conclusion

The Department visited the site and confirmed the original configuration of the equipment. Subsequent improvements include removing the blanking plate and lower vanes in the vane cage and reducing the maximum sugar content of the recycled scrubber water. Based on additional tests conducted in August, the changes appear to have reduced average emissions by approximately half of the May test results. Performance of the wet scrubber has been improved and the entrained water droplets may present more of a "housekeeping" problem than an emissions problem. Nevertheless, not all options have been explored and additional testing should be performed. Therefore, the Department agrees to revise the permit and require the following:

- Install a drain(s) in the ductwork with the silencer vanes to remove collected water.
- Reduce the maximum sugar content to 15 brix in the recirculated scrubber water.
- Establish PM_{10} emissions standard of 0.005 grains per dscf and 4.2 lb/hour (as determined by EPA Method 201A) and a separate PM emissions standard of 15.0 lb/hour (as determined by EPA 5).
- Conduct two series of three, 1-hour test runs in accordance with EPA Method 5 to demonstrate compliance with the new "15 lb/hour" emissions standard. One series shall be conducted at a recirculation flow rate of 500 gpm and the second series shall be conducted at a recirculation flow rate of 750 gpm.
- Conduct one series of three, 1-hour test runs in accordance with EPA Method 201A to demonstrate compliance with the proposed PM_{10} emissions standards.

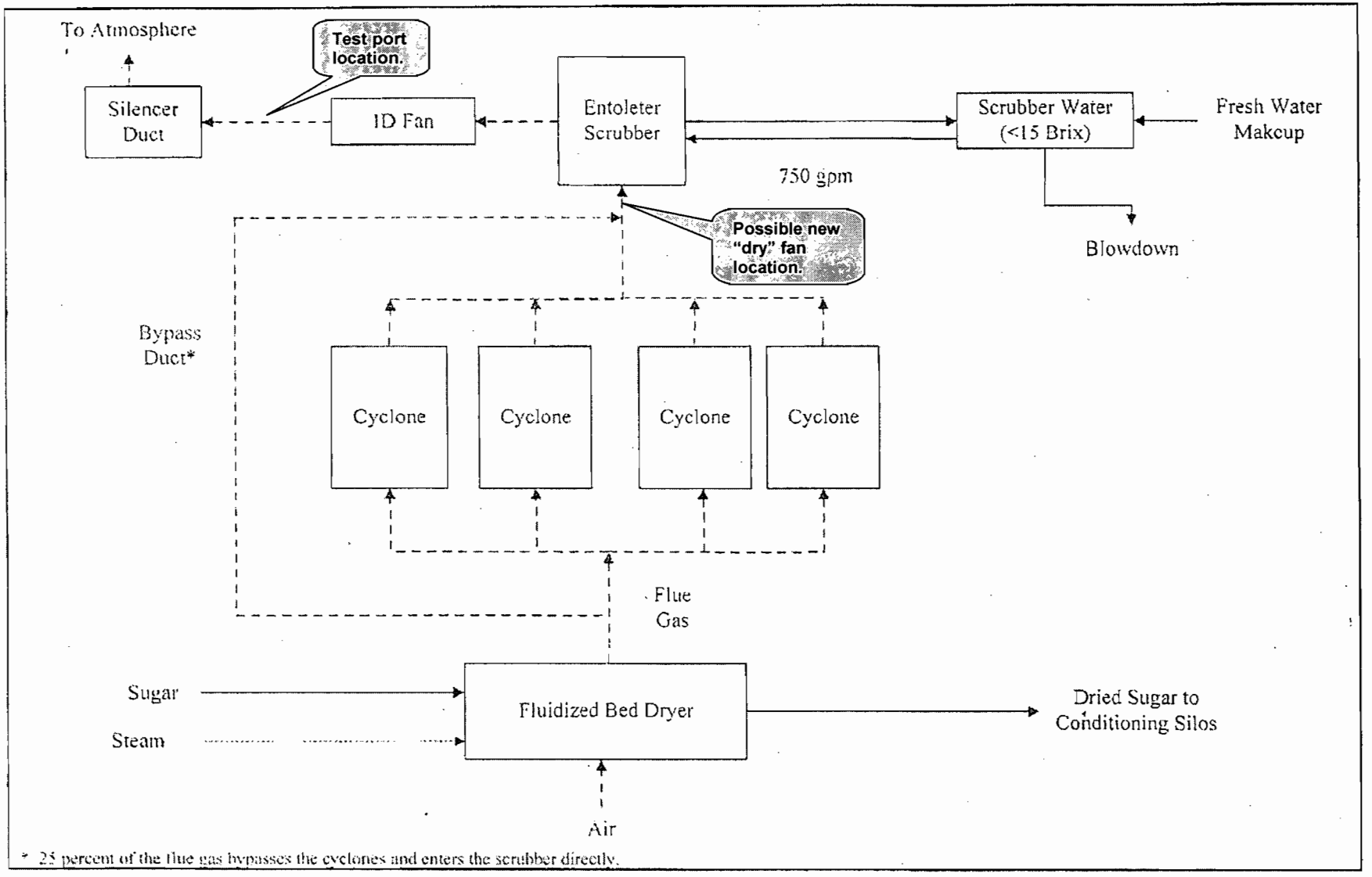
- In conjunction with the stack test reports for PM/PM_{10} emissions, submit a report on individual costs estimates based on bids and a detailed description of the necessary work for: redesigning and modifying the cyclone system (possibly adding a cyclone) to accept all of the dryer exhaust; moving the I.D. fan from after the scrubber to between the cyclones and the scrubber; and removing the mitered elbow and installing a properly sized vertical duct at the scrubber outlet. The Department may use this information to modify this permit and reduce the particulate matter emissions standards accordingly.

The revisions will allow U.S. Sugar to demonstrate compliance with the proposed standards, gather additional operational data, and investigate costs for possible additional improvements. The original air quality analysis evaluated PM_{10} emissions from the new white sugar dryer. Since PM_{10} emissions are not changing, additional modeling was not necessary.

3. PRELIMINARY DETERMINATION

Copies of the application were provided to the EPA Region 4 Office and the Department's South District Office. The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. Jeff Koerner is the project engineer responsible for reviewing the application and drafting the permit changes. Deborah Nelson is the staff meteorologist responsible for reviewing the ambient air quality analyses. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

Process Flow Diagram - New White Sugar Dryer and Controls



** This diagram is from the additional information provided by Golder Associates Inc. dated September 20, 2006.*

TABLE B-1
WHITE SUGAR DRYER NO. 2 PM EMISSION TESTS

Run Number	Test Date	Start/End Time	% Load	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Avg. Water Flow (gpm)	Avg. Pressure Drop		Particulate Data		
						lb/hr	gr/dscf	lb/hr	gr/dscf		Cyclone (in. H_2O)	Scrubber (in. H_2O)	Filter (mg)	Wash (mg)	% Wash of Total
1	12/07/05	1056-1206	100	82,909	96,941	4.2	0.005	6.82	0.0096	529.4	3.8	9.6	0.3	23.5	98.7
2	12/07/05	1235-1345	100	82,993	97,239	4.2	0.005	3.65	0.0051	527.8	4.0	9.0	0.2	12.4	98.4
3	12/07/05	1453-1605	100	82,541	97,104	4.2	0.005	19.23	0.0272	524.8	4.0	9.0	0.4	65.2	99.4
Average=				**82,814**	**97,095**	**4.2**	**0.005**	**9.9**	**0.0140**	**527**	**3.9**	**9.2**			**98.8**
1	05/24/06	0852-0927	100	83,682	96,546	4.2	0.005	26.10	0.0364	747.7	5.0	9.0	1.0	46.5	97.9
2	05/24/06	1002-1037	100	82,769	95,849	4.2	0.005	18.61	0.0262	747.7	4.3	9.0	0.7	33.8	98.0
3	05/24/06	1100-1134	100	83,743	96,872	4.2	0.005	20.89	0.0291	750.0	4.3	9.0	0.6	36.6	98.4
4	05/24/06	1208-1243	50	85,704	98,102	4.2	0.005	19.65	0.0267	750.0	4.8	9.5	0.5	35.1	98.6
5	05/24/06	1303-1337	50	86,321	98,919	4.2	0.005	32.55	0.0440	747.3	3.7	10.7	0.5	57.1	99.1
6	05/24/06	1350-1425	50	85,981	98,614	4.2	0.005	20.89	0.0283	749.0	4.0	10.0	0.8	36	97.8
7	05/25/06	0802-0836	100	82,866	96,457	4.2	0.005	24.30	0.0342	747.7	4.7	10.0	0.5	42.7	98.8
8	05/25/06	0850-0925	100	82,501	96,272	4.2	0.005	20.21	0.0286	749.7	4.0	10.3	0.7	34.1	98.0
9	05/25/06	0934-1008	100	83,246	97,078	4.2	0.005	20.99	0.0294	745.7	3.0	11.0	0.6	35.4	98.3
Average=				**84,090**	**97,190**	**4.2**	**0.005**	**22.7**	**0.0314**	**748**	**4.2**	**9.8**			**98.3**
1	08/23/06	1320-1353	50	74,966	88,090	4.2	0.005	14.09	0.0219	750	3.0	8.5	0.8	28.9	97.9
2	08/23/06	1415-1449	50	75,900	88,771	4.2	0.005	10.38	0.0160	750	2.3	8.7	0.8	22.5	98.0
3	08/23/06	1502-1535	50	75,677	89,775	4.2	0.005	10.61	0.0164	751	3.0	8.7	0.7	23.3	98.4
4	08/23/06	1543-1600	50	75,650	89,117	4.2	0.005	11.97	0.0185	747	2.5	9.0	0.7	26.2	98.6
5	08/23/06	1635-1708	50	75,618	89,384	4.2	0.005	9.72	0.0150	757	3.0	8.7	0.8	21.1	99.1
6	08/23/06	1720-1753	50	76,365	89,939	4.2	0.005	6.91	0.0106	752	3.3	9.0	1.1	14.2	98.3
Average=				**75,696**	**89,179**	**4.2**	**0.005**	**10.6**	**0.0164**	**751**	**2.9**	**8.8**			**98.4**

Notes:
lb/hr = pounds per hour
gr/dscf = grains per dry standard cubic foot
mg = milligrams

** This table is from additional information provided by Golder Associates Inc. dated September 20, 2006.*

TABLE B-2
WHITE SUGAR DRYER NO. 2 PM_{10} EMISSION TESTS

Run Number	Test Date	Start/End Time	% Load	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Allowable PM_{10} Emissions		Actual PM_{10} Emissions (EPA Method 210A)		Avg. Water Flow (gpm)	Avg. Pressure Drop		Particulate Data		
						lb/hr	gr/dscf	lb/hr	gr/dscf		Cyclone (in. H_2O)	Scrubber (in. H_2O)	Filter (mg)	Wash (mg)	% Wash of Total
1	05/23/06	1015-1040	50	85,299	93,003	4.2	0.005	2.37	0.00324	749.7	4.7	9.7	1.1	1.5	57.7
2	05/23/06	1127-1200	50	85,082	92,570	4.2	0.005	1.59	0.00218	753.0	4.3	9.7	0.7	1	58.8
3	05/23/06	1220-1254	50	85,713	92,883	4.2	0.005	1.13	0.00154	750.0	4.0	9.8	0.7	0.5	41.7
4	05/23/06	1400-1433	100	83,395	91,246	4.2	0.005	1.02	0.00143	750.0	4.0	9.7	0.4	0.8	66.7
5	05/23/06	1450-1554	100	84,141	91,790	4.2	0.005	1.75	0.00242	750.6	4.0	10.0	1	1	50.0
6	05/23/06	1545-1619	100	83,009	90,815	4.2	0.005	1.06	0.00149	750.3	4.0	10.0	0.5	0.7	58.3
7	05/25/06	1024-1058	100	83,263	91,101	4.2	0.005	1.02	0.00143	749.7	4.0	10.3	0.5	0.7	58.3
8	05/25/06	1110-1144	100	83,058	90,876	4.2	0.005	0.94	0.00131	745.7	4.0	10.0	0.4	0.7	63.6
9	05/25/06	1153-1228	100	82,799	90,877	4.2	0.005	1.26	0.00177	751.0	3.7	11.0	0.7	0.8	53.3
Average=				**83,973**	**91,684**	**4.2**	**0.005**	**1.3**	**0.00187**	**750**	**4.1**	**10.0**			**56.5**

Notes:
lb/hr = pounds per hour
gr/dscf = grains per dry standard cubic foot
mg = milligrams

* *This table is from additional information provided by Golder Associates Inc. dated September 20, 2006.*

{Filename: PSD-FL-346A Sugar Dryer - TEPD}

DRAFT PERMIT

PERMITTEE

United States Sugar Corporation
111 Ponce DeLeon Avenue
Clewiston, FL 33440
Authorized Representative:
Mr. William A. Raiola, V.P. of Sugar Processing Operations

Clewiston Sugar Mill and Refinery
Air Permit No. PSD-FL-346A
Project No. 0510003-038-AC
Revised PM/PM_{10} Standards
Permit Expires: December 31, 2007

FACILITY AND LOCATION

The United States Sugar Corporation operates the existing Clewiston sugar mill and refinery (SIC Nos. 2061, 2062), which is located at the intersection of W.C. Owens Avenue and State Road 832 in Hendry County, Florida. Sugarcane is harvested from nearby fields and transported to the mill by train. In the mill, sugarcane is cut into small pieces and passed through a series of presses to squeeze juice from the cane. The juice undergoes clarification, separation, evaporation, and crystallization to produce raw, unrefined sugar. In the refinery, raw sugar is decolorized, concentrated, crystallized, dried, conditioned, screened, packaged, stored, and distributed as refined sugar.

STATEMENT OF BASIS

This permit modification revises the PM/PM_{10} emissions standards and is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to perform the proposed work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

CONTENTS

(DRAFT)

Joseph Kahn, Director
Division of Air Resource Management

Effective Date

PROJECT DESCRIPTION

The United States Sugar Corporation installed new White Sugar Dryer No. 2 (EU-029) to support the existing refinery operations. Particulate matter emissions are controlled by a set of four high efficiency cyclone collectors in parallel followed by a wet atomizing venturi-type scrubber. Initial testing shows water droplets containing dissolved sugar in the exhaust stream. This permit modification revises the permit and requires following actions: retain the current standard of "4.2 lb/hour" as the PM_{10} standard with compliance demonstrated by EPA Method 201A; add a new PM standard of "15 lb/hour" with compliance demonstrated by EPA Method 5; install a drain in the silencer ductwork to prevent re-entraining water droplets; reduce the maximum sugar concentration of the recycled scrubber water; conduct new compliance tests; and submit a report detailing the costs of several possible additional improvements. Based on the cost information and addition test data, the Department may modify this permit to reduce the particulate matter emissions standards.

REGULATORY CLASSIFICATION

Title III: The existing facility is a potential major source of hazardous air pollutants (HAP).

Title IV: The existing facility has no units subject to the acid rain provisions of the Clean Air Act.

Title V: The existing facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The existing facility is a PSD-major facility as defined in Rule 62-212.400, F.A.C.

APPENDICES

The following Appendices are attached as part of this permit.

Appendix A. Citation Formats
Appendix B. General Conditions
Appendix C. Common Requirements

RELEVANT DOCUMENTS

The permit application and additional information received to make it complete are not a part of this permit; however, the information is specifically related to this permitting action and is on file with the Department.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Florida Department of Environmental Protection's Bureau of Air Regulation. The mailing address is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.

2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department's South District Office at 2295 Victoria Avenue, Suite 364, Fort Myers, Florida, 33901-3381.

3. Citation Formats: Appendix A identifies the methods used to cite rules, regulations, and permits.

4. General Conditions: The permittee shall comply with the general conditions specified in Appendix B.

5. Common Requirements: Common regulatory requirements are specified in Appendix C.

6. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

7. Source Obligation:

   (a) Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.

   (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   (c) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

8. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

9. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning

construction or modification. [Rule 62-4.030 and Chapters 62-210 and 62-212, F.A.C.]

10. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Department's South District Office. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

A. White Sugar Dryer No. 2 (EU-029)

This section of the permit addresses the following new emissions unit.

ID	Emission Unit Description
029	The new white sugar dryer will be a fluidized bed-type dryer/cooler with a rated capacity of 85 tons per hour of refined sugar. After wet refined sugar is centrifuged, the dryer will be used to drive off remaining moisture. Sugar with a moisture content of approximately 1.5% by weight will enter the dryer between 120° - 140° F and be suspended in a fluidized bed with jets of hot, conditioned air. A maximum of 11,000 pounds per hour of low pressure steam (12 psig) from the existing mill boilers will supply heat for the process. Sugar will exit the dryer with a moisture content of approximately 0.03% by weight and a temperature between 92° F - 102° F. The refined sugar is then transferred to the conditioning silos. No fuel will be fired and no other new equipment is being added. Particulate matter emissions from the dryer will be controlled by a set of four high efficiency cyclone collectors in parallel followed by a wet scrubber. Exhaust at 110° F will leave a stack approximately ~~78~~ 82 feet above ground level with a with a volumetric flow rate of ~~96,000~~ 92,000 acfm. The rectangular stack will be 7.0 feet by 6.0 feet. The scrubber pressure drop and scrubber water recirculation flow rate will be continuously monitored.

{Permitting Note: The particulate matter emissions standards for the new dryer are established pursuant to Rule 62-212.400, F.A.C (BACT).}

EQUIPMENT

1. New White Sugar Dryer No. 2: The permittee is authorized to construct a new fluidized bed white sugar dryer/cooler (BMA or equivalent) with a rated capacity of 85 tons per hour. Jets of hot conditioned air will be used in the dryer to suspend sugar in a fluidized bed to drive off excess moisture. Low pressure steam will be used to heat the conditioned air; no fuel will be fired. [Design]

2. Air Pollution Control Equipment: To comply with the standards of this permit, the permittee shall install the following air pollution control equipment.

   a. *Cyclone Collectors*: In accordance with the manufacturer's recommendations, the permittee shall install, operate, and maintain a set of four high efficiency cyclone collectors (Entoleter, LLC Model 6600 or equivalent) in parallel with a design removal efficiency of at least 99% of the particulate loading from the new white sugar dryer. The design control efficiency is based on the following inlet conditions: inlet temperature of 110° F; inlet flow rate of ~~105,000~~ 92,000 acfm; inlet dust loading of 14 grains per dscf of inlet gas (11,760 lb/hour); and a pressure drop across the cyclone collectors of 4 - 6 inches of water column.

   b. *Wet Scrubber*: In accordance with the manufacturer's recommendations, the permittee shall install, operate, and maintain a wet scrubber (Entoleter, LLC Centrifield Vortex Model 1500 or equivalent) with a design removal efficiency of at least 96% of the particulate loading from the new cyclone collectors. The design control efficiency is based on the following inlet conditions: inlet temperature of 113° F; inlet flow rate of ~~105,000~~ 92,000 acfm; inlet dust loading of 0.14 grains per dscf of inlet gas (118 lb/hour); a scrubber water recirculation flow rate of 500 gpm; a scrubber make-up water flow rate of 12 gpm; and a pressure drop of 8 - 10 inches of water column.

   The combined design removal efficiency of the two particulate control devices shall be no less than 99.96% based on the above conditions.

   [Design; Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

A. White Sugar Dryer No. 2 (EU-029)

PERFORMANCE REQUIREMENTS

3. Permitted Capacity: The maximum design capacity of the new sugar dryer is 85 tons per hour of sugar. [Design; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

4. Wet Scrubber: The owner or operator shall maintain 3-hour block averages of the scrubber water recirculation rate (gpm) and pressure drop across the wet scrubber (inches of water column) above the 3-hour averages established during a satisfactory compliance test for particulate matter conducted at permitted capacity. If either monitored parameter drops below the specified level, the permittee shall investigate, take corrective actions to regain the specified operating level, and record the incident in a written log. Operation outside of the specified operating range for any monitored parameter is not a violation of this permit, in and of itself. However, continued operation outside of the specified operating range for any monitored parameter without taking corrective action may be considered circumvention of the air pollution control equipment. *{Permitting Note: For informational purposes, the nominal operating ranges are 500 gpm and ~~4 to~~ 8 - 10 inches of water column.}* [Design; Rule 62-4.070(3), F.A.C.]

EMISSIONS STANDARDS

5. Particulate Matter: As determined by EPA Method ~~5~~ 201A stack test, particulate matter emissions less than 10 microns (PM_{10}) shall not exceed 0.005 grains per dscf and 4.2 pounds per hour based on the average of three test runs. As determined by EPA Method 5 stack test, particulate matter emissions shall not exceed 15.0 pounds per hour based on the average of three test runs. [Design; Rule 62-212.400(BACT), F.A.C.]

6. Visible Emissions: Excluding water vapor, visible emissions from the wet scrubber stack shall not exceed 10% opacity. [Rule 62-212.400(BACT), F.A.C.]

TESTING REQUIREMENTS

7. Compliance Stack Tests – Revised: The permittee shall conduct ~~an~~ initial stack tests to demonstrate compliance with the particulate matter emissions standards within ~~60~~ 90 days after issuance of this final permit and after installing the drain(s) in the ductwork with the silencer vanes to remove collected water ~~achieving the maximum sugar processing rate, but not later than 180 days after initial startup~~. The permittee shall conduct one series of three, 1-hour test runs to demonstrate compliance with the PM_{10} and visible emissions standards. The permittee shall conduct two series of three, 1-hour test runs to demonstrate compliance with the PM and visible emissions standards. For the PM tests, one series shall be conducted at a recirculation flow rate of 500 gpm and the second series shall be conducted at a recirculation flow rate of 750 gpm. The permittee shall also conduct subsequent stack tests to demonstrate compliance with the particulate matter emissions standards during the 12-month period prior to the expiration date of any air operation permit. Tests shall be conducted in accordance with EPA Method 201A (PM_{10}), EPA Method 5 (~~particulate emissions~~ PM), EPA Methods 1 - 4 (as necessary to support EPA Methods 201A and 5), and EPA Method 9 (visible emissions). The EPA test methods and procedures are specified in Appendix A of 40 CFR 60 and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. In accordance with Rule 62-297.310(2), F.A.C., all tests shall be conducted at permitted capacity. The Department may require the permittee to repeat some or all of these initial stack tests after major replacement or major repair of any air pollution control or process equipment. [Rules 62-204.800, 62-212.400(BACT) and 62-297.310(7)(a) and (b), F.A.C.; 40 CFR 60.8; 40 CFR 60, Appendix A]

MONITORING REQUIREMENTS

8. Cyclone Collectors: In accordance with the manufacturer's recommendations, the permittee shall install, calibrate, operate and maintain a manometer (or equivalent) to monitor the pressure differential across each

cyclone collector. *{Permitting Note: The design pressure differential for the cyclone collectors is 4 - 6 inches of water column. Although no periodic records of the pressure differential are required, the devices shall be properly maintained and functional to provide operational data for evaluating problems.}* [Rule 62-4.070(3), F.A.C.]

9. Wet Scrubber Parameters: In accordance with the manufacturer's recommendations, the permittee shall install, calibrate, operate and maintain devices to continuously monitor and record the wet scrubber water recirculation rate (gpm) and the pressure differential across the wet scrubber (inches of water column). Data shall also be reduced to 3-hour block averages. Records shall be maintained on site and made available upon request. [Design; Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

RECORDS AND REPORTS

10. Stack Test Reports: In addition to the information required in Rule 62-297.310(8), F.A.C., each stack test report shall also include the following information: sugar processing rate through the dryer (tons per hour); the air flow rate; the scrubber water recirculation rate (gpm); the scrubber water sugar content in brix; and the pressure differential across the wet scrubber (inches of water column). In addition, the permittee shall record and report the pressure differential across each cyclone collector at the beginning and end of each test run. The stack test report shall clearly indicate the 3-hour averages of the wet scrubber water recirculation rate and pressure differential and that these operating parameters will be complied with based on a 3-hour block average. [Rule 62-4.070(3), F.A.C.]

ADDITIONAL REQUIREMENTS – PM/PM$_{10}$ REVISION

11. Drain: Within 30 days of issuance of this final permit, the permittee shall install a drain(s) in the ductwork with the silencer vanes to remove collected water. The permittee shall notify the Bureau of Air Regulation and the Compliance Authority when the drain is installed. [Rule 62-4.070(3), F.A.C.]

12. Sugar Content of Recirculating Scrubber Water: Within 30 days of issuance of this final permit, the scrubber system shall be reset to operate so that fresh makeup water will be added to maintain a maximum sugar content of 15 brix in the recirculated scrubber water. [Rule 62-4.070(3), F.A.C.]

13. Additional Report: In conjunction with the required PM/PM$_{10}$ stack test report, the permittee shall provide individual cost estimates based on bids and a detailed description of the necessary work for: redesigning and modifying the cyclone system (possibly adding a cyclone) to accept all of the dryer exhaust; moving the I.D.fan from after the scrubber to between the cyclones and the scrubber; and removing the mitered elbow and installing a properly sized vertical duct at the scrubber outlet. Based on the cost information and additional test data, the Department may modify this permit to reduce the particulate matter emissions standards. [Rules 62-4.070(3) and 62-212.400(PSD), F.A.C.]

B. Miscellaneous Particulate Sources (EU-015, 016, 018, 019, 020, 022, and 029)

This section of the permit addresses the following emissions units.

EU No.	Emissions Unit Description
015	VHP sugar dryer with baghouse (S-11)
016	White sugar dryer No. 1 with baghouse (S-10)
018	Vacuum Systems: Screening/distribution vacuum with baghouse (S-1); 100 lb bagging vacuum with baghouse (S-2); 5 lb bagging vacuum with baghouse (S-3)
019	Six conditioning silos with baghouses (S-7, S-8, and S-9)
020	Screening/distribution and powdered sugar/starch bins with baghouses (S-5 and S-6)
022	Packaging baghouse (S-4)
029	White sugar dryer No. 2 with wet scrubber (S-13)

MODIFIED CONDITION

Condition 2 (Section III, Subsection F) in Permit No. PSD-FL-272A is changed:

From:

2. Production Restrictions: No more than 2000 tons of refined sugar per day nor 730,000 tons of refined sugar per consecutive 12 months shall be packaged at this facility. In addition, no more than 2200 tons of refined sugar per day nor 803,000 tons of refined sugar per consecutive 12 months shall be loaded out from this facility. [Applicant Request; Rule 62-210.200 (Definitions - PTE), F.A.C.]

To:

2. Production Restrictions: No more than 2000 tons of refined sugar per day and no more than 730,000 tons of refined sugar per consecutive 12 months shall be packaged at this facility. In addition, no more than 2250 tons of refined sugar per day and no more than 803,000 tons of refined sugar per consecutive 12 months shall be loaded out from this facility. [Applicant Request; Rules 62-210.200 (PTE) and 62-212.400(12)~~(g)~~, F.A.C., F.A.C.; Air Permit No. PSD-FL-346A]

All other conditions in Permit No. PSD-FL-272A shall remain unchanged.

Filename: PSD-FL-346A Sugar Dryer - Draft Permit

Contents

SECTION 4. APPENDIX A

Citation Formats

The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.

REFERENCES TO PREVIOUS PERMITTING ACTIONS

Old Permit Numbers

Example: Permit No. AC50-123456 or Air Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction Permit
"AO" identifies the permit as an Air Operation Permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located
"2222" represents the specific facility ID number
"001"identifies the specific permit project
"AC" identifies the permit as an air construction permit
"AF" identifies the permit as a minor federally enforceable state operation permit
"AO" identifies the permit as a minor source air operation permit
"AV" identifies the permit as a Title V Major Source Air Operation Permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the Prevention of Significant Deterioration of Air Quality
"FL" means that the permit was issued by the State of Florida
"317" identifies the specific permit project

RULE CITATION FORMATS

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 CFR 60.7 or §60.7]

Means: Title 40, Part 60, Section 7

General Conditions

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology (Yes);
    b. Determination of Prevention of Significant Deterioration (Yes); and
    c. Compliance with New Source Performance Standards (Not Applicable).

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

Common Requirements

Unless otherwise specified by permit, the following conditions apply to all emissions units and activities at this facility.

Definitions

1. Excess Emissions: Emissions of pollutants in excess of those allowed by any applicable air pollution rule of the Department, or by a permit issued pursuant to any such rule or Chapter 62-4, F.A.C. The term applies only to conditions which occur during startup, shutdown, soot-blowing, load changing or malfunction. [Rule 62-210.200(106), F.A.C.]

2. Shutdown: The cessation of the operation of an emissions unit for any purpose. [Rule 62-210.200(231), F.A.C.]

3. Startup: The commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions. [Rule 62-210.200(246), F.A.C.]

4. Malfunction: Any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner. [Rule 62-210.200(160), F.A.C.]

Emissions and Controls

5. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

6. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

7. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

8. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

9. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

10. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]

11. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. [Rule 62-296.320(4)(b)1, F.A.C.]

12. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as confining, containing, covering, and/or applying water to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

13. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three

complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

14. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

15. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

16. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

    a. *Required Sampling Time.* Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.

    b. *Minimum Sample Volume.* Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

    c. *Calibration of Sampling Equipment.* Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

    [Rule 62-297.310(4), F.A.C.]

17. Determination of Process Variables

    a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

    b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

    [Rule 62-297.310(5), F.A.C.]

18. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.

19. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]

20. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

21. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

    1. The type, location, and designation of the emissions unit tested.
    2. The facility at which the emissions unit is located.
    3. The owner or operator of the emissions unit.
    4. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
    5. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
    6. The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
    7. A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
    8. The date, starting time and duration of each sampling run.
    9. The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
    10. The number of points sampled and configuration and location of the sampling plane.
    11. For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
    12. The type, manufacturer and configuration of the sampling equipment used.
    13. Data related to the required calibration of the test equipment.
    14. Data on the identification, processing and weights of all filters used.
    15. Data on the types and amounts of any chemical solutions used.
    16. Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
    17. The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
    18. All measured and calculated data required to be determined by each applicable test procedure for each run.
    19. The detailed calculations for one run that relate the collected data to the calculated emission rate.
    20. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.
    21. A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

22. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. Information recorded and stored as an electronic file shall be made available within at least three days of a request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]

23. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

Florida Department of Environmental Protection

Memorandum

TO: Trina Vielhauer, Chief - Bureau of Air Regulation

FROM: Jeff Koerner, Air Permitting North

DATE: November 6, 2006

SUBJECT: Draft Air Permit No. PSD-FL-346A
Project No. 0510003-038-AC
U.S. Sugar Corporation, Clewiston Sugar Mill and Refinery
New White Sugar Dryer – Revision of PM/PM_{10} Standard

Attached for your review are the following items for a revised air construction permit:

- Intent to Issue Air Permit and Public Notice Package;
- Technical Evaluation and Preliminary Determination;
- Draft Permit; and
- P.E. Certification.

The P.E. certification briefly summarizes the proposed permit project. The Technical Evaluation and Preliminary Determination provide a detailed description of the project, rationale, and conclusion. Day #74 is December 3, 2006. This PSD project requires a 30-day comment period. I recommend your approval of the attached Draft Permit for this project.

Attachments

P.E. CERTIFICATION STATEMENT

PERMITTEE

United States Sugar Corporation
Clewiston Sugar Mill and Refinery
111 Ponce DeLeon Avenue
Clewiston, FL 33440

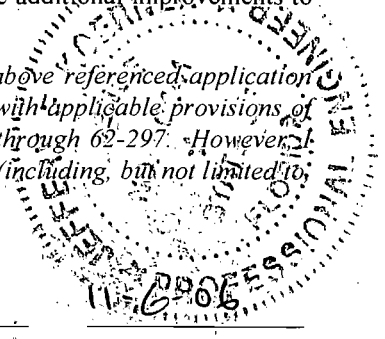
Draft Air Permit No. PSD-FL-346A
Project No. 0510003-038-AC
New White Sugar Dryer No. 2
Revised PM/PM_{10} Standards

PROJECT DESCRIPTION

The existing Clewiston sugar mill and refinery is a major facility in accordance with Rule 62-212.400, F.A.C., the regulatory program for the Prevention of Significant Deterioration (PSD) of Air Quality. In accordance with a PSD preconstruction review permit, the applicant installed a new white sugar dryer designed to remove moisture from refined sugar prior to storage in a conditioning silo. No fuel is combusted. Low-pressure steam supplies the heat necessary for drying. Sugar particles in the exhaust stream are removed with a set of four cyclone collectors followed by a wet atomizing venturi-type scrubber. Sugar captured by the cyclones is transferred to storage. Sugar captured by the scrubber water is recycled back to the refining process. The original project was subject to PSD preconstruction review and a determination of the Best Available Control Technology (BACT) for particulate matter (PM) and particulate matter less than 10 microns in diameter (PM_{10}).

After completing construction, emissions tests showed low PM_{10} emissions, but unexpectedly higher total PM emissions. Investigations indicate that large water droplets containing dissolved sugar are being re-entrained in the exhaust gas stream. Observations and estimation techniques indicate that the entrained droplets quickly settle to the ground and substantially remain on plant property. Subsequent equipment modifications have improved performance and reduced PM emissions by approximately half, but total PM emissions still remain high due to the droplets. The draft permit includes the following changes: retain the current standard of "4.2 lb/hour" as the PM_{10} standard with compliance demonstrated by EPA Method 201A; add a new PM standard of "15 lb/hour" with compliance demonstrated by EPA Method 5; install a drain in the silencer ductwork to prevent re-entraining water droplets; reduce the maximum sugar concentration of the recycled scrubber water; conduct new compliance tests; and submit a report to summarizing the costs of possible additional improvements to reduce emissions.

I HEREBY CERTIFY *that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including, but not limited to, the electrical, mechanical, structural, hydrological, geological, and meteorological features).*



Jeffery F. Koerner, P.E.
Registration Number: 49441

(Date)

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
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www.golder.com

Golder Associates

September 20, 2006

063-7591

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SEP 21 2006

BUREAU OF AIR REGULATION

Florida Department of Environmental Regulation
Air Permitting South Program
2600 Blair Stone Road, MS 5500
Tallahassee, Florida 32399-2400

Attention: Mr. Jeff Koerner, P.E.

Re: **Project No. 0510003-038-AC (PSD-FL-346)**
Request for Additional Information
U. S. Sugar Corporation – Clewiston Sugar Mill and Refinery
Revision to New White Sugar Dryer No. 2

Dear Mr. Koerner:

United States Sugar Corporation (U.S. Sugar) and Golder Associates Inc. have received the Department's request for information (RAI) dated August 2, 2006, regarding the above referenced air construction permit application for the White Sugar Dryer (WSD) No. 2. We have also received the Department's email requests dated July 12 and July 26, 2006. We have reviewed the RAI and developed responses to each of the Department's comments. The responses are presented below, in the same order as they appear in the RAI letter and the emails.

August 2, 2006 Letter

1. A description of the corrective actions taken and the results.

Response: A detailed description of corrective actions taken through June 2006 was provided in the revised PSD application submitted in June. Since that time, the following additional activities have been conducted:

a. After inspection by David Taub, scrubber consultant, it was determined that the shroud in the Entoleter scrubber was hindering the scrubbing capabilities of the vane cage. Water was building up in the bottom of the vane cage and pouring over the shroud in surges, so instead of a constant 'cloud of mist' around the vane cage the cloud would appear intermittently between surges. Mr. Taub recommended removing the shroud and the bottom section of the vane cage to get the performance expected. Mr. Taub's official report is attached in Appendix A.

b. The modifications to the scrubber were completed in July.

c. The scrubber was operated and visually inspected for proper cloud formation. The visual inspection showed a much improved, more continuous, cloud formation in the scrubber. Therefore, the scrubber modification was considered successful.

d. Additional source testing for PM (PM_{10} was not tested) was conducted on the dryer on August 23, 2006. The results were markedly improved over the previous testing in May 2006. During the May testing, PM emissions averaged 23 pounds per hour (lb/hr). After the scrubber modifications, the August testing averaged 10.6 lb/hr PM. Refer to Question #2 below for a summary of the test results.

2. A summary of all emission tests conducted, including preliminary tests.

Response: A complete summary of all emission tests conducted to date is provided in Appendix B.

3. A description and schematic of the final emissions unit and controls noting changes to the original design and installed equipment.

Response: A schematic of the current emission unit configuration is shown in Figure 1. The only major difference from the original design is the installation of a bypass duct around the cyclone dust collectors, due to higher than anticipated air flow from the dryer. The higher air flow was creating too high a pressure drop across the cyclones. A comparison of the original and current design details is presented below.

Parameter	Original Design	Current Design
Maximum Production Rate (TPH)	85	85
Sugar Temperature- In	120-140°F	120-140°F
Sugar Temperature- Out	92-102°F	92-102°F
Sugar Moisture- In	1.5 percent	1.5 percent
Sugar Moisture- Out	0.03 percent	0.03 percent
Steam Requirement	11,000 lb/hr	11,000 lb/hr
Dust Loading to Control Equipment	14 gr/acf	14 gr/acf
Flue Gas Temperature	113°F	113°F
Flue Gas Volume	104,950 acfm	92,000 acfm, based on August 2006 testing
Flue Gas Volume	91,000 scfm	79,700 scfm, based on August 2006 testing

The original and final (current) control equipment design parameters are shown in Attachment UC-EU1-I3a, b (see revised air permit application pages in Appendix C).

4. A summary of the effectiveness of the particulate matter control system (as corrected) and the emissions.

Response: As described above, the recent changes to the scrubber have resulted in improved PM emissions. PM_{10} emissions have always been well below the permit limit. It is believed that the combination of cyclones and wet scrubber are very effective in removing PM/PM_{10} emissions.

However, the carryover of droplets out of the scrubber, which contain dissolved sugar solids, continues to some degree and is the origin of the higher PM emissions.

July 12 Email

1. A modeling analysis was not provided with the application. Debbie Nelson was the meteorologist on the original project and will be working on this revision as well. She is reviewing the original project to see what was provided and what was "exempted" by rule. She is also reviewing our current rules, which were revised in February of this year. She will review and let you know what modeling analyses must be provided for this project.

An ambient impact analysis for PM_{10} was performed in October 2004 for the original permitting of the new WSD No. 2. Modeling was performed for significant impacts and for AAQS for the 24-hour averaging period. A PM_{10} emission rate of 4.2 lb/hr, which is the current permitted rate for the dryer, was used in the modeling analysis. The analysis showed the maximum 24-hour impact due to all sources as 69 micrograms per cubic meter (ug/m^3), well below the ambient standard of 150 ug/m^3 for the 24-hour averaging period. Since U.S. Sugar is not requesting any increase in the permitted PM_{10} emission rate for the WSD No.2, we believe the previous modeling analysis is sufficient.

2. Page 2-2 of the application indicates that 25 percent of the dryer exhaust bypasses the cyclones directly to the wet scrubber. Please describe how the bypass is introduced into the scrubber and are the flows well mixed? Can another cyclone be added prior to the wet scrubber to avoid the bypass? What would be the additional capital and annualized costs?

The bypass duct joins with the duct to the wet scrubber just prior to the wet scrubber. Mr. Taub's survey did not reveal any issues with the bypass duct and the convergence with the primary exhaust duct from the cyclones.

As shown in the plan view of the scrubbing system submitted with the 2004 application, the cyclones are positioned in a corner of the building. There is no physical room to add another cyclone.

Mr. Taub's report states that bypassing the cyclones with a portion of the flow should have no effect on the overall particulate removal or meeting the PM emission standards, since the wet scrubber has a higher removal efficiency than does the cyclones. It should also be recognized that Entoleter itself proposed this modification.

3. The original application indicated that the scrubber exhaust would be horizontally out of the side of the building. The recent application indicates that the scrubber exhaust is vertical (Page 2-3). Is the scrubber exhaust horizontal or vertical? Was the exhaust stream tested for cyclonic flow?

The exhaust to the atmosphere for the WSD No. 2 is horizontal out the side of the building. A corrected permit application page is attached. However, the point at which the PM stack tests have been conducted is located along a horizontal duct running from the scrubber to the ID fan. This test point meets the minimum criteria of 2 diameters downstream/0.5 diameters upstream, so cyclonic flow should not be an issue at this location.

4. The second paragraph on page 4-6 of the application indicates "... an outlet dust loading of 0.005 gr/dscf (proposed limit for permitting purposes is 0.00729 gr/dscf)." Please explain this statement.

This statement was inadvertently carried over from the previous 2004 application, when U.S. Sugar was proposing an emission limit of 6 lb/hr. Please disregard it.

5. Please describe any other engineering solutions that are being pursued.

U.S. Sugar was considering extending the exhaust duct horizontally outside the building by about 40 feet, and enlarging the duct size to lower the velocity through the duct. The objective would be to allow the water droplets to grow and fallout, as suggested in Mr. Taub's report. However, this would cost in the range of $80,000 to $100,000, due to the structural supports required and the large size of the duct. This is considered to be a very high cost (roughly one-third of the cost of the entire pollution control system for the dryer), and there is no guarantee that this would solve the current problems with the PM emissions. Therefore, U.S. Sugar does not desire to pursue this approach any further.

July 26 Email

Please answer the below questions and add anything else that you plan to do to improve performance. Provide a preliminary schedule for completing each of these items.

1. Remove shrouds; (Where are these located? Describe designed function and current problem. How will removal improve performance?)

There is a blanking plate (or shroud) on the bottom section of the vane cage. There are four vane cage sections total. The blanking plate was installed to increase the velocity through the vane cage. This had to be done because the operating flow rate of 97,000 cfm was less than the design flow rate of 104,000 cfm. After inspection, Mr. Dave Taub determined that this shroud was hindering the scrubbing capabilities of the vane cage. Water was building up in the bottom of the vane cage and pouring over the shroud in surges, so instead of a constant 'cloud of mist' around the vane cage the cloud would appear intermittently between surges. Mr. Taub recommended removing the shroud and the bottom section of the vane cage to get the performance expected. This work was completed. The scrubber was then operated and visually inspected for proper cloud formation.

2. Increase duct dimensions; (specifically, where will duct dimensions be increased?)

The duct dimensions would be increased downstream of the existing duct, which exhausts to the atmosphere, as part of an extension to the existing duct. See also response #5 above.

3. Add ~ 40 ft. horizontal extension and test ports to existing exhaust vent;

As stated above in the response #5 to the July 12 email, this approach has a very high cost with uncertain results, which render this option infeasible.

4. Increase diameter of the new extension to reduce exhaust flow rates; and

As stated above in the response #5 to the July 12 email, this approach has a very high cost with uncertain results, which render this option infeasible.

5. Add drains to new extension and existing silencer.

U.S. Sugar is still considering the drain on the existing silencer, as it could reduce the deposition of sugar water onto the ductwork, outlet duct screen, and refinery building and process area. However, this would not affect the PM test results due to the location of the test ports upstream of the silencer.

U.S. Sugar is proposing a maximum PM emission rate for the new White Sugar Dryer No. 2 of 15 lb/hr, pending additional compliance testing (see revised air permit application pages in Appendix C). The revised emission tables (UC-EU1-F.10a and UC-EU1.F.10d) and revised PSD netting table (Table 3-3) are also included in Appendix C. Although the in-house testing indicated PM emissions of less than 15 lb/hr, additional compliance testing at full load operation is needed.

If you have any questions regarding this information, please call me at (352)336-5600 or email me at dbuff@golder.com.

Sincerely,

GOLDER ASSOCIATES INC.

David A. Buff, P.E., Q.E.P.
Principal Engineer

DB/dm

Enclosures

cc: Mr. Ron Blackburn, DEP South District Office
Mr. Peter Briggs, USSC
Mr. Don Griffin, USSC
Mr. James Stormer, PBCHD
Jim Little, EPA

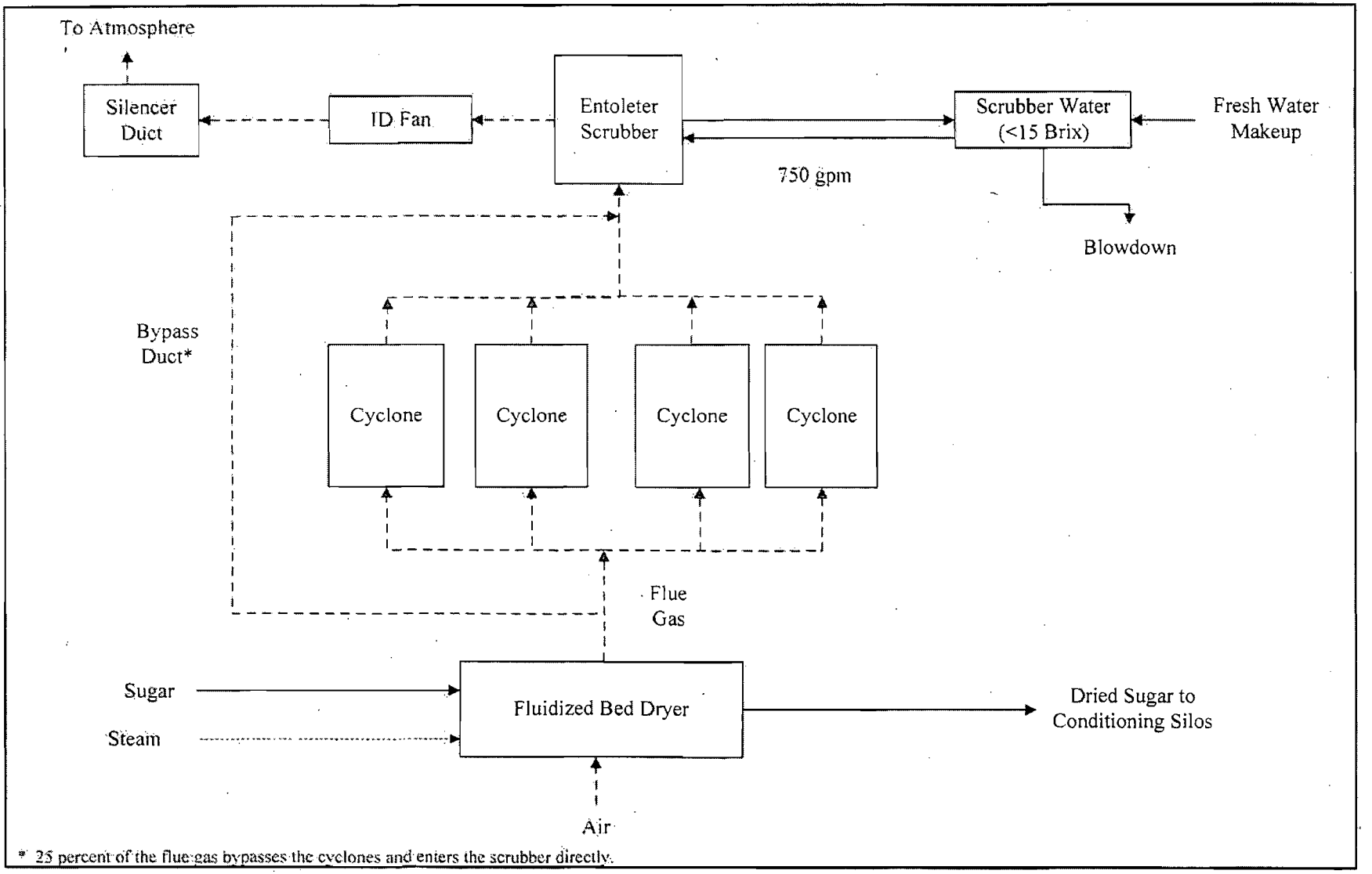

Figure 1
New White Sugar Dryer No. 2
Process Flow Diagram
U.S. Sugar

Process Flow Legend
Solid/Liquid
Gas
Steam

Filename: 0637591/4.1/RA1091406/FIGURE 1.VSD
Date: 09/19/06

Golder Associates

APPENDIX A

REPORT BY MR. DAVID TAUB

INNOVATIVE
SCRUBBER SOLUTIONS, INC.
32 Pasture Court, Ledgewood, NJ 07852
Phone: 973-584-4439 Fax: 973-584-4081
e-mail: dtaub@inscrubbers.com

August 2, 2006

US Sugar Corporation
1731 South W.C. Owen Ave.
Clewiston, FL 33440-1207

Att: Mr. Don Griffin

Ref: USSC PO No. C224316
Dryer #1 Entoleter Scrubber
ISS 2306 Report

Dear Mr. Griffin:

The purpose of this investigation is to determine if the Entoleter scrubber was correctly sized according to the design parameters, fabricated in accordance with drawings and to determine possible causes for the scrubber's failure to meet particulate emission limits and guarantees. A visual inspection was conducted on July 11 and 12, 2006 to gather the information required to accomplish the objectives of this report. Details of the information I gathered and observations that I made follow.

SCRUBBER OPERATION & DESIGN

Please refer to the attached figure 1 for the terminology used to describe the parts of the CentriField scrubber. The exhaust from the dryer enters the scrubber through the air inlet. It passes around and through the vane cage. The vane cage in this scrubber consisted of four rows with12-1/2" tall vanes in each row. There were about 84 vanes in each row. Each vane is angled toward the next vane in the cage so that each pair of vanes forms a mini venturi throat. As the air passes through the vanes, it picks up and atomizes liquid that has been recycled to the sump in the bottom of the vane cage. The droplets form a cloud of drops that spin inside the vane cage. Larger drops are spun out of the cloud by centrifugal force. The larger drops can exit the cage through slots in the vanes and clean the inside walls of the scrubber. Drops thrown from the cloud also sustain the cloud by two methods. First, the larger drops will collide with other drops and shatter to make smaller drops that are not affected by centrifugal force. They remain in the cloud.

Second, a drop can hit the back side of a vane and be regenerated by venturi action (by the velocity of the gas passing over the face of the vane).

Particles entering with the gas must travel a tortuous path through the cloud of droplets. Almost all of the particles will collide with a drop and be collected. While most of the drops remain in the cloud or exit the cages through the slots in the vanes, some drops exit as the gas is pulled up through the scrubber. The primary mist eliminator removes the particle-laden drops before they can exit the scrubber. The primary imparts a spin to the gas/droplet mixture and forces it to the wall of the separator tank. The drops with the collected particles agglomerate on the wall and fall to the bottom of the tank to be recirculated to the recycle tank through the liquid return. Liquid is bled from the stream to maintain a given percent solids.

The droplet free gas then continues spinning in the separator tank to insure that there is no droplet carry over. In this scrubber the spin pattern takes the form of a helix and will complete at least three spins before exiting the scrubber.

PARTICULATE TESTS

A review of the particulate tests shows that most of the particulate is being captured in the probe wash. This is typically the result of poor scrubber operation, droplet carryover, or poor test methods. Tests have shown that there is very little emission of particles under 10 microns. This indicates that the particles are being collected in the cage. I have to assume that the testers were alerted to the significance of the tests performed and that should rule out poor test methods. Droplet carryover would seem to be the cause of the test failures. We observed the performance of the primary mist eliminator through a sheet of Plexiglas while the unit was in operation. The visual surveillance of the mist eliminator demonstrates that it seems to be operating in accordance with its design. Most of the droplets are removed by the time the liquid reaches a height of about one half of the scrubber diameter (about 7-8 feet) above the mist eliminator. The vessel walls above this point seem to be dry.

Based on the above visual observation of the mist eliminator in operation, it appears that the droplets reaching the test ports are from condensation. At low saturated temperatures, the water in the gas will condense on any solid particles that pass through the scrubber and the drops formed have a high solids content. If a drop is collected during the test, non-compliance is guaranteed. I have observed this phenomenon in other dryer scrubbers with low saturated temperatures. Drops have caused failure of tests if there is not enough time for the drops to grow and fall out of the gas stream prior to the test ports. There is not enough time for the condensed drops to grow and fall from the gas stream in the present layout. It has been suggested that a chevron mist eliminator will solve the problem of droplet carryover. I am not convinced that droplet carryover is the problem

If condensation is causing the drops at the test ports, a chevron will have little effect on the test results.

EXISTING SYSTEM

The Entoleter scrubber appears to be correctly sized based on the original design parameters provided by the dryer manufacturer. Upon start-up and testing of the scrubber, it was determined that the exhaust gas volume was approximately 10,000 actual cubic feet per minute less than given design. Even with the reduced volume the cyclones were found to be undersized. Entoleter proposed that 25% of the gas be bypassed around the cyclones directly to the scrubber inlet. The fact that the gas is bypassed should have no effect on the operation of the scrubber or it's ability to meet emission requirements. The particles that would have been caught in the cyclone will easily be collected in the scrubber because it is more efficient at removing particulate than a cyclone when operated correctly. Entoleter also proposed modifications to the vane cage and primary mist eliminator (ME) to improve the operation of the scrubber. A 10" high steel band was placed around the bottom of the bottom row of vanes. That modification would increase the air velocity through the cage back to its original design. Increasing the air velocity makes smaller droplets in the cloud, which improves the collection efficiency of particles. The modification to the primary ME consisted of adding 5" pieces to the end of the nine blades of the ME. That increases the velocity out of the ME, which increases the droplet removal. The new velocity is about 7700 FPM. That is normal for this type of ME.

Visual observation of the ME verified that it is operating in accordance with good practice. The same cannot be said for the vane cage. Upon close scrutiny, it was noted that the cloud was not forming. The cloud would appear and then vanish. It was visible about one third of the time and when it was there it was watery. There also appeared to be no cloud in the top third of the cage. A gap between the installed band modification and the bottom of the cage allows recycle liquid to spill out of the cage bottom and bypass the cloud. That decreases the amount of water that can enter the cloud and adversely affects the cleaning of the inside of the scrubber, as well as particulate removal efficiency.

I was also informed that the recycle liquid rate had been increased from 500 to 750 GPM. This might or might not help the performance of the scrubber. The increased recycle rate would only help if the vane velocity is high enough to draw the excess liquid into the cloud. Too much water could have and adverse effect. The bottom of the cloud will become watery (larger drops) and larger drops reduce the particulate removal capability. Additional tests and visual observation would be required to determine the benefits of increasing the recycle rate.

DUCTWORK

Two areas of concern are noticeable when looking at the duct for the system. The duct into and out of the cyclones is not designed in accordance with manifolds I have seen for multiple cyclones. The present design allows most of the air to enter one or the other cyclones, creating an imbalance and the high pressure drop noted at start-up.

Properly designed manifolds are sloped to create a higher pressure drop at the back of the manifold. Air is then forced into the front cyclone. It is possible that a correctly designed manifold and larger outlet tubes in the cyclones will alleviate the high pressure drop.

The second area of concern is the duct at the outlet of the scrubber. A mitered elbow should not be installed on the top outlet of a scrubber. The scrubber should have been installed with a side tangential outlet on the separator tank. The velocity of the existing outlet duct is 60 FPS. Normal design for a wet duct is 45 FPS. The high velocity and turbulence caused by the mitered elbow could be the cause of condensation of gaseous liquid to drops. High velocity across cooler metal will cause condensation.

MODIFICATIONS

The inconsistent and watery cloud can be corrected by cutting the recycle feed pipe and removing the bottom of the cage. The bottom row of vanes can then be unbolted and removed and the cage bottom reinstalled. A spool piece should be welded in to reconnect the feed pipe. This modification should make the particulate removal capability of the scrubber more consistent. There will probably be a slight increase in the scrubber pressure drop, an inch or less.

There seemed to be few drops exiting the duct exhaust. Reheat of the exhaust by the fan raises the exhaust gas above the dew point and the silencer is probably acting like a mist eliminator to remove any drops remaining after the fan. The liquid exiting at the bottom of the exhaust duct confirms this. I would like to see a drawing of the silencer to confirm my suspicions. A drain should be installed on the bottom of the duct after the silencer to prevent the condensed liquid from coating the side of the building and ground.

The existing outlet duct should be extended and a new test conducted. There is a reasonable chance that the exhaust after the fan is in compliance with PM-10. All ducts and the silencer should be cleaned prior to testing. If the outlet is still higher than the allowable, more tests and observations should be conducted to determine where the drops are being formed.

It is my opinion that the scrubber is capable of providing outlet emissions of less than 0.05 gr/dscf. There are a number of this type of scrubber installed on similar, not the same type, dryers that have emissions in the 0.003 gr/dscf range. If the above modifications do not yield the required results more drastic changes will be required to bring the system into compliance.

The first change is to insure that the cyclones are correctly sized and make any modifications required to pass all the dryer exhaust gas through them. This would reduce the amount of liquid bleed from the system. I would then change the fan to a dry fan so it is between the cyclones and scrubber. This would allow a properly sized stack to be installed at the scrubber outlet and remove the poorly designed miter elbow. The stack would be sized so that condensed drops would have the opportunity to grow and fall back into the scrubber prior to the test ports.

GENERAL COMMENTS

Typically, scrubbers that require outlet particulate loadings of less than 0.005 gr/dscf are operated with low percent solids in the recycle liquid. There is no way I would ever recommend operating a scrubber at 50% solids. No mist eliminator is 100% efficient. A single, caught drop would fail an emission test. Most of the dryer scrubbers I installed that required 0.005 gr/dscf were operated with less than 3% solids in the recycle. Improving the performance of the cyclones would probably get you close to 3% solids with less bleed from the system.

Please let me know if you have any questions or require further clarification. Thank you for the opportunity to work with you.

Regards,
David B. Taub
President

APPENDIX B

WHITE SUGAR DRYER NO. 2 PM/PM_{10} TESTS

TABLE B-1
WHITE SUGAR DRYER NO. 2 PM EMISSION TESTS

Run Number	Test Date	Start/End Time	% Load	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Avg. Water Flow (gpm)	Avg. Pressure Drop		Particulate Data		
						lb/hr	gr/dscf	lb/hr	gr/dscf		Cyclone (in. H_2O)	Scrubber (in. H_2O)	Filter (mg)	Wash (mg)	% Wash of Total
1	12/07/05	1056-1206	100	82,909	96,941	4.2	0.005	6.82	0.0096	529.4	3.8	9.6	0.3	23.5	98.7
2	12/07/05	1235-1345	100	82,993	97,239	4.2	0.005	3.65	0.0051	527.8	4.0	9.0	0.2	12.4	98.4
3	12/07/05	1453-1605	100	82,541	97,104	4.2	0.005	19.23	0.0272	524.8	4.0	9.0	0.4	65.2	99.4
Average=				**82,814**	**97,095**	**4.2**	**0.005**	**9.9**	**0.0140**	**527**	**3.9**	**9.2**			**98.8**
1	05/24/06	0852-0927	100	83,682	96,546	4.2	0.005	26.10	0.0364	747.7	5.0	9.0	1.0	46.5	97.9
2	05/24/06	1002-1037	100	82,769	95,849	4.2	0.005	18.61	0.0262	747.7	4.3	9.0	0.7	33.8	98.0
3	05/24/06	1100-1134	100	83,743	96,872	4.2	0.005	20.89	0.0291	750.0	4.3	9.0	0.6	36.6	98.4
4	05/24/06	1208-1243	50	85,704	98,102	4.2	0.005	19.65	0.0267	750.0	4.8	9.5	0.5	35.1	98.6
5	05/24/06	1303-1337	50	86,321	98,919	4.2	0.005	32.55	0.0440	747.3	3.7	10.7	0.5	57.1	99.1
6	05/24/06	1350-1425	50	85,981	98,614	4.2	0.005	20.89	0.0283	749.0	4.0	10.0	0.8	36	97.8
7	05/25/06	0802-0836	100	82,866	96,457	4.2	0.005	24.30	0.0342	747.7	4.7	10.0	0.5	42.7	98.8
8	05/25/06	0850-0925	100	82,501	96,272	4.2	0.005	20.21	0.0286	749.7	4.0	10.3	0.7	34.1	98.0
9	05/25/06	0934-1008	100	83,246	97,078	4.2	0.005	20.99	0.0294	745.7	3.0	11.0	0.6	35.4	98.3
Average=				**84,090**	**97,190**	**4.2**	**0.005**	**22.7**	**0.0314**	**748**	**4.2**	**9.8**			**98.3**
1	08/23/06	1320-1353	50	74,966	88,090	4.2	0.005	14.09	0.0219	750	3.0	8.5	0.8	28.9	97.9
2	08/23/06	1415-1449	50	75,900	88,771	4.2	0.005	10.38	0.0160	750	2.3	8.7	0.8	22.5	98.0
3	08/23/06	1502-1535	50	75,677	89,775	4.2	0.005	10.61	0.0164	751	3.0	8.7	0.7	23.3	98.4
4	08/23/06	1543-1600	50	75,650	89,117	4.2	0.005	11.97	0.0185	747	2.5	9.0	0.7	26.2	98.6
5	08/23/06	1635-1708	50	75,618	89,384	4.2	0.005	9.72	0.0150	757	3.0	8.7	0.8	21.1	99.1
6	08/23/06	1720-1753	50	76,365	89,939	4.2	0.005	6.91	0.0106	752	3.3	9.0	1.1	14.2	98.3
Average=				**75,696**	**89,179**	**4.2**	**0.005**	**10.6**	**0.0164**	**751**	**2.9**	**8.8**			**98.4**

Notes:
lb/hr = pounds per hour
gr/dscf = grains per dry standard cubic foot
mg = milligrams

TABLE B-2
WHITE SUGAR DRYER NO. 2 PM_{10} EMISSION TESTS

Run Number	Test Date	Start/End Time	% Load	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Allowable PM_{10} Emissions		Actual PM_{10} Emissions (EPA Method 210A)		Avg. Water Flow (gpm)	Avg. Pressure Drop		Particulate Data		
						lb/hr	gr/dscf	lb/hr	gr/dscf		Cyclone (in. H_2O)	Scrubber (in. H_2O)	Filter (mg)	Wash (mg)	% Wash of Total
1	05/23/06	1015-1040	50	85,299	93,003	4.2	0.005	2.37	0.00324	749.7	4.7	9.7	1.1	1.5	57.7
2	05/23/06	1127-1200	50	85,082	92,570	4.2	0.005	1.59	0.00218	753.0	4.3	9.7	0.7	1	58.8
3	05/23/06	1220-1254	50	85,713	92,883	4.2	0.005	1.13	0.00154	750.0	4.0	9.8	0.7	0.5	41.7
4	05/23/06	1400-1433	100	83,395	91,246	4.2	0.005	1.02	0.00143	750.0	4.0	9.7	0.4	0.8	66.7
5	05/23/06	1450-1554	100	84,141	91,790	4.2	0.005	1.75	0.00242	750.6	4.0	10.0	1	1	50.0
6	05/23/06	1545-1619	100	83,009	90,815	4.2	0.005	1.06	0.00149	750.3	4.0	10.0	0.5	0.7	58.3
7	05/25/06	1024-1058	100	83,263	91,101	4.2	0.005	1.02	0.00143	749.7	4.0	10.3	0.5	0.7	58.3
8	05/25/06	1110-1144	100	83,058	90,876	4.2	0.005	0.94	0.00131	745.7	4.0	10.0	0.4	0.7	63.6
9	05/25/06	1153-1228	100	82,799	90,877	4.2	0.005	1.26	0.00177	751.0	3.7	11.0	0.7	0.8	53.3
Average=				**83,973**	**91,684**	**4.2**	**0.005**	**1.3**	**0.00187**	**750**	**4.1**	**10.0**			**56.5**

Notes:
lb/hr = pounds per hour
gr/dscf = grains per dry standard cubic foot
mg = milligrams

APPENDIX C

REVISED AIR PERMIT APPLICATION PAGES

Professional Engineer Certification

1. Professional Engineer Name: **David A. Buff**
   Registration Number: **19011**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **6241 NW 23rd Street, Suite 500**
   City: **Gainesville** State: **FL** Zip Code: **32653**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 336-5600** ext. **545** Fax: **(352) 336-6603**
4. Professional Engineer Email Address: **dbuff@golder.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

David A. Buff
Signature (seal)

9/19/06
Date

DAVID A. BUFF LICENSE No. 19011 STATE OF FLORIDA PROFESSIONAL ENGINEER

* Attach any exception to certification statement.

** Board of Professional Engineers Certificate of Authorization #00001670

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **Sugar Refinery**	2. Emission Point Type Code: **3**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **See Attachment UC-EU1-A11.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **H**	6. Stack Height: **80** feet	7. Exit Diameter: **7.0 × 6.0** feet
8. Exit Temperature: **113**°F	9. Actual Volumetric Flow Rate: **92,000** acfm	10. Water Vapor: **4** %
11. Maximum Dry Standard Flow Rate: **79,700** dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude… Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: **Stack parameters represent White Sugar Dryer No. 2 discharge vent. See Attachment UC-EU1-A11 for a list of all stacks and their parameters in this emissions unit.**		

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **15** lb/hour **65.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **15 lb/hr** Reference: **Proposed permit limit**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☒ 10 years
10. Calculation of Emissions: **15 lb/hr x 8,760 hr/yr ÷ 2000 lb/ton = 65.7 TPY**	
11. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.63 lb/hr**	4. Equivalent Allowable Emissions: **1.63** lb/hour **7.12** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to VHP Sugar Dryer (EU 015) (Point ID S-11). As a surrogate parameter for PM, VE Must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions 2 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.43 lb/hr**	4. Equivalent Allowable Emissions: **1.43** lb/hour **6.28** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to existing White Sugar Dryer No. 1 (EU 016) (Point ID S-10). As a surrogate parameter for PM, VE must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions 3 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.7 lb/hr**	4. Equivalent Allowable Emissions: **0.7** lb/hour **3.07** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Granular Carbon Regeneration Furnace (EU 017) (Point ID S-12).**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **4** of **8**

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **15 lb/hr**	4. Equivalent Allowable Emissions: **15** lb/hour **65.7** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Proposed permit limit. Applies to new White Sugar Dryer No. 2 (EU 029) (Point ID S-13).**	

Allowable Emissions Allowable Emissions **5** of **8**

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.19 lb/hr**	4. Equivalent Allowable Emissions: **0.19** lb/hour **0.84** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Vacuum Systems (EU 018). As a surrogate parameter for PM, VE must be less that 5% opacity (Point IDs S-1, S-2, S-3).**	

Allowable Emissions Allowable Emissions **6** of **8**

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.17 lb/hr**	4. Equivalent Allowable Emissions: **0.17** lb/hour **0.74** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Conditioning Silos (EU 019) (Point IDs S-7, S-8, S-9).**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 7 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.25 lb/hr**	4. Equivalent Allowable Emissions: **0.25** lb/hour **1.07** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Screening and Distribution (EU 020) (Point IDs S-5, S-6). As a surrogate parameter for PM, VE must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions 8 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.21 lb/hr**	4. Equivalent Allowable Emissions: **0.21** lb/hour **0.90** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Packing Baghouse (EU 022) (Point ID S-4). As a surrogate parameter for PM, VE must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

ATTACHMENT UC-EU1-A11

SOURCES AND RESPECTIVE STACK PARAMETERS INCLUDED IN THE SUGAR PROCESSING OPERATION

Source/Vent Name	EU ID	Stack No.	Stack/Vent Release Height (ft)	Stack/Vent Diameter (ft)	Exhaust Flow (acfm)	Exit Velocity[a] (ft/sec)	Gas Exit Temp. (°F)
Existing White Sugar Dryer	015	S-11	75	7.31	113,000	0.29	115
New White Sugar Dryer	029	S-13	80	7 × 6	92,000	36.5	113
VHP Sugar Dryer	016	S-10	10	4.79	127,000	0.29	115
Granular Carbon Furnace	017	S-12	30	2.00	4,300	22.8	160
Vacuum Systems							
Screening & Distribution Vacuum	018	S-1	65	0.50	1,705	0.29	68
100-lb Bagging Vacuum System	018	S-2	65	0.50	1,564	0.29	90
5-lb Bagging Vacuum System	018	S-3	65	0.50	1,585	0.29	90
Conditioning Silos							
Conditioning Silo No. 2	019	S-7	130	1.37	3,000	0.29	110
Conditioning Silo No. 4	019	S-8	130	1.37	3,000	0.29	110
Conditioning Silo No. 6	019	S-9	130	1.37	3,000	0.29	110
Screening, Distributing, Packaging, Powdered Sugar/Starch							
Screening and Distribution #1	020	S-5	72	0.95	3,200	0.29	125
Screening and Distribution #2	020	S-6	72	1.94	10,500	0.29	125
Sugar Packaging Baghouse							
Packaging Baghouse	022	S-4	60	1.94	11,500	0.29	125

[a] All sources but the Granular Carbon Furnace have horizontal discharge.

Attachment UC-EU1-F.10a
Future Potential Emissions of PM/PM_{10} From the Sugar Refinery, U.S. Sugar Corp., Clewiston
(revised 9-20-06)

Source/Vent Name	EU No.	Source ID	Exhaust Grain Loading (gr/dscf)	Exhaust Gas Flow (dscfm)	Hours of Operation	PM10 Emissions (lb/hr)[a]	PM10 Emissions (TPY)	PM Emissions (lb/hr)[a]	PM Emissions (TPY)
V.H.P. Sugar Dryer	015	S-11	0.001723	110,042	8,760	1.63	7.12	1.63	7.12
White Sugar Dryer No. 1	016	S-10	0.00177	94,488	8,760	1.43	6.28	1.43	6.28
White Sugar Dryer No. 2	029	S-13	0.022	79,700	8,760	15.03	65.83	15.0 [b]	65.70
					TOTAL =	18.09	79.22	18.06	79.10
Vacuum Systems									
Screening and Distribution Vacuum	018	S-1	0.00754	990	8,760	0.06	0.28	0.06	0.28
100 lb Bagging Vacuum System	018	S-2	0.00856	872	8,760	0.06	0.28	0.06	0.28
5 lb Bagging Vacuum System	018	S-3	0.00759	984	8,760	0.06	0.28	0.06	0.28
					TOTAL =	0.19	0.84	0.19	0.84
Conditioning Silos									
Conditioning Silo No. 2	019	S-7	0.0025	2,641	8,760	0.06	0.25	0.06	0.25
Conditioning Silo No. 4	019	S-8	0.0025	2,641	8,760	0.06	0.25	0.06	0.25
Conditioning Silo No. 6	019	S-9	0.0025	2,641	8,760	0.06	0.25	0.06	0.25
					TOTAL =	0.17	0.74	0.17	0.74
Screening and Distribution									
Screening and Distribution #1	020	S-5	0.0025	2,668	8,760	0.06	0.25	0.06	0.25
Screening and Distribution #2	020	S-6	0.0025	8,775	8,760	0.19	0.82	0.19	0.82
					TOTAL =	0.25	1.07	0.25	1.07
Sugar Packaging Baghouse									
Packing Dust Collector	022	S-4	0.0025	9,589	8,760	0.21	0.90	0.21	0.90
Granular Carbon Furnace	017	--	--	--	8,760	0.63	2.76	0.70	3.07
		GRAND TOTAL =				**19.53**	**85.54**	**19.57**	**85.72**

[a] Based on permit emission limits, except for PM emissions from White Sugar Dryer No. 2, based on proposed limit.
[b] Based on proposed PM limit.
Note: lb/hr = pounds per hour
TPY = tons per year

Attachment UC-EU1-F.10d
Summary of Potential Future Emissions from Sugar Refinery, U. S. Sugar Corporation, Clewiston (revised 9-20-2006)

Source	EU No.	Source ID	Potential Emissions (TPY)						
			PM	PM_{10}	SO_2	NO_x	CO	VOC	SAM
V.H.P. Sugar Dryer	015	S-11	7.12	7.12	0	0	0	0	0
White Sugar Dryer No. 1	016	S-10	6.28	6.28	0	0	0	0	0
White Sugar Dryer No. 2	029	S-13	65.70	65.83	0	0	0	0	0
Vacuum Systems									
Screening and Distribution Vacuum	018	S-1	0.28	0.28	0	0	0	0	0
100 lb Bagging Vacuum System	019	S-2	0.28	0.28	0	0	0	0	0
5 lb Bagging Vacuum System	020	S-3	0.28	0.28	0	0	0	0	0
Conditioning Silos									
Conditioning Silo No. 2	019	S-7	0.25	0.25	0	0	0	0	0
Conditioning Silo No. 4	020	S-8	0.25	0.25	0	0	0	0	0
Conditioning Silo No. 6	021	S-9	0.25	0.25	0	0	0	0	0
Screening, Distribution, Packaging, Powdered Sugar/Starch									
Screening and Distribution #1	020	S-5	0.25	0.25	0	0	0	0	0
Screening and Distribution #2	021	S-6	0.82	0.82	0	0	0	0	0
Sugar Packaging Baghouse									
Packing Dust Collector	022	S-4	0.90	0.90	0	0	0	0	0
Granular Carbon Furnace	017	S-12	3.07	2.76	2.80	13.14	13.14	4.38	0.172
Alcohol Usage	021		0	0	0	0	0	15.00	0
TOTAL ALL REFINERY SOURCES			85.72	85.54	2.80	13.14	13.14	19.38	0.172

ATTACHMENT UC-EU1-I3a

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

Control Equipment Parameters for
White Sugar Dryer No. 2
Cyclone Collectors

	ORIGINAL DESIGN	CURRENT DESIGN
Manufacturer and Model No.	Entoleter, LLC – Model 6600	Entoleter, LLC – Model 6600
No. of Cyclones	4	4
Inlet Gas Temp (°F)	113	113
Inlet Gas Flow Rate (acfm)	105,000	92,000
(scfm)	96,000	79,700
Pressure Drop Across Cyclones (inches of H_2O)	6	3 to 5
Inlet Dust Loading	11,760 lb/hr; 14 gr/dscf	11,760 lb/hr; 14 gr/dscf
Outlet Dust Loading	118 lb/hr	118 lb/hr
Cyclone System Particulate Removal Efficiency	99%	99%

Note: All values are based on manufacturer's design information and are subject to revision.
All values represent typical operating conditions.

ATTACHMENT UC-EU1-I3b

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

Control Equipment Parameters for
White Sugar Dryer No. 2
Wet Scrubber

	ORIGINAL DESIGN	CURRENT DESIGN
Manufacturer and Model No.	Entoleter, LLC – Centrifield Vortex Model 1500	Entoleter, LLC – Centrifield Vortex Model 1500
Inlet Gas Temp (°F)	113	113
Inlet Gas Flow Rate (acfm)	105,000	92,000
(scfm)	96,000	79,700
Pressure Drop Across Scrubber (inches of H_2O)	8-10	8-11
Scrubber Recirculation Flow Rate (gal/min)	500	750
Scrubber Make-up Flow Rate (gal/min)	12	12
Inlet Dust Loading	118 lb/hr	118 lb/hr
Outlet Dust Loading: PM_{10}	4.2 lb/hr	4.2 lb/hr
PM	4.2 lb/hr	15 lb/hr
PM/PM_{10}	0.005 gr/acf	0.02 gr/acf
Wet Scrubbing System Particulate Removal Efficiency (PM_{10})	96%	87%

[a] Efficiency impacted by carryover of water droplets from scrubber which contain dissolved sugar.

Table 3-3

White Sugar Dryer No. 2 PSD Source Applicability Analysis, U.S. Sugar Corporation, Clewiston (revised 9-20-2006)

	Baseline Emissions [a]				Future Potential Emissions				Net Change In	PSD	
Regulated Pollutant	Sugar Refinery Baghouses (TPY)	Granular Carbon Furnace (TPY)	Alcohol Usage (TPY)	Total (TPY)	Sugar Refinery Baghouses (TPY)	Granular Carbon Furnace (TPY)	Alcohol Usage (TPY)	Total (TPY)	Emissions Due to Proposed Project (TPY)	Significant Emission Rate (TPY)	PSD Review Triggered?
Particulate Matter (Total)	11.45	1.82	0	13.26	82.66	3.07	0	85.72	72.46	25	Yes
Particulate Matter (PM_{10})	11.45	1.63	0	13.08	82.78	2.76	0	85.54	72.46	15	Yes
Sulfur Dioxide	0	1.05	0	1.05	0	2.80	0	2.80	1.75	40	No
Nitrogen Oxides	0	10.13	0	10.13	0	13.14	0	13.14	3.01	40	No
Carbon Monoxide	0	10.13	0	10.13	0	13.14	0	13.14	3.01	100	No
VOC	0	1.24	3.13	4.37	0	4.38	15.0	19.38	15.01	40	No
Sulfuric Acid Mist	0	0.064	0	0.064	0	0.172	0	0.172	0.107	7	No

[a] Actual emissions based on the average emissions for 2002 and 2003.

PM_{10} = Particulate Matter with aerodynamic diameter less than or equal to 10 microns
VOC = Volatile Organic Compounds
TPY= tons per year

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

August 2, 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Neil Smith, Vice President of Sugar Processing Operations
U.S. Sugar Corporation
Clewiston Sugar Mill and Refinery
111 Ponce DeLeon Avenue
Clewiston, Florida 33440

Re: **Request for Additional Information**
U.S. Sugar Corporation – Clewiston Sugar Mill and Refinery
Project No. 0510003-038-AC (PSD-FL-346)
Application for Revision to New White Sugar Dryer

Dear Mr. Smith:

On July 3, 2006, the Department received your application requesting a revision to the particulate matter emissions standard for the new white sugar dryer at the Clewiston Mill. On July 12, 2006, the Department requested additional information via email (attached) regarding this project. The purpose of this letter is to update you on the status of your application for a revised air construction permit.

Based on my site visit conducted on July 24, 2006 and subsequent conversations with our South District Office, U.S. Sugar is pursuing several options to establish operation of the particulate matter control system consistent with the original design. For example, U.S. Sugar is in the process of removing the blanking plate at the scrubber inlet. This should allow the atomized water cloud to form that is needed for proper operation of the scrubber and may prevent the carryover of water droplets. Additional testing will be performed to document any improvements. Other options may also be tried and additional emissions tests conducted. Such corrective actions may result in a demonstration of compliance with the original emissions standard.

At this time your application remains incomplete. In order to continue processing your application, the Department will need the additional information requested in the July 12th email as well as the following:

1. A description of the corrective actions taken and the results;
2. A summary of all emissions tests conducted, including preliminary tests;
3. A description and schematic of the final emissions unit and controls system noting changes to the original design and installed equipment; and
4. A summary of the effectiveness of the particulate matter control system (as corrected) and the emissions.

Should your response to any of the items below require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

The Department will resume processing your application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official. You are reminded that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days or provide a written request for an additional period of time to submit the information.

If you have any questions regarding this matter, please call me at 850/921-9536.

Sincerely,

Jeffery F. Koerner, P.E.
Air Permitting North Program

cc: Mr. Peter Briggs, U.S. Sugar
Mr. Don Griffin, U.S. Sugar
Mr. David Buff, Golder Associates Inc.
Mr. Ron Blackburn, SD Office
Mr. Jim Little, EPA Region 4

Koerner, Jeff

From: Koerner, Jeff
Sent: Wednesday, July 12, 2006 4:37 PM
To: 'Buff, Dave'
Cc: Nelson, Deborah; Don Griffin
Subject: White Sugar Dryer - Request for Additional Information & Modeling

David Buff, P.E.
Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, FL 32653
(352) 336-5600

Dave,

We received the application for the white sugar dryer on July 3rd. I'll be out all next week (17th - 21st) and wanted to get you my initial request for additional information. I'll be meeting with Don Griffin and Peter Briggs on July 24th at Clewiston to look at the facility and see the dryer and refinery. Here's my initial questions.

1. A modeling analyses was not provided with the application. Debbie Nelson was the meteorologist on the original project and will be working on this revision as well. She is reviewing the original project to see what was provided and what was "exempted" by rule. She is also reviewing our current rules, which were revised in February of this year. She will review and let you know what modeling analyses must be provided for this project.

2. Page 2-2 of the application indicates that 25% of the dryer exhaust bypasses the cyclones directly to the wet scrubber. Please describe how the bypass is introduced into the scrubber and are the flows well mixed? Can another cyclone be added prior to the wet scrubber to avoid the bypass? What would be the additional capital and annualized costs?

3. The original application indicated that the scrubber exhaust would be horizontally out of the side of the building. The recent application indicates that the scrubber exhaust is vertical (Page 2-3). Is the scrubber exhaust horizontal or vertical? Was the exhaust stream tested for cyclonic flow?

4. The second paragraph on page 4-6 of the application indicates that the "... an outlet dust loading of 0.005 gr/dscf (proposed limit for permitting purposes is 0.00729 gr/dscf)." Please explain this statement.

5. Please describe any other engineering solutions that are being pursued.

After my site visit, I may have additional questions.

Sincerely,

Jeff Koerner, BAR - Air Permitting North
Florida Department of Environmental Protection
850/921-9536

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Neil Smith, V.P. of Sugar Processing Operations
Clewiston Sugar Mill and Refinery
United States Sugar Corporation
111 Ponce DeLeon Avenue
Clewiston, Florida 33440

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Rachel Felts ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* Rachel Felts
C. Date of Delivery 8-7-6

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

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☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
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4. Restricted Delivery? *(Extra Fee)* ☐ Yes

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Mr. Neil Smith, V.P. of Sugar Processing Operations
Clewiston Sugar Mill and Refinery
United States Sugar Corporation
111 Ponce DeLeon Avenue
Clewiston, Florida 33440

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PS Form 3800, May 2000 See Reverse for Instructions

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

July 12, 2006

Mr. Gregg M. Worley, Chief
Air Permits Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303-8960

RE: U.S. Sugar Corporation
Clewiston Mill
0510003-038-AC, PSD-FL-346A

Dear Mr. Worley:

Enclosed for your review and comment is a request to modify a PSD permit to revise the White Sugar Dryer No. 2 PM emission rate at the U.S. Sugar Clewiston Mill in Hendry County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact me at 850/921-9536.

Sincerely,

Patty Adams

for Jeffry F. Koerner, P.E., Administrator
North Permitting Section

JFK/pa

Enclosure

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

July 12, 2006

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
P. O. Box 25287
Denver, Colorado 80225

RE: U.S. Sugar Corporation
Clewiston Mill
0510003-038-AC, PSD-FL-346A

Dear Mr. Bunyak:

Enclosed for your review and comment is a request to modify a PSD permit to revise the White Sugar Dryer No. 2 PM emission rate at the U.S. Sugar Clewiston Mill in Hendry County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact me at 850/921-9536.

Sincerely,

Patty Adams

for Jeffry F. Koerner, P.E., Administrator
North Permitting Section

JFK/pa

Enclosure

APPLICATION TO REVISE WHITE SUGAR DRYER NO. 2 PM EMISSION RATE

U.S. SUGAR CORPORATION
CLEWISTON, FLORIDA

Prepared For:
United States Sugar Corporation
111 Ponce de Leon Ave.
Clewiston, Florida 33440

Prepared By:
Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653-1500

June 2006
0437583

DISTRIBUTION:
6 Copies – FDEP, Tallahassee
1 Copy – FDEP, Ft. Myers
2 Copies – U.S. Sugar
1 Copy – Golder Associates Inc.

APPLICATION FOR AIR PERMIT – LONG FORM

Department of Environmental Protection

RECEIVED
JUL 03 2006
BUREAU OF AIR REGULATION

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air permit. Also use this form to apply for an air construction permit:

- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- Where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- Where the applicant proposes to establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

Air Construction Permit & Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **United States Sugar Corporation**
2. Site Name: **U.S. Sugar Clewiston Mill**
3. Facility Identification Number: **0510003**
4. Facility Location...:
   Street Address or Other Locator: **W.C. Owens Ave. and S.R. 832**
   City: **Clewiston** County: **Hendry** Zip Code: **33440**
5. Relocatable Facility? ☐ Yes ☒ No
6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Neil Smith, Vice President and General Manager, Sugar Processing Operations**
2. Application Contact Mailing Address...
   Organization/Firm: **United States Sugar Corporation**
   Street Address: **111 Ponce de Leon Ave.**
   City: **Clewiston** State: **Florida** Zip Code: **33440**
3. Application Contact Telephone Numbers...
   Telephone: **(863) 902-2703** ext. Fax: **(863) 902-2729**
4. Application Contact Email Address: **nsmith@ussugar.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 7-3-06
2. Project Number(s): 0510003-038-AC
3. PSD Number (if applicable): PSD-FL-346A
4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

☒ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

Air Construction Permit application to revise the allowable PM emissions limit for the White Sugar Dryer No. 2 in the refinery building.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
015	VHP sugar dryer (S-11)	AC1A	$7,500 (already paid)
016	White sugar dryer (S-10)	AC1A	
017	Granular carbon furnace (S-12)	AC1A	
018	Vacuum Systems (S-1, S-2, S-3)	AC1A	
019	Six conditioning silos (S-7, S-8, S-9)	AC1A	
020	Screening/distribution (S-5, S-6)	AC1A	
022	Packaging baghouse (S-4)	AC1A	
029	New white sugar dryer (S-13)	AC1A	

Application Processing Fee

Check one: ☐ Attached - Amount: $____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Neil Smith, Vice President and General Manager, Sugar Processing Operations
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **United States Sugar Corporation**
   Street Address: **111 Ponce de Leon Ave.**
   City: **Clewiston** State: **FL** Zip Code: **33440**
3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(863) 902-2703** ext. Fax: **(863) 902-2729**
4. Owner/Authorized Representative Email Address: **nsmith@ussugar.com**
5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.

   Signature _____ Date 6/28/06

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

   ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

   ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

   ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

   ☐ The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
   Telephone: ( ) - ext. Fax: ( ) -

5. Application Responsible Official Email Address:

6. Application Responsible Official Certification:

   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

   Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **David A. Buff**
   Registration Number: **19011**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **6241 NW 23rd Street, Suite 500**
   City: **Gainesville** State: **FL** Zip Code: **32653-1500**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 336-5600** ext.**545** Fax: **(352) 336-6603**
4. Professional Engineer Email Address: **dbuff@golder.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature: David A. Buff Date: 6/26/06

(seal)

* Attach any exception to certification statement.

Board of Professional Engineers Certificate of Authorization #00001670

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone **17** East (km) **506.1** North (km) **2956.9**		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) **26/44/06** Longitude (DD/MM/SS) **80/56/19**	
3. Governmental Facility Code: **0**	4. Facility Status Code: **A**	5. Facility Major Group SIC Code: **20**	6. Facility SIC(s): **2061, 2062**
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: **Neil Smith, Vice President and General Manager, Sugar Processing Operations**
2. Facility Contact Mailing Address... Organization/Firm: **United States Sugar Corporation** Street Address: **111 Ponce de Leon Ave.** City: **Clewiston** State: **FL** Zip Code: **33440**
3. Facility Contact Telephone Numbers: Telephone: **(863) 902-2703** ext. Fax: **(863) 902-2729**
4. Facility Contact Email Address: **nsmith@ussugar.com**

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I. that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
4. Facility Primary Responsible Official Email Address:

APPLICATION INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☒ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☒ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

APPLICATION INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Particulate Matter Total - PM	**A**	**No**
Sulfur Dioxide - SO_2	**A**	**No**
Nitrogen Oxides - NO_x	**A**	**No**
Carbon Monoxide - CO	**A**	**No**
Particulate Matter - PM_{10}	**A**	**No**
Sulfuric Acid Mist - SAM	**A**	**No**
Total Hazardous Air Pollutants - HAPs	**A**	**No**
Volatile Organic Compounds - VOC	**A**	**No**
Acetaldehyde - H001	**A**	**No**
Benzene - H017	**A**	**No**
Formaldehyde - H095	**A**	**No**
Phenol - H144	**A**	**No**
Polycyclic Organic Matter - H151	**A**	**No**
Styrene - H163	**A**	**No**
Toluene - H169	**A**	**No**
Naphthalene - H132	**A**	**No**
Dibenzofuran - H058	**A**	**No**

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID Nos. Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: ☒ Previously Submitted, Date: **May 2005**
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID: ☒ Previously Submitted, Date: **May 2005**
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID:_____ ☒ Previously Submitted, Date: **May 2005**

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: ☐ Attached, Document ID:_____ ☒ Not Applicable (existing permitted facility)
2. Description of Proposed Construction or Modification, or Plantwide Applicability Limit (PAL): ☒ Attached, Document ID: **PSD Report**
3. Rule Applicability Analysis: ☒ Attached, Document ID: **PSD Report**
4. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): ☒ Attached, Document ID: **To be submitted.** ☐ Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): ☒ Attached, Document ID: **To be submitted.** ☐ Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(8). and 62-212.500(4)(e), F.A.C.): ☒ Attached, Document ID: **To be submitted.** ☐ Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): ☐ Attached, Document ID:_____ ☒ Not Applicable

APPLICATION INFORMATION

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):
   ☐ Attached, Document ID:____ ☒ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities (Required for initial/renewal applications only):
   ☐ Attached, Document ID:____ ☐ Not Applicable (revision application)

2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):
   ☐ Attached, Document ID:____
   ☐ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan (Required for all initial/revision/renewal applications):
   ☐ Attached, Document ID:____
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):
   ☐ Attached, Document ID:____
   ☐ Equipment/Activities On site but Not Required to be Individually Listed
   ☐ Not Applicable

5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :
   ☐ Attached, Document ID:____ ☐ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☐ Attached, Document ID:____ ☐ Not Applicable

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)
   - ☐ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
   - ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)
   - ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
   - ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
   - ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: **Sugar Processing Operations**

3. Emissions Unit Identification Number: **015, 016, 017, 018, 019, 020, 021, 022, 029**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A			**20**	☐ Yes ☒ No

9. Package Unit:
   Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:
    This emission unit represents the sugar processing operation (refinery), which produces bulk and bagged sugar. For a list of sources, see Attachment UC-EU1-A11.

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:
The emissions from the VHP sugar dryer, white sugar dryer, vacuum systems, conditioning silos, bins and packaging operations are controlled with baghouses. There are a total of 11 baghouses.

The emissions from the granular carbon regeneration furnace are controlled with a direct flame afterburner and a wet venturi/impingement plate scrubber system.

The emissions from the White Sugar Dryer No. 2 are controlled with 4 high efficiency cyclones followed by a wet scrubber.

2. Control Device or Method Code(s): **018, 053, 054, 055, 099**

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate: **730,000 TPY of refined sugar packaged**	
2. Maximum Production Rate: **803,000 TPY of refined sugar loaded out**	
3. Maximum Heat Input Rate: million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	**7** days/week
52 weeks/year	**8,760** hours/year

6. Operating Capacity/Schedule Comment:
Maximum process rate refers to refined sugar packaged in refinery. Maximum daily rate is 2,000 tons per day. Maximum production rate refers to bulk and bagged refined sugar loaded out from this facility. Maximum daily rate is 2,250 tons per day. Permit No. 0510003-026-AC/PSD-FL-346.

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment **1** of **3**

1. Segment Description (Process/Fuel Type): **Food and Agriculture; Sugar Cane Processing; General**		
2. Source Classification Code (SCC): **3-02-015-01**	3. SCC Units: **Tons Produced**	
4. Maximum Hourly Rate: **100**	5. Maximum Annual Rate: **803,000**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Maximum hourly and annual rates refer to the amount of refined sugar produced by the fluidized bed drying system and packaged or loaded via the bulk shipment facility. Maximum daily production limited to 2,250 tons per day. Permit No. 0510003-026-AC/PSD-FL-346.**		

Segment Description and Rate: Segment **2** of **3**

1. Segment Description (Process/Fuel Type): **Food and Agriculture; Sugar Cane Processing; Other Not Classified**		
2. Source Classification Code (SCC): **3-02-015-99**	3. SCC Units: **Tons Processed**	
4. Maximum Hourly Rate: **85**	5. Maximum Annual Rate: **730,000**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: **Maximum hourly rate based on 2,000 TPD. Rates refer to the amount of refined sugar that could be processed through packaging operations. Permit No. 0510003-026-AC/PSD-FL-346.**		

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **Sugar Refinery**	2. Emission Point Type Code: **3**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **See Attachment UC-EU1-A11.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **80** feet	7. Exit Diameter: **7.0 × 6.0** feet
8. Exit Temperature: **90**°F	9. Actual Volumetric Flow Rate: **98,000** acfm	10. Water Vapor: **4** %
11. Maximum Dry Standard Flow Rate: **86,000** dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: **Stack parameters represent White Sugar Dryer No. 2 discharge vent. See Attachment UC-EU1-A11 for a list of all stacks and their parameters in this emissions unit.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 3

1. Segment Description (Process/Fuel Type): **In-Process Fuel Use; Distillate Oil; General**		
2. Source Classification Code (SCC): **3-90-005-89**	3. SCC Units: **Thousand Gallons Burned**	
4. Maximum Hourly Rate: **0.09**	5. Maximum Annual Rate: **788.4**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.05**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **135**
10. Segment Comment: **Maximum rates refer to the amount of No. 2 fuel oil burned in the granular carbon regeneration furnace (GCRF) and afterburner.**		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
Particulate Matter - PM	018	054	EL
Particulate Matter - PM_{10}	018	054	NS
Volatile Organic Compounds - VOC	099	053	EL
SO_2	053	055	EL
NO_x			NS
CO			NS

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **25.0** lb/hour **109.5** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **25 lb/hr** Reference: **Proposed permit limit**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☒ 10 years
10. Calculation of Emissions: **25 lb/hr x 8,760 hr/yr ÷ 2000 lb/ton = 109.5 TPY**	
11. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM_{10}**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **8.70** lb/hour **38.10** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☒ 10 years
10. Calculation of Emissions: **See Attachment UC-FU1-F1.10.**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.63 lb/hr**	4. Equivalent Allowable Emissions: **1.63** lb/hour **7.12** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to VHP Sugar Dryer (EU 015) (Point ID S-11). As a surrogate parameter for PM, VE Must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions 2 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.43 lb/hr**	4. Equivalent Allowable Emissions: **1.43** lb/hour **6.28** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to existing White Sugar Dryer No. 1 (EU 016) (Point ID S-10). As a surrogate parameter for PM, VE must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions 3 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.7 lb/hr**	4. Equivalent Allowable Emissions: **0.7** lb/hour **3.07** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Granular Carbon Regeneration Furnace (EU 017) (Point ID S-12).**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **4** of **8**

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **25 lb/hr**	4. Equivalent Allowable Emissions: **25** lb/hour **109.5** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Proposed permit limit. Applies to new White Sugar Dryer No. 2 (EU 029) (Point ID S-13).**	

Allowable Emissions Allowable Emissions **5** of **8**

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.19 lb/hr**	4. Equivalent Allowable Emissions: **0.19** lb/hour **0.84** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Vacuum Systems (EU 018). As a surrogate parameter for PM, VE must be less that 5% opacity (Point IDs S-1, S-2, S-3).**	

Allowable Emissions Allowable Emissions **6** of **8**

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.17 lb/hr**	4. Equivalent Allowable Emissions: **0.17** lb/hour **0.74** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Conditioning Silos (EU 019) (Point IDs S-7, S-8, S-9).**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 7 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.25 lb/hr**	4. Equivalent Allowable Emissions: **0.25** lb/hour **1.07** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Screening and Distribution (EU 020) (Point IDs S-5, S-6). As a surrogate parameter for PM, VE must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions 8 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.21 lb/hr**	4. Equivalent Allowable Emissions: **0.21** lb/hour **0.90** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Packing Baghouse (EU 022) (Point ID S-4). As a surrogate parameter for PM, VE must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.63 lb/hr**	4. Equivalent Allowable Emissions: **1.63** lb/hour **7.12** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to VHP Sugar Dryer (EU 015) (Point ID S-11). As a surrogate parameter for PM, VE Must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions 2 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.43 lb/hr**	4. Equivalent Allowable Emissions: **1.43** lb/hour **6.28** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to existing White Sugar Dryer No. 1 (EU 016) (Point ID S-10). As a surrogate parameter for PM, VE must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions 3 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.63 lb/hr**	4. Equivalent Allowable Emissions: **0.63** lb/hour **2.76** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Granular Carbon Regeneration Furnace (EU 017) (Point ID S-12).**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 4 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **4.20 lb/hr**	4. Equivalent Allowable Emissions: **4.20** lb/hour **18.38** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit limit. Applies to White Sugar Dryer No. 2 (EU 029) (Point ID S-13). Permit No. 0510003-026-AC/PSD-FL-346.**	

Allowable Emissions Allowable Emissions 5 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.19 lb/hr**	4. Equivalent Allowable Emissions: **0.19** lb/hour **0.84** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Vacuum Systems (EU 018) (Point IDs S-1, S-2, S-3). As a surrogate parameter for PM, VE must be less that 5% opacity.**	

Allowable Emissions Allowable Emissions 6 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.17 lb/hr**	4. Equivalent Allowable Emissions: **0.17** lb/hour **0.74** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Conditioning Silos (EU 019) (Point IDs S-7, S-8, S-9).**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 7 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.25 lb/hr**	4. Equivalent Allowable Emissions: **0.25** lb/hour **1.07** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Screening and Distribution (EU 020) (Point IDs S-5, S-6). As a surrogate parameter for PM, VE must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions 8 of 8

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.21 lb/hr**	4. Equivalent Allowable Emissions: **0.21** lb/hour **0.90** tons/year
5. Method of Compliance: **EPA Method 5 or DEP Method 9**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Packing Baghouse (EU 022) (Point ID S-4). As a surrogate parameter for PM, VE must be less than 5% opacity.**	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **4.42** lb/hour **19.38** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **Vendor Data**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☒ 10 years
10. Calculation of Emissions: **See Attachment UC-EUI-F1.10.**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **1.0 lb/hr**	4. Equivalent Allowable Emissions: **1.0** lb/hour **4.38** tons/year
5. Method of Compliance: **EPA Method 25A and 18.**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Granular Carbon Regeneration Furnace only.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **15.0 tons/yr**	4. Equivalent Allowable Emissions: **3.42** lb/hour **15.0** tons/year
5. Method of Compliance: **Track alcohol usage.**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Alcohol Usage.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.64** lb/hour **2.80** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.05% S fuel** Reference: **Permit Limits**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☒ 10 years
10. Calculation of Emissions: **Fuel burning: 90 gal/hr x 7.1 lb/gal x 0.05 percent S x 2 lb SO_2/lb S = 0.64 lb/hr**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.05% S fuel**	4. Equivalent Allowable Emissions: **0.64** lb/hour **2.80** tons/year
5. Method of Compliance: **Fuel analysis**	
6. Allowable Emissions Comment (Description of Operating Method): **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to Granular Carbon Regeneration Furnace only (EU 017).**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: **VE05**	2. Basis for Allowable Opacity: ☐ Rule ☒ Other
3. Allowable Opacity: Normal Conditions: **5** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **DEP Method 9**	
5. Visible Emissions Comment: **Permit No. 0510003-010-AC; PSD-FL-272A. Applies to refinery and dryer baghouses.**	

Visible Emissions Limitation: Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: **VE10**	2. Basis for Allowable Opacity: ☐ Rule ☒ Other
3. Allowable Opacity: Normal Conditions: **10** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **DEP Method 9**	
5. Visible Emissions Comment: **Applies to Granular Carbon Regeneration Furnace and White Sugar Dryer No. 2. Permit No. 0510003-010-AC; PSD-FL-272A, and 0510003-026-AC/PSD-FL-346.**	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 3

1. Parameter Code: **TEMP**	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Temperature of afterburner on Granular Carbon Regeneration Furnace.**	

Continuous Monitoring System: Continuous Monitor 2 of 3

1. Parameter Code: **FLOW**	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Monitoring of wet scrubber water recirculation rate (gpm). Permit No. 0510003-026-AC/PSD-FL-346.**	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 3 of 3

1. Parameter Code: **PRS**	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☒ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Monitoring of pressure differential across the wet scrubber (inches of water column). Permit No. 0510003-026-AC/PSD-FL-346.**	

Continuous Monitoring System: Continuous Monitor _ of _

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
8. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION
Section [1] of [1]
Sugar Processing Operations

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **UC-EU1-I1** ☐ Previously Submitted, Date _____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **UC-EU1-I2** ☐ Previously Submitted, Date _____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **UC-EU1-I3** ☐ Previously Submitted, Date _____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date _____
   ☒ Not Applicable

6. Compliance Demonstration Reports/Records
   ☐ Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   ☒ Previously Submitted, Date: **PM/PM10**
   Test Date(s)/Pollutant(s) Tested: **December 2005; May 2006**
   ☐ To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   ☐ Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   ☐ Attached, Document ID: _____ ☒ Not Applicable

EMISSIONS UNIT INFORMATION
Section [1] of [1]
Sugar Processing Operations

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☒ Attached, Document ID: **PSD Report** ☐ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☐ Attached, Document ID: _____ ☐ Not Applicable
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _____ ☐ Not Applicable
3. Alternative Methods of Operation
   ☐ Attached, Document ID: _____ ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _____ ☐ Not Applicable
5. Acid Rain Part Application
   ☐ Certificate of Representation (EPA Form No. 7610-1)
      ☐ Copy Attached, Document ID: _____
   ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Not Applicable

EMISSIONS UNIT INFORMATION
Section [1] of [1]
Sugar Processing Operations

Additional Requirements Comment

ATTACHMENT UC-EU1-A11

SOURCES AND RESPECTIVE STACK PARAMETERS INCLUDED IN THE SUGAR PROCESSING OPERATION

ATTACHMENT UC-EU1-A11

SOURCES AND RESPECTIVE STACK PARAMETERS INCLUDED IN THE SUGAR PROCESSING OPERATION

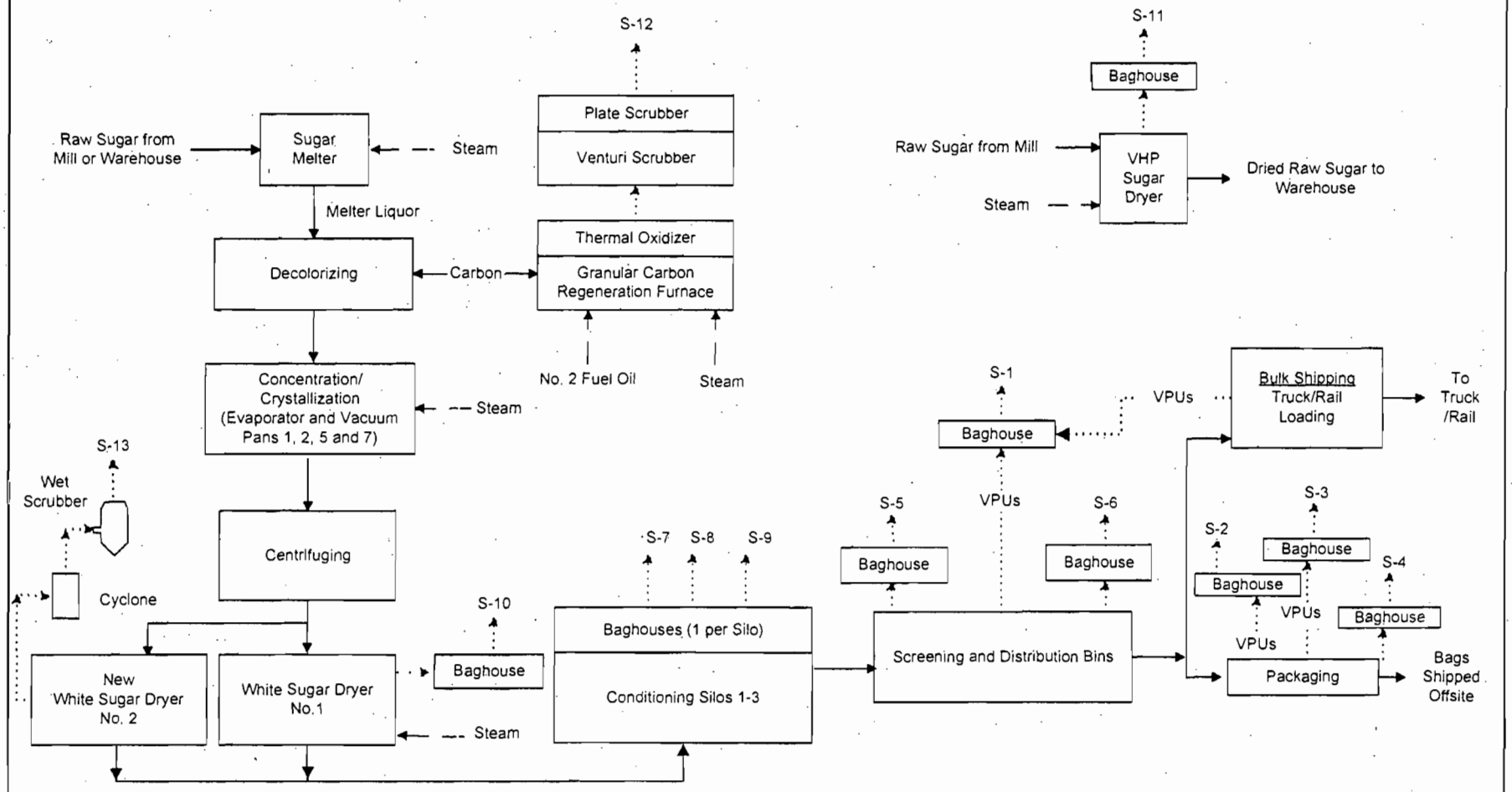
Source/Vent Name	EU ID	Stack No.	Stack/Vent Release Height (ft)	Stack/Vent Diameter (ft)	Exhaust Flow (acfm)	Exit Velocity[a] (ft/sec)	Gas Exit Temp. (°F)
Existing White Sugar Dryer	015	S-11	75	7.31	113,000	0.29	115
New White Sugar Dryer	029	S-13	80	7 × 6	98,000	38.9	90
VHP Sugar Dryer	016	S-10	10	4.79	127,000	0.29	115
Granular Carbon Furnace	017	S-12	30	2.00	4,300	22.8	160
Vacuum Systems							
Screening & Distribution Vacuum	018	S-1	65	0.50	1,705	0.29	68
100-lb Bagging Vacuum System	018	S-2	65	0.50	1,564	0.29	90
5-lb Bagging Vacuum System	018	S-3	65	0.50	1,585	0.29	90
Conditioning Silos							
Conditioning Silo No. 2	019	S-7	130	1.37	3,000	0.29	110
Conditioning Silo No. 4	019	S-8	130	1.37	3,000	0.29	110
Conditioning Silo No. 6	019	S-9	130	1.37	3,000	0.29	110
Screening, Distributing, Packaging, Powdered Sugar/Starch							
Screening and Distribution #1	020	S-5	72	0.95	3,200	0.29	125
Screening and Distribution #2	020	S-6	72	1.94	10,500	0.29	125
Sugar Packaging Baghouse							
Packaging Baghouse	022	S-4	60	1.94	11,500	0.29	125

[a] All sources but the Granular Carbon Furnace have horizontal discharge.

ATTACHMENT UC-EU1-I1

PROCESS FLOW DIAGRAM

PRIVILEGED AND CONFIDENTIAL - PREPARED FOR COUNSEL



Notes:
VPUs = Vacuum Pickup Units
S = Emission Point ID
Conditioning Silos 4, 5 and 6 (Sources S-13, 14, and 15) and Powdered Sugar/Starch Bins (Source S-16) have not yet been constructed.

Attachment UC-EU1-I1 Process Flow Diagram U.S. Sugar Corporation - Clewiston, FL	**Process Flow Legend** Solid/Liquid ——→ Air ·····→ Steam — — →	Mill Expansion Project Number: 0437583/4/4.4 Filename: UC-EU1-I1.VSD Date: 6/23/06 Golder Associates

ATTACHMENT UC-EU1-I2

FUEL ANALYSIS SPECIFICATION

ATTACHMENT UC-EU1-I2

FUEL ANALYSIS SPECIFICATION FOR U.S. SUGAR CORPORATION

Granular Carbon Regeneration Furnace

Parameter	Low Sulfur No. 2 Fuel Oil [a] (0.05% max S)
Density (lb/gal)	7.2 [a]
Approximate Heating Value (Btu/lb)	18,750
Approximate Heating Value (Btu/gal)	135,000-139,000
Ultimate Analysis (dry basis):	
Carbon	87.3% [b]
Hydrogen	12.6% [b]
Nitrogen	0.22% [b]
Oxygen	0.04% [b]
Sulfur	0.05%
Ash/Inorganic	<0.001% [a]
Moisture	0.05%

Note: All values represent average fuel characteristics.

[a] Source: Marathon Ashland Pretoleum LLC; Coastal Fuels.

[b] Source: Perry's Chemical Engineers' Handbook. Sixth Edition.

ATTACHMENT UC-EU1-I3

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

ATTACHMENT UC-EU1-I3a

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

Control Equipment Parameters for

White Sugar Dryer No. 2

Cyclone Collectors

Manufacturer and Model No.	Entoleter, LLC – Model 6600
No. of Cyclones	4
Inlet Gas Temp (°F)	110
Inlet Gas Flow Rate (ACFM)	105,000
Pressure Drop Across Cyclones (inches of H_2O)	6
Inlet Dust Loading	11,760 lb/hr; 14 gr/dscf
Outlet Dust Loading	118 lb/hr
Cyclone System Particulate Removal Efficiency	99%

Note: All values are based on manufacturer's design information and are subject to revision. All values represent typical operating conditions.

ATTACHMENT UC-EU1-I3b

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

Control Equipment Parameters for

White Sugar Dryer No. 2

Wet Scrubber

Manufacturer and Model No.	Entoleter, LLC – Centrifield Vortex Model 1500
Inlet Gas Temp (°F)	113
Inlet Gas Flow Rate	105,000 acfm; 96,000 dscfm
Pressure Drop Across Scrubber (inches of H_2O)	8-10
Scrubber Recirculation Flow Rate (gal/min)	500
Scrubber Make-up Flow Rate (gal/min)	12
Inlet Dust Loading	118 lb/hr
Outlet Dust Loading: PM 10	4.2 lb/hr
PM	25 lb/hr
Wet Scrubbing System Particulate Removal Efficiency (PM_{10})	96%

PSD REPORT

TABLE OF CONTENTS

LIST OF APPENDICES

TABLE OF CONTENTS

LIST OF TABLES

1.0 INTRODUCTION

United States Sugar Corporation (U.S. Sugar) owns and operates a sugar mill and sugar refinery located in Clewiston, Florida, Hendry County. U.S. Sugar received air construction permit No. 0510003-026-AC/PSD-FL-346 on February 11, 2005, for the construction of White Sugar Dryer (WSD) No. 2. The new WSD, located within the sugar refinery, was constructed to provide backup to the existing WSD and to also allow the existing dryer to operate at a lower, more efficient operating rate. The dryer is equipped with four cyclone collectors followed by a wet scrubber (both Entoleter design) for control of particulate matter (PM) emissions.

The maximum operating rate for the dryer is 85 tons per hour (TPH) of refined sugar. The maximum permitted PM emission rate for WSD No. 2 is 4.2 pounds per hour (lb/hr) and 0.005 grain per dry standard cubic feet (gr/dscf). The PM test method is U.S. EPA Method 5, contained in the Code of Federal Regulations (CFR), Title 40, Part 60 (40 CFR 60), Appendix A. The emission limit for PM with an aerodynamic particle size diameter of 10 microns or less (PM_{10}) is the same as the PM emission limit. Compliance with the PM_{10} emission limit is assumed by demonstrating compliance with the PM emission limit.

WSD No. 2 was constructed per the specifications contained in the air permit application submitted in September 2004. The new dryer began operation in September 2005. Initial PM compliance testing was conducted in December 2005. The results of this testing resulted in PM emissions averaging 9.9 lb/hr, which is higher than the permit limit of 4.2 lb/hr. Subsequent testing and investigation have shown that while PM emissions as measured by EPA Method 5 remained high, PM_{10} emissions as measured by EPA Method 201A were below the permit limit of 4.2 lb/hr.

The purpose of this application is to request a revision of the prevention of significant deterioration (PSD) permit, to increase the allowable PM emission rate to 25 lb/hr, which is less than that allowed by the process weight table in Chapter 62-296.320 of the Florida Administrative Code (F.A.C.). The current allowable of 4.2 lb/hr will be retained as a PM_{10} emissions limit.

This application contains the technical information to support the changes to the PM emission limit. The higher allowable PM emission limit is justified based on the following:

- The PM emissions result from the carryover of water droplets out of the wet scrubber. The water droplets contain dissolved sugar.
- The PM emissions consist primarily of large particles (water droplets) of greater than 200 microns in size, which will fall out on U.S. Sugar plant property.
- The PM emissions consist entirely of refined sugar, which does not represent any health hazard.
- The PM emissions do not result in any adverse environmental or visibility impacts.

Through this application, U.S. Sugar requests that the Florida Department of Environmental Protection (FDEP) revise the PSD air construction permit issued for the WSD No. 2.

2.0 PROJECT DESCRIPTION

2.1 Request to Revise PM Emission Limit

U.S. Sugar received air construction permit No. 0510003-026-AC/PSD-FL-346 on February 11, 2005, for the construction of WSD No. 2. The new dryer, the purpose of which was to support the sugar refinery operations, was constructed per the specifications contained in the air permit application submitted in September 2004. The new dryer began operations in September 2005, and initial PM compliance testing was conducted in December 2005. However, the results of this testing resulted in PM emissions averaging 9.9 lb/hr, which is higher than the permit limit of 4.2 lb/hr.

Subsequent testing and investigation have indicated that the high PM emissions are a result of the carryover of refined sugar dissolved in water droplets. The Entoleter design wet scrubber is experiencing a significant amount of water droplet carryover. U.S. Sugar believes the droplet carryover problem is a design issue with Entoleter. Based on Entoleter's failure to fully cooperate on resolving the issue, U.S. Sugar has initiated legal action against Entoleter.

The PM testing has also shown that while PM emissions as measured by EPA Method 5 remained high, PM_{10} emissions as measured by EPA Method 201A were well below the permit limit.

The purpose of this application is to request a revision of the PSD permit by increasing the allowable PM emission rate to 25 lb/hr. This emission rate is less than that allowed by the process weight table in Chapter 62-296.320, F.A.C. This will provide an adequate margin of safety based on the variability in measured PM emissions. The current allowable of 4.2 lb/hr will be retained as the PM_{10} emission limit.

Further information providing justification for this request is provided in the following sections.

2.2 WSD No. 2 Control Equipment

The air pollution control equipment serving the WSD No. 2 consists of four high-efficiency cyclones followed by a wet scrubber, all of Entoleter design. The basic design information for this equipment was presented in the original permit application in 2004 and subsequent correspondence. This information has not changed (see Appendix A for a copy of this information).

The four cyclones are designed to remove the large particulate particles prior to the dryer exhaust gas stream entering the wet scrubber. The cyclones are designed for a pressure drop of 6 inches of water column and a removal efficiency of 99 percent. The wet scrubber is designed for an inlet volume of 105,000 actual cubic feet per minute (acfm), a pressure drop of 8 inches of water column, and a removal efficiency of 95 percent. The design scrubber liquid flow rate is 500 gallons per minute (gpm).

The exhaust gases from WSD No. 2, after passing through the control devices, exhaust to atmosphere at a point on the refinery building approximately 80 feet above ground level. The exhaust vent size is 7 feet (84 inches) by 6 feet (72 inches).

Since startup of WSD No. 2, the PM control equipment has not worked as designed, as demonstrated by the PM compliance testing (refer also to Section 2.3). U.S. Sugar believes this is due to flaws in the original design of the equipment by Entoleter.

Subsequent to the initial stack testing in December 2005, U.S. Sugar investigated the potential causes of the higher than expected emissions. This included the following activities and engineering issues that were discovered:

- Discussions with the scrubber manufacturer, which ultimately proved to be unsatisfactory.
- October 2005- The original scrubber was designed for 104,500 acfm at the inlet, but the air flow through the dryer was actually about 95,000 acfm at the inlet, which also resulted in a lower than normal pressure drop. To correct this, Entoleter added a blanking plate to the vane cage within the scrubber to increase velocity and raise the pressure drop. The vane cage is located on the inlet of the scrubber and is basically a cage with vanes that distribute the air flow and creates the proper air flow in the scrubber (see Appendix A for illustration). About 25 percent of the area of the vane cage was blocked to increase the air velocity. The scrubber now operates at 8- to 10-inch pressure drop, and the scrubber is not discharging the large amounts of sugar seen at startup.
- October 2005- The outlet of the cyclones was identified as being designed too small. As a result, the cyclones could not handle all of the air flow from the dryer. Therefore, at Entoleter's suggestion, a bypass duct around the cyclones was installed to route about 25 percent of the air flow directly to the wet scrubber.
- January 2006- Additional diagnostic testing was performed on the dryer in January 2006. However, PM emissions were not improved over the initial compliance testing.

- February 2006- Blanking plates were also needed at the radial liquid separator (de-entrainer or mist eliminator) to increase the velocity at this point. The liquid separator acts to remove the PM-laden droplets from the gas stream. The ideal velocity through the de-entrainer is 7,200 to 7,500 feet per minute (fpm). But at 97,000 acfm at the outlet (flow at initial test), the velocity was only about 6,700 fpm through the de-entrainer. U.S. Sugar installed these blanking plates.
- May 2006- Entoleter believed the scrubber water flow rate was too low. Without adequate water flow, the maximum PM removal efficiency of the scrubber cannot be obtained. Therefore, the scrubber water flow rate was increased to about 750 gpm. The May 2006 tests were conducted with the higher scrubber water flow rate, but the PM results did not improve.
- May 2006- The low scrubber recirculation water temperature was investigated, but this was not believed to be an issue. No changes were made to that system.
- May 2006- U.S. Sugar hires two scrubber experts (Winkler APC, LLC and David Taub, a former vice-president of Entoleter) to help identify the causes and potential solutions to the high PM emissions.
- June 2006- U.S. Sugar files lawsuit against Entoleter over design flaws.
- June 2006- U.S. Sugar has investigated the feasibility of installing a mist eliminator at the outlet of the wet scrubber. U.S. Sugar also contacted Mr. Taub, a former vice-president of Entoleter to obtain his professional opinion. It was his opinion that because the outlet of the wet scrubber is configured vertically (instead of a horizontal outlet), a mist eliminator would not be effective due to the cyclonic flow exiting the scrubber. Also, due to the existing scrubber system geometry and space limitations, it is not practical to reconfigure the outlet of the scrubber.

In summary, the high PM emissions from WSD No. 2 are due to water droplet carryover from the wet scrubber. These water droplets contain dissolved sugar. It is expected that the water droplets would contain a high level of dissolved sugar, since the design of the scrubber is to remove sugar dust through wet scrubbing. The problem lies in the carryover of the large droplets from the scrubber, which would not be occurring if the scrubber were designed properly. The dissolved sugar is being captured in the Method 5 sampling probe and being counted as PM emissions. Conversely, some of the smaller sugar dust particles are not captured by the water droplets and exit the scrubber as PM_{10} emissions. These are the emissions caught in the Method 201A sampling train and are low in magnitude.

U.S. Sugar has made every effort to resolve the issues of the higher PM emissions from the wet scrubber. U.S. Sugar has implemented at least four recommendations by Entoleter, as described above, but these have failed to resolve the issue. Entoleter is no longer cooperating in resolving the issues, and U.S. Sugar has filed a lawsuit to obtain relief.

2.3 PM/PM_{10} Test Data

2.3.1 PM Test Data

Initial PM compliance testing on the dryer was performed in December 2005 using EPA Method 5. A summary of the test data is presented in Table 2-1. As shown, 3 test runs were performed, and the resulting average PM emissions were 0.014 gr/dscf and 9.90 lb/hr. This exceeds the allowable PM limit of 4.2 lb/hr. One individual run was 19 lb/hr.

The dryer was operating at its normal operating rate of approximately 85 TPH during the testing. The wet scrubber was also operating normally, with pressure drop of 9 to 10 inches of water, and the scrubber water flow rate of about 527 gpm.

Also shown in Table 2-1 are the results of the filter catch and the probe wash from the EPA Method 5 sampling train. The filter catch represents that portion of the PM that was caught on the filter in the sampling train. The probe wash is that portion of the total PM that was caught in the sampling nozzle and probe. As shown, the probe wash accounts for almost 99 percent of the total PM on a consistent basis. This is very unusual and is indicative of a "sticky" substance which is adhering to the walls of the probe and nozzle. As discussed previously, this is believed to be due to a significant amount of water droplet carryover from the wet scrubber, which contains dissolved sugar solids.

After modifications to the scrubber were performed, as described in Section 2.2, additional PM testing was performed in May 2006 using EPA Method 5. A total of nine sampling runs were performed, with six runs at 100-percent operating load, and three runs at 50-percent operating load. As shown, the air flow through the dryer and wet scrubber does not vary with operating load. The wet scrubber was also operating normally, with pressure drop of 9 to 11 inches of water, and the scrubber water flow rate increased to about 750 gpm.

As shown, the resulting average PM emissions were 0.031 gr/dscf and 23 lb/hr. This exceeds the allowable PM limit of 4.2 lb/hr. Individual runs ranged from 19 to 33 lb/hr.

Also shown in Table 2-1 are the results of the filter catch and the probe wash from the EPA Method 5 sampling train. As shown in the December 2005 tests, the probe wash accounts for over 98 percent of the total PM on a consistent basis. Again, this is very unusual and is indicative of a

"sticky" substance which is adhering to the walls of the probe and nozzle, and is believed to be due to a significant amount of water droplet carryover from the wet scrubber, which contains dissolved sugar solids.

2.3.2 PM_{10} Test Data

PM_{10} compliance testing on the dryer was not performed in December 2005 along with the PM compliance testing since it was not required by permit condition. However, PM_{10} testing was performed during the May 2006 PM testing. Testing was performed using EPA Method 201A, which utilizes a cyclone to remove PM_{10} from the sample gas stream, allowing PM_{10} to be collected on a filter.

A total of nine sampling runs were performed, with six runs at 100-percent operating load, and three runs at 50-percent operating load. A summary of the test data is presented in Table 2-2. As shown, the resulting average PM_{10} emissions were 0.0019 gr/dscf and 1.3 lb/hr. This is well below the allowable PM limit of 4.2 lb/hr. The highest individual run was 2.4 lb/hr.

As shown during the May 2006 PM testing, the air flow through the dryer and wet scrubber does not vary with operating load. The wet scrubber was also operating normally, with pressure drop ranging from about 10 to 11 inches of water, and the scrubber water flow rate at about 750 gpm.

2.3.3 Opacity Test Data

U.S. Sugar has conducted a number of visible emission tests on the WSD No. 2. One test was conducted during the December 2005 compliance testing. Additional tests were conducted periodically after this time to document operation of the dryer (see Appendix B). All visible emissions tests have shown opacity of 0 percent.

2.3.4 Analysis of Test Data

The particulate testing showed that the PM_{10} emissions from the WSD No. 2 are low and well below the allowable limits of 0.005 gr/dscf and 4.2 lb/hr. The PM_{10} emissions are the result of the smaller sugar dust particles that are not captured by the water droplets. They exit the scrubber as PM_{10} emissions. These are the emissions caught in the Method 201A sampling train, and are low in magnitude.

The analysis of the PM test data demonstrate that almost all of the PM emissions are being caught in the probe and nozzle of the Method 5 sampling train. Visual observations of the stack test personnel confirm this. The mechanism causing this begins with the carryover of water droplets out of the wet scrubber. The droplets contain dissolved sugar. These droplets are then "sticky" due to the nature of sugar, and the sugar adheres to the walls of the probe and nozzle. The stack test team confirms the difficulty in removing all of the material in the probe, having to repeatedly wash the probe.

To further analyze the data, U.S. Sugar obtained the services of Winkler APC, LLC, to provide its opinion on the issue. Winkler's report is provided in Appendix C. The report indicates that the vast amount of water droplets exiting the scrubber are 200 microns or greater in size on a weight basis. Further, these droplets will quickly reach the ground (in about 36 seconds or less) due to their substantial settling velocity [2.2 feet per second (ft/sec) or greater], if released from a height of about 80 feet. Due to the distance from the WSD No. 2 exhaust point and the nearest property boundary (1,440 feet), all of these particles would settle on U.S. Sugar property unless the wind speed is greater than 27 miles per hour.

Even with the PM test data, it is not known the exact amount of PM that is being emitted to the atmosphere from the WSD No. 2. This is because the PM sampling location is between the wet scrubber and the ID fan, inside the sugar refinery building. After the ID fan, there is a straight, horizontal length of duct of about 40 feet, still inside the building. This provides the exhaust gas exit to the atmosphere, which is out the side of the building. Since this location is about 80 feet up the side of the building, there is no practical way to test the exhaust location.

Silencer vanes are located inside the 40-foot-length of ductwork making it impossible to conduct a PM test in this area. However, it is believed that a significant amount of water droplets/dissolved sugar is impacting and sticking on the silencer vanes and the walls of the ducting, as witnessed by a significant amount of liquid running out the duct and down the side of the building. As a result, the actual PM emissions to the atmosphere are believed to be substantially less than indicated by the Method 5 testing, again due to the sticky nature of the PM.

2.4 Proposed WSD No. 2 Emissions

Based on the PM test data described in Section 2.3, the proposed allowable PM emission limit for the WSD No. 2 is 25 lb/hr. This limit is less than the limit based on the process weight table in Rule 62-296.320(4)(a), which is calculated below:

$$E = 17.31\ P^{0.16}$$

where: E = emission rate in lb/hr; and

P = process weight rate in tons per hour.

Based on the maximum dryer process rate of 85 TPH, the allowable emission rate is:

$$E = 17.31\ (85)^{0.16} = 35 \text{ lb/hr}$$

Based on the PM_{10} test data described in Section 2.3, no change in the allowable PM_{10} emission rate is proposed. The current allowable is 0.005 gr/dscf and 4.2 lb/hr.

A summary of total future potential emissions from the sugar refinery, including the higher PM emissions from WSD No. 2, is presented in Attachment UC-EU1-F10 of the application form.

TABLE 2-1
WHITE SUGAR DRYER NO. 2 PM EMISSION TESTS

Run Number	Test Date	Start/End Time	% Load	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Avg. Water Flow (gpm)	Avg. Pressure Drop		Particulate Data		
						lb/hr	gr/dscf	lb/hr	gr/dscf		Cyclone (in. H_2O)	Scrubber (in. H_2O)	Filter (mg)	Wash (mg)	% Wash of Total
1	12/07/05	1056-1206	100	82,909	96,941	4.2	0.005	6.82	0.0096	529.4	3.8	9.6	0.3	23.5	98.7
2	12/07/05	1235-1345	100	82,993	97,239	4.2	0.005	3.65	0.0051	527.8	4.0	9.0	0.2	12.4	98.4
3	12/07/05	1453-1605	100	82,541	97,104	4.2	0.005	19.23	0.0272	524.8	4.0	9.0	0.4	65.2	99.4
Average=				**82,814**	**97,095**	**4.2**	**0.005**	**9.9**	**0.0140**	**527**	**3.9**	**9.2**			**98.8**
1	05/24/06	0852-0927	100	83,682	96,546	4.2	0.005	26.10	0.0364	747.7	5.0	9.0	1.0	46.5	97.9
2	05/24/06	1002-1037	100	82,769	95,849	4.2	0.005	18.61	0.0262	747.7	4.3	9.0	0.7	33.8	98.0
3	05/24/06	1100-1134	100	83,743	96,872	4.2	0.005	20.89	0.0291	750.0	4.3	9.0	0.6	36.6	98.4
4	05/24/06	1208-1243	50	85,704	98,102	4.2	0.005	19.65	0.0267	750.0	4.8	9.5	0.5	35.1	98.6
5	05/24/06	1303-1337	50	86,321	98,919	4.2	0.005	32.55	0.0440	747.3	3.7	10.7	0.5	57.1	99.1
6	05/24/06	1350-1425	50	85,981	98,614	4.2	0.005	20.89	0.0283	749.0	4.0	10.0	0.8	36	97.8
7	05/25/06	0802-0836	100	82,866	96,457	4.2	0.005	24.30	0.0342	747.7	4.7	10.0	0.5	42.7	98.8
8	05/25/06	0850-0925	100	82,501	96,272	4.2	0.005	20.21	0.0286	749.7	4.0	10.3	0.7	34.1	98.0
9	05/25/06	0934-1008	100	83,246	97,078	4.2	0.005	20.99	0.0294	745.7	3.0	11.0	0.6	35.4	98.3
Average=				**84,090**	**97,190**	**4.2**	**0.005**	**22.7**	**0.0314**	**748**	**4.2**	**9.8**			**98.3**

Notes:
lb/hr = pounds per hour
gr/dscf = grains per dry standard cubic foot
mg = milligrams

TABLE 2-2
WHITE SUGAR DRYER NO. 2 PM_{10} EMISSION TESTS

Run Number	Test Date	Start/End Time	% Load	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Allowable PM_{10} Emissions		Actual PM_{10} Emissions (EPA Method 210A)		Avg. Water Flow (gpm)	Avg. Pressure Drop		Particulate Data		
						lb/hr	gr/dscf	lb/hr	gr/dscf		Cyclone (in. H_2O)	Scrubber (in. H_2O)	Filter (mg)	Wash (mg)	% Wash of Total
1	05/23/06	1015-1040	50	85,299	93,003	4.2	0.005	2.37	0.00324	749.7	4.7	9.7	1.1	1.5	57.7
2	05/23/06	1127-1200	50	85,082	92,570	4.2	0.005	1.59	0.00218	753.0	4.3	9.7	0.7	1	58.8
3	05/23/06	1220-1254	50	85,713	92,883	4.2	0.005	1.13	0.00154	750.0	4.0	9.8	0.7	0.5	41.7
4	05/23/06	1400-1433	100	83,395	91,246	4.2	0.005	1.02	0.00143	750.0	4.0	9.7	0.4	0.8	66.7
5	05/23/06	1450-1554	100	84,141	91,790	4.2	0.005	1.75	0.00242	750.6	4.0	10.0	1	1	50.0
6	05/23/06	1545-1619	100	83,009	90,815	4.2	0.005	1.06	0.00149	750.3	4.0	10.0	0.5	0.7	58.3
7	05/25/06	1024-1058	100	83,263	91,101	4.2	0.005	1.02	0.00143	749.7	4.0	10.3	0.5	0.7	58.3
8	05/25/06	1110-1144	100	83,058	90,876	4.2	0.005	0.94	0.00131	745.7	4.0	10.0	0.4	0.7	63.6
9	05/25/06	1153-1228	100	82,799	90,877	4.2	0.005	1.26	0.00177	751.0	3.7	11.0	0.7	0.8	53.3
Average=				**83,973**	**91,684**	**4.2**	**0.005**	**1.3**	**0.00187**	**750**	**4.1**	**10.0**			**56.5**

Notes:
lb/hr = pounds per hour
gr/dscf = grains per dry standard cubic foot
mg = milligrams

3.0 PSD REVIEW

PSD regulations require that the past actual emissions of all affected sources be compared to future potential emissions to determine PSD applicability. Past actual (baseline) emissions for the Clewiston sugar refinery were shown in the original PSD permit application for WSD No. 2 submitted in 2004. The past actual annual emissions were based on the last 2 years (2002-2003) of actual operation of the sugar refinery. Future potential emissions from the modified sugar refinery, including the proposed PM limit for the WSD No. 2, are presented in Attachment UC-EU1-F.10 of the application form.

Presented in Table 3-1 is a comparison of past actual emissions to future maximum emissions from the sugar mill refinery, with the increased PM emission from the WSD No. 2. As shown on Table 3-1, the potential increase in emissions due to the proposed project exceeds the PSD significant emission rates for PM and PM_{10}. As a result, PSD review applies for these pollutants.

As described in the original application, the PSD rules provide an exemption form certain PSD review requirements. WSD No. 2 was subject to a limited PSD review [Rule 62-212.400(3)(d)] since the Clewiston Mill was in existence on March 1, 1978, and the proposed modification results in a net emissions increase of all pollutants listed in Table 212.440-2, Regulated Air Pollutants – Significant Emission Rates, F.A.C., of less than 50 TPY after the application of BACT. Therefore, the project was exempted from the requirements of Rule 62-212.400(5)(d), (e), (f), and (g), F.A.C. This exempted the original project from all requirements of PSD review except for the BACT review.

Based on the revised PM emissions shown in Table 3-1, the above exemption is no longer available for the project. The reviews required by FDEP, other than the BACT review, will be presented in a separate report. A revised BACT analysis for the WSD No. 2 is presented in Section 4.0.

TABLE 3-1

WHITE SUGAR DRYER NO. 2 PSD SOURCE APPLICABILITY ANALYSIS, U.S. SUGAR CORPORATION, CLEWISTON (Revised 6-22-2006)

	Baseline Emissions [a]				Future Potential Emissions						
Regulated Pollutant	Sugar Refinery Baghouses (TPY)	Granular Carbon Furnace (TPY)	Alcohol Usage (TPY)	Total (TPY)	Sugar Refinery Baghouses (TPY)	Granular Carbon Furnace (TPY)	Alcohol Usage (TPY)	Total (TPY)	Net Change In Emissions Due to Proposed Project (TPY)	PSD Significant Emission Rate (TPY)	PSD Review Triggered?
Particulate Matter (Total)	11.45	1.82	0	13.26	170.26	3.07	0	173.32	160.06	25	Yes
Particulate Matter (PM_{10})	11.45	1.63	0	13.08	35.34	2.76	0	38.10	25.01	15	Yes
Sulfur Dioxide	0	1.05	0	1.05	0	2.80	0	2.80	1.75	40	No
Nitrogen Oxides	0	10.13	0	10.13	0	13.14	0	13.14	3.01	40	No
Carbon Monoxide	0	10.13	0	10.13	0	13.14	0	13.14	3.01	100	No
VOC	0	1.24	3.13	4.37	0	4.38	15.0	19.38	15.01	40	No
Sulfuric Acid Mist	0	0.064	0	0.064	0	0.172	0	0.172	0.107	7	No

[a] Actual emissions based on the average emissions for 2002 and 2003.

Note: PM_{10} = Particulate Matter with aerodynamic diameter less than or equal to 10 microns.
TPY = Tons per year.

4.0 BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

4.1 Requirements

The 1977 Clean Air Act (CAA) Amendments established requirements for the approval of pre-construction permit applications under the PSD program. One of these requirements is that BACT be installed for applicable pollutants. BACT determinations must be made on a case-by-case basis considering technical, economic, energy, and environmental impacts for various BACT alternatives. To bring consistency to the BACT process, the EPA developed the "top-down" approach to BACT determinations.

The first step in a top-down BACT analysis is to determine, for each applicable pollutant, the most stringent control alternative available for a similar source or source category. If it can be shown that this level of control is not feasible on the basis of technical, economic, energy, or environmental impacts for the source in question, then the next most stringent level of control is identified and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any technical, economic, energy, or environmental consideration.

In the case of the proposed project, only PM emissions from the WSD No. 2 require a BACT analysis, since this is the only pollutant for which a revised emission limit is being requested. A BACT analysis for both PM and PM_{10} emissions was performed for the original PSD permit application in 2004. The revised BACT analysis for PM is presented in the following section.

4.2 Particulate Matter

4.2.1 Proposed Control Technology

Emissions of PM from WSDr No. 2 occur primarily due to carryover of water droplets from the wet scrubber, which contains dissolved sugar. These water droplets are largely greater than 200 microns in size and, therefore, will settle out quickly, primarily on U.S. Sugar property. The proposed BACT for PM is based on the following control techniques:

- High efficiency cyclone dust collectors (4); and
- Wet scrubber.

The proposed maximum PM emissions for the WSD No. 2 are 25 lb/hr and 109.5 TPY. The higher allowable PM emission limit is justified based on the following:

- The PM emissions result from the carryover of water droplets out of the wet scrubber. The water droplets contain dissolved sugar;
- The PM emissions consist primarily of large particles (water droplets) of greater than 200 microns in size, which will fallout on U.S. Sugar plant property;
- The PM emissions consist entirely of refined sugar, which does not represent any health hazard; and
- The PM emissions do not result in any adverse environmental or visibility impacts.

4.2.2 BACT Analysis

4.2.2.1 *Previous BACT Determinations*

As part of the BACT analysis, a review was performed of previous PM/PM_{10} BACT determinations for dryers and coolers in the agricultural products category, as listed in the RACT/BACT/LAER Clearinghouse on EPA's web page. A summary of BACT determinations for these sources from this review is presented in Table 4-1. Determinations issued during the last 10 years are shown in the table.

From the review of Table 4-1, previous BACT determinations for agricultural products, dryers, and coolers have typically been based on rotoclones, baghouses, or wet scrubbers. Control efficiencies have generally been in the range of 98 percent for rotoclones to 99.8 percent for baghouses. Most of these determinations were not based on emissions in terms of exhaust grain loading. The two that were, both wet scrubber controls, specified an exhaust grain loading of 0.02 gr/dscf.

4.2.2.2 *Control Technology Feasibility*

The technically feasible PM controls for the WSD No. 2 are listed in Table 4-2. As shown, there are five types of PM abatement methods with various techniques of each method. Each available technique is listed in Table 4-2, with its associated efficiency estimate, identified as feasible or infeasible, and rank based on control efficiency.

4.2.2.3 *Potential Control Method Descriptions*

Fuel Techniques

Fuel substitution, or fuel switching, is a common means of reducing emissions from combustion sources, such as electric utilities and industrial boilers. It involves replacing the current fuel with a fuel that emits less of a given pollutant when burned.

For fuel substitution to be practical, there must be a suitable replacement fuel available at an acceptable cost. In the case of the proposed WSD No. 2, no fuel is used in the process. Steam is used to supply heat for drying. Therefore, fuel substitution is not a feasible alternative.

Pretreatment Devices

The performance of particulate control devices can often be improved through pretreatment of the gas stream. For PM control devices, pretreatment consists of the following techniques:

- Settling Chambers;
- Elutriators;
- Momentum Separators;
- Mechanically Aided Separators; and
- Cyclones.

Of these five techniques, cyclones offer the most control efficiency, typically in the range of 60 to 90 percent. All of the other techniques have control efficiencies less than 30 percent.

Cyclones use inertia to remove particles from a spinning gas stream. Within a cyclone, the gas stream is forced to spin within a usually conical-shaped chamber. The gas spirals down the cyclone near the inner surface of the cyclone tube. At the bottom of the cyclone, the gas turns and spirals up through the center of the tube and out the top of the cyclone.

Particles in the gas stream are forced toward the cyclone walls by centrifugal forces. For particles that are large, typically greater than 10 microns, inertial momentum overcomes the fluid drag forces so that the particles reach the cyclone walls and are collected. For smaller particles, the fluid drag forces are greater than the momentum forces and the particles follow the gas out of the cyclone. Inside the cyclone, gravity forces the large particles down the sidewalls of the cyclone to a hopper where they are collected.

Pretreatment devices are technically feasible for application to the WSD No. 2. The WSD No. 2 utilizes four high-efficiency cyclones manufactured by Entoleter, with an estimated removal efficiency of 99 percent, based on the manufacturer's design data. The cyclones provide pretreatment before the gas stream enters the wet scrubber.

Electrostatic Precipitators (ESPs)

Collection of PM by ESPs involves the ionization of the gas stream passing through the ESP; the charging, migration, and collection of particles on oppositely charged surfaces; and the removal of particles form the collection surfaces. There are two basic types of ESPs, dry and wet. In dry ESPs, the particulate is removed by rappers, which vibrate the collection surface, dislodging the material and allowing it to fall into the collection hoppers. Wet ESPs use water to rinse the particulates off of the collection surfaces.

ESPs have several advantages when compared with other control devices. They are very efficient collectors, even for small particles, with greater than 97-percent control efficiency. ESPs can also treat large volumes of gas with a low-pressure drop. ESPs can operate over a wide range of temperatures and generally have low operating cost. The disadvantages of ESPs are large capital cost, large space requirements, and difficulty in controlling particles with high resistivity.

There is no known application of an ESP to such a process. Such a device would also be very costly in terms of capital and annual costs. As a result, ESPs were not considered further in the BACT analysis.

Fabric Filters

Baghouses, or fabric filters, utilize porous fabric to clean an airstream. They include types such as reverse-air, shaker, and pulse-jet baghouses. The dust that accumulates on the surface of the filter aids in the filtering of fine dust particles. PM/PM_{10} control efficiencies for fabric filters are typically greater than 99 percent.

During fabric filtration, dusty gas is sent through the fabric by forced-draft fans. The fabric is responsible for some filtration, but more significantly it acts as support for the dust layer that accumulates. The layer of dust, also known as the filter cake, is a highly efficient filter, even for

submicron particles. Woven fabrics rely on the filtration of the dust cake much more than felted fabrics.

Fabric filters offer high efficiencies, are flexible to treat many types of dusts, and can accommodate a wide range of volumetric gas flow rates. In addition, fabric filters can be operated with low pressure drops. Some potential disadvantages are:

- High-moisture gas streams and sticky particles can plug the fabric and blind the filter, requiring bag replacement;
- High temperatures can damage fabric bags; and
- Fabric filters have a potential for fire or explosion.

Fabric filters are considered technically feasible for application to the WSD No. 2. The existing WSD No. 1 at the Clewiston refinery uses a baghouse for control. However, U.S. Sugar's experience with the baghouse control device on this application is that maintenance is high due to downtime caused by broken bags and other problems. The downtime results in lost production, lost revenue, increased maintenance activities, and increased maintenance costs. Serious concerns exist over the ability of a baghouse to operate as reliably as a wet scrubber, which would not suffer from these same problems.

Wet Scrubbers

Wet scrubbers are systems that involve particle collection by contacting the particles to a liquid, usually water. The aerosol particles are transferred from the gaseous airstream to the surface of the liquid by several different mechanisms. Wet scrubbers create a liquid waste that must be treated prior to disposal. PM/PM_{10} control efficiencies for wet scrubbing systems range from about 50 to 95 percent, depending on the type of scrubbing system used. Typical wet scrubbers are as follows:

- Spray Chamber,
- Packed-Bed,
- Impingement Plate,
- Mechanically Aided,
- Venturi,
- Orifice, and
- Condensation.

The advantages of wet scrubbers compared to other PM collection devices are that they can collect flammable and explosive dusts safely, absorb gaseous pollutants, and collect mists. Scrubbers can also cool hot gas streams. The disadvantages are the potential for corrosion and freezing, the potential of water and solid waste pollution problems, and high energy costs.

Wet scrubbers are technically feasible for the proposed WSD No. 2. This device is well suited for this application due to minimal maintenance requirements and the ability to recycle the scrubber effluent directly back to the process to recover sugar product. The WSD No. 2 uses an Entoleter Centrifield Vortex wet scrubber. The design of the scrubber is 96-percent removal of PM/PM_{10}, with an outlet dust loading of 0.005 gr/dscf (proposed limit for permitting purposes is 0.00729 gr/dscf). Although the wet scrubber would not provide a greater degree of PM emission reduction compared to a baghouse (the existing WSD No. 1 is permitted for a PM/PM_{10} limit of 0.0018 gr/dscf), the baghouse technology has resulted in increased downtime due to baghouse maintenance requirements.

Mist Eliminators

Because of the higher than expected PM emissions from WSD No. 2 due to water droplet carryover from the wet scrubber, a mist eliminator must be considered as BACT for PM removal. There are two basic types of mist eliminators that could be applied to WSD No. 2. The first is a "chevron" type mist eliminator, and the second is a "mesh pad" mist eliminator. The chevron type use a series of baffles, which cause the air stream to change direction, causing the large water droplets to impacted on the baffles and be captured. The second type uses a mesh pad and captures water droplets down to a smaller size compared to the chevron type. The mesh pad relies on diffusion and brownian motion of the water droplets for capture.

The chevron-type mist eliminator, although theoretically the best technology for this application, would be ineffective due to the cyclonic nature of the gas flow exiting the wet scrubber. Therefore, this technology was not considered further.

Due to the belief that the water droplets being carried out of the WSD No. 2 are primarily greater than 200 microns in size, the mesh pad-type mist eliminator would also not be effective for this application. It would also be highly susceptible to plugging by the sticky sugar particles dissolved in the droplets. The mesh pad would present the ideal conditions for bacterial growth, i.e., moist

atmosphere existing at temperature of about 100 degrees Fahrenheit (°F), which is a recognized problem in handling sugar.

As a result, the mist eliminator is not considered further as BACT for the WSD No. 2.

4.2.2.4 *Economic Analysis*

U.S. Sugar presented a detailed economic evaluation of the baghouse and the cyclone/wet scrubber technology in the original PSD application submitted in 2004. The BACT analysis demonstrated that the incremental cost of using the baghouse technology was over $12,000 per ton of PM/PM_{10} removed. For this reason, the baghouse technology was eliminated. Technical issues with using a baghouse were also discussed.

Adding a baghouse now to the existing scrubber system would not be feasible due to the moisture in the gas stream exiting the wet scrubber. Also, there exists no commensurate environmental benefit associated with installing a baghouse or replacing the existing wet scrubber system with a baghouse.

U.S. Sugar will experience a severe economic impact if WSD No. 2 is shut down for any length of time. Up to 50 percent of the refinery's production capacity would be curtailed if the dryer is shut down. In such a case, U.S. Sugar would be forced to send its sugar outside for refining, at a much higher cost to U.S. Sugar.

4.2.2.5 *Environmental Impacts*

No significant environmental impacts should result from the increased PM emissions from the cyclone/wet scrubber technology. The majority of PM emissions are comprised of dissolved sugar in water droplets greater than 200 microns in size. The vast majority of these droplets will fallout on U.S. Sugar plant property.

There are no ambient air quality standards for PM. As a result, there are no health-related concerns associated with the higher PM emission limit.

Visible emissions from the WSD No. 2 have been demonstrated to be zero opacity. PM emissions are also not important in impacts upon regional haze.

4.2.3 BACT Selection

U.S. Sugar's proposed PM technology and the emission limit are reasonable based on consideration of all the facts, as described above. The proposed PM BACT limit is 25 lb/hr and 109.5 tons per year (TPY) based on the cyclone/wet scrubber combination.

The higher allowable PM emission limit is justified based on the following:

- The PM emissions result from the carryover of water droplets out of the wet scrubber. The water droplets contain dissolved sugar.
- The PM emissions consist primarily of large particles (water droplets) of greater than 200 microns in size, which will fallout on U.S. Sugar plant property.
- The PM emissions consist entirely of refined sugar, which does not represent any health hazard.
- The PM emissions do not result in any adverse environmental or visibility impacts.

TABLE 4-1
BACT DETERMINATIONS FOR PM/PM_{10} FOR OTHER FOOD AND AGRICULTURAL PRODUCTS SOURCES--DRYERS AND COOLERS

Company	State	RBLC ID	Permit Date	Source	Throughput	Emission Limits As Provided in LAER/BACT Clearinghouse	Control Equipment Description	Removal Efficiency %
Golden Grain Energy	IA	IA-0082	4/19/2006	Distillers Dried Grain with Solubles (DDGS) Dryer	209 MMBtu/hr	4.5 lb/hr	Thermal Oxidizer	98
Cargill, Inc., Cargill - Blair Plant	NE	NE-0024	6/22/2004	Germ Meal Dryer	--	0.67 lb/hr	Serubber	--
Cargill, Inc., Cargill Oilseeds Division	OH	OH-0282	11/28/2003	Isolate Plant Soy Protein Spray Dryer	5,600 lb Soy/hr	4.68 lb/hr	Baghouse and Separation Cyclone	--
Advanced Organics, Inc., Advanced Organics	OH	OH-0283	2/4/2003	Animal Feed Dryers	129,604 ton feed/yr	0.15 lb/hr	--	--
Midwest Grain Products of Illinois Inc.	IL	IL-0077	1/22/2002	Feed Dryer	1,073,100 TPY	0.01 gr/dscf	Eco-Dry (Afterburner)	--
Cargill, Inc.	IN	IN-0097	12/3/2001	Grain Drying	225 ton/hr	49.5 lb/hr	None	--
Central Soya Company Inc.	OH	OH-0251	11/29/2001	Soy Protein Concentrate Dryer	37 MMBtu/hr	1.78 lb/hr	Baghouse, 100% Capture	99.9
Minnesota Corn Processors	MN	MN-0039	8/8/2000	Corn Gluten Dryer	39 MMBtu/hr	17.5 lb/hr	Wet Sentrifugal Venturi Scrubber	--
Agrimark / Cabot Inc. - Middlebury	VT	VT-0012	1/3/2000	Whey Dryer	12 MMBtu/hr	0.02 gr/dscf	Venturi Followed by Wet Cyclonic Scrubber	--
Agrimark / Cabot Inc. - AMC	VT	VT-0018	1/3/2000	Whey Dryers	12 MMBtu/hr	--	Wet Scrubber and Baghouse	--
Givaudan Flavors Corp.	OH	OH-0240	10/15/1998	Spray Dryer	500 lb/hr	0.41 lb/hr	Wet Cyclone Scrubber	--
Proctor and Gamble Manufacturing Co.	TN	TN-0111	3/19/1998	Dryer		0.06 lb/hr	Exclusive Use of Natural Gas	--
Minnesota Corn Processors	MN	MN-0038	12/12/1997	Corn Gluten Dryer	39 MMBtu/hr	11.8 lb/hr	Wet Sentrifugal Venturi Scrubber	--
American Crystal Sugar Company	ND	ND-0016	6/11/1997	Pulp Dryer	230 MMBtu/hr	52 lb/hr	Wet Scrubber	0
Grain Processing Corp.	IN	IN-0075	6/10/1997	Germ Dryer	17 MMBtu/hr	0.685 lb/hr	50% Caustic Scrubber	95
Bunge Corporation	IA	IA-0054	5/20/1997	Grain Dryers	--	1.02 lb/hr	Settling Chamber	--
Westvaco Corporation, Chemical Division	KY	KY-0071	9/2/1996	Extrusion Plant Vibrating Fluidized Bed Dryer	2 MMBtu/hr	1.27 lb/hr	Rotoclone Scrubber	98
Fresno Cogeneration Partners, L.P.	CA	CA-0750	6/28/1996	Feed Rotary Drum Dryers	30 MMBtu/hr	--	--	--
Cargill, Inc.	NE	NE-0016	4/25/1996	Gluten Flash Dryer	45 MMBtu/hr	2.01 lb/hr	Cyclone / Wet Scrubber	--
Brown & Williamson Tobacco Corp.	GA	GA-0072	1/12/1996	Redryer #2		0.34 lb/hr	Rotoclone	98
				Dryer/Cooler		0.51 lb/hr	Baghouse	99.8
				Stem Dryer		0.1 lb/hr	Rotoclone	98
				Redryer #1		1.23 lb/hr	Rotoclone	98
				Redryer #1		0.4 lb/hr	Rotoclone	98
				Redryer #1		0.5 lb/hr	Rotoclone	98
				Redryer #1		4.83 lb/hr	Rotoclone	98
				Stem Dryer		0.1 lb/hr	Rotoclone	98
				Stem Dryer		0.78 lb/hr	Rotoclone	98
				Redryer #2		0.93 lb/hr	Rotoclone	--
				Redryer #2		0.29 lb/hr	Rotoclone	98
				Redryer #2		0.93 lb/hr	Rotoclone	98
				Redryer #2		0.29 lb/hr	Rotoclone	98
				Redryer #2		2.75 lb/hr	Rotoclone	98
				Redryer #2		0.24 lb/hr	Rotoclone	98
				Tobacco Dryer		0.8 lb/hr	None	
				Dryer/Cooler		0.51 lb/hr	Baghouse	99.8

Reference: RACT/BACT/LAER Clearinghouse on EPA's Webpage, June 2006.

TABLE 4-2
PM/PM_{10} CONTROL TECHNOLOGY FEASIBILITY ANALYSIS FOR THE WHITE SUGAR DRYER NO. 2

PM Abatement Method	Technique Now Available	Estimated Efficiency	Feasible and Demonstrated? (Y/N)	Rank Based on Control Efficiency	Employed on WSD No. 2? (Y/N)
Fuel Techniques	Fuel Substitution	NA	N	NTF	N
Pretreatment	Settling Chambers	< 10%	Y	6	N
	Elutriators	< 10%	Y	6	N
	Momentum Separators	10 - 20%	Y	5	N
	Mechanically-Aided Separators	20 - 30%	Y	4	N
	Cyclones	60 - 99%	Y	3	Y
Electrostatic Precipitators (ESP)	Dry ESP	>99%	N	1	N
	Wet ESP	>99%	N	1	N
	Wire-Plate ESP	>99%	N	1	N
	Wire-Pipe ESP	>99%	N	1	N
Fabric Filters	Shaker-Cleaned	>99%	Y	1	N
	Reverse-Air	>99%	Y	1	N
	Pulse-Jet	>99%	Y	1	N
Wet Scrubbers	Spray Chambers	50 - 95 %	Y	2	N
	Packed-Bed	50 - 95 %	Y	2	N
	Impingement Plate	50 - 95 %	Y	2	N
	Mechanically-Aided	50 - 95 %	NTF	NTF	N
	Venturi	50 - 95 %	Y	2	Y
	Orifice	50 - 95 %	Y	2	N
	Condensation	50 - 95 %	Y	2	N
Mist Eliminators	Chevron Type	50%	N	2	N
	Mes Pad Type	70%	N	2	N

Note: NTF = Not Technically Feasible.

5.0 REFERENCES

U.S. Environmental Protection Agency. 1978. *Guidelines for Determining Best Available Control Technology (BACT).* Office of Air Quality Planning and Standards.

U. S .Environmental Protection Agency. 1980. *Prevention of Significant Deterioration Workshop Manual.*

U.S. Environmental Protection Agency. 1987. *Ambient Monitoring Guidelines for Prevention of Significant Deterioration.* EPA Report No. EPA 450/4-87-007

U.S. Environmental Protection Agency. 1990. *"Top-Down" Best Available Control Technology Guidance Document* (Draft). Research Triangle Park, North Carolina.

U.S. Environmental Protection Agency. 1999. Letter from P. Douglas Neeley, Chief Air and Radiation Technology Branch, EPA Region IV, Atlanta, GA (November 10, 1999).

U.S. Environmental Protection Agency. 2003. *Guidelines on Air Quality Models.* 40 CFR 51, Subpart W.

APPENDIX A

CONTROL EQUIPMENT INFORMATION FOR WHITE SUGAR DRYER NO. 2

ENTOLETER LLC
251 Welton Street
Hamden, CT 06517 USA
Tel: 203-787-3575 Fax: 203-787-1492
www.entoleter.com

August 4, 2004

Mr. Donald H. Griffin
Manager Specialty Sugar
United States Sugar Corporation
1731 South W.C. Owen Avenue
Clewiston, FL 33440

RE: Scrubber Addition

Dear Mr. Griffin:

Based upon the following design conditions, we are recommending four (4) Model 6600 High Efficiency Cyclones, followed by the Centrifield Vortex Model 1500, per the attached schematics.

Inlet Gas Volume = 104,950 ACFM
Inlet Gas Temperature = 113 F
Inlet Dust Loading = 14 grains/cuft

Cyclone Inlet Volume = 96,000 SCFM

Cyclone Inlet Temperature = 113 F

Cyclone Inlet Dust Loading = 11,760lb

Pressure Drop across Cyclones = 6 inches WC

Scrubber Inlet Volume = 96,000 SCFM
Scrubber Inlet Temperature = 113 F

Scrubber Inlet Loading = 118 lb/hr

Scrubber Liquid Recirculation Rate = 500 GPM
Scrubber Blow Down Rate = 12 GPM

Scrubber Outlet Volume = 96,000 SCFM

Scrubber Outlet Dust Loading = 4.2lb/hr

We guarantee that the outlet dust loading will not exceed 0.005 grains/cubic foot for particular greater than 1 micron.

The cyclones will be located at an elevation 43 feet above grade on the second floor of the Refinery Process Building. The scrubber will be located on the second floor, at an elevation of 43 feet above grade, and extend through the third floor, at an elevation of 72 feet above grade, in the Refinery Process Building. The discharge ducting from the scrubber will be connected to the inlet of the ID fan, and discharged to the atmosphere through the west wall of the Refinery Process Building at an elevation of 78 feet 4 inches above grade. The exhaust duct dimensions are 84 inches X 72 inches.

The scheduled start up for this equipment is July 2005. Should you require any additional information, please let us know.

Sincerely,

Dick Steinsvaag
Product Manager

ENTOLETER
251 Welton Street
Hamden, Connecticut 06517 U.S.A.
(800) 729-3575
(203) 787-3575
Fax (203) 787-1492
www.entoleter.com

GAS OUT
96,000 SCFM
113°F
0.005 g/cf

GAS IN
104,950 ACFM
113°F
14 g/cf

RECIRCULATION FEED
500 GPM

MAKEUP
12 GPM

13.86 g/cf

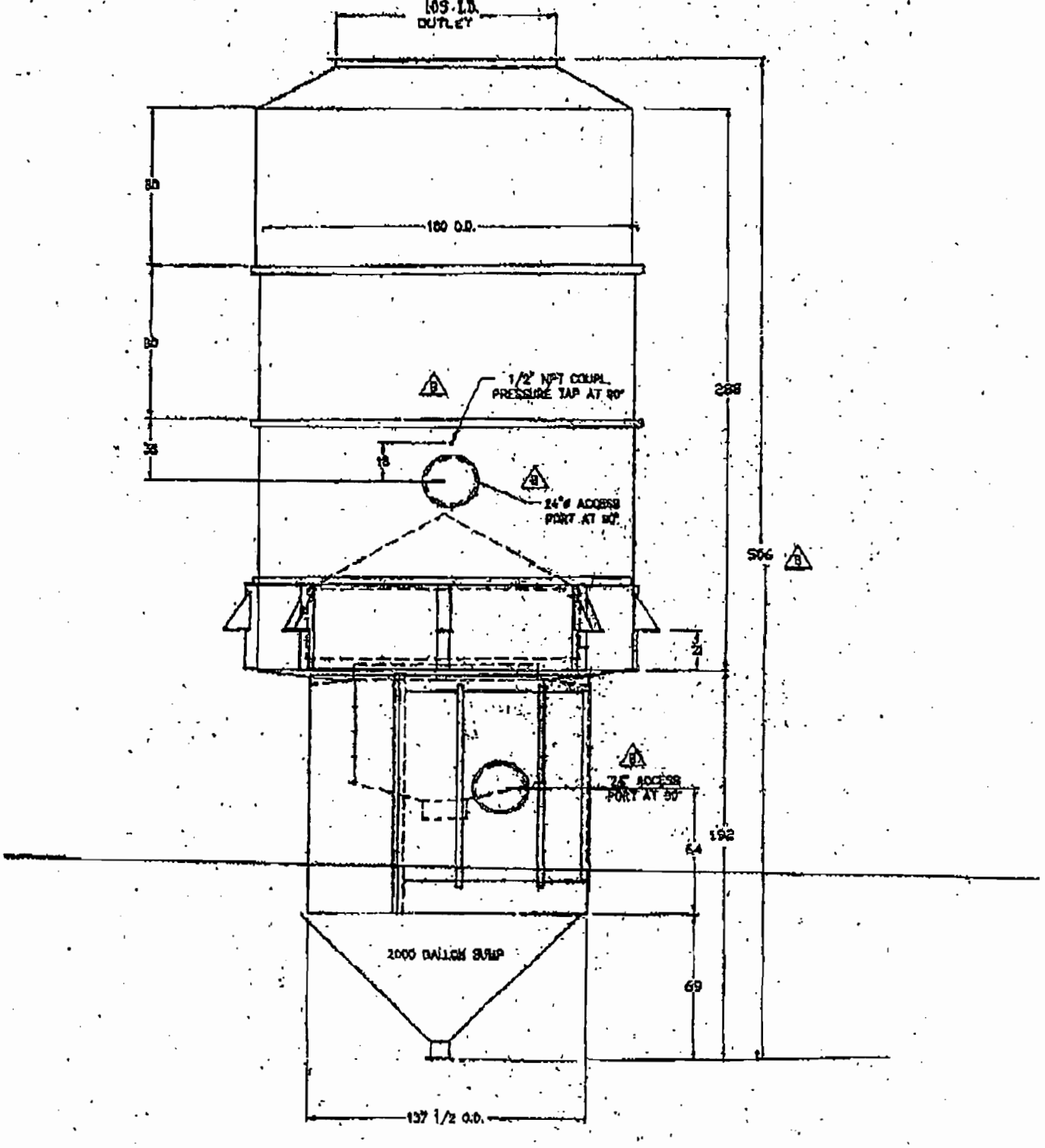
BLOWDOWN
12 GPM

RECIRCULATION PUMP

CYCLONES

SCRUBBER

US SUGAR EXPANSION
#4-1002B

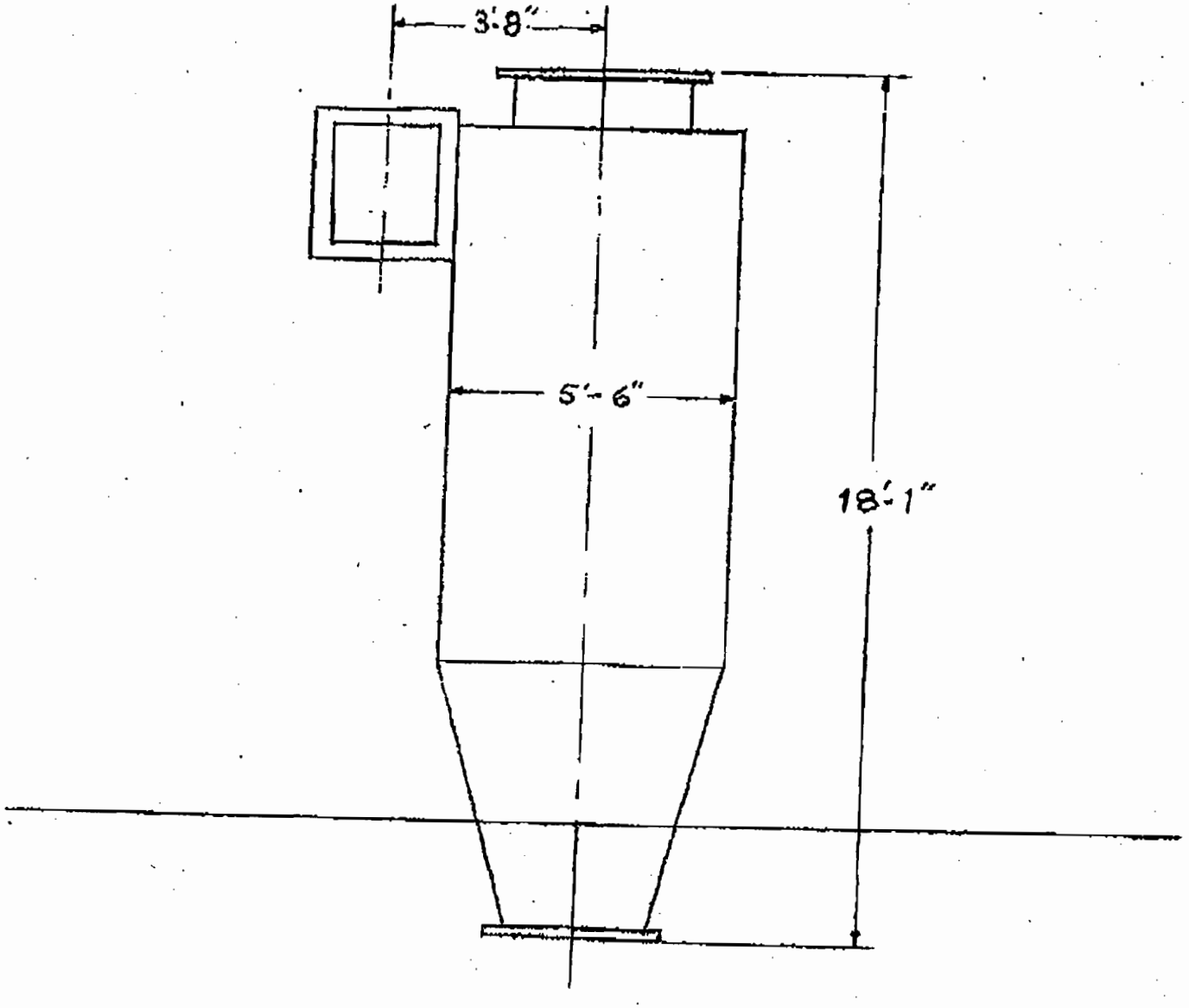


MODEL 1500

ENTOLETER LLC
251 Welton Street
Hamden CT 06517
USA

FROM :ENTOLETER FAX NO. :3034849422 Aug. 02 2004 09:45AM P6

ENTOLETER



CYCLONE

MODEL 6600

QUANITY-4

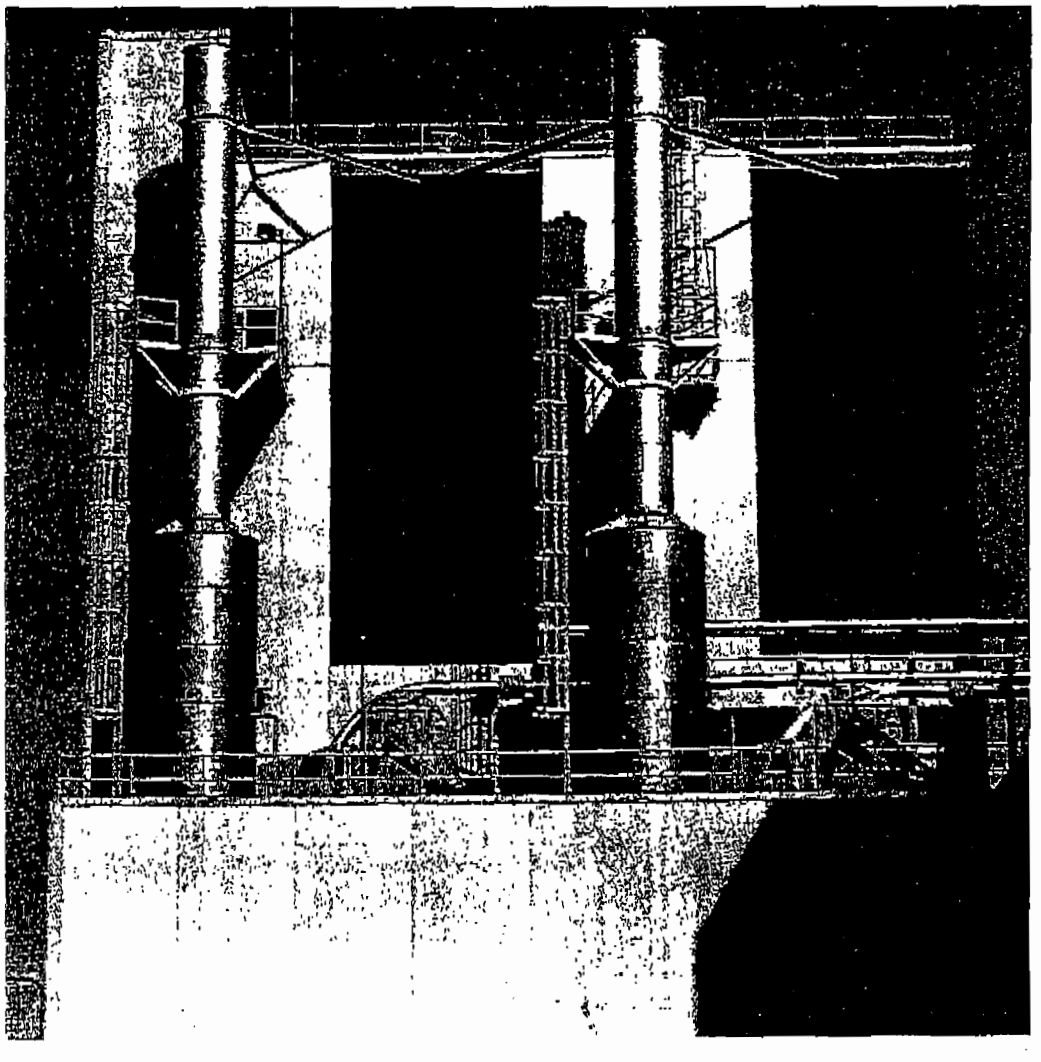
US SUGAR EXPANSION #4-10028

entoleter

TO Dave Buff
From Don Griffin
USSC

11-15-04

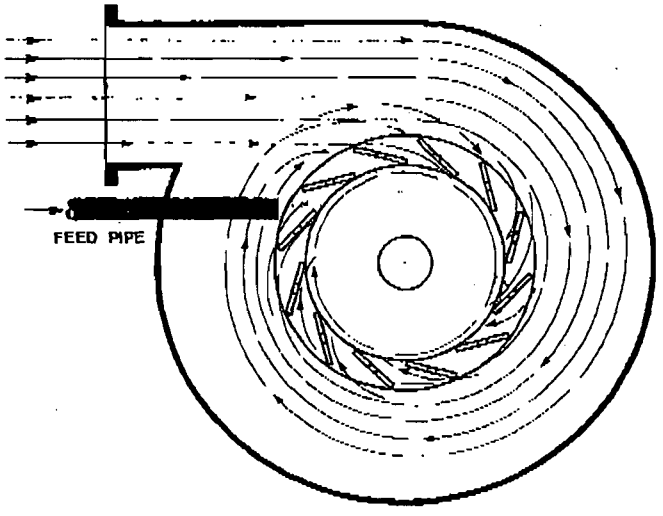
air pollution control systems for industry

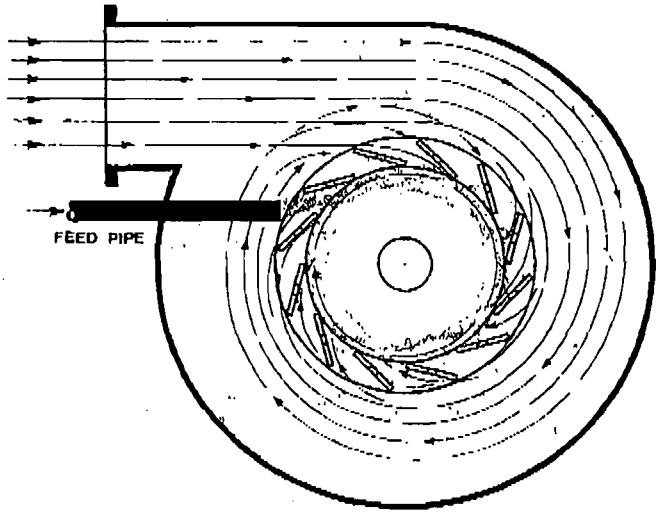


These Illustrations Show the Three Unique Stages of Scrubbing that Occur in the CENTRIFIELD:

1. WET CYCLONE PRE-CLEANING

The gas enters the CentriField tangentially and establishes a tornado like cyclonic pattern around a centrally located vane cage. Scrubbing liquid is fed to the cage through an open pipe. Large liquid droplets are thrown outward from the cage due to centrifugal force. These drops exit the cage through slots in the vanes and contact the incoming gas counter-currently. Large particles impact on these droplets and are removed from the gas stream by cyclonic action. In addition, they saturate the gas stream and clean the cage and scrubber walls.



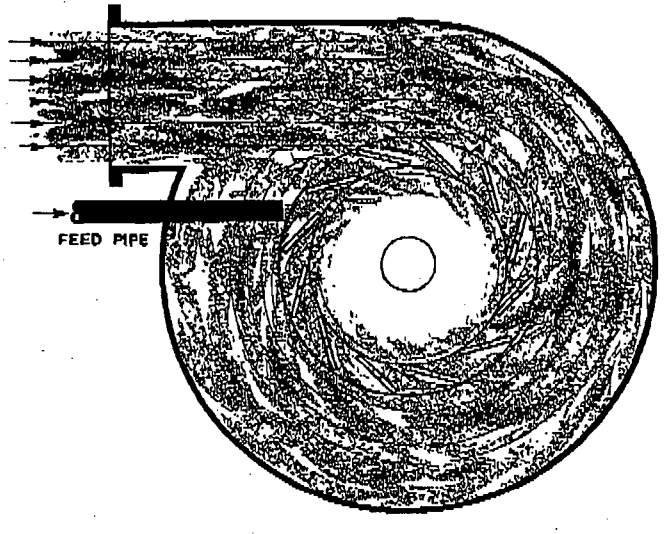


2. MULTI-THROAT VENTURI SCRUBBING

A second cyclonic flow pattern is formed after the gas has passed through the vanes. The cyclonic action inside the cage coats the vanes with a sheet of scrubbing liquid. This liquid is ripped from the vanes and atomized by the velocity of the gas passing the vanes. This action provides scrubbing that is comparable to the best multi-throat venturi scrubber.

3. THE CENTRIFIELD CLOUD

The cyclonic flow pattern inside the cage forms a vortex cloud of fine water droplets. The final stage of scrubbing occurs when any uncollected particulate is forced to pass through this cloud of fine water droplets inside the vane cage. The cloud is maintained by a balance between the force of the incoming gas and the centrifugal force on the droplets. This cloud is the heart of the CentriField and provides the extended contact time required for removal of any particles remaining in the gas stream. These particles must follow a tortuous path through the cloud that ensures contact with and capture by the spinning droplets. Finally, the cleaned gas exits the vortex eye and travels vertically into a radial liquid separator which removes the particle laden droplets from the gas stream.



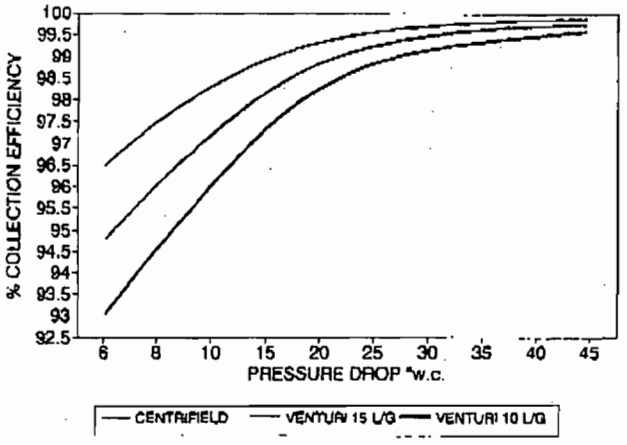
CENTRIFIELD Saves Energy and Maintenance Dollars

REDUCED PRESSURE DROP

The counter-current action and fine droplets produced in the CentriField provide substantially improved contact between the liquid scrubbing media and the gas when compared to other wet scrubbers. In actual side-by-side comparison tests with venturi's, the CentriField has consistently demonstrated greater particulate removal efficiency at the same pressure drops. Typically, the CentriField will require 25 to 35 percent less pressure drop to accomplish the same degree of particulate removal.

COMPARATIVE PERFORMANCE CURVE

CENTRIFIELD vs. VENTURI

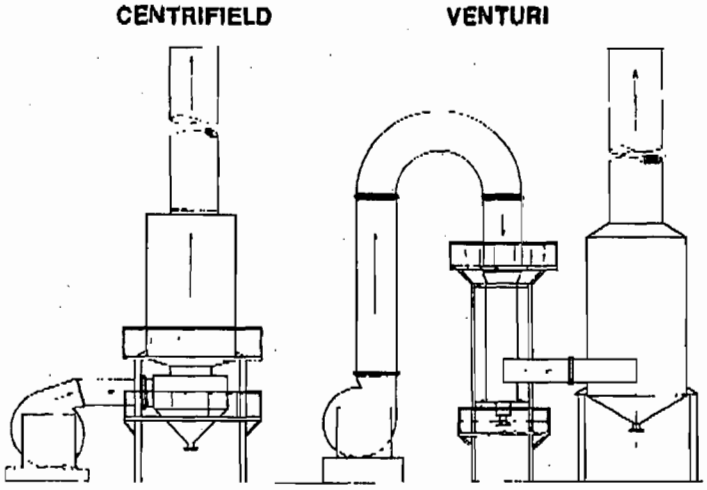


LOWER WATER POWER

The vortex in the CentriField provides extended residence time between the gas and the scrubbing liquid. This important feature allows the CentriField to operate with lower amounts of liquid per unit volume of gas passing through the scrubber. The CentriField will normally operate at liquid to gas (L/G) ratios of 5-6 gallons per 1000 CFM. Venturi scrubbers typically operate at double this rate. The CentriField scrubbing liquid is fed to the unit through open pipes. Venturi's normally require nozzles for the introduction of scrubbing liquid. The nozzles require liquid to be fed at increased pressure when compared to the open pipe of the CentriField. The combination of lower pressure and less liquid allow the CentriField to operate with less pumping horsepower than other wet scrubbers.

MINIMUM SPACE REQUIREMENTS

The CentriField provides a compact installation when compared to a venturi. Floor space requirements are often 25 percent less than conventional venturi's and horizontal scrubber designs.



LOWER INSTALLATION COSTS

The minimal floor space requirements of the CentriField insure that the grading and foundation work will be less than that required by other wet scrubbers. In addition, the compact CentriField arrangement will typically require less duct and structural steel than a conventional venturi's.

LOW MAINTENANCE

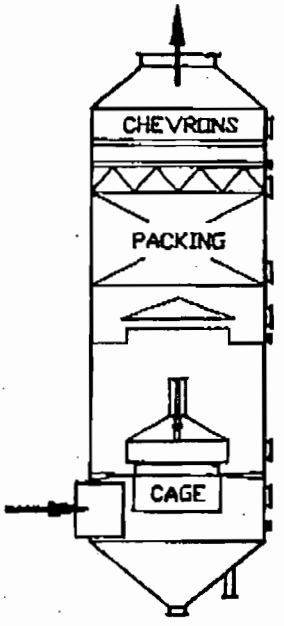
The cyclonic action of the gas and liquid in the CentriField generates superior flushing that keeps the internals and walls clean by preventing the build-up of solids. This self cleaning feature has meant success where other wet scrubbers have plugged and failed. With no moving parts, nozzles, packing, chevrons, mesh pads or close clearances, the CentriField is virtually maintenance free.

In addition, the quick opening access doors provided on the CentriField decrease the time required for entrance into the scrubber during normal maintenance inspections.

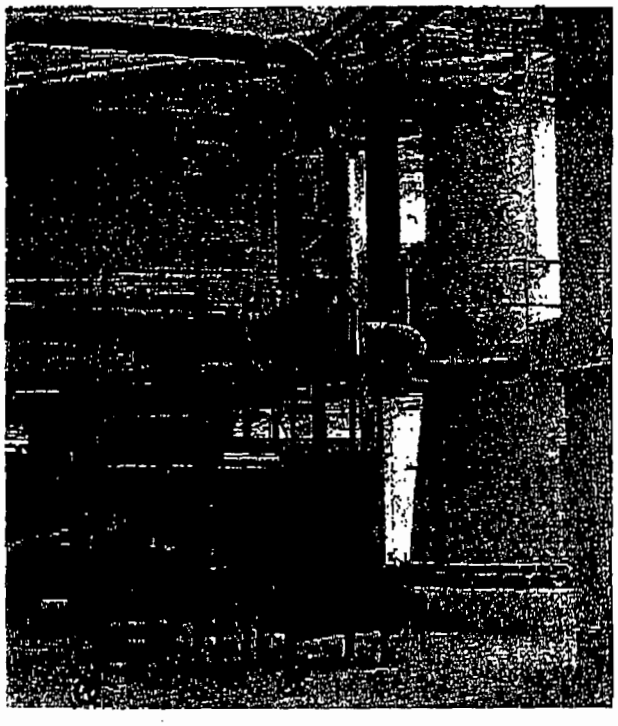
SUPERIOR GAS ABSORPTION

In co-current wet scrubbers, such as a venturi, gas absorption efficiency is limited to one theoretical plate. The CentriField cloud, with its large droplet surface area and long retention time, is capable of providing up to 2 1/2 theoretical plates of scrubbing in a single scrubbing stage. This is especially important in applications where insoluble particulate is present, or where the product of the absorption tends to plug packing or sieve trays. CentriField has large, non-restrictive internal openings, no nozzles and cyclone-like flushing action. As a result CentriField does not exhibit the operational problems experienced by packed bed and tray units in the presence of particulate or precipitant.

The scrubbing of gaseous contaminants and flyash from boiler and incinerator exhausts are examples where a high degree of particulate and gaseous contaminant removal can be achieved in a single stage of CentriField. In applications where extremely high levels of gaseous contaminant removal are required, a packed bed can be provided as a separate stage in the shell of the CentriField. All the scrubbing required is provided in a single unit, thus saving valuable floor space.



2-Stage CENTRIFIELD



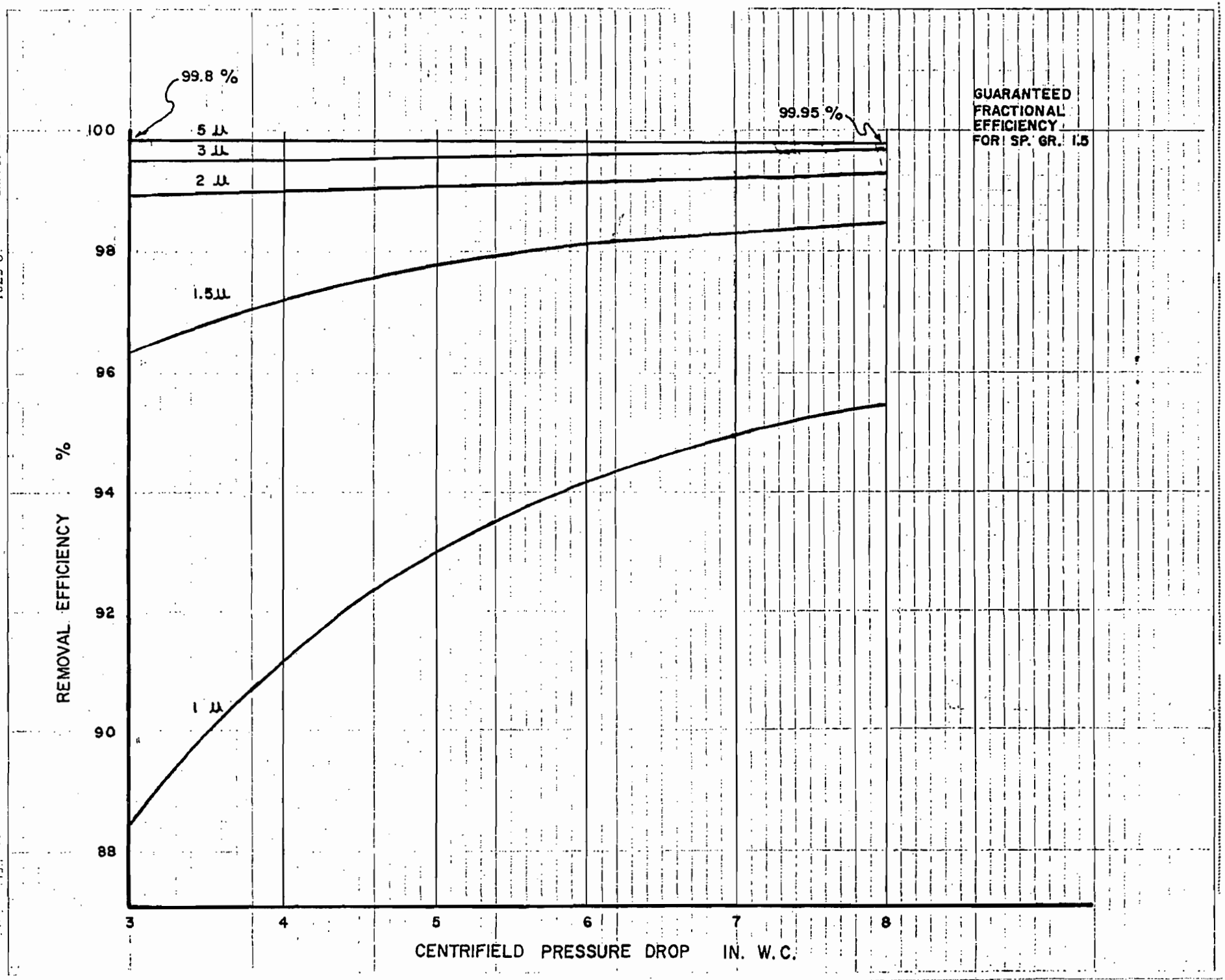
PILOT PROGRAMS

Self contained CentriField Pilot Scrubbers are available on a rental basis for in plant, on-line performance testing under actual process conditions. The use of the pilot system enables the customer to predict operating parameters that will enable the full size unit to meet their emission control requirements. By piloting the CentriField on site, pressure drop and water requirements may be optimized. The performance of the CentriField is confirmed to management and/or pollution control agencies by providing pilot data.

CentriField Pilot Scrubbers are furnished as completely assembled systems and include: a CentriField variable vane cage scrubber, integral fan with a 30 HP motor, recycle pump with fractional HP motor, recycle tank and all required recycle piping. The unit requires that the customer provide duct, water and power to the scrubber. Shipping time is not included in a rental period, so that the customer only pays for the time the pilot unit is at the plant gathering useful information. A field engineer is available to supervise the start-up of the pilot unit and provide training in its operation to plant personnel.

ENTOLETER

ENTOLETER LLC
251 Welton Street
Hamden CT 06517
Tel: 203-787-3575 Fax: 203-787-1492
www.entoleter.com
info@entoleter.com



BY..... DATE.....

CHKD. BY..... DATE.....

SUBJECT.....

SHEET NO..... OF.....

JOB NO.....

ALBANENE - GUIDE LINE
NON-REPRODUCIBLE
10 SQUARES TO THE INCH

APPENDIX B

EPA VISIBLE EMISSION OBSERVATION FORMS

EPA

VISIBLE EMISSION OBSERVATION FORM 1

Form Number						Page	Of
Continued on VEO Form Number							

Method Used (Circle One) Method 9 203A 203B Other:

Company Name: UNITED STATES SUGAR CORP.
Facility Name: CLEWISTON SUGAR HOUSE
Street Address: S. W. C. OWENS AVE
City: CLEWISTON State: FL Zip: 33440

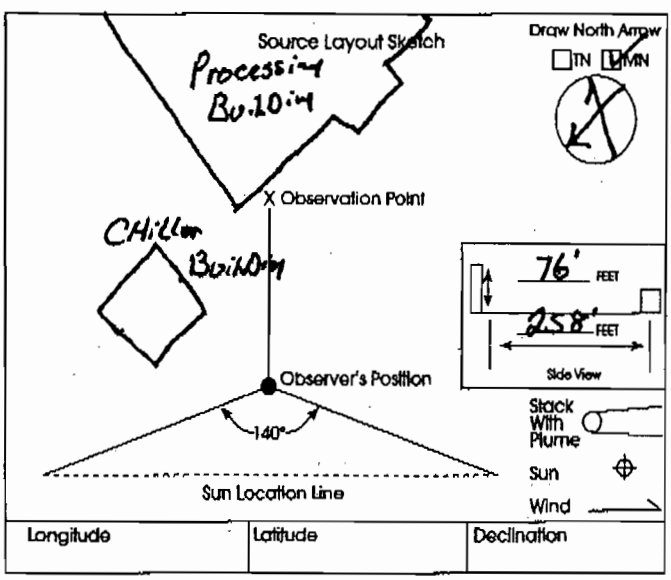
Process: SUGAR DRYER Unit#: 1 Operating Mode: 1090
Control Equipment: WET SCRUBBER Operating Mode: AUTO

Describe Emission Point: 6' WIDE X 7' TALL OUTLET ON THE NW CORNER OF PROCESS BUILDING
Height of Emiss. Pt. Start: 76' End: SAME
Height of Emiss. Pt. Rel. to Observer Start: 76' End: SAME
Distance to Emiss. Pt. Start: 258' End: SAME
Direction to Emiss. Pt. (Degrees) Start: 124° End: SAME

Vertical Angle to Obs. Pt. Start: 16° End: SAME
Direction to Obs. Pt. (Degrees) Start: 124° End: SAME
Distance and Direction to Observation Point from Emission Point Start: 2' OUT FROM VENT End: SAME

Describe Emissions Start: COMING End: SAME
Emission Color Start: WHITE End: SAME
Water Droplet Plume: Attached ☐ Detached ☑ None ☐

Describe Plume Background Start: BUILDING End: SAME
Background Color Start: YELLOW End: SAME
Sky Conditions Start: SCATTERD End: SAME
Wind Speed Start: 5-7 End: SAME
Wind Direction Start: NW End: SAME
Ambient Temp. Start: 91 End: SAME
Wet Bulb Temp.
RH Percent: 32



Longitude	Latitude	Declination

Additional Information:

Observation Date: 4-3-06	Time Zone: EDST	Start Time: 3:32 P.m	End Time: 3:44 P.M.

Min \ Sec	0	15	30	45	Comments
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Observer's Name (Print): STEVE MAMMEN
Observer's Signature: [signature] Date: 4-3-06
Organization: USSC
Certified By: ETA Date: 11-30-05

USSC-ES-0001

EPA

VISIBLE EMISSION OBSERVATION FORM 1

Form Number						Page	Of
Continued on VEO Form Number							

Method Used (Circle One): Method 9 | 203A | 203B | Other: _____

Company Name: United States Sugar Corp.
Facility Name: Clewiston Sugar House
Street Address: S. W.C. Owens Ave
City: Clewiston | State: FL | Zip: 33440

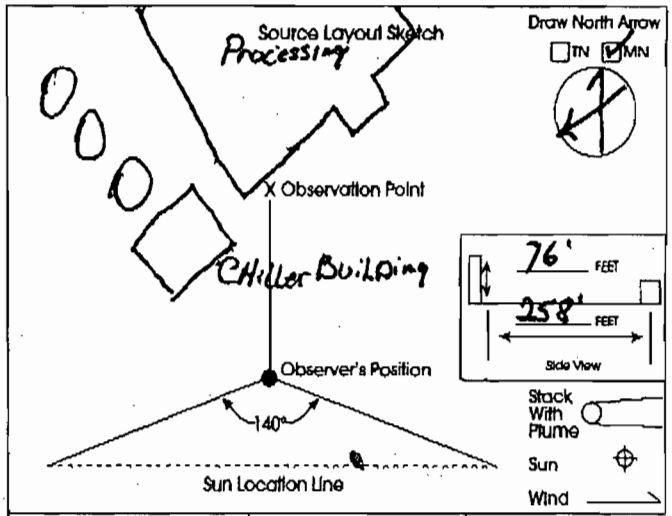
Process: Sugar Dryer | Unit: 1 | Operating Mode: 100%
Control Equipment: Wet Scrubber | Operating Mode: AUTO

Describe Emission Point: 6 wide x 7' tall outlet on the NW Corner of Process Building
Height of Emiss. Pt. Start: 76 End: SAME | Height of Emiss. Pt. Rel. to Observer Start: 76 End: SAME
Distance to Emiss. Pt. Start: 258' End: SAME | Direction to Emiss. Pt. (Degrees) Start: 124° End: SAME

Vertical Angle to Obs. Pt. Start: 16° End: SAME | Direction to Obs. Pt. (Degrees) Start: 124° End: SAME
Distance and Direction to Observation Point from Emission Point Start: 2 out from vent End: SAME

Describe Emissions Start: None End: SAME
Emission Color Start: Clear End: | Water Droplet Plume Attached ☐ Detached ☐ None ☑

Describe Plume Background Start: Building End: SAME
Background Color Start: Yellow End: SAME | Sky Conditions Start: Scattered End: SAME
Wind Speed Start: 7-10 End: SAME | Wind Direction Start: NW End:
Ambient Temp. Start: 86 End: SAME | Wet Bulb Temp.: 86 | RH Percent: 38%



Longitude	Latitude	Declination

Additional Information:

Observation Date	Time Zone	Start Time	End Time
4-4-06	EDST	3:29 P.M.	3:41 P.M.

Sec / Min	0	15	30	45	Comments
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Observer's Name (Print): Steve Mammen
Observer's Signature: [signature] | Date: 4-4-06
Organization: USSC
Certified By: ETA | Date: 11-30-05

EPA

VISIBLE EMISSION OBSERVATION FORM 1

Form Number		Page	of
Continued on VEO Form Number			

Method Used (Circle One): Method 9 | 203A | 203B | Other: _____

Company Name: UNITED STATES Sugar Corp.		
Facility Name: Clewiston Sugar House		
Street Address: S. W.C. Owens AVE		
City: Clewiston	State: FL	Zip: 33440

Process: Sugar Dryer	Unit#: 1	Operating Mode: 20%	
Control Equipment: WET Scrubber		Operating Mode: AUTO	

Describe Emission Point: 6' wide X 7' TALL OUTLET ON THE NW Corrner OF Process Building

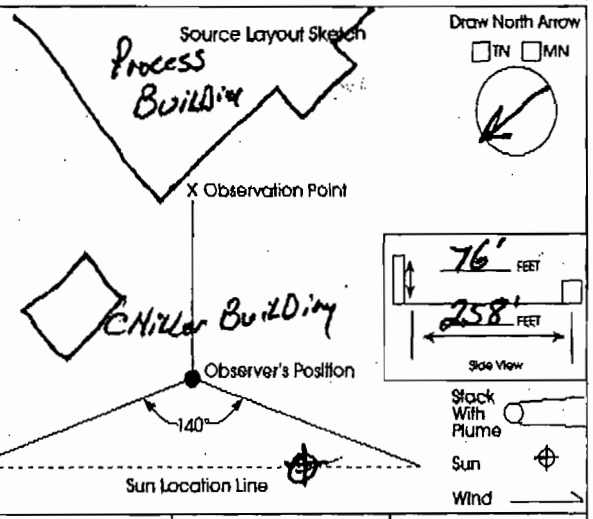
Height of Emiss. Pt. Start: 76'	End: SAME	Height of Emiss. Pt. Rel. to Observer Start: 76'	End: SAME
Distance to Emiss. Pt. Start: 258'	End: SAME	Direction to Emiss. Pt. (Degrees) Start: 124°	End: SAME
Vertical Angle to Obs. Pt. Start: 16°	End: SAME	Direction to Obs. Pt. (Degrees) Start: 124°	End: SAME

Distance and Direction to Observation Point from Emission Point: Start: 2' OUT From VENT End: SAME

Describe Emissions Start: NONE		End: SAME	
Emission Color Start: CLEAR	End: SAME	Water Droplet Plume: Attached ☐ Detached ☐ None ☑	

Describe Plume Background Start: Building		End: SAME	
Background Color Start: yellow	End: SAME	Sky Conditions Start: SCATTERD	End:
Wind Speed Start: 5-10	End: SAME	Wind Direction Start: SW	End: SAME
Ambient Temp. Start: 94°	End: SAME	Wet Bulb Temp.: 68°	RH Percent: 30%

Source Layout Sketch



Draw North Arrow: ☐TN ☐MN

Longitude	Latitude	Declination

Additional Information:

Observation Date: 4-17-06	Time Zone: EDST	Start Time: 3:28 P.M.	End Time: 3:40 P.M.

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Observer's Name (Print): Steve Mammen	
Observer's Signature	Date: 4-17-06
Organization: USSC	
Certified By: ETA	Date: 11-30-05

EPA

VISIBLE EMISSION OBSERVATION FORM 1

Form Number		Page	Of
Continued on VEO Form Number			

Method Used (Circle One) Method 9 203A 203B Other: _____

Company Name: UNITED STATES Sugar Corp.
Facility Name: Clewiston Sugar House
Street Address: S. W.C. OWENS AVE
City: Clewiston | State: FL | Zip: 33440

Process: Sugar Dryer | Unit: 1 | Operating Mode: 40%
Control Equipment: WET SCRUBBER | Operating Mode: AUTO

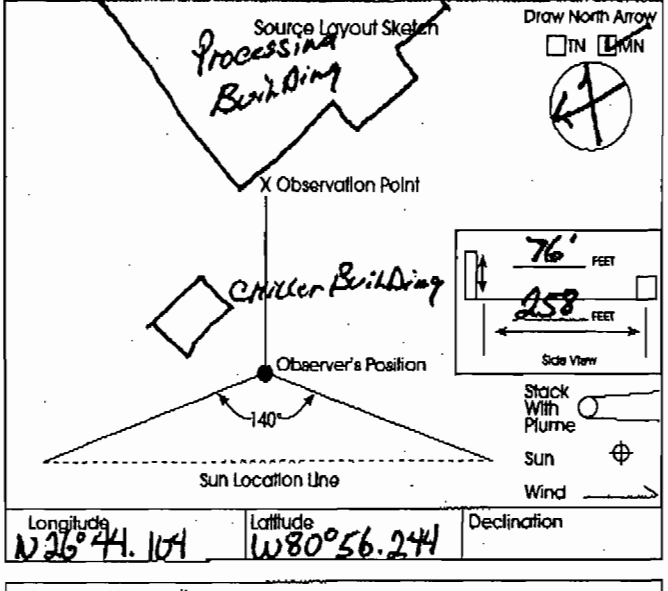
Describe Emission Point: 6' WIDE X 7' TALL OUTLET ON THE NW CORNER OF Processing BUILDING
Height of Emiss. Pt. Start: 76 End: SAME | Height of Emiss. Pt. Rel. to Observer Start: 76' End: SAME
Distance to Emiss. Pt. Start: 258' End: SAME | Direction to Emiss. Pt. (Degrees) Start: 124° End: SAME

Vertical Angle to Obs. Pt. Start: 16° End: SAME | Direction to Obs. Pt. (Degrees) Start: 124° End: SAME
Distance and Direction to Observation Point from Emission Point Start: 2' OUT FROM VENT End: SAME

Describe Emissions Start: NONE End: SAME
Emission Color Start: CLEAR End: SAME | Water Droplet Plume Attached ☐ Detached ☐ None ☑

Describe Plume Background Start: BUILDING End: SAME
Background Color Start: YELLOW End: SAME | Sky Conditions Start: OVERCAST End: SAME
Wind Speed Start: 3-5 End: SAME | Wind Direction Start: NW End:
Ambient Temp. Start: 88° End: SAME | Wet Bulb Temp.: 74 | RH Percent: 50%

Source Layout Sketch



Longitude: N 26° 44. 104 | Latitude: W 80° 56. 244 | Declination:

Additional Information:

Observation Date	Time Zone	Start Time	End Time
4-26-06	EDST	4:07 P.M.	4:19 P.M.

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Observer's Name (Print): STEVE MAMMEN
Observer's Signature: [signature] Date: 4-26-06
Organization: USSC
Certified By: ETA Date: 11-30-06

APPENDIX C

WINKLER APC, LLC REPORT

June 9, 2006

Winkler APC, LLC
14911 Lake Olive Drive
Ft. Myers, FL 33919
Ph: 239-466-6367
Fax: 309-276-1399
Email: w1nkler@comcast.net

US Sugar Corporation
1731 South W.C. Owen Ave.
Clewiston, FL 33440-1207

ATT: Don Griffin

REF: USSC P.O. # C222147
White Sugar Dryer Dust Collector Study
June 2, 2006 ACE Test Report

Dear Mr. Griffin,

Summary:

The low emissions shown in PM10 test results indicate that the scrubber is doing a very good job of removing dry sugar dust particles. In general particles less than 10 microns are of greater concern than larger particles. The high grain loading in the Method 5 test results (compared to the low PM10 results) show that the scrubber is not properly removing the large (over 10 microns) recycle water droplets that are generated within the scrubber. The scrubber is emitting these large droplets containing 15% dissolved sugar solids-and these account for the higher grain loading in the Method 5 test than the PM10 test. These large droplets drop out on site and are a housekeeping problem.

Details:

Scrubber emissions are a combination of uncaptured dry solids and dissolved solids in droplets that escape from the mist eliminator. A properly operating 10" w.g. pressure drop venturi scrubber should have very little dry PM emissions above 1 micron and no dry PM emissions above 10 microns. Please Refer to "FIG. 1". There is an average of 0.0314 gr/dscf Total PM and an average of 0.00168 gr/dscf of PM under 10 microns. In a properly operating 10" w.g. scrubber there are virtually no emissions over 10 microns in size and the Method 5 results are virtually equal to the PM10 results. Since the Method 5 emissions is approximately 18 times the PM10 emissions- excessive droplet carryover from the scrubber must be occurring.

All wet scrubbers pass the air stream through a water droplet cloud. The fine solid particulate is captured on the droplets by inertial impaction. This dryer scrubber is a "gas atomized venturi" design. There are no spray nozzles and the droplet cloud is generated in the venturi throats. In the throats the droplet cloud is formed by the shear forces generated by very high velocity air flowing over water films.

The size of the water droplets formed is primarily a function of the air speed in the throats. The higher the air speed, the higher the pressure drop and the finer the droplet size generated. A properly operating 10" w.g. pressure drop scrubber generates a droplet distribution where the vast amount by weight is above 200 microns.

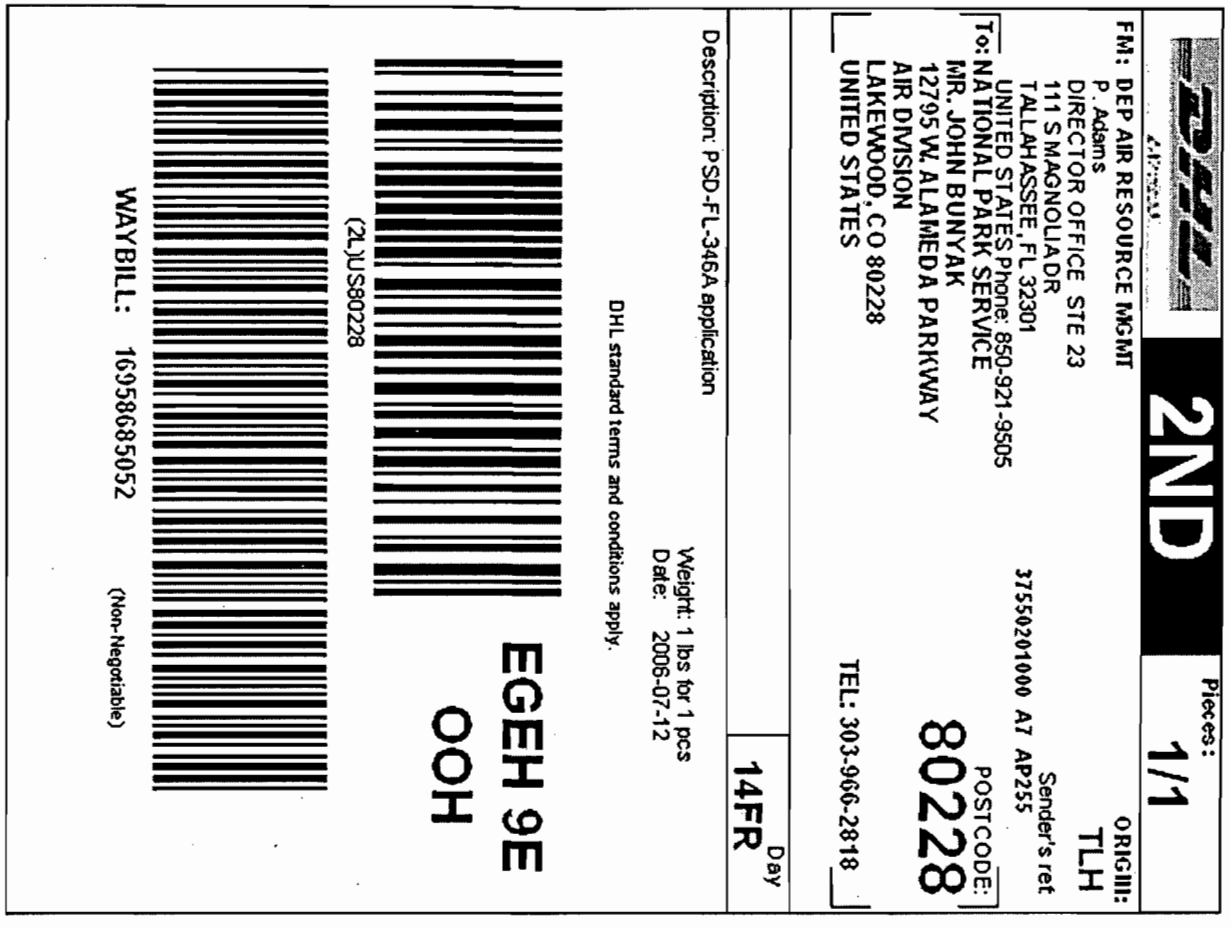
The significance of droplet size is that large 200 micron droplets will be caught in the Method 5 sampling train; but not in the PM10 sampling train. Therefore the carryover is masking the Method 5 results that we would achieve without the carryover. Please refer to "FIG.2". The sampling probe is not meant to remove dust -just to convey it to the final filter where it is captured and weighed. Only very large particles and droplets are captured in the probe and measured in the probe wash. One would normally expect 0.1-2.0 mg solids in the wash if the filter had 1.0 mg solids. There is an exceedingly high proportion of solids in the probe wash (46.5 mg) versus the filter (1.0 mg) and this is another indication that dissolved solids in droplets accounts for the majority of the weight in the Method 5 test. The PM10 test has equipment in the sample train to keep out large liquid drops over 10 microns and gives a more accurate measurement of the true sugar dust emission rate.

As I mentioned in the summary- these 200+ micron droplets cause a housekeeping problem. The dryer scrubber air stream exits the building through a horizontal duct whose roof is approximately 82' above grade. Since a 200 micron water droplet has a terminal settling velocity of 2.2 feet per second therefore it takes approximately 37 seconds for the droplet to reach the ground-regardless of wind speed. From visual inspections-most dropout is in the immediate area. If there is a steady wind the droplets can travel horizontally. For example-with a steady 30 mph (44 ft/sec) wind the 200 micron droplets would travel horizontally approximately (44x37=) 1628 feet before reaching the ground.

If horizontal dispersion is of concern a downward turning elbow could be put on the current horizontal outlet duct. If –for example-the elbow discharge velocity were 3000 fpm (50 ft/sec) then the droplet settling rate would be 52.2 ft/sec. This is 23 times the gravitational settling rate therefore the droplets would travel approximately 1/23rd of 1628 feet, or about 71 feet.

Regards,

Gene Winkler
Winkler APC LLC



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Please fold or cut in half

DO NOT PHOTOCOPY

Using a photocopy could delay the delivery of your package and will result in additional shipping charge

SENDER'S RECEIPT
Waybill #: 16958685052

To(Company):
National Park Service
Air Division
12795 W. Alameda Parkway

Lakewood, CO 80228
UNITED STATES

Attention To: Mr. John Bunyak
Phone#: 303-966-2818

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 4.91
Protection: Not Required
Description: PSD-FL-346A application

Weight (lbs.): 1
Dimensions: 0 x 0 x 0

Ship Ref: 37550201000 A7 AP255
Service Level: 2nd Day (2nd business day by 5 PM)

Special Svc:

Date Printed: 7/12/2006
Bill Shipment To: Sender
Bill To Acct: 778941286

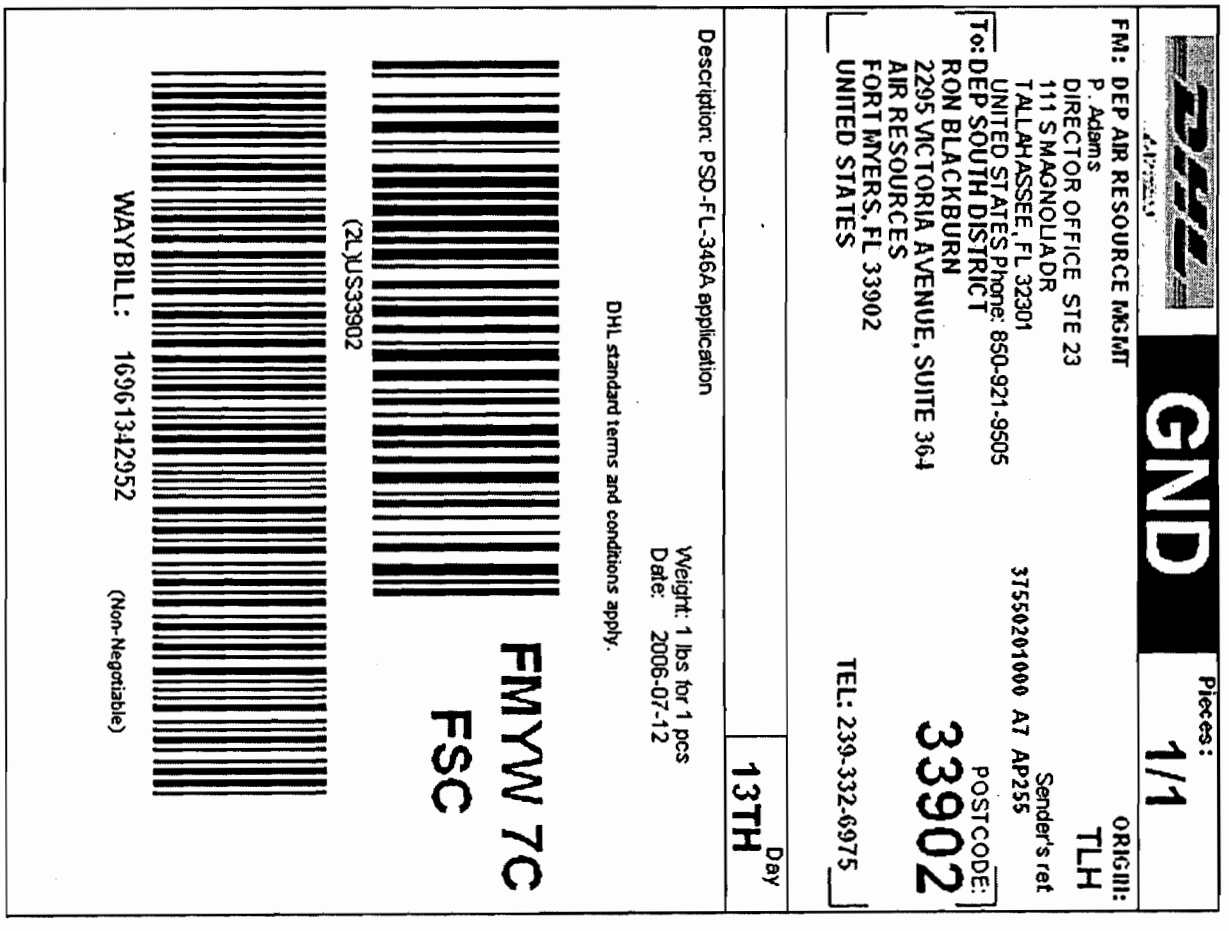
DHL Signature (optional) _____ Route _____ Date _____ Time _____

For Tracking, please go to www.dhl-usa.com or call 1-800-225-5345

Thank you for shipping with DHL

Create new shipment ▶ View pending shipments Print waybill

DHL EXPRESS



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DO NOT PHOTOCOPY

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SENDER'S RECEIPT
Waybill #: 16961342952

To(Company):
DEP South District
Air Resources
2295 Victoria Avenue, Suite 364

Fort Myers, FL 33902
UNITED STATES

Attention To: Ron Blackburn
Phone#: 239-332-6975

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 3.1
Protection: Not Required
Description: PSD-FL-346A application

Weight (lbs.): 1
Dimensions: 0 x 0 x 0

Ship Ref: 37550201000 A7 AP255
Service Level: Ground (Est. delivery in 1 business day(s))

Special Svc:

Date Printed: 7/12/2006
Bill Shipment To: Sender
Bill To Acct: 778941286

DHL Signature (optional) _____ Route _____ Date _____ Time _____

For Tracking, please go to www.dhl-usa.com or call 1-800-225-5345

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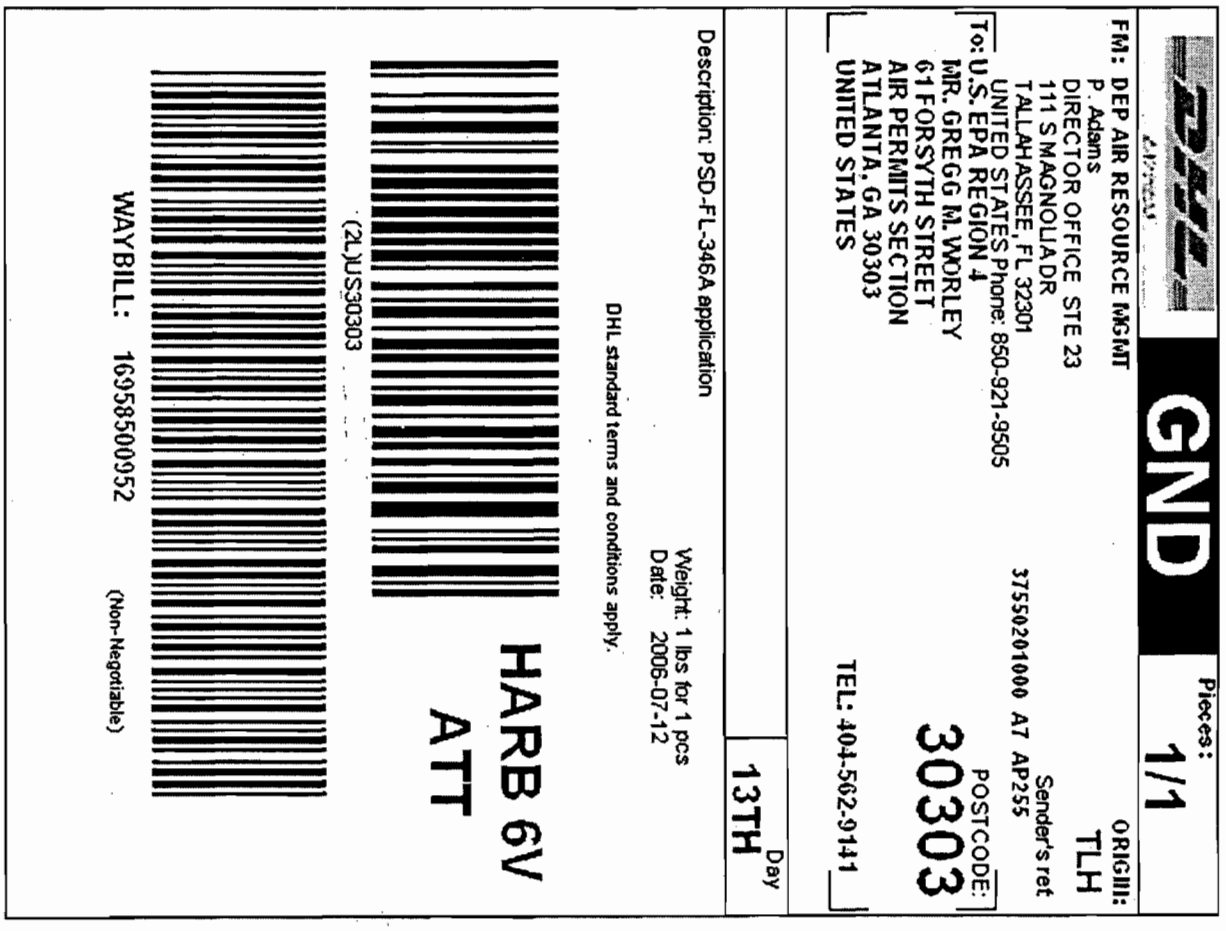
DHL EXPRESS



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Please fold or cut in half

DO NOT PHOTOCOPY

Using a photocopy could delay the delivery of your package and will result in additional shipping charge

SENDER'S RECEIPT
Waybill #: 16958500952

To(Company):
U.S. EPA Region 4
Air Permits Section
61 Forsyth Street

Atlanta, GA 30303
UNITED STATES

Attention To: Mr. Gregg M. Worley
Phone#: 404-562-9141

Sent By: P. Adams
Phone#: 850-921-9505

Rate Estimate: 3.1
Protection: Not Required
Description: PSD-FL-346A application

Weight (lbs.): 1
Dimensions: 0 x 0 x 0

Ship Ref: 37550201000 A7 AP255
Service Level: Ground (Est. delivery in 1 business day(s))

Special Svc:

Date Printed: 7/12/2006
Bill Shipment To: Sender
Bill To Acct: 778941286

DHL Signature (optional) _____ Route _____ Date _____ Time _____

For Tracking, please go to www.dhl-usa.com or call 1-800-225-5345

Thank you for shipping with DHL

Create new shipment ▶ View pending shipments Print waybill

DHL EXPRESS