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MAY 06 2011

BUNEAU OF AIR REGULATION

May 3, 2011 Hand Deliver

Mr. Rick Bradburn, Air Program Administrator Florida Department of Environmental Protection Northwest District 160 W. Government Street, Suite 308 Pensacola, Florida 32502

RE: FILE NO. 0330040-036-AC

ASCEND PERFORMANCE MATERIALS, PENSACOLA SITE

Dear Mr. Bradburn:

Ascend Performance Materials LLC (Ascend) received a request for additional information (RAI) from the Florida Department of Environmental Protection (FDEP) Northwest District Office for the 1080 MAR Air Permit Application (FDEP File No. 0330049-036-AC) in a letter dated February 28, 2011. Ascend is pleased to provide this response to the RAI. In addition, Ascend is providing the attached updated PSD applicability analysis to support the RAI responses and is based on additional discussions with FDEP.

Application Section I, Page 3 (Scope of Application) does not list Emissions Units 014, 015 and 016 (boilers 4, 5 and 6), yet the project takes credit for reducing SO2 emissions by placing a lower limit on the allowable fuel oil fed to these boilers. Please submit an Emissions Unit Information section (Section III) for the affected boilers and a corrected Scope of Application.

Response: A new Section III of the FDEP application form for the Emission Units 014, 015, and 016 is included as Attachment 1. Based on the updated PSD applicability analysis, Ascend is requesting PSD avoidance emissions limits for boilers 7, 8, 9, and the cogen boiler in addition to boilers 4, 5, and 6. As a result, new Section III of the FDEP application form for boilers 7, 8, and 9, and the cogen boiler are also included in Attachment 1. The revised Application Information page (page 3) is attached in Attachment 2.

Item 2. Application Section II.A., Page 7 requires, for the Facility Location and Type, that the UTM coordinates be given to "at least the nearest tenth of a kilometer for the approximate center of the points of air pollutant emissions at the facility." Please confirm that these coordinates should be listed as 476.0 and 3385.0 in the permit.

Response: The coordinates referenced above are an approximate center of the Pensacola Plant manufacturing units. The coordinates are 476.0 and 3385.2 respectively. The revised diagram entitled Permitted Stack Inventory Site Plan is included in Attachment 3 and illustrates the general location of the existing as well as proposed emission units. The longitude/latitude of the flagpole located at the facility entrance is shown on the diagram.

Item 3. Application Section II.C., Page 11 requires "a plot plan of the facility showing the location of existing and proposed manufacturing processes, control equipment, stacks, vents, identifiable sources of fugitive emissions and principal buildings." Further, "if this application is being submitted to obtain an air construction permit for a proposed new emissions unit at the facility, the plot plan should be drawn to scale, show the precise location of the new emissions unit and its emission point(s), include at least one UTM or latitude/longitude reference coordinate point and compass direction, and provide dimensions, including height, of any buildings

P. O. Box 97 Gonzalez, FL 32560

or structures that may affect dispersion of pollutants from the new emissions unit." Please provide a legible larger copy of the plot plan meeting these requirements, as the one submitted is not readable.

Response: The revised diagram entitled Permitted Stack Inventory Site Plan included in Attachment 3 and illustrates the general location of the existing as well as proposed emission units. Since we are not conducting dispersion modeling at this time, and the height of new structures associated with the new hydrogen plant and new Therminol vaporizer are not finalized, Ascend proposes to provide such detail in the event that dispersion modeling is required in the future.

- Item 4. Application Section III, Emissions Unit Information, Section 1, Area II Adipic Acid.

 Please supply the following supplemental information to help us determine regulatory applicability:
 - a. The applicant has requested that a new emissions unit be designated for new fugitive emissions from the adipic acid process in order to facilitate post project emissions monitoring. Please confirm that fugitive emissions from the existing equipment will continue to be reported under EU 002.

Response: Ascend confirms that existing fugitive emissions from the adipic acid unit will continue to be reported under EU 090, which are the fugitive emissions associated with EU 002. Ascend has requested a new emissions unit for new fugitive emission components associated with this construction permit in order to clearly delineate emission increases associated with this permit.

b. The project proposes to install two new storage tanks, one for Refined Crystallizer Feed and one for Water Mother Liquor. Based on the information in Table 2, these tanks will be a source of VOC emissions. 40 CFR 60 subpart Kb applies to certain tanks that store volatile organic liquids (defined in the regulation as "any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere"). Please provide the information needed to determine subpart Kb applicability to these tanks (size and vapor pressure). Additionally, Section 2.1.4 of Attachment A mentions another tank, Adipic Solution tank. Please provide pertinent information for that tank as well.

Response The proposed new Refined Crystallizer Feed (RCF) tank will have an approximate capacity of 267,300 gallons (1,012 cubic meters) and the proposed new Water Mother Liquor (WML) tank will have an approximate capacity of 96,200 gallons (364 cubic meters). Both tanks will be exempt from 40 CFR 60, subpart Kb per 60.110b(b) due to storing a volatile organic liquid with a true vapor pressure of less than 0.51 psia (3.5 kPa). The calculated vapor pressures of the mixtures for the RCF tank and WML tank are, respectively, 0.002 kPa and 0.0003 kPa. The new proposed Adipic Solution Tank has a capacity of 500 gallons and is thereby exempt from all provision of 40 CFR 60, subpart Kb.

c. The current Title V permit for the facility (0330040-029-AV) states that EU 002 is subject to 40 CFR 63 subpart FFFF. Please indicate where HAPs are handled or may be emitted in this emissions unit to determine the applicability of subpart FFFF.

Response An initial Notification of Compliance Status (NOCS) for subpart FFFF was submitted by the Pensacola Plant in October of 2008. This NOCS had detailed information on each affected process, including the Adipic Acid Unit. The principal HAP associated with adipic acid manufacture is hydrogen cyanide in low concentration; however, all of the process vents, storage/surge vessels, wastewater streams are categorized as Group 2. Per subpart FFFF, this "miscellaneous chemical process unit" or MCPU is not subject to fugitive emission monitoring due to the low concentration of HAP. For reference, please see the NOCS submitted by Ascend to EPA and DEP. The proposed projects in this application will not impact the regulatory status of the Adipic Acid Unit with regard to subpart FFFF. Low

Mr. Rick Bradburn May 3, 2011 Page 3 of 12

concentrations of HAPs are inadvertent byproduct impurities in the adipic acid process and emitted at the TRU and Backup SCR.

d. Table 3 provides an estimate of fugitive emissions from new equipment proposed to be installed by this project. The emission estimate indicates that percent of components at "default zero" is 98%. Please provide screening data or other supporting information for the assumption that 98% of the new equipment will test at "default zero." Also, the regulatory analysis indicates that 40 CFR 60 subpart VV (which carries a leak definition of 10,000 ppm for pumps and valves in light liquid service) is the applicable regulation. Please explain why 40 CFR subpart VVa is not the applicable regulation (which carries a leak definition of 2000 ppm for pumps and 500 ppm for valves in light liquid service) for the facility, since it is being modified after November 7, 2006.

Response With regard to the percentage of components assigned to the "default zero" category for the purpose of calculating emission increases due to new components, Ascend believes this is a conservative (high) estimate of future fugitive emission rates from new components in the Adipic Acid Unit. Actual monitoring data for existing process units (Adipic Acid and Area 480) has shown that greater than 99% of components screen at zero. Regulatory applicability for the Adipic Acid Unit does indicate that NSPS Subpart VVa would be triggered as a result of the projects. Ascend is clarifying with this submittal that NSPS subpart VVa will apply to both EU 090 and the new fugitive emissions associated with the Adipic Acid Unit following installation of new equipment associated with this application.

e. The project proposes to install a new Low Temperature Converter. Based on the converter producing adipic acid, which is one of the compounds listed in 40 CFR 60.707, it appears that the new converter will be subject to 40 CFR 60 subpart RRR, Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes. Please indicate which compliance option Ascend intends to use and provide relevant information regarding the disposition of the vent (if any).

Response Ascend elects to comply with 40 CFR 60.700(d) which provides for compliance with 40 CFR 65, subpart D. The subject vent stream will be a combination of two or more reactor processes and the common recovery system into which their vent streams discharge (40 CFR 60.700(b)(3). TRE calculations for this equipment show Group 2b status for the affected streams. Data used for the TRE calculation was obtained by process modeling as allowed under 40 CFR 65, subpart D. The vent stream will route to the TRU during normal operation and to the Backup SCR during periods when the TRU is not operating.

f. Section 2.1.8 of Attachment A involves upgrades to the 403B still. Please advise if this is the same still discussed in the letter from Timothy Montgomery to the Department dated January 11, 2011. If the 403B still is not the still described in the recent letter, please provide information related to the applicability of 40 CFR 60 subpart NNN, Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.

Response The 403B still is the same as discussed in the letter of January 11, 2011. Per the Department's letter of January 31, 2011, and in compliance with 40 CFR 60 Subpart NNN, Ascend will reassess the Still's Group determination status and notify the Department as required. If the additional water removal is required, Ascend proposes upgrading, adding or replacing the reboiler, condenser, and pumps. Per the Department's letter of January 31, 2011 and in compliance with 40 CFR 60 Subpart NNN, Ascend would reassess the Group determination and notify the Department as required.

g. Section 2.1.9 of the Project Description involves replacement of the existing selective catalytic reduction system (SCR) with a selective non-catalytic reduction system (SNCR) that uses ammonia to break down NOx into water and nitrogen. Please verify that the site-wide emissions of ammonia (fugitives plus emissions from this SNCR and from the one in the nitric acid plant) do not exceed 250 tons per year. Also, please describe the impact this change will have on CO emissions and on the operation of the NOx CEMS.

Response Site wide emissions of ammonia will not exceed 250 tons per year. The estimated ammonia slip from the SNCR unit is 40 ppmv or less which correlates to approximately 1.35 tons or less per year increase from the site. CO emissions as a result of proposed increase production rates are reflected in the TRU emission estimates are not impacted by the selected NOx control technology. The installation of SNCR will not impact operation of the NOx CEMS. Even with the additional ammonia emissions from the SNCR, we expect actual site-wide ammonia emissions to remain less than 5 tons per year. Ascend has attached the ammonia slip and NOx emission guarantee letter from John Zinc for the TRU/SNCR in Attachment 4. Should the department require testing of ammonia slip, Ascend proposes CTM-027 or after consultation with the testing company another appropriate method to be approved by the Department.

h. Attachment APM-EU1-I1 shows two vents to the atmosphere from Adipic Drying and the Transfer System. Please indicate whether these vents are controlled or not and the type of control applied. Please also include the Emissions Unit Control Equipment/Method information required on Pages 16 and 20 of the application.

Response The six adipic acid dryers and loading operations are not associated with EU 002, but are part of other emissions units at the site. APM-EU-I1 has been revised to reflect only EU 002 by deleting reference to downstream emissions units such as the dryers and loading for which there are no physical modifications associated with this project. The revised APM-EU1-I1 is attached in Attachment 5.

i. Application Section III, Emissions Unit Information, Subsection C., Emission Point (Stack/Vent) Information, Page 18 requires the applicant to "enter the emissions unit addressed in this Emissions Unit Information Section, as shown on the facility plot plan or flow diagram. If the emissions unit has multiple emission points...enter the identification numbers or symbols for all of the emission points serving the emissions unit." Page 18 lists only one emission point; however, Attachment APM-EU1-I1 shows four vents to the atmosphere. Please provide a unique number or symbol for each emission point for which permitting is required and show them on the Process Flow Diagram. If vents are for emergency purposes only, please indicate this by some designation such as "EV." This will help in communication regarding specific vents in the future. Larger diagrams such as 11" X 17" (which can easily be folded to fit the application) may be submitted as necessary.

Response: APM-EU1-I1 has been revised (see Attachment 5) to identify the TRU stack and backup SCR stack. Equipment not specifically associated with EU 002 has been removed from this diagram. Revised Page 18 of the application form is included in Attachment 2.

j. Attachment SPM-FUEL does not list the sulfur content of the natural gas used in the TRU. Please submit the latest sulfur analysis for the natural gas being used and an estimate of the SO2 emissions based on the amount of natural gas used.

Response: In the enclosed sulfur analysis in Attachment 6, the sulfur content from a March 9, 2011 sample was <0.03 grains/scf. Ascend has added the corresponding amount of SO2 to emission calculations.

Mr. Rick Bradburn May 3, 2011 Page 5 of 12

Item 5. Application Section III, Emissions Unit Information, Section 2, EU 020 starting on Page 34 describes proposed modifications in the cyclohexane oxidation area of the facility. Please provide the following additional information and clarifications.

a. The Emission Point Comment in subsection C., Page 37 states that "venting to high pressure scrubbers occurs during change from TRU to OBUD." Please explain what this comment means.

Response: The Emission Point Comment in subsection C., Page 37 has been revised to say "venting from the high pressure scrubber occurs during change from TRU to OBUD during emergency events". Revised Page 37 of the application form is presented in Attachment 2. This comment refers to a malfunction of the TRU, an event that requires redirecting the off gas stream. The TRU is the primary control device and the OBUD is the backup control device. Startup of the OBUD is not instantaneous and thus there may exist a period of venting from the high pressure scrubbers during a malfunction of the TRU until the proper operating temperature of OBUD is achieved.

b. The Process Flow Diagram, Attachment APM-EU2-I1, indicates that there are two High Pressure Off-gas Vents. Please verify that these vents are either locked closed, monitored or are classified as emergency vents as required by 40 CFR 63.983(a)(3) (referenced by 40 CFR 63.2450(e) via 63.982(c)).

Response: Yes, the vents are classified as emergency vents per required by 40 CFR 63.983(a)(3). The vents are over-pressure or high-pressure safety vents. Whenever there is malfunction or over-pressure, venting may occur through these safety vents in order to protect the process and control equipment. Ascend will continue to meet all requirements of NESHAP Subpart FFFF.

c. Please indicate on the Process Flow Diagram the proposed tie-ins from the four tanks and two centrifuges, referenced in Section 2.5.1 of Attachment A, to the Low Pressure Recovery Scrubbers.

Response These tanks have been added to the Process Flow Diagram (PFD) (Attachment APM-EU2-I1) and the revised PFD is presented in Attachment 5.

d. Please provide the supporting calculations for the four tanks and two centrifuges referenced in Item c. above to demonstrate that they are included in the baseline emissions that were reported for EU020 during the baseline years for VOC (2004-2005).

Response: Calculations are attached in Attachment 7. Actual VOC emissions from these 4 tanks and 2 centrifuges were 11.45 tons/yr average for 2004/2005. Upon review, Ascend notes that these tanks were not included as part of the AOR for the subject baseline years. Ascend has recalculated the baseline emissions for 2004/2005 using a modification of the approach requested by the Department to restate Halcon emissions post OBUD installation. The reported tank and LP Scrubber emissions from 2007/2008 were removed from the AOR reported emissions and the remaining emissions were used to determine an emission rate which was then converted into equivalent emissions for the 2004/2005 base years. The actual tank and LP Scrubber emissions from 2004/2005 were then added to this value to arrive at the actual emissions. Post emission reduction project emissions (following routing of these tanks and centrifuges to the low pressure scrubber) are included with this submittal.

e. The Continuous Monitor Comment on Page 45 for the KA Recovery Column suggests that there is a vent to the atmosphere from the KA Recovery Column. Please clarify whether this is the case, and if so, identify the location of that emission point on the Process Flow Diagram.

Response: The KA Recovery Column is routed to the low pressure scrubbers. Monitoring of the KA Recovery Column is done in accordance with NSPS Subpart NNN and the existing Title V permit condition.

f. Subsection C., Emission Point (Stack/Vent) Information, Page 37, discusses the TRU and the OBUD, but identifies only one emission point as EU 020 (which is not shown on the process flow diagram). Please assign a unique number or symbol for each emission point and show them on the Process Flow Diagram.

Response: The revised PFD, "Attachment APM-EU2-I1" in Attachment 5 illustrates major equipment associated with EU 020.

Item 6. Attachment A, Section 2.3.1 indicates that the nitric acid plant is currently limited to 1,500 tons per day, which will not be exceeded. However, the last compliance test conducted on December 6, 2010 was only conducted at 1,247 tons per day. Therefore, by Rule 62-297.310(2), the current limit is 1,372 tons per day until the plant can be retested at a higher rate. Please clarify whether the plant has been retested to allow the 1,500 tons per day limit and, if not, verify that the current production limit has not been exceeded since December 6, 2010.

Response: The current production rate has not exceeded 1,372 tons per day. Maximum production since December 6, 2010 occurred on December 16, 2010, when the production was 1,268.8 tons per day. Ascend continues to comply with Rule 62-297.310(2).

Item 7. Application Section III., Emissions Unit Information, Section 3 (nitric acid), Page 53 Identifies the emission point as EU 042. Please "enter the identification number or symbol for the emission point associated with the emissions unit addressed in this Emissions Unit Information Section, as shown on the facility plot plan or flow diagram."

Response: EU 042 is identified on the revised facility plot plan entitled Permitted Stack Inventory Site Plan included in Attachment 3.

Item 8. Application Section III., Emissions Unit Information, Section 3 (nitric acid), subsection G lists an allowable opacity under exceptional conditions of 100% for 60 min/hour. Please cite the authority or regulatory citation for that allowable opacity.

Response: In accordance with Rule 62-210.700(1), F.A.C., opacity provisions are not applicable during periods of startup, shutdown, or malfunction. Also, per 40 CFR 60.11(c), opacity provisions do not apply during periods of startup, shutdown, or malfunction.

Item 9. Application Attachment A, Section 3.3.1 proposes to reduce NOx emissions from the nitric acid plant by increasing ammonia injection to the SCR. Please show the SCR and ammonia injection point on the Process Flow Diagram, Attachment APM-EU3-I1, and provide documentation or supporting calculations to verify that this emission reduction can be achieved.

Response: Attachment APM-EU3-I1 has been revised to illustrate the locations of the SCR and ammonia injection. The revised APM-EU3-I1 is presented in Attachment 5. Ascend conducted rate tests in 2010 to demonstrate that the SCR could be optimized to achieve the lower projected emission rate for NOx, primarily by increasing the ammonia injection rate.

Item 10. Application Section III., Emissions Unit Information, Section 4 (P2K), Page 64 lists "flare and backup flare" as the control equipment for this emissions unit. Additionally, Attachment APM-EU4-I3 provides vendor data for two different flare designs. Please explain which flare is the primary flare and which one is the backup flare and describe the parameters that are monitored to ensure compliance with NSPS (40 CFR 60 subparts A, NNN, and RRR) and NESHAP (40 CFR 63 subparts A, F and G). Please also provide documentation to support that the flares will meet the requirements of 40 CFR 63.11 at the production rates proposed in this project.

Response: There are 2 identical flares (Model 648 enclosed-type). The vendor data from the original 2001 HON Notice of Compliance Status are presented in Attachment 8. The presence of a flame is monitored by 3 flame scanners per flare (one for each stream) and alarm in the control room should no flame be detected. Flare outrages are logged and submitted in the semi-annual HON report. The flares were designed to support maximum operating rates and the projects proposed do not increase rates above that limit. These units are designed, operated and monitored consistent with flare provisions as outlined in 40 CFR 63.11. Per 40 CFR 63.110 (regulatory overlap) the NSPS provisions of 40 CFR 60 are superseded by the requirements of 40 CFR 63 Subparts A, F and G.

To document compliance with 40 CFR 63.11(b)(6), the individual flare stream BTU values and tip velocities are as follows:

			Allowed		Indiv	ridual
i I			Exit		Surface	Exit
			Velocity		Area	Velocity
Stream	BTU/scf	MJ/scm	ft/sec	scfm	ft^2	ft/sec
Reactor & Atm. Column Vents	223	8.32	122	353.5	0.0639	92.2
Tank Vent	650	24.21	154	68.34	0.0150	75.9
Vacuum System Vent	432	16.07	85	44.01	0.0123	59.8

Flare Tip velocity and heat content requirements are specified in 40 CFR 63.11, summarized below:

MAX Exit Velocity for non-assisted Hydrogen Flares (v%-wet H2 > 8.0) = 122 ft/s (Reactor & Atm. Column Vents contains 73.7% by volume Hydrogen)

MIN Heating Value for non-assisted flares = 200 btu/scf

MAX Exit Velocity for non-H2 Flares: 60 ft/s or $Log_{10}(V_{max}) = (Ht + 28.8) / 31.7$ (with 400 ft/s MAX)

where:

V_{max} is in m/s H_t heating value in MJ/scm

Item 11. Attachment A, Section 2.6.2 describes improvements to barge loading proposed by this project. Please explain how vapor emissions from barge loading are estimated and controlled (if applicable) and where they are accounted for in the emissions analysis for this project.

Response: The proposed barge loading is vapor balanced, which means any emissions from the loading operation will go back to the tanks. The proposed barge loading system will be vapor balanced.

- Item 12. Attachment A, Section 2.7 and Application Section 5 describe modifications to the nylon polymerization Emissions Units 081 and 082 proposed by this project. Please provide the following additional information to help us determine regulatory applicability.
 - a. Section 2.7.6 addresses transitioning CP lines 21 and 18 to pelletizing lines. Table 9 of the 0330040-036-AC application presents the estimated PM10 emission increases from this modification due to elutriation and conveying. The emission factor listed for elutriation is 0.01 grains per standard cubic foot (based on bag filter vendor specs) and for conveying is 0.004 grains per standard cubic foot (based on test results conducted by TRC, Test Report 39596-001, conducted on 4/16/2003).

Mr. Rick Bradburn May 3, 2011 Page 8 of 12

Table 1 from 0330040-033-AC application issued March 2010 documents similar projects undertaken within the last five years as follows:

Permit No.	Date issued	PM10 increase	comment
0330040-020-AC	March 2006	0.5 TPY	CP 27 conversion
0330040-021-AC	June 2006	1.0 TPY	CP 26 conversion
0330040-023-AC	December 2006	1.5 TPY	CP 24 & 25 conv.
0330040-025-AC	August 2007	1.45 TPY	CP 28 & 29 conv.
0330040-030-AC	December 2008	1.8 TPY	CP 22 &23 conv.
0330040-033-AC	March 2010	1.7 TPY	CP 16 & 17 conv.
Total:		7.95 TPY	

Please explain why the particulate emissions from these projects are not considered contemporaneous for the purposes of the current project.

Response: The CP Lines are affected units of the project. The potential emissions as presented in Table 1, above, have been added to Table 1a of the PSD applicability analysis. The application form for EU081/EU082 has been revised to add pollutant sections for PM/PM10 and PM2.5. The revised pollutant sections are presented in Attachment 2.

b. Application Section III, Emissions Unit Information, subsection E, Page 81 lists VOC as the only pollutant emitted. The application instructions require that each pollutant be identified that the emissions unit would "emit or have the potential to emit in an amount greater than a threshold amount," which is 5.0 tons per year for PM10. Based on the information presented in a., above, please explain why PM10 is not listed as an emissions unit pollutant for this emissions unit.

Response: Please see the response for Item 12a above.

c. Application Section III, Emissions Unit Information, subsection A, Emissions Unit Control Equipment/Method, Page 77 lists the adsorption column as the only control device employed by this emissions unit. Please list all the control devices used to reduce particulate matter emissions from this emissions unit (baghouses, scrubbers, etc.).

Response: In addition to the column referenced above, individual CP lines have Monomer Scrubbers that control VOCs from the emission unit. The projects referenced in Table 1 above did not add any PM control devices to the emission unit. The emissions from the TRC test report (0.0030 grains/dscf) vent uncontrolled from miscellaneous dryer and convey vents as identified on the applications. (In fact other than the silos and loading facility constructed under permit 0330040-025-AC, all loading and gravity blender (silo) emissions were at sources designated as insignificant emission units in the Title V permit.) Following discussions with the Department, PM emissions from the monomer scrubbers and malfunction events using appropriate emission factors have also been added to the application. See the revised Table 1a and new Table 14 in Attachment 7.

The CP 16/17 conversion project ties into an existing elutriator and baghouse to make use of unused capacity. The elutriator and baghouse are identified as an insignificant activity in the existing Title V permit as Polymer Fines Removal System with baghouse." This source was designated an insignificant activity in permit 0330040-016-AC. Source testing has previously determined emissions as less than 0.003 grains per dscf which was conservatively used in calculations for permit 0330040-033-AC. This project did not change the status of the system.

Mr. Rick Bradburn May 3, 2011 Page 9 of 12

d. Please indicate PM10 emission points on Attachment APM-EU5-I1, the Process Flow Diagram. Please identify the emission points with a number or symbol that can be cross-referenced to Application Section III., subsection C, page 79.

Response: A revised APM-EU5-I1 is presented in Attachment 5.

Item 13. Table 5 provides an estimate of fugitive emissions from the new therminol vaporizer proposed to be installed by this project. The emission estimate indicates that percent of components at "default zero" is 98%. Please provide screening data or other justification for the assumption that 98% of the new equipment will test at "default zero."

Response: With regard to the percentage of components assigned to the "default zero" category for the purpose of calculating emission increases due to new components, Ascend believes this is a conservative (high) estimate of future fugitive emission rates from new components in Therminol service. Actual monitoring data for existing process units (Adipic Acid and Area 480) has shown that greater than 99% of components screen at zero.

Item 14. Table 6 uses very low emission factors to estimate NOx and CO emissions from the steam methane reformer exhaust stack. Please verify whether a catalyst is used to achieve the low CO value. Also, please explain how these low emissions will be verified and maintained.

Response: The emission factors are based on data from the hydrogen plant vendor, Air Products. The current design reflects a low NOx burner from Hamworthy Peabody which provides burner specific data (0.05 lb NOx /MMBTU and 0.015 lb CO / MMBTU). These factors are reflected in the emission calculations for the new hydrogen plant. An oxygen analyzer in the reformer flue gas will be utilized to ensure good combustion. There are no catalysts utilized for emission control.

Item 15. Table 6 estimates the emissions of SOx from the proposed new hydrogen generating plant at 0.35 lb/hr. Please explain the calculations to get 0.35 lb/hr of SOx from the information provided in Footnote c, namely 3 grains sulfur per 100 scf of gas.

Response: During normal operation, the primary fuel to the reformer furnace will be pressure swing adsorption (PSA) purge gas and the trim fuel will be pipeline quality natural gas. The emission factor is derived as follows:

- A. The Process heater has 2 Fuel sources.
 - 1. Major Fuel is Purge Gas which was natural gas that has been desulfurized by passing over zinc oxide and reformed.
 - 2. Natural Gas Trim (supplemental) Fuel
- B. Conservatively assume that natural gas has 3 grains sulfur per 100 scf. This is equivalent to 50.7 ppmv (50.7 x 10⁻⁶ lb-moles S/lb-mole natural gas). This is a conservative assumption as the most recent natural gas analysis was less than 0.03 grains per 100 scf.
- C. Per the vendor, the Natural Gas Trim fuel flow is 106 lb-moles/hr at maximum rates.
- D. Hourly SO2 Emission Rate (ER) is as follows:

ER = Trim Fuel Flow x Total Sulfur x 64 lbs SO₂/lb-mole S

Mr. Rick Bradburn May 3, 2011 Page 10 of 12

ER = (106 ib-moles/hr Natural Gas) x 50.7 ppmv x 64 lbs SO₂/lb-mole S

ER = 0.35 lb/hr SO₂

Item 16. Section 7 of the application proposes to install a new Hydrogen Generating Plant that uses steam methane reforming technology. Table 1 indicates that the steam rate required to support this project does not increase over that required to support the last adipic rate increase from 850 to 990 MAR proposed in 0330040-035-AC. Please explain how the steam rate to support the 0330040-036-AC project can be the same as the steam rate to support the 0330040-035-AC project with the addition of a new steam methane reformer.

Response: The proposed new Hydrogen plant will utilize heat recovery and generate substantially more steam than is required for the reformer. As such, the new hydrogen plant will be a net exporter of steam. In addition, the increased utilization of the Nitric Acid Plant will result in addition steam generation. This steam is the amount above the steam utilized within the nitric acid plant / new hydrogen plant and is available for use elsewhere at the Pensacola Plant. The following summarizes the additional steam requirement for the project:

From 930 Permit (Incremental Steam Basis from 850 MAR)

Wet Adipic Production Dry Adipic Production Nylon Production DME Production AGS Steam Confidential
Process
Data

Total:

313,914

Adjusted for 1080 Permit (Incremental Steam Basis from 850 MAR)

Wet Adipic Production Dry Adipic Production Nylon Production DME Production AGS Steam 10^6 Btu

Confidential

Process

Data

Total:

651,602

Additional Units

HMD Steam
P2K Steam
Steam from Nitric
Steam from new H2 plant

Confidential Process Data

Total:

-358268

Net increase:

293,334

Mr. Rick Bradburn May 3, 2011 Page 11 of 12

Item 17.

Application Section III., Emissions Unit Information, subsection C., in Section 7, page 113 requires the identification of emission points on the plot plant or process flow diagram. Please provide an identification number or symbol for each emission point and show them on the Process Flow Diagram, Attachment APM-EU7-I1.

Response: Page 113 has been revised to indicate two separate emission points associated with the emissions unit: (1) combustion flue gas from the reformer; and (2) emissions from a flare utilized for SSM events. Revised Page 113 is presented in Attachment 2. Attachment APM-EU7-I1 has been revised accordingly and presented in Attachment 5.

Item 18. Attachment APM-EU7-I1, the Process Flow Diagram for the new hydrogen generating plant indicates that the natural gas feed will be desulfurized. A process vent from the desulfurizer to the flare is shown. Please clarify whether this vent is for regenerating the desulfurizers or for other purposes and whether the emissions from the flare from this vent are included in Table 6.

Response: Attachment APM-EU7-I1 has been revised to clarify that the vent stream associated with the desulfurizer is for overpressure conditions only and not for the purposes of routing sulfur to the flare. The zinc oxide bed utilized for desulfurization will capture the sulfur for ultimate disposal as a solid waste. All emissions from the flare are accounted for in Table 6 (see Attachment 7). Other than pilot flame emissions, all flare emissions are due to SSM events.

Item 19. Table 13 presents an estimate of the increase in particulate emissions as a result of increasing the circulation rate in five cooling towers and construction of a new cooling tower. The drift rates which are utilized are significantly less than the rate presented in AP-42 for induced draft towers, which is 0.02% of circulation rate. Please explain how the drift rates used in Table 13 were obtained.

Response: The AP-42 emission factors for cooling towers were established in the early 1990s based on then available technology. The technology to reduce drift has advanced over the years. State of the art drift eliminators now have drift rates of 0.0005% for counter flow towers and 0.001% for cross flow towers. The most recent drift eliminators Ascend installed on Cooling Towers 3 (a cross flow tower) are rated at 0.001% drift rate. Drift eliminator efficiencies on all Cooling Towers are based on Vendor ratings. Vendor specifications for the most recent installation are presented in Attachment 9.

Item 20. Each of sections 3.1.3 through 3.1.8 in Attachment A end with the sentence, "Any production rate related changes in emissions are reflected in Tables 1 and 2." Please clarify whether there are other changes in emissions as a result of the proposed project that are not "production rate related."

Response: All emissions changes, whether production rate related or otherwise, are reflected in revised Tables 1 and 2 provided in Attachment 7.

On the last page of Table 1, the "total emissions all emission units" table does not match the "PSD Review Applicability" table below it. Please reconcile the discrepancy and submit a corrected Table 1.

Response: Revised Tables (1a, 1b and 1c) are provided in Attachment 7.

Item 22. Please provide PM2.5 emission estimates for the emissions units affected by this project.

Response: Calculations for PM2.5 emissions are provided in revised Table 1a through 17.

Mr. Rick Bradburn May 3, 2011 Page 12 of 12

Ascend has also revised several "Emission Point Information" forms to provide the revised emission point IDs and "Emission Unit Pollutant Detail Information" forms to provide the new requested emissions limits. These revised pages are presented in Attachment 2.

Thank you for considering the information. Should you have any questions concerning this submittal, please contact Roy Noble. at (850) 968-8721.

Sincerely,

Timothy N. Montgomery

cc: Bobby Bull, FDEP, Tallahassee

APPLICATION INFORMATION

Owner/Authorized Representative Statement

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

1. Owner/Authorized Representative Name: Timothy N. Montgomery, Chemical & Utilities Plant Manager

2. Owner/Authorized Representative Mailing Address...

Organization/Firm: Ascend Performance Materials LLC

Street Address: P.O. Box 97

City: Gonzalez

State: FL

Zip Code: 32560-0097

3. Owner/Authorized Representative Telephone Numbers...

Telephone: (850) 968-7114

ext. Fax:

Fax: (850)968 - 7220

4. Owner/Authorized Representative E-mail Address: tnmont@ascendmaterials.com

5. Owner/Authorized Representative Statement:

I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.

Signature

Date

5/4/11

DEP Form No. 62-210.900(1) – Form Effective: 03/11/2010

4

APPLICATION INFORMATION

Professional Engineer Certification

1.	Professional Engineer Name: Kennard F. Kosky
	Registration Number: 14996
2.	Professional Engineer Mailing Address
	Organization/Firm: Golder Associates Inc.**
	Street Address: 6026 NW 1 st Place
	City: Gainesville State: FL Zip Code: 32607
3.	Professional Engineer Telephone Numbers
	Telephone: (352) 336-5600 ext.21156 Fax: (352) 336-6603
	Professional Engineer Email Address: kkosky@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 x, 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.
	113mex + 1/3/1/ 5/4/11
	Signature Date
	(seal)

Project No. 1038657

*Attach any exception to certification statement.

**Board of Professional Engineers Certificate of Authorization #00001670

DEP Form No. 62-210.900(1) — Form

Effective: 03/11/2010

SUPPLEMENTAL PSD ANALYSIS

SUPPLEMENTAL PSD ANALYSIS INFORMATION

The following information is provided as a result of the Department's request for additional information (RAI) dated February 28, 2011, and based on additional discussions with the Department. The information contained herein represents a re-evaluated the PSD applicability analysis for the proposed Adipic Acid increase of 1080 MAR production, FDEP File No. 0330040-036-AC.

In order for Ascend to achieve an adipic acid production rate of 1,080 MAR, modifications must be made to upstream and downstream supporting operations including the addition of new emission units. The new emission units include the following:

- Adipic Acid and P2K fugitive sources;
- New Hydrogen Plant;
- New Nylon sources (Extruder, Elutriators, and Conveying);
- New Vaporizer; and
- New Cooling Tower

A process flow diagram of the "Project" affected emission units is shown in Figure 1 that encompasses the project proposed by Ascend for 1080 MAR. The new hydrogen plant and vaporizer are shown in Figure 1, while the other new sources will be integrated into the plant.

The PSD applicability analysis performed is consistent the hybrid PSD analysis defined in Rule 62.212.400(2)(a)3. The existing units affected by the project were evaluated based on a comparison of baseline actual emission to projected actual emissions and accounting for demand growth. All new units were evaluated based on potential emission increases. The results of this analysis of project emission increases from both existing and new emission units affected by the project are presented in Table1a, Revised PSD Applicability Analysis - Adipic Acid 1080 MAR Project Project Emission Increases. Table 1a replaces the previously submitted Table 1. The resulting emission increases as a result of the project are as follows:

	Project Emiss	sion Increases Prior	to PSD Avoidance	e Limits (TPY)	
СО	NOx	PM/PM10	PM2.5	SO2	VOC
47.41	69.02	70.46	58.75	1.8	46.85

The project increases include increases in steam requirement (power house) for the project equal to 300,000 MMBtu/yr heat input. This increase is projected from that required for the demand growth level of 850 MAR adiipic acid. The steam generating units will fire natural gas to achieve the projected additional 300,000 MMBtu/yr. The total steam required for the project from the power house is reduced by

significant offsetting steam generated by the new hydrogen plant and increased utilization of the nitric acid plant. Both these emission units generate steam which is feed to the steam header and used within the project units.

In response to RAI Question No. 12, regarding the CP Line Conversion projects, Ascend has conservatively included the potential emissions from these projects into Table 1a of the analysis

In order to avoid PSD review for NOx, PM10, PM2.5, and VOC, Ascend is proposing PSD Avoidance Limits for the following units:

- Nitric Acid Plant
- HALCON; and
- Powerhouse (Boilers Nos. 4, 5, 6, 7, 8, 9 and Cogeneration)

PSD Avoidance Limits

1.1.1 NOx

As shown above and in Table 1a of this supplemental information, NOx emission increases from the project are projected to be 69.02 TPY. Ascend proposes to reduce emissions from Nitric Acid by 31.67 TPY (Table 1b) to offset NOx emissions generated by the project. **Ascend proposes a PSD avoidance limit for the Nitric Acid Plant of 285 TPY NOx.**

1.1.2 PM10 and PM2.5

As shown above and in Table 1a of this supplemental information, PM10 and PM2.5 emission increases from the project are projected to be 70.46 TPY and 58.75, respectively. Ascend proposes to reduce PM10 and PM2.5 emissions by 56.16 and 49.58 TPY (Table 1b), respectively. Ascend proposes PSD avoidance limits for the powerhouse steam units equal to 235 and 138 TPY PM10 and PM2.5, respectively. Ascend will achieve emissions at or below these levels by managing the sulfur content of the fuel oil combusted in Boilers Nos. 4, 5, and 6. Ascend proposes a formula based method of compliance to determine the PM10 and PM2.5 emissions as follows.

For Boilers 7 and 8 (EU-004, EU-003) PM10 and PM2.5 emissions will be calculated using the 5 year average from the Method 5 emission testing and the condensable PM will be calculated using the AP-42 emission factor for condensable PM (5.7 lbs/mscf or 0.00559 lbs/MMBtu).

For Cogeneration (EU-032) and Boiler 9 (EU-099) PM10 and PM2.5 emissions will be calculated using the AP-42 factor for PM including condensables of 7.6 lbs/mscf of natural gas.

For Boilers 4, 5 and 6 (EU-014, EU-015, EU-016) PM10 and PM2.5 emission calculations will be as follows:

For natural gas combustion PM10 and PM2.5 emissions will be calculated using the AP-42 factor for PM (including condensable PM) of 7.6 lbs/mscf of natural gas.

For Fuel Oil and KATT Composite Fuel:

```
PM10 = (9.19(S) + 3.22) * kgal / 2000 + 1.5 * kgal / 2000

PM2.5 = (4.67(1.12(S) + 0.37)) * kgal / 2000 + 1.5 * kgal / 2000
```

Where S = sulfur in percent as supplied by the Certificate of Analysis for Fuel Oil and sulfur in percent based on the latest analysis of KATT Composite Fuel. (Currently 0.02% S)

(Note the Boiler 6 is not authorized to combust KATT Composite Fuel)

PM10 TPY (Total) = Boiler No. 7 PM10 + Boiler No. 8 PM10 + Cogeneration PM10 + Boilers No. 9 PM10 + Boiler No. 4 PM10 + Boiler No. 5 PM10 + Boiler No. 6 PM10

PM2.5 TPY (Total) = Boiler No. 7 PM2.5 + Boiler No. 8 PM2.5 + Cogeneration PM2.5 + Boilers No. 9 PM2.5 + Boiler No. 4 PM2.5 + Boiler No. 5 PM2.5 + Boiler No. 6 PM2.5

PM10 TPY (Total) < = 235 TPY

PM2.5 TPY (Total) < = 138 TPY

A secondary benefit to the limitations of PM10 and PM2.5 emissions is the reduction of annual SO2 emissions associated with managing the sulfur content of the fuel oil to meet the proposed PM10 and PM2.5 emission limits. Dependent on the sulfur content of fuel oil and the quantity combusted, the annual SO2 emissions may be reduced by as much as 500 TPY.

1.1.3 VOC

As shown above and in Table 1a of this supplemental information, VOC emission increases from the project are projected to be 46.85 TPY. Ascend proposes to reduce emissions from HALCON, project controlled tanks and LP Scrubbers by 17.55 TPY (Table 1b) to offset VOC emissions generated by the project. Ascend proposes a PSD avoidance limit for the HALCON equal to 94.21 TPY VOC as follows: HALCON Project Actual 71.21 TPY (Table 1a) + Halcon Tank Vent Recovery 8 TPY (Table 1b) + Halcon LP Scrubber 15 TPY (Table 1b) = 94.21 TPY Total Halcon VOC emissions.

PSD Applicability Results

Ascend has performed a PSD applicability analysis of the 1080 MAR Adipic Acid Production Project including existing and new emission units. Ascend has proposed PSD avoidance limits for NOx, PM10,

PM2.5, and VOC. All the emission units affected by the Project that include increases from existing and new units, and decreases from existing units are within the project boundary shown in Figure 1. The resulting emissions compared to PSD thresholds is provided in Table 1c, and summarized as follows:

	Ascend 1080	MAR Adipic Acid	PSD Applicability	Analysis		
	СО	NOx	PM/PM10	PM2.5	SO2	VOC
Post Project	47.41	37.35	12.24	8.54	1.8	29.3
Emissions						
PSD Review	100	40	15	10	40	40
Thresholds						
PSD Review	N	N	N	N	N	N
Required (Y/N)					<u> </u>	1

Identification of Changes from Original PSD Applicability Analysis

The following summarizes the changes as a result of the updated PSD applicability analysis:

- 1. Updated project emission calculations to Incorporate PM2.5 where applicable.
- 2. Table 1 has been revised and replaced with Table 1a, Table 1b and Table 1c. See text for explanation.
- 3. Table 11 is no longer used as a result of Ascend's proposal of PSD avoidance limits for PM10 and PM2.5.
- 4. Table 12 has been revised to show PSD avoidance limits.
- 5. Table 14 added to show PM emissions from nylon polymerization.
- 6. Table 15 added to show PM emission calculations due to ammonia slip at the SCR and proposed new SNCR.
- 7. Table 16 added to show recalculation of Halcon baseline emissions post OBUD and including tank emissions.
- 8. Table 17 added to show powerhouse emissions from additional natural gas combustion.
- 9. Boiler 7/8 reported emissions were Method 5 (filterable), updated reported emissions to include condensable PM emissions based on AP-42.

Updated Cooling Tower PM10/PM2.5 based on Cooling Tower Particulate Emissions Size Distribution (based on paper by Reisman and Frisbie, "Calculating Realistic PM10 Emissions from Cooling Tower")

10.

FIGURE 1

Project Definition

Process Flow Diagram of the Project Affected Emission Units

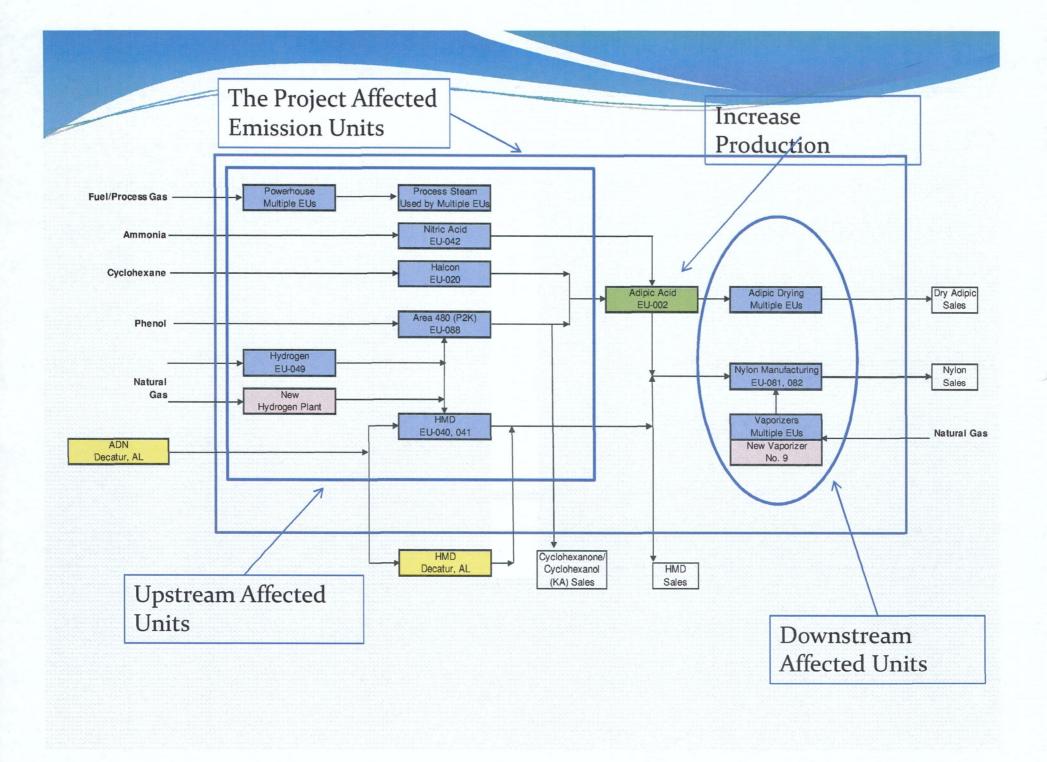


Table 1a. Revised PSD Applicability Analysis - Adipic Acid 1080 MAR Project Project Emission Increases.

						 Post	-Project Emissio	ns Excluding Er	mission Reduction	on Projects/Limitations			Baseline Emission	s plus Demand (Growth							
Source		NOX	Ba PM/PM10*	seline Emission	so2 VOC	 CO	Projec	ted Emissions	(TPY) up to 108	SO2 VO	<u> </u>	CO NOX	Projected Emission	s (TPY) up to 8:		VOC	Project En	nission Increas	e (Post-Project	t minus Baselin (TPY) PM2.5	e Emissions plus SO2	Demand Growth) VOC
Adipic Acid (Synthesis & Refining) (EU-002)	2001 9.184 2002 12.386	333.4 518.4		PM2.5	0.03	 		-	PM2.5	302 VC			-			VOC		0.00				
	2003 13,072 2004 10,152 2005 11,694 2006 11,452 2007 12,536 2008 12,248 2009 9,786	531.4 425.3 506.8 522.4 506.9 445.06 398.5	18.40 21.39	18.40 21.39	0.03 0.02 0.03 0.03 0.03 0.03 0.03 0.03 0.03	20.37 14.42	610.00 610.00	34.88 34.44	34.88 34.44	0.04 0.03 55. 55.		610.00 6.03 610.00 1.35	22 23	.54 22.5 .72 23.7	4 0.03 2 0.02	37.51 41.89	4.34 3.07	0.00	12.34 10.72	12.34 10.72	0.01	18.11 13.73
Adipic Acid New Fugitive Emissions (New Emission Unit)	*PM2,5 conserve(Net) assumed equal to PM10. No Baseline Emissions - New fug			NH4NO3)		 				0.1	8		-			0.00						0.18
Nitric Acid Unit (EU-042)	2001 2002 2003 2004 2005 2006 2007 2008 2009	265.8 318.04 315.3 300.78 337.95 316.53 332.38 261.82 255.9	6.36 6.00	6.36			355.72 356.29	6.79 6.79	6.79 6.79			355.72 356.29	6	36 6.30 36 6.30				0.00	0.43 0.43	0.43		
Halcon Unit (EU-020) Includes Non-Project Tanks	2001 274 2002 317 2003 321 2004 349 2005 312 2006 306 2007 198 2008 97 2009 80 • PMZ.5 contentiopholy assumed equal to PM10	1.19 1.37 1.39 1.51 1.35 1.324 2.111 0.608 1.106	0.02 0.026 0.028 0.028 0.025 0.025 0.04 0.0116 0.021	0.02 0.026 0.026 0.028 0.025 0.025 0.04 0.0116 0.021	0.01 0.008267 0.008382 0.009099 67.31 0.008138 62.87 0.008 0.013 0.004 0.007	215.84 215.84	1.56 1.56	0.03	0.03	0.01 0.01 71. 71.	21 21	1.56 15.64 1.59 15.64		03 0.0 03 0.0	3 0.01 3 0.01	71.21 71.21	0.00	0.00	0.00	0.00	0.00	9.00 9.00
Halcon Tank Vent Recovery (Project Controlled Sources, See Table 12)	2004 2005				10.86 12.04					17. 17.						17,31 17,31						0.00
LP Scrubbers Off-Gas to HP Scrubbers	2004 2005				29.10 29.10											29.10 29.10						0.00
Area 480 (P2K) (EU-088)	2001 0.798 2002 0.092 2003 2004 2005 2006 0.126 2007 0.229 2008 0.244 2009 0.25	7.581 0.876 1.197 2.176 2.325 2.384	0.569 0.068 0.09 0.163 0.174 0.179	0.569 0.068 0.09 0.163 0.174 0.179	0.946 0.013 3.492 8.793 6.966 3.631	0.46 0.46	4.38	0.33	0.33	5.1 5.1	00	4.38 4.46 4.38 4.46		33 0.33 33 0.33	3	0.94	0.00	0.00	0.00	0.00		4.16 4.16
P2K New Fugitive Emissions (New Insignificant Emission)	PM2.6 conservatively assumed equal to PM10 No Baseline Emissions - New fug				3.551	 				0.0	08					0.00						0.008
Hydrogen Unit (EU-049)	2001 0.285 2002 0.276 2003 0.272 2004 0.355 2005 0.337 2006 0.315 2007 0.42 2008 0.329 2009 0.220	26.223 25.354 25.026 32.679 30.999 29.014 38.686 31.337 21.135	2.362 2.283 2.254 2.9431 2.792 2.813 3.484 2.81 1.895	2.362 2.283 2.254 2.9431 2.792 2.613 3.484 2.81 1.895	1.134 1.096 1.082 1.413 1.34 1.254 1.672 2.375 1.602	0.41	41.33 37.64	3.39	3.39 3.72	1.7 1.7	9 0	41.33 0.41 37.64 0.45		39 3.3(72 3.72	2	1.79 1.79	0.00	0.00	0.00	0.00		0.00 0.00
New Hydrogen Plant (New Emission Unit including Flare) New Hydrogen Plant Flare	No Baseline Emissions - New Em - PM2.5 conservetively assumed equal to PM10 No Baseline Emissions - New Em - PM2.5 conservetively assumed equal to PM10	ission Unit		<u>-</u>		 12.22 0.04	37.53 0.02	5.67 0.003	5.67 0.003	1.52 4.1 0.0003 0.00		0.00 0.00		00 0.00			12.22	37.53 0.02	5.67 0.003	0.003	0.00	0.00
HMD (EU-040/041)	2001 2002 2003 2004 2005 2006 2007 2008 2009			<u>-</u> -	15.491 16.603 15.934 15.687 16.435 15.881 16.099 14.114 9.876					21.1 23.0						19.68 22.11						1,33 1,49
DME	2001 2002 2003 2004 2005 2006 2007 2008 2009				3.56 3.99 3.98 4.1 3.78 3.67 3.32 2.95					5.0 4.9						4.58 4.55						0.43 0.43
Nylon (EU081/082)	2001 2002				45.12 45.12																	

Include 7.95 by PM/PM10 and 3.48 by PM2.5 from Conversion Permits)	2003 2004 2005 2006	37.15 37.15 32.44 32.44	49.61 49.61 48.03 44.62			73.21 73.21	68.74 68.74	81.0 82.6	<u> </u>		45.80 45.80	45.80		63.61 64.93		27.4 27.4	1 22.94 1 22.94	
	2007 2008 2009		43.33 27.98 27.98															
Nylon Extruder (New Insignificant Emission Unit)	No Baseline Emissions - New Insignificant Emiss	ion Unit				0.92	0.40	0.75	0.00	0.00	0.00	0.00	0.00	0.00		0.92	2 0.40	
Nylon Elutriators and Conveying (New Insignificant Emission Unit)	* PM2.5 conservatively assumed equal to PM10 No Baseline Emissions - New insignificant Emiss * PM2.5 conservatively assumed equal to PM10	on Unit		Emissions from		1,77	0.77		0.00	0.00	0,00	0.00	0.00	0.00		1.77	7 0.77	
Vaporizer No. 1	2001 2.134 2.540 2002 3.331 3.986	0.048 0.048 0.075 0.075	0.015 0.140 0.024 0.218	Vaporizers Grouped	58.40				10.50	50.70						'.70	0.45	0.05
	2003 3,056 3,639 2004 2,881 3,430 2005 2,768 3,296 2006 2,752 3,276 2007 2,169 2,582 2008 2,196 2,614	0.069 0.069 0.065 0.065 0.063 0.063 0.062 0.062 0.049 0.049 0.050 0.050	0.022 0.200 0.021 0.189 0.020 0.181 0.020 0.180 0.015 0.142 0.016 0.144		49.06 58.40 49.06	1.11	1,11	0.35 0.35 3.21 3.21		50.70	0.98	0.96	0.30	2.79 2.79	6.47	7.70 0.18 0.18	5 0.15 5 0.15	0,05
Vaporizer No. 2	2009 0.000 0.000 2001 1.138 1.355 2002 2.882 3.431 2003 2.085 2.483 2004 2.793 3.325 2005 2.730 3.250 2006 2.747 3.271 2007 1.814 2.160 2008 2.244 2.671 2009 1.614 1.922	0.000 0.000 0.026 0.026 0.065 0.065 0.047 0.047 0.083 0.082 0.082 0.082 0.082 0.082 0.041 0.041 0.051 0.051 0.037 0.037	0.000 0.000 0.008 0.075 0.021 0.189 0.015 0.137 0.020 0.183 0.020 0.179 0.020 0.180 0.013 0.119 0.016 0.147 0.012 0.106															
Vaporizer No. 3	2001 2.675 3.185 2002 3.195 3.804 2003 2.686 3.198 2004 2.768 3.295 2005 2.755 3.280 2006 2.727 3.246 2007 3.119 3.713 2008 2.769 3.297 2009 0.569 0.678	0.061 0.061 0.072 0.072 0.061 0.061 0.063 0.063 0.062 0.062 0.071 0.071 0.063 0.063	0.019 0.175 0.023 0.209 0.019 0.176 0.020 0.181 0.020 0.180 0.019 0.179 0.022 0.204 0.020 0.181 0.000 0.037															
Vaporizer No. 4	2001 3.331 3.965 2002 3.615 4.303 2003 3.507 4.176 2004 3.851 4.585 2005 3.831 4.561 2006 3.794 4.517 2007 3.015 3.589 2008 3.094 3.683	0.075 0.075 0.082 0.082 0.079 0.079 0.087 0.087 0.087 0.087 0.086 0.088 0.068 0.068	0.024 0.218 0.026 0.237 0.025 0.230 0.028 0.252 0.027 0.251 0.027 0.248 0.022 0.197 0.022 0.203															
Vaporízer No. 5	2009 2,993 3,563 2001 4,355 5,185 2002 4,653 5,540 2003 4,334 5,160 2004 4,368 5,200 2005 3,807 4,532 2006 3,830 4,560 2007 3,186 3,793 2008 2,906 3,460 2009 1,696 2,019	0.088 0.068 0.099 0.099 0.105 0.105 0.098 0.098 0.099 0.099 0.086 0.086 0.097 0.087 0.072 0.072 0.086 0.088 0.098 0.098	0.021 0.198 0.031 0.285 0.033 0.305 0.031 0.284 0.031 0.286 0.027 0.249 0.027 0.251 0.023 0.200 0.021 0.190 0.012 0.111															
Vaporizer No. 6	2001 2.822 3.360 2002 3.339 3.975 2003 2.581 3.073 2004 2.617 3.115 2005 2.042 2.431 2006 2.060 2.452 2007 1.516 1.805 2008 1.811 2.156 2009 1.621 1.930	0.036 0.084 0.076 0.076 0.058 0.059 0.059 0.059 0.046 0.047 0.034 0.034 0.041 0.041 0.037 0.037	0.022 0.118 0.024 0.219 0.018 0.169 0.019 0.171 0.015 0.134 0.015 0.135 0.011 0.099 0.013 0.119 0.012 0.106															
Vaporizer No. 7	2001 5.536 6.590 2002 6.410 7.631 2003 6.199 7.380 2004 5.825 6.935 2005 5.975 7.114 2006 6.009 7.163 2007 3.677 4.377 2008 3.666 4.368 2009 1.738 2.069	0.125 0.125 0.145 0.145 0.140 0.140 0.132 0.132 0.135 0.136 0.136 0.136 0.083 0.083 0.083 0.083 0.083 0.083	0.040 0.362 0.046 0.420 0.044 0.406 0.042 0.381 0.043 0.391 0.043 0.393 0.026 0.241 0.026 0.240 0.012 0.114															
Vaporizer No. 8	2001 4.691 5.585 2002 4.798 5.712 2003 5.309 6.320 2004 6.119 7.285 2005 6.794 8.088 2006 6.893 8.135 2007 7.216 8.590 2008 6.660 7.929 2009 6.211 7.394	0.106 0.106 0.109 0.109 0.120 0.120 0.138 0.138 0.154 0.154 0.155 0.155 0.163 0.163 0.151 0.151 0.140 0.140	0.034 0.307 0.034 0.314 0.038 0.348 0.044 0.401 0.049 0.445 0.049 0.447 0.052 0.472 0.048 0.436 0.044 0.407															
Vaporizer No. 9 (Therminol)	No Baseline Emissions - New Emission Unit				20.06 11.94	1,81	_ 1.81	0.14 1.31	0.00	0.00	0.00	0.00	0.00	0.00	20.06 11	1.94 1.81	1 1.81	0.14
Vaporizer Fugitive Emissions (New Insignificant Emission Unit)	PM2.5 conservatively assumed equal to PM10 No Baselfine Emissions - New Emission Unit		· · · ·					0.03	i					0.00				
Adipic Drying Bepex Dryer EU-060	2001 2002 2003 2004 2005 2006 2007 2008	0.215 0.124 0.285 0.164 0.33 0.190 0.285 0.164 0.31 0.170 0.35 0.202 0.36 0.208 0.32 0.185				0.54 0.54	0.31 0.31				0.46 0.47	0.27 0.27				0.08 0.08	B 0.04 B 0.04	

2.206 1.469

405A Dryer

EU-081	2002 2003 2004 2005	1.641 2.7 4.04 2.54	1.093 1.798 2.691 1.692				9.00	5.99 5.99				49 4.32 48 4.31				2.51 1 2.52 1	.67 .68	
	2005 2006 2007 2008 2008 2009 *PMZ 5 automated to be 66.6% of total PM/PM10 bessed on site appoint.	2.54 4.03 4.75 2.61 4.276	1.692 2.684 3.164 1.738 2.848															
405B Dryer EU-062	2001 2002 2003 2004	1.765 1.245 2.123 4.1	1.175 0.829 1.414 2.731				9.05 9.05	6.03				.81 <u>4.40</u> .80 4.40					.63 .63	
	2005 2006 2007 2008 2009	2.87 4.24 5.39 3.8 4.278	1.911 2.824 3.590 2.531 2.849				0.00											
465A Dryer EU-063	* PM2.5 estimated to be 66.6% of total PM/PM10 based on are specific 2001 2002 2003	4.545 5.150	3.027 3.436 2.755				11.19	7.45			8.	29 5.52				2.89 1 2.89 1	.93	
	2004 2005 2006 2007 2008	4.136 5.07 2.99 5.27 7.31 6.83	3.377 1.991 3.510 4.868 4.549				11.19	7.45			. 8.	30 5.53				2.89 1	.92	
465B Dryer EU-064	2009 *PMZ.5 setImeted to be 66.6% of total PMAPM 10 based on site specific 2001 2002	4,593 4.581	4.298 3.059 3.051														_	
	2003 2004 2005 2008 2007 2008	3.584 5.05 4.1 6.47 8.85 5.97	2.387 3.363 2.731 4.309 5.894 3.976				11.46 11.46	7.63 7.63			8.	48 5.64 47 5.64				2.98 1 2.99 1	.98	
Niro Dryer EU-079	2009 PM2.5 estimated to be 66 6% of total PMPM10 based on site specific 2001 2002	6.504	4.332 0.235															
	2003 2004 2005 2006 2007	0.335 0.355 0.36 0.54 0.57	0.298 0.265 0.280 0.284 0.427 0.450				0.63 0.63	0.49 0.49			0. 0.	41 0.32 41 0.32				0.22 0 0.22 0	.17 .17	
Buik Loading #1 EU-050	2008 2009 * PM2.5 estimated to be 79% of total PMPM10 based on atle specific in 2001	0.47 0.489 formation	0.371 0.386 4.740															
	2002 2003 2004 2005 2006 2007 2008	6.984 6.945 11.09 7.47 11.05	5.517 5.487 8.761 5.901 8.730				17.33 17.33	13.69 13.69			17 17	.33 <u>13.69</u> .33 <u>13.69</u>			 _	0.00 0 0.00 0	.00	
Bulk Loading #2 EU-051	2009 *PM2.5 estimated to be 79.7% of total PM/PM10 based on site specific		8.248 7.521 1.351															
EU-U01	2001 2002 2003 2004 2005 2005 2006 2007 2008	0.082 0.096 0.101 0.096 0.106 0.125	0.065 0.076 0.080 0.076 0.084 0.099				0.29	0.23 0.23			0.	27 0.21 27 0.21				0.02 0 0.02 0	.01	
Building 373 Loading	2007 2008 2009 **PM2.5 estimated to be 79.7% of total PMSPM10 based on sife speado.	0,119 0,109 0,102	0.094 0.086 0.080															
EU-080	2001 2002 2003 2004 2005	0.010 0.012 0.011 0.012 0.012	0.008 0.010 0.009 0.009 0.009				0.014 0.014	0.011 0.011			0.0	0.011 013 0.011				0.0006 0.0 0.0006 0.0	0001 0001	
	2005 2006 2007 2008 2009 - PM2 Sestimated to be 79.7% of Idaal PMSPM10 based on abe specific	0.013 0.013 0.011 0.011	0.010 0.010 0.009 0.009															
Building 465 Boxing/Bagging EU-045	2001 2002 2003	0.038 0.038 0.042	0.030 0.030 0.033				0.06	0.05			0.	06 0.05 06 0.05				0.000 0.0 0.000 0.0	000	
	2004 2005 2006 2007 2007 2008 2009	0.048 0.038 0.048 0.071 0.049 0.049	0.038 0.030 0.038 0.056 0.039 0.038				0.06	0.05			0.	0.05				0.000 0.4		·····
olling Tower 1, 2, 3, 4 and 6 Modification (Existing Insignificant Emission Unit)	* PM2.5 estimeted to be 79.7% of lotal PMPM10 based on site specific: 2003 2004		2.293 2.438				5.79 5.79	2.54 2.54			5.0 5.0						.31	
New Cooling Tower (New Insignificant Emission Unit) Boiler 4	No Baseline Emissions - New Insignificant Emission - New Insignificant Emission - New Insignificant - New	ions		18.61 2.99	Emissions from Powerhouse Grouped		0.51	0.22			0.0	0.00				0.51 0.	.22	
(EU-014)	2001 26.9 349.852 2002 26.9 349.852 2003 24.7 267.811 2004 21.148 160.015 2005 18.09 127.9 2006 11.528 84.044 2007 10.114 73.188	76.50 77	45.40 45.40	0.39 2.903 1045.88 4.341 1045.181 3.84 939.216 3.875 211.253 2.399 143.146 2.156	- Couped	1386,60 211.83 1113.23 250.88	376.76 361.56	243.27 4646.4 231.00 4561.5	0 8 64.64 62.46	137- 206.91 110- 245.96	4.76 1.39 375 360	5.25 241.76 0.05 229.50	4646.32 4581.49	4.92 64.12 4.92 61.94		1.51 1. 1.51 1.	.51 <u>0.09</u> .51 <u>0.09</u>	0.52 0.52

	2008	10.065	71.135			127.112	2.382
	2009	9.304	69,093			9,111	2.382
	2008	8.304	09.093			9.111	2.301
Boiler 5	2001	20.313	231.717			811.968	3.717
(EU-015)	2002	24.658	322.311			188.262	3.377
, —,	2003	21.718	216.989	91.8	54.10	1302.24	4.48
	2004	19.048	130.185	87.4	51.60	1261.218	4.369
	2005	19.475	136.565	07.4	51.00	1046.301	4.242
	2005						
		16.572	127.081			195.652	3.039
	2007	16.696	126.653			250.664	3.137
	2008	16.502	127.308			92.99	4.344
	2009	11.383	92.282			3.767	3.171
Boiler 6	2001	16.78	222.114			166.488	2.542
(EU-016)	2002	20.663	277.532			127.328	3.02
, ,	2003	18.19	182.083	85.4	50.50	1252.197	4.354
	2004	15.965	103,152	81.5	48.20	1202.073	4.049
	2005	17.469	114,132	41.0	40.20	1010.395	4.38
	2006	7.956	55.559			75.649	1.855
	2007	8.947	60.917			218.242	
							2.147
	2008	7.703	54.484			10.178	1.768
	2009	5,187	36.593			0.449	1.184
Boiler 7	2001	12.56	13.211			0.227	1.698
(EU-004)	2002	8.69	14.072			0.261	1.808
	2003	8.69	14.954	17.85	17.85	0.28	1.922
	2004	14.213	11.511	10.50	10.50	0.286	4.446
	2005	8.7	10.959	70.00	10.00	0.27	4.266
	2006	9.67					
			11.308			0.275	3.765
	2007	12.56	10.784			0.243	3.884
	2008	5.98	11.443			0.211	4.122
	2009	2.5	7.662			0.166	2.76
Boiler 8	2001	11.64	17.661			0.216	9.191
(EU-003)	2002	9.41	14,376			0.244	10.397
	2003	9.41	14.003	9.46	9.46	0.244	10.313
	2004	13.892	13.47	9.93	9.93	0.264	4.207
	2005	8.7	13.302	0.00	0.00	0.256	4.145
	2006	9.82	13.11			0.243	3,493
	2007						
	2007	12.8	9.633			0.237	3.853
	2008	6.13 2.51	10.676 7.677			0.239 0.208	4.271 3.071
Boiler 9	2001						
(EU-099)	2002						
	2003						
	2004						
	2005						
	2006						
	2007	8.07	14.04	1.72	1.72	1.968	1.376
	2008	12.67	23.48	2.094	2.09	2.427	1.675
	2009	9.16	13.26	1.58	1.58	1.849	1.284
Cogen	2001	93.344	191.35 6	12.501	12.50	10.226	11.001
(EU-032)	2002	101.847	208.787	13.64	13.64	11.157	12.003
	2003	78.029	159.958	10.501	10.50	8.589	9.196
	2004	105,444	219.283	11.39	11.39	9.316	28.544
	2005	92.555	192.478	9,998	10.00	8,178	25.055
	2008	65.019	197.425	9.892	9.89	8,091	18.766
	2007	58.811	178.583	8.888	8.89	7.27	16.974
	2008	24,964	75.805	3.822	3.82	3.126	7.205
	2009	54.057	164.148	8.358	8.36	6,836	15.602
						0,000	
		_					
Baseline Emissions verage 24-Month Periods		со	NOX	PM/PM10	PM2.5	SO2	VOC
	2001 - 2002	522.92	1886.79			667.92	
	2002 - 2003	539.37	1926.63			1968.79	
	2003 - 2004	552.46	1599.59	374.02	264.55	3564.13	
	2004 - 2005	549.69	1472.02	U. 4.UZ	204.00	3261.73	219.19
							218.18
	2005 - 2006 2006 - 2007	494.52 417.28	1452.29			1748.14	
	2000 - 2007		1391.13			556.70	
	2007 - 2008	292.04	1266.16			429.24	
	2008 - 2009	209.99	1117.49	07/	001.00	129.51	045 : 5
		552.46	1926.63	374.02	264.55	3564.13	219.19

^{*}VOC Emissions include Adipic Acid Synthesis and Refining. New VOC emissions were calculated for Baseline Years 2004-2005

Total	Emissions	from	Existing	Units
				•

			ected Emission						issions (TPY) @ 850								nand Growth (TP	
	co	NOX	PM/PM10	PM2.5	SO2	VOC	CO	NOX	PM/PM10	PM2.5	SO2	VOC	СО	NOX	PM/PM10	PM2.5	SO2	VOC
2001																		
2002		2457.98						2438.44						19.54				
2003	497.77	2181.50	561.85	402.97	4646.81		482.04	2161.98	508.18	357.88	4646.66		15.73	19.54	53.66	45.10	0.14	
2004	530.91		546.53	390.59	4561,97	355.01	516.44		494.79	347.23	4561.83	312.63	14.48		51.75	43.36	0.14	42.38
2005						357.08						318.55						38.52
2006																		
2007																		
2008																		
2009																		
Avg.	514.34	2319.74	554.19	396,78	4604.39	358.04	499.24	2300.20	501,49	352.55	4604.25	315.59	15.10	19.54	52,70	44.23	0.14	40.45
otal Er	missions l	New Emiss	ion Units															
		Pro	jected Emission	is (TPY) @ 108	30 MAR			Projected Em	issions (TPY) @ 850	MAR Deman	d Growth			Project	Emissions Increa	ases minus Den	nand Growth (TP	
	CO	NOX	PM/PM10	PM2.5	SO2	VOC	CO	NOX	PM/PM10	PM2.5	SO2	VOC	CO	NOX	PM/PM10	PM2.5	SO2	voc
2001																		
2002		49.49 49.49	10.69	8.89	1.66		0.00	0.00	0.00	0.00	0.00		32.31	49.49 49.49	10.69	8.89	1.66	
2003	32.31 32.31	49.49	10.69	8.89	1.66	6.40	0.00	0.00	0.00	0.00	0.00	0.00	32.31	49.49	10.69	8.89	1.66	6.40
2004	32.31		10.00	0.08	1,00	6.40	_0.00	·	0.00	0.00	0.00	0.00	32.31		10.08	0.08	1.00	6.40
2006						0.40						0.00						
2007																		
2008																		
2009																		
Avg.	32.31	49.49	10.69	8.89	1.66	6.40	0.00	0.00	0.00	0.00	0.00	0.00	32.31	49.49	10.69	8.89	1.66	6.40
otal Er	nissions .	All Emissio	n Units															
				(TD) 0 400					(TD) 0 000		10			<u> </u>				
	CO	NOX	jected Emission PM/PM10	PM2.5	SO2	VOC	CO	NOX	ssions (TPY) @ 850 PM/PM10	PM2.5	SO2	VOC	CO	NOX	PM/PM10	PM2.5	nand Growth (TP SO2	VOC
	CO	NUX	PMPM1U	PMZ.5	502	VOC	CO	NOX	PM/PM10	PM2.5	502	VOC	CO	NOX	PM/PM10	PM2.5	502	VOC
2001																		
2002		2507.47						2438.44						69.03				
2003	530.08	2230.99	572.53	411.86	4648.47		482.04	2161.96	508.18	357.86	4646.66		48.04	69.03	64.35	53.99	1.81	
2004	563.22		557.22	399.48	4563.63	361.41	516.44		494.79	347.23	4561.83	312.63	46.78		62.44	52.25	1.80	48.78
2005						363.48						318.55						44.93
2006																		
2007																		
2008																		
2009																		
Avg.	546,65	2369.23	564.88	405,67	4606.05	362.45	499.24	2300.20	501,49	352.55	4604.25	315.59	47,41	69.03	63,39	53.12	1.81	46.85
	J									******		*		40.00		77.12		

Table 1b. Revised PSD Applicability Analysis - Adipic Acid 1080 MAR Project Emission Decreases.

					Baseline Emissi	ons (TPY)				•	sions With Reductions (TPY) up to 1080 MAR				Emiss	on Change (TPY)	
Source		со	NOX	PM/PM10*	PM2.5*	SO2	VOC		NOX	PM/PM10	PM2.5	voc	СО	NOX	PM/PM10	PM2.5	Vo
Nitric Acid Unit (EU-042)	2001 2002 2003 2004 2005		265.8 318.04 315.3 300.78 337.95	6.36 6.00	6.36 6.00				285.00 285.00					-33.04 -30.30			
Halcon Tank Vent Recovery Scrubbers Off-Gas to HP Scrubbers	2004 2005 2004						10.86 12.04 29.10					8.00 8.00 15.00					-2. -4.
	2005						29.10					15.00					-14
Bulk Loading #1 EU-050	2001 2002 2003 2004 2005 2006 2007 2008 2009	9% of total PM/PM10 bes	ed on site specific infor	6 6.984 6.945 11.09 7.47 11.05 10.44 9.52 1.71	#REF! #REF! #REF! #REF! #REF! #REF! #REF! #REF!					2.47 2.47	1.95 1.95				-4.47 -8.62	-3.53 -6.81	
Powerhouse Group	2001 2002 2003 2004 2005 2006 2007 2008 2009	26.1 26.9 24.7 21.148 18.09 11.528 10.114 10.065 9.304	342.435 349.652 267.611 160.015 127.9 84.044 73.188 71.135 69.093	76.50 77	45.40 45.40	18.61 0.39 1045.88 1045.181 939.216 211.253 143.146 127.112 9.111	2.99 2.903 4.341 3.84 3.875 2.399 2.156 2.382 2.301	Emissions from Powerhouse Grouped		240.00 240.00	143.00 143.00				-51.51 -37.71	-44.81 -34.01	
	2001 2002 2003 2004 2005 2006 2007 2008 2009	20.313 24.658 21.718 19.048 19.475 16.572 16.696 16.502 11.383	231.717 322.311 216.989 130.185 136.565 127.081 126.653 127.308 92.282	91.8 87.4	54.10 51.60	811.966 188.262 1302.24 1261.218 1046.301 195.652 250.664 92.99 3.767	3.717 3.377 4.48 4.369 4.242 3.039 3.137 4.344 3.171										
	2002 2003 2004 2005 2006 2007 2008 2009	20.663 18.19 15.965 17.469 7.956 8.947 7.703 5.167	277.532 182.083 103.152 114.132 55.559 60.917 54.484 36.593	85.4 81.5	50.50 48.20	127.328 1252.197 1202.073 1010.395 75.649 218.242 10.178 0.449	3.02 4.354 4.049 4.38 1.855 2.147 1.768 1.184										
	2001 2002 2003 2004 2005 2006 2007 2008 2009	12.56 8.69 8.69 14.213 8.7 9.67 12.56 5.98 2.5	13.211 14.072 14.954 11.511 10.959 11.308 10.784 11.443 7.662	17.85 10.50	17.85 10.50	0.227 0.261 0.28 0.286 0.27 0.275 0.243 0.211 0.166	1.698 1.808 1.922 4.446 4.266 3.765 3.884 4.122 2.76										
	2001 2002 2003	11.64 9.41 9.41	17.661 14.376 14.003	9.46	9.46	0.216 0.244 0.244	9.191 10.397 10.313										

	2004	13.892		13.47	9.93	9.93	0.264	4.207
	2005	8.7		13.302			0.256	4.145
	2006	9.82		13.11			0.243	3.493
	2007	12.8		9.633			0.237	3.853
	2008	6.13		10.676			0.239	4.271
	2009	2.51		7.677			0.208	3.071
	2001							
	2002							
	2003							
	2004							
	2005							
	2006							
	2007	8.07		14.04	1.72	1.72	1.968	1.376
	2007	12.67		23.48	2.094	2.09	2.427	1.675
	2009	9.16		13.26	1.58	1.58	1.849	1.264
	2009	9.10		13.20	1.50	1.30	1.049	1.204
	2001	93.344		191.356	12.501	12.50	10.226	11.001
	2002	101.847		208.787	13.64	13.64	11.157	12.003
	2003	78.029		159.958	10.501	10.50	8.589	9.196
	2004	105.444		219.283	11.39	11.39	9.316	28.544
	2005	92.555		192.478	9.998	10.00	8.178	25.055
	2006	65.019		197.425	9.892	9.89	8.091	18.766
	2007	58.811		178.583	8.888	8.89	7.27	16.974
	2008	24.964		75.805	3.822	3.82	3.126	7.205
	2009	54.057		164.148	8.358	8.36	6.836	15.602
owerhouse Total	2001							
	2002	192.1		1186.7	13.6	13.6	327.6	33.5
	2003	160.7	#	855.6	291.5	187.8	3609.4	34.6
	2004	189.7	#	637.6	277.7	177.0	3518.3	49.5
	2005	165.0	#	595.3	10.0	10.0	3004.6	46.0
	2006	120.6	#	488.5	9.9	9.9	491.2	33.3
	2007	128.0	#	473.8	10.6	10.6	621.8	33.5
	2008	84.0	#	374.3	5.9	5.9	236.3	25.8
	2009	94.1	#	390.7	9.9	9.9	22.4	29.4
	2009	34.1	77	330.1	3.3	3.3	22.4	23.4

					Emissio	n Reduction (TPY)	
NO	X PM/PM10	PM2.5	VOC	NOX	PM/PM10	PM2.5	VO
285.	00 242.47	144.95		-33.04	-55.98	-48.34	
285.		144.95	23.00	-30.30	-46.33	-40.82	-16.9
			23.00				
285.	00 242.47	144.95	23.00	-31.67	-51.16	-44.58	-17.5

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Table 1c. Revised PSD Applicability Analysis - Adipic Acid 1080 MAR Project.

•						
	CO	NOX	PM/PM10	PM2.5	SO2	VOC
Project Emission Increases From Existing Units	15.10	19.54	52.70	44.23	0.14	40.45
Project Emission Increases From New Units	32.31	49.49	10.69	8.89	1.66	6.40
Project Emission Decreases		-31.67	-51.16	-44.58	· · · · · · · · · · · · · · · · · · ·	-17.55
Project Net Emissoins	47.41	37.36	12.24	8.54	1.81	29.30
PSD Review Threshold	100	40	15	10	40	40
PSD Review Required (Y/N)	N	N	N	N	N	N

Table 2. Projected Adipic Acid VOC Emissions Based on Emissions Testing (1080 MAR) - EU002

Post Project Estimated VOC Emissions are as follows:

Projected Annual Emissions from Adipic TRU/SCR I

	Annual	VOC Emissions per	HCN Emissions per	VOC Control	HCN Control		
	TRU Flow ^b	Off Gas	Off Gas	Efficiency ^a	Efficiency ^a	VOC Emissions	HCN Emissions
	(lb/yr)	(lb/lb Off Gas)	(lb/lb Off Gas)	(% Reduction)	(% Reduction)	(TPY)	(TPY)
<u>-</u>	479528400	9.06E-04	4.29E-05	99.5	99	1.09	0.10

^aENTEC Services Inc. October 22, 2010

Projected Annual Emissions from Adipic Backup SCR (SCR II) based on Control Device Operations

Annual SCR Feed ^a (lb/yr)	VOC + HCN Emissions per Off Gas (lb/lb Off Gas)	VOC Emissions ^b (TPY)
 113786400	9.49E-04	53.99

^a Based on 67,730 lb/hr x (8760 hr - 7080 hr) = 101135755 lb/yr

Annual Emission from Adipic Acid Refining Tanks

Total A	houst	Emissions	for .	1080 MAI	-
INTALA	nnuai	EMISSIONS	TOT :	IUAU MAI	₹ .

Annuai VOC		
Emission ^a	VOC Emissions	Annual VOC Emission
(lb/yr)	(TPY)	(TPY)
882	0.44	55.62

^a Source: Ascend. Basis: EPA Water 9 Calculations 0.0016 lb VOC / Ton Adipic Acid

^b Based 7080 hours per year and 67,730 pph average projected rate at 1080 MAR.

b VOC Emissions (tpy) = Annual TRU Flow (lb/yr) x Emission per Off Gas (lb/lb Off Gas) x (1 - VOC Control Efficiency/100) x ton/2000 lb

b HCN Emissions (tpy) = Annual TRU Flow (lb/yr) x Emission per Off Gas (lb/lb Off Gas) x (1 - HCN Control Efficiency/100) x ton/2000 lb

^b Emissions of VOC are uncontrolled through the Backup SCR

Table 3. Projected Adipic Acid VOC Emissions - EU090 New Fugitive Emission Sources (1080 MAR)

Calculation of Component Leak Rates

Component Type	n Equation	(E) Correlatio n Equation Exponent ⁽	(Z) Default-	(N) Total Number Of Compone nts	(P _z) Percent of Compone nts at Devault- Zero	(SV₁) Screening	(P ₁) Percent of Compone nts at Screening Value 1	(SV₂) Screening	(P ₂) Percent of Compone nts at Screening Value 1	(SV ₃) Screening	(P ₃) Percent of Compone nts at Screening Value 1	Average Emissions per	Average Emissions (lbs/hr) ⁽⁵⁾	Annual Emissions (tons/yr) ⁽⁶⁾
Valves, Gas	1.87E-06	0.873	6.60E-07	0	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0000278	0.000	-
Valves, Liquid	6.41E-06	0.797	4.90E-07	500	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0000555	0.028	3 to 3
Pumps (3)	1.90E-05	0.824	7.50E-06	30	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0002094	0.006	
Compressors	1.90E-05	0.824	7.50E-06	0	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0002094	0.000	*
Pressure Relief Valves	1.90E-05	0.824	7.50E-06	5	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0002094	0.001	
Connectors	3.05E-06	0.885	6.10E-07	2000	98.00%	10	1.75%	100	0.25%			0.0000032	0.006	
		.					Total V	OC Emissi	ons Based	on Annual	Operation	of 8,760 hrs/yr	0.041	0.182

⁽¹⁾ Source: USEPA, Protocol for Equipment Leak Emission Estimates, November 1995: Correlation Equations from Table 2-09

Source: USEPA, Protocol for Equipment Leak Emission Estimates, November 1995: Default-Zero Values from Table 2-11

⁽³⁾ Use for all other SOCMI compressor seals, pressure relief valves, agitator seals, and heavy liquid pumps.

Calculated as: $(P_1 \times C \times SV_1^E + P_2 \times C \times SV_2^E + P_3 \times C \times SV_3^E + Z \times P_z) \times 2.2.4026 \text{ lbs/kg}$

⁽⁵⁾ Calculated as: Average Emissions per Component (lbs/hr/comp) X Total Number of Components

⁽⁶⁾ Calculated as: Average Emissions (lbs/hr) X Annual Operation (hrs/yr) ÷ 2,000 lbs/ton

Table 4. Projected Therminol No. 9 Emissions - New Emission Unit

Average Heat Input

55.6 MMBtu/hr (Natural Gas)

Annual Operation

8,760 hrs/yr

			Emis	sions
Pollutant	Average Operating Rate (MMBtu/hr)	Emission Factor ⁽¹⁾ (Ibs/MMBtu)	Average ⁽²⁾ (lbs/hr)	Annual ⁽³⁾ (Tons/yr)
Particulate Matter (PM ₁₀)	55.6	0.00745	0.414	1.815
Particulate Matter (PM _{2.5})	55.6	0.00745	0.414	1.815
Sulfur Dioxide (SO ₂)	55.6	0.00059	0.033	0.143
Nitrogen Oxides (NO _x)	55.6	0.04902	2.7	11.94
Carbon Monoxide (CO)	55.6	0.08235	4.58	20.06
Total VOC	55.6	0.00539	0.30	1.313

(1) Emission Factor Sources:

For PM, SO₂, and VOC: AP-42 (7/98); Table 1.4-2

For NO_x Design basis for Low NO_x burners

For CO: AP-42 (7/98); Table 1.4-1

(2) Calculated as: Average Operating Rate (MMBtu/hr) X Emission Factor (lbs/MMBtu)

(3) Calculated as: Average Emissions (lbs/hr) X Annual Operation (hrs/yr) ÷ 2,000 lbs/ton

Table 5. Projected Vaporizer No. 9 Fugitive VOC Emissions - New Fugitive Emission Sources

Calculation of Component Leak Rates

Component Type	(C) Correlation Equation Constant ⁽¹⁾	(E) Correlation Equation Exponent ⁽¹⁾	(Z) Default- Zero Value ⁽²⁾	(N) Total Number Of Components	(P _Z) Percent of Components at Devault- Zero	(SV ₁) Screening Value 1 (ppmv)	(P ₁) Percent of Components at Screening Value 1	(SV₂) Screening Value 1 (ppmv)	(P ₂) Percent of Components at Screening Value 1	(SV₃) Screening Value 1 (ppmv)	(P ₃) Percent of Components at Screening Value 1	Average Emissions per Component (lbs/hr/comp) ⁽⁴⁾	Average Emissions (lbs/hr) ⁽⁵⁾	Annual Emissions (tons/yr) ⁽⁶⁾
Valves, Gas	1.87E-06	0.873	6.60E-07	75	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0000278	0.002	
Valves, Liquid	6.41E-06	0.797	4.90E-07	45	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0000555	0.002	
Pumps ⁽³⁾	1.90E-05	0.824	7.50E-06	6	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0002094	0.001	
Compressors	1.90E-05	0.824	7.50E-06	0	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0002094	0.000	
Pressure Relief Valves	1.90E-05	0.824	7.50E-06	6	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0002094	0.001	
Connectors	3.05E-06	0.885	6.10E-07	300	98.00%	10	1.75%	100	0.25%			0.0000032	0.001	
								Total VOC	Emissions Ba	sed on Annı	ual Operation	of 8,760 hrs/yr	0.008	0.035

⁽¹⁾ Source: USEPA, Protocol for Equipment Leak Emission Estimates, November 1995: Correlation Equations from Table 2-09

⁽²⁾ Source: USEPA, Protocol for Equipment Leak Emission Estimates, November 1995: Default-Zero Values from Table 2-11

⁽³⁾ Use for all other SOCMI compressor seals, pressure relief valves, agitator seals, and heavy liquid pumps. (4) Calculated as: $(P_1 \times C \times SV_1^E + P_2 \times C \times SV_2^E + P_3 \times C \times SV_3^E + Z \times P_z) \times 2.24026$ lbs/kg

⁽⁵⁾ Calculated as: Average Emissions per Component (lbs/hr/comp) X Total Number of Components

⁽⁶⁾ Calculated as: Average Emissions (lbs/hr) X Annual Operation (hrs/yr) + 2,000 lbs/ton

Table 6. Projected Hydgrogen Plant Emissions

1. SMR Stack

		Natural Gas Heat Input		Emissions	
	Emission Factor	MMBtu/hr	(lb/hr)	(lb/day)	(TPY)
NOx	0.05 lb/MMBtu*	171.3	8.57	205.6	37.53
co	0.015 lb/MMBtu ^a	171	2.57	61.7	11.26
PM10	0.0076 lb/MMBtu ^b	171	1.30	31.1	5.67
PM2.5	0.0076 1b/MMBtu ^b	171	1.30	31.1	5.67
SOx	0.0020 lb/MMBtu ^c	171	0.35	8.3	1.52
voc	0.0055 lb/MMBtu ^d	171	0.94	22.5	4.11

^a Vendor date. Air Products, 2011.

II. Flare (Two Natural Gas Pilots, Each Rated at 50 SCFH)

		Natural Gas Heat Input	Emissions				
	Emission Factor	MMBtu/hr	(lb/hr)	(lb/day)	(TPY)		
NOx	0.05 lb/MMBtu ^a	0.102	0.0051	0.1224	0.022		
00	0.082 lb/MMBtu ^a	0.102	0.0084	0.2016	0.037		
M10	0.0075 lb/MMBtu ^a	0.102	0.0008	0.01824	0.003		
M2.5	0.0075 lb/MMBtu ^a	0.102	0.0008	0.01824	0,003		
Ox.	0.0006 lb/MMBtu ^b	0.102	0.0001	0.00144	0.0003		
/OC	0.0054 lb/MMBtu ^a	0.102	0.0006	0.0132	0.002		

^a Vendor data based on AP-42 · 7/98 edition). Small boilers (<100 MMBtu/hr)

III. Startup and Shutdown Emissions

Streams are estimated to be routed to the flare for following duration each year.

Vent Stream Effective Vent Hours @100% Cap PSA Feed 10 H2 Product 10 PSA Purge Gas 3 Natural Gas 0.3

	PSA FEED GAS			PSA H2 PRODUCT			PSA Purge GAS				Natural Gas				Total Uncontrolled Emissions			
								LBMOL/H	MOL				MOL					
Componenet	MW	LBMOL/HR	LBS	LBMOL/HR _	MOL FRAC	KSCF	LBS	R	FRAC	KSCF	LBS	LBMOL/HR	FRAC	KSCF	LBS _	KSCF	LBS	Tons/yr
C5H12	72.151		0			0	0			0	0	0.52	0.00	0.06	11.66	0.06	11.66	0.01
C4H10	58.124		0			0	0			0	0	2.33	0.00	0.28	42.23	0.28	42.23	0.02
C3H8	44.097		0			0	0			0	0	5.06	0.01	0.60	69.77	0.60	69.77	0.03
C2 H6 (Ethane - Non VOC)	30.07		0			0	0			0	0	17.31	0.03	2.05	162.63	2.05	162.63	0.08
CH4 (Mehtane - Non VOC)	16.0429	70,746	11491.6		0.0	0.0	0.0	70.7	0.1	77.2	3263.0	485.20	0.94	57.54	2432.52	406.54	17187.14	8.59
CO2	44.0097	374.996	167098	0.008	0.0	0.0	3.4	375.0	0.5	409.1	47446.4	4.44	0.01	0.53	61.10	1850.44	214608.48	107.30
CO	28.0109	105,593	29947.3	0,008	.0.0,	0.0	- 2.2	105.6	0.1	115.2	8502.9	8 ·	0.00	0.00	0.00	520.92	38452.33	19:23
H2	2.016	1762.52	35976.6	1592.654	1.0	5817.0	30903.9	169.9	0.2	185.3	984.5		0.00	0.00	0.00	12774.16	67864.96	33.93
N2	28.013	2.221	629.946	1.592	0.0	5.8	429.2	0.6	0.0	0.7	. 50.7	2.22	0.00	0.26	19.44	15.30	1129.29	0.56
H2O	18.01511	9.375	1710.03		0.0	0.0	0.0	9.4	0.0	10.2	485.6		0.00	0.00	0.00	46.25	2195.59	1.10

^{*} Engineering Estimate.

b From Vendor based on AP-42, Section 1.4, 1070 Btu/scf. PM2.5 conservatively assumed equal to PM10

^e From Vendor based 3 grains S per 100scf, Material Balance

^d From Vendor based on AP-42 · 7/98 edition),

^b Based on AP-42 Table 1.4-2. PM2.5 conservatively assumed equal to PM10.

Table 7. Projected P2K Emissions Supportive of 1080 MAR Adipic Acid

Flare Emissions (from P2K Application, 12/18/98 5 MMBtu/hr	RAI Respons	se)		
8760 hrs/year	co	NOx	PM/PM10/PM2.5*	VOC
Productor Produc				
Emission Factor	0.021	0.2	0.015	0.003
	0.46	4.38	0.33	0.07
OC Emissions at max P2K Production		at max Halcon production)		
Emission Factor				VOC 2
				8.76
				0.70
				VOC
P2K Production Required to support 1080 MAR	Adipic (at ma	к Halcon pr	oduction)	0.876
P2K Production Required to support 1080 MAR	Adipic (at ma	к Halcon pr	oduction)	
	Adipic (at ma	k Halcon pr	oduction) PM/PM10/PM2.5*	0.876 VOC
				0.876 VOC 5.037
Total Emissions to support 850 MAR Adipic	CO 0.46	NO x 4.38	PM/PM10/PM2.5* 0.33	0.876 VOC 5.037
otal Emissions to support 850 MAR Adipic	CO 0.46	NOx 4.38	PM/PM10/PM2.5* 0.33 PM/PM10/PM2.5*	0.876 VOC 5.037 VOC 0.94
otal Emissions to support 850 MAR Adipic	CO 0.46	NO x 4.38	PM/PM10/PM2.5* 0.33	0.876 VOC 5.037 VOC 0.94
P2K Production Required to support 1080 MAR Afford Fotal Emissions to support 850 MAR Adipic Fotal Emissions to support 1080 MAR Adipic Net Increase 850 MAR to 1080 MAR	CO 0.46	NOx 4.38	PM/PM10/PM2.5* 0.33 PM/PM10/PM2.5*	0.876 VOC 5.037 VOC 0.94

^{*} PM, PM10, and PM2.5 conservatively assumed equal. Source: Ascend, 2011.

Table 8. Projected P2K VOC Fugitive Emissions - New Fugitive Emission Sources

Barge Loading Additional Component Fugitive Emissions

Calculation of Component Leak Rates

Component Type	n Equation	(E) Correlatio n Equation Exponent ⁽	(Z) Default-	(N) Total Number Of Compone nts	(P _z) Percent of Compone nts at Devault- Zero		(P ₁) Percent of Compone nts at Screening Value 1	(SV₂) Screening	(P ₂) Percent of Compone nts at Screening Value 1	(SV₃) Screening	(P ₃) Percent of Compone nts at Screening Value 1	Average Emissions per Component (lbs/hr/comp) ⁽⁴⁾	Average Emissions (lbs/hr) ⁽⁵⁾	
Valves, Gas	1.87E-06	0.873	6.60E-07	0	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0000278	0.000	
Valves, Liquid	6.41E-06	0.797	4.90E-07	20	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0000555	0.001	
Pumps (3)	1.90E-05	0.824	7.50E-06	2	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0002094	0.000	
Compressors	1.90E-05	0.824	7.50E-06	0	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0002094	0.000	- <u></u>
Pressure Relief Valv	1.90E-05	0.824	7.50E-06	0	98.00%	500	1.25%	1000	0.50%	1500	0.25%	0.0002094	0.000	
Connectors	3.05E-06	0.885	6.10E-07	60	98.00%	10	1.75%	100	0.25%			0.0000032	0.000	- 44
			<u>-</u>				Total \	OC Emiss	ions Based	on Annua	I Operation	of 8,760 hrs/yr	0.002	0.008

⁽¹⁾ Source: USEPA, Protocol for Equipment Leak Emission Estimates, November 1995: Correlation Equations from Table 2-09

Source: USEPA, Protocol for Equipment Leak Emission Estimates, November 1995: Default-Zero Values from Table 2-11

⁽³⁾ Use for all other SOCMI compressor seals, pressure relief valves, agitator seals, and heavy liquid pumps.

⁽⁴⁾ Calculated as: $(P_1 \ X \ C \ X \ SV_1^E + P_2 \ X \ C \ X \ SV_2^E + P_3 \ X \ C \ X \ SV_3^E + Z \ X \ P_z) \ X \ 2.2.4026 \ lbs/kg$

⁽⁵⁾ Calculated as: Average Emissions per Component (lbs/hr/comp) X Total Number of Components

Calculated as: Average Emissions (lbs/hr) X Annual Operation (hrs/yr) ÷ 2,000 lbs/ton

Table 9. Projected Elutriator and Conveying Emissions - EU 081/082

Number of Proposed Elutriators

8

Number of Proposed Conveyors

2

Annual Operation

8,760 hrs/yr

		Emission Factor ⁽¹⁾ (grains/scf)	PM/PM10	Emissions	PM2.5 Emissions		
Pollutant	Flow Rate (scfm)		Average ⁽²⁾ (lbs/hr)	Annual ⁽³⁾ (Tons/yr)	Average ⁽⁴⁾ (lbs/hr)	Annual ⁽⁴⁾ (Tons/yr)	
Particulate Matter (Elutriator)	400	0.010	0.274	1.200	0.120	0.525	
Particulate Matter (Conveyor)	2,000	0.004	0.130	0.570	0.057	0.249	
			TOTAL	1.770		0.775	

(1) Emission Factor Sources:

For Elutriator: Bagfilter vendor specs

For Conveyor: TRC Test Report 39596-001 conducted on 4/16/2003

- (2) Calculated as: Flow Rate (scfm) X Emission Factor (grains/scf) X 60 (min/hr) X 0.0648 (grams/grain) / 454 (grams/lb) X Number
- (3) Calculated as: Average Emissions (lbs/hr) X Annual Operation (hrs/yr) ÷ 2,000 lbs/ton
- Based on test performed by TRC, $PM_{2.5} = 79.7\%$ of PM_{10} , 43.75% of total PM.

Table 10. Projected Extruder Emissions - EU 081/082

Number of Proposed Extruders

1

Annual Operation

8,760 hrs/yr

HEAF Vent

				Emis	sions
Pollutant	Production (MAR)	Emission Factor ⁽¹⁾ (lb/MAR)	Abatement Factor %	Average ⁽²⁾ (lbs/hr)	Annual ⁽³⁾ (Tons/yr)
Total VOC	(Production Data Company Confidential)	(Production Data Company Confidential)	0	0.171	0.750
PM/Particulate Matter (PM ₁₀)	(Production Data Company Confidential)	(Production Data Company Confidential)	95	0.018	0.078
Particulate Matter (PM _{2.5}) ⁽⁶⁾	_		· · · · · · · · · · · · · · · · · · ·	0.008	0.034

Baghouse Vacuum Convey

			Emissions			
Pollutant	Flow Rate (scfm)	Emission Factor ⁽⁴⁾ (grains/scf)	Average ⁽⁵⁾ (lbs/hr)	Annual ⁽³⁾ (Tons/yr)		
PM/Particulate Matter (PM ₁₀)	1,500	0.015	0.193	0.844		
Particulate Matter (PM _{2.5}) ⁽⁶⁾			0.084	0.369		

Total Emissions

Pollutant	Annual _(Tons/yr)
Particulate Matter (PM ₁₀)	0.922
Particulate Matter (PM _{2.5})	0.403
Total VOCs	0.750

(1) Emission Factor Sources: ISSN 1047-3289 J. Air & Waste Manage. Assoc. 51:1001-1008, Vol 51 July 2001,

Table 3, Nylon 66 Extrusion

(2) Calculated as: Production (MAR) X Emission Factor (lb/million lb nylon) X (1-Abatement Factor/100%) / 8760 hours/year

- (3) Calculated as: Average Emissions (lbs/hr) X Annual Operation (hrs/yr) ÷ 2,000 lbs/ton
- (4) Emission Factor Sources: Bagfilter vendor specs
- Calculated as: Flow Rate (scfm) X Emission Factor (grains/scf) X 60 (min/hr) X 0.0648 (grams/grain) I 454 (grams/lb)
- Based on test performed by TRC, $PM_{2.5} = 79.7\%$ of PM_{10} , 43.75% of total PM.

Table 12. VOC REDUCTION PROJECTS IN HALCON

		VOC Emissions,	VOC Emissions,				
Vent Source		lbs/yr ¹	ton/yr				
PROJECT I - TANK VENT R	ECOVERY						
Project Components		Average of Baseline 2004 and 2005					
481TA54B	BML						
Tank Conservation Vent		19,434	9.72				
481TA108	Flasher						
Condensate Vent Tank		2,166	1.08				
481TA56A A Slurry Tank		633	0.32				
481TA56B B Slurry Tank		614	0.31				
481SE53A A Centrifuge	(vents						
through TA56A)		28	0.01				
481SE53B B Centrifuge	(vents						
through TA56B)		28	0.01				
Uncontrolled	Project Total	22,902	11.45				
Controlled	Project Total ²	16,000	8.00				
Emission Re	duction (TPY)		3.45				

PROJECT II - LP SCRUBBERS EMISSION CONTROL

Project Components	Average of Baselin	ne 2004 and 2005
LP Scrubbers, 401 and 461	58,200	29.10
Uncontrolled Project Total	58,200	29.10
Controlled Project Total ²	30,000	15.00
Emission Reduction (TPY)		14.10
Uncontrolled Total TPY VOC (Project I and	l II)	40.55
Controlled Total TPY VOC (Project I and II)		23.00
Total Change in VOC Emissions ³		-17.55

NOTE:

¹ Emission calculations based on Halcon emissions during baseline period Calculations performed using Engineering Models TANKS4 and WATER9

² VOC emissions controlled via TRU to PSD avoidance level emissions

³Total Reduction VOC Emissions = (VOC Emissions After Control - VOC Vented)

Table 13. Cooling Tower PM Emissions (Insignificant Activity)

Annual Operation

8,760 hrs/yr

I. Modifications to Existing Cooling Towers 1, 2, 3, 4, and 6.

		Baseline Emiss	sions (200:	3)		_			Baseline E	missions	(2004)					_			
				PM10 Emis	ssions	PM2.5 E	missions				PM10 Emiss	ions	PM2.5 Er	missions				PM10 Em	issions
															Post Project				
	Water														Projected Actual	Eliminatio			
	Circulation.	Elimination				fraction of		Water	Elimination				fraction of		Circulation Rate,	n Drift			
Cooling Tower	gpm	Drift Rate, %	TDS	lbs/hr ⁽¹⁾	ton/yr ⁽²⁾	PM10 (%)	(TPY)(3)	Circulation, cpm	Drift Rate, %	TDS	lbs/hr(1)	ton/yr ⁽²⁾	PM10 (%)	(TPY)	gpm ^a	Rate, % ^b	TDSc	lbs/hr ⁽¹⁾	ton/yr(2)
1&2	68700	0.001	834	0.26	1.12	44.3%	0.50	72100	0.001	936	0.30	1.32	44.3%	0.59	92,000	0.001	885	0.36	1.59
3	42734	0.0027	966	0.48	2.12	43.7%	0.92	39741	0.0027	1027	0.48	2.09	43.7%	0.91	59,000	0.001	996.5	0.25	1.12
4	10944	0.007	796	0.27	1.20	44.4%	0.53	10776	0.007	785	0.27	1.17	44.4%	0.52	17,000	0.007	790.5	0.42	1.86
6	9200	0.003	1322	0.15	0.65	42.5%	0.28	11300	0.003	1364	0.19	0.82	42.5%	0.35	17,000	0.003	1343	0.28	1.22
Total					5.09		2.23					5.41		2.37					5.79

^a Post project actual circulation rate = average of baseline + circulation increase.

(1) Calculated as: Increase Water Circulation X 8.34 lb/gal X 60 minutes/hr X Drift Rate/100 X TDS/10^6 X PM10/PM

Estimated Drift Rate: Performance of drift eliminators as % of tower circulation rate

Estimated TDS: ppm total dissolved solids in tower water

PM10/PM: fraction of total PM that is PM10 = 0.893

(2) Calculated as: Average Emissions (lbs/hr) X Annual Operation (hrs/yr) + 2,000 lbs/ton

(3) Calculated as: Fraction of PM10, that is PM2.5 = 0.44 PM10

II. New Cooling Tower

	Increase Water				missions	PM2.5 Emissions			
	Circulation,	Estimated	Estimated	ibs/hr ⁽¹⁾	ton/yr ⁽²⁾	lbs/hr ^{/3)}	ton/yr ⁽³⁾		
Cooling Tower	qpm	Drift Rate. %	TDS						
New Cooling Tower	20,000	0.0010	1,300	0.12	0.51	0.05	0.22		
TOTAL				0.12	0.51	0.05	0.22		

(1) Calculated as: Increase Water Circulation X 8.34 lb/gal X 60 minutes/hr X Drift Rate/100 X TDS/10/6 X PM10/PM

Estimated Drift Rate: Performance of drift eliminators as % of tower circulation rate

Estimated TDS: ppm total dissolved solids in tower water

PM10/PM: fraction of total PM that is PM10 = 0.893

(2) Calculated as: Average Emissions (lbs/hr) X Annual Operation (hrs/yr) + 2,000 lbs/ton

(3) Calculated as: Fraction of PM10, that is PM2.5 = 0.44 PM10

^b Baseline emission estimates utilize the current tower drift elimination rate. Cooling Tower No. 3 post project drift rate based on planned maintenance replacement of drift eliminators.

^c Average of baseline TDS

Table 14. Nylon Condensable PM Emission Calculations

Ascend Emission Factors Developed from Data of Similar Facility

Process	PM2.5 (Condensable PM from Process) lb/ton
Monomer Scrubber Controlled	0.1342
Monomer Scrubber Uncontrolled	1.342
Evaporator Uncontrolled	0.316
Reactor Uncontrolled	1.35
Batch Evaporator Uncontrolled	11.52
Batch Autoclave Uncontrolled	4.4
Batch Autoclave Controlled	0.052

CP - Continuous Polymerization

			_	Percent	of Operation Unc	ontrolled	Conde	Condensable PM Emissions (PM2.5)				
Deschoo	Des	d	4D)	Monomer	F	Decetor	Monomer		Desetes	Takal		
Baseline	Proc	duction (M	4R)	Scrubber	Evaporator	Reactor	Scrubber	Evaporator	Reactor	Total		
Year	Total	Batch	CP	(%)	(%)	(%)	TPY	TPY	TPY	TPY		
2003	643.3373		559.2343	1.87%	0.70%	2.28%	21.30	0.31	5.10	26.70		
2004	673.62		570.384	1.5%	0.4%	2.7%	21.72	0.18	5.20	27.10		
2005	638.9347		544.8727	1.1%	0.1%	1.7%	20.09	0.06	4.97	25.12		
2009	337.577		248.156	0.1%	2.9%	0.2%	8.43	0.57	2.26	11.26		
2010	670.53		542.64	0.2%	0.1%	2.8%	18.53	0.05	4.94	23.53		
Baseline Period Average												
(2003 and 2004)	656.2773		557.6283				21.51	0.24	5.15	26.90		
Demand Growth	863.7	130	733.7				28.30	0.32	6.77	35.39		
Post Project	1100	130	970	1.87%	2.	9% 2.8%	38.02	2.24	8.84	49.10		
CP PM increase (EU-08	1), TPY									13.70		

Batch Polymerization

				Controlled Operation	ent of Operation Uncontrolled			Condensable PM Emissions (PM2.5)				
Baseline	duction (MA	NR)		Autoclave	Evaporato	or	Autoclave	Autoclave	Evaporator	Autoclave	Total	
Year	Total	Batch	CP	(%)	(%)		(%)	TPY	TPY	TPY	TPY	
2003	643.3373	84.103		94.5%	1.80%		5.47%	1.03	4.36	5.06	10.45	
2004	673.62	103.236		96.7%	0.1%		3.3%	1.30	0.30	3.75	5.34	
2005	638.9347	94.062		95.9%	0.0%		4.1%	1.17	0.00	4.24	5.41	
2009	337.577	89.421		99.8%	0.1%		0.2%	1.16	0.26	0.20	1.61	
2010	670.53	127.89		99.9%	0.0%		0.1%	1.66	0.00	0.14	1.80	
Baseline Period Averag	je							·				
2003 and 2004)	656.2773	98.649						1.17	2.33	4.40	7.90	
emand Growth	863.7	130						1.54	3.07	5.80	10.41	
Post Project	1100	130		94.5%	6	1.80%	5.47%	1.60	6.74	7.82	16.16	
atch PM increase (El	U-082), TPY		***								5.75	
'M increase total (EU-	-081 and EU-0	82). TPY									19.46	

Note: Emisisons do not include conversion project emissions of 7.95 TPY PM10 and 3.48 TPY of PM2.5.

Table 15. PM Emissions Resulting from Secondary Formation of NH4NO3 from Ammonia Slip

AND 1 A COLD 12										
Nitric Acid Unit (EU-042)										
	N	itric Unit Opera	ation - On Stream						-	
	.,		me		Ammonia		PA	/2.5 Emissio	ne	
	_	2003 2004		Slip 2003 2004			2003	2004	8760	
		hrs	hrs	lb/hr	TPY	TPY	TPY	TPY	TPY	
Baseline Emissions		8202	7740	0.33	1.35	1.28	6.36	6,00	6.79	
Demand Growth based on Year 2003 Operation		8202		0.33	1.35		6.36			
		SCR - On S	Stream Time		Ammonia		PA	A2.5 Emissio	ons	
Adipic Acid (Synthesis & Refining)		2003	2004	Slip	2003	2004	2003	2004	8760	
(EU-002)		hrs	hrs	lb/hr	TPY	TPY	TPY	TPY	TPY	
Baseline Emissions	SCRI	0	4981	0.125	0.00	0.31	0.00	1.46		
Baseline Emissions	SCRII	916	1586	0.042	0.02	0.03	0.09	0.16	_	
						Sum	0.09	1.62		
Post Project SNCR Emissions				0.309					6.36	5.50 @ 40 ppmv (Vendor guarentee)
(based on Vendor Guarantee)										

Note: 100% of ammonia slip assumed to convert to PM2.5, NH4NO3 ratio of molecular weights NH4NO3/NH3, (80,04/17.03). Site specific data from SARA 313 reporting.

Ammonia Slip Ib/hr = TRU Exit Flow (wet Ib-mol/hr)* (1 - Moisture (% Water/100) / MW Exit Gas * ((NH3 Slip (ppm) / 1,000,000) * MW NH3) 0.309 Ib/hr = 12,427 Ib-mole/hr * (1 - 7 / 100) / 25.5 * ((40 / 1000000) * 17.031)

Table 16. EU-020 VOC Emissions Updated based on Revised Tank Emission Calculations

I. Step 1, Removal of Tanks Emissions from Baseline Estimates

			Baseline E	missions (TP)	<u>()</u>
	_	2004	2005	2007	2008
AOR Reported Total	_	n/a	n/a	93.0	48.9
AOR Reported LP Scrubbers				29.1	16.6
AOR Reported Tanks		n/a	n/a	14.83	14.6655
	Total minus Tanks & LP Scrubbers			49.0	17.7

I. Step 2, Addition of New Emissions to Baseline Estimates and Projection of Post Project Actual

Site Specific Emission Factor	Conf.	tons/MAR			
Based on 2007 and 2008 operation					Demand Growth and Post Project
	2004	2005	2007	2008	Max
Production MAR	Conf.	Conf.	Conf.	Conf.	Conf.
OBUD Adjusted Emissions	47.21	42.22			48.78
LP Scrubber Emissions	29.10	29.10			29.1
Tanks Project Controlled*	10.86	12.04			17.31
Non Project Tanks Tanks (Total Minus Project Controlled Tanks)	20.10	20.65			22.43
Total VOC Emissions	107.27	104.01			
Baseline Emissions, TPY	Ave:	105.64			
Demand Growth/Post Project Emissions, TPY					117.62
(580 MAR)					

(Note Tanks were not part of the OBUD permit emission assessment)

Table 17. Projected Emissions for Project Additional Steam Requirement Equivalent to 300,000 Mmbtu/yr

II. Natural Gas Combustion Emissions for additional 1080 MAR

	E	mission Factors		
	Boilers 4/5/6	Boilers 7/8	Boiler 9	Cogen
	lb/MMBtu	lb/MMBtu	Ib/MMBtu	lb/MMBtu
0	0.0235	0.0006	0.038	0.0567
NOX	0.1667	0.0100	0.036	0.0610
PM/PM10	0.0075	0.0178	0.0075	0.0075
PM2.5	0.0075	0.0178	0.0075	0.0075
SO2	0.0006	0.0006	0.000003	0.0006
/OC	0.0054	0.0016	0.004	0.0033
Boiler Usage	Boilers 4/5/6	Boilers 7/8	Boiler 9	Cogen
2002	26.06%	21.71%	0.00%	52.24%
2003	30.28%	24.70%	0.00%	45.02%
2004	28.77%	25.50%	0.00%	45.72%
2005	29.77%	25.69%	0.00%	44.54%
1/1/2010 - 3/31/2011	20.71%	22.76%	4.32%	52.21%

Note: Values represent % of total heat input of powerhouse

Annual Emissions Associated with Additional 1080 MAR Steam Requirement Relative to Steam Generator

300,000 MMBut/yr required to produce additional steam at 1080 MAR

2002	Boilers 4/5/6	Boilers 7/8	Boiler 9	Cogen	Total
co	0.92	0.02	0.00	4.44	5.38
NOX	6.51	0.33	0.00	4.78	11.62
PM/PM10	0.29	0.58	0.00	0.58	1.46
PM2.5	0.29	0.58	0.00	0.58	1.46
SO2	0.02	0.02	0.00	0.05	0.09
VOC	0.21	0.05	0.00	0.26	0.52

VOC

2003	Boilers 4/5/6	Boilers 7/8	Boiler 9	Cogen	Total
CO	1.07	0.02	0.00	3.83	4.92
NOX	7.57	0.37	0.00	4.12	12.06
PM/PM10	0.34	0.66	0.00	0.50	1.50
PM2.5	0.34	0.66	0.00	0.50	1.50
SO2	0.03	0.02	0.00	0.04	0.09
voc	0.24	0.06	0.00	0.22	0.53

2004	Boilers 4/5/6	Boilers 7/8	Boiler 9	Cogen	Total
со	1.02	0.02	0.00	3.89	4.93
NOX	7.19	0.38	0.00	4.19	11.76
PM/PM10	0.32	0.68	0.00	0.51	1.51
PM2.5	0.32	0.68	0.00	0.51	1.51
SO2	0.03	0.02	0.00	0.04	0.09
VOC	0.23	0.06	0.00	0.22	0.52

2005	Boilers 4/5/6	Boilers 7/8	Boiler 9	Cogen	Total
co	1.05	0.02	0.00	3.79	4.86
NOX	7.44	0.39	0.00	4.08	11.90
PM/PM10	0.33	0.69	0.00	0.50	1.52
PM2.5	0.33	0.69	0.00	0.50	1.52
SO2	0.03	0.02	0.00	0.04	0.09
VOC	0.24	0.06	0.00	0.22	0.52

Current	Boilers 4/5/6	Boilers 7/8	Boiler 9	Cogen	Total
CO	0.73	0.02	0.25	4.44	5.44
NOX	5.18	0.34	0.23	4.78	10.53
PM/PM10	0.23	0.61	0.05	0.58	1.47
PM2.5	0.23	0.61	0.05	0.58	1.47
SO2	0.02	0.02	0.00	0.05	0.08
VOC	0.17	0.05	0.03	0.26	0.50

2002/2003 Avg	Boilers 4/5/6	Boilers 7/8	Boiler 9	Cogen	Total
NOX	7.04	0.35	0.00	4.45	11.84
rojected for CO, PM,	and SO2 Emissio	ns Based on Bas	seline Years 200	2 and 2003	
2003/2004 Avg	Boilers 4/5/6	Boilers 7/8	Boiler 9	Cogen	Total
co	1.04	0.02	0.00	3.86	4.92
PM/PM10	0.33	0.67	0.00	0.51	1.51
PM2.5	0.33	0.67	0.00	0.51	1.51
SO2	0.03	0.02	0.00	0.04	0.09
Projected for VOC Em	issions Based on	Baseline Years 2	2002 and 2003		
Frojected for VOC Em					

0.06

0.00

0.22

0.52

0.24

ATTACHMENT 1
POWERHOUSE UNIT FORMS

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 an initial, revised or renewal 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. 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 an 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 or 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. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes 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.

DEP Form No. 62-210.900(1) – Form

Section [10] Boiler Nos. 4, 5, 6

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.					
<u>En</u>	nissions Unit Descr	ription and Status				
1.	Type of Emissions	Unit Addressed in this	Section: (Check one)			
	single process	s Unit Information Section or production unit, or ac which has at least one de	tivity, which produces of	one or more air		
	of process or pr	s Unit Information Section roduction units and active vent) but may also produced	vities which has at least	e emissions unit, a group one definable emission		
		s Unit Information Section production units and a	-	e emissions unit, one or fugitive emissions only.		
2.	Description of Emissions Unit Addressed in this Section: Boiler Nos. 4, 5 and 6 are normally fueled by natural gas.					
3.		entification Number: EU 015 (Boiler 5), EU 016	(Boiler 6)			
4.	Emissions Unit	5. Commence	6. Initial Startup	7. Emissions Unit		
	Status Code:	Construction	Date:	Major Group		
0	Fodoral Program A	Date: Check all	that apply)	SIC Code: 28		
0.	☐ Acid Rain Unit	• ,	mat appry)			
9.	Package Unit:					
•	Manufacturer:	M	Iodel Number:			
10.	Generator Namepla	ate Rating: MW				
11.	10. Generator Nameplate Rating: MW 11. Emissions Unit Comment: No. 6 fuel oil is an alternate fuel, which may contain blended on-specification used oil as supplemental fuel. Boiler No.4 and/or No.5 may also burn as supplemental fuels AGS (a mixture of organic acids from deep well waste stream), KATT (a mixture of organic esters), DME (Dimethyl Ethers), Amines and Area 480 residue. Emissions are controlled by proper combustion control and by fuel consumption.					

DEP Form No. 62-210.900(1) – Form

Section [10] Boiler Nos. 4, 5, 6

Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2. Control Device or Method Code:
Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2. Control Device or Method Code:
Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2. Control Device or Method Code:
Emissions Unit Control Equipment/Method: Control of
Control Equipment/Method Description:
1. Condoi Equipment/Method Description.
2. Control Device or Method Code:

17

Section [10] Boiler Nos. 4, 5, 6

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1.	Maximum Process or Throughput Rate:	
2.	Maximum Production Rate:	
3.	Maximum Heat Input Rate: 723 million Btu/hr ^a	
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:

The aggregate maximum operating rate is 723 MMBtu/hr for Boiler Nos. 4, 5, and 6 with no individual boiler limits. During periods of outage of the cogeneration plant, Boiler Nos. 4, 5, and 6 may operate at a combined maximum operating rate of 864 MMBtu/hr.

For a period of ten years from the effective date of Permit No. 0330040-036-AC, total heat input for EU 003 (Boiler No. 8), 004 (Boiler No. 7), 014 (Boiler No. 4), 015(Boiler No. 5), 016 (Boiler No. 6), 032 (Cogeneration Plant) and 099 (Boiler No. 9) shall not exceed more than 16,360,362 MMBtu/yr from all fuels in any 12-month rolling period.

DEP Form No. 62-210.900(1) - Form

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1.	Identification of Point on Flow Diagram: 14, 15, 16	Plot Plan or	2. Emission Point 7	Гуре Code:	
	Descriptions of Emission				
	 ID Numbers or Descriptions of Emission Units with this Emission Point in Common: Boilers Nos. 5 and 6 vent to a common stack. 				
5.	Discharge Type Code: V	6. Stack Height 150 feet	:	7. Exit Diameter: 10 feet	
8.	Exit Temperature: 9. Actual Volum 450° F 74,171 acfm ^a		netric Flow Rate:	10. Water Vapor: %a	
11.	. Maximum Dry Standard F dscfm	low Rate:	12. Nonstack Emissi feet	on Point Height:	
13.	Emission Point UTM Coo	rdinates		Latitude/Longitude	
	Zone: 17 East (km):		Latitude (DD/MI	·	
1.5	North (km)		Longitude (DD/I	MM/SS)	
15.	Emission Point Comment:				
^a B	oiler No. 4 - 74,171; Boiler N	lo. 5 - 71,541 acfm	; Boiler No. 6 - 71,782	acfm	

DEP Form No. 62-210.900(1) – Form

Section [10] **Boiler Nos. 4, 5, 6**

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 5

1. Segment Description (Process/Fuel Type): Natural Gas Combustion						
	urce Classification Code 2-006-01	e (SCC):	3. SCC Units MM ft ³ Burn			
4. Ma 0.8	aximum Hourly Rate:	5. Maximum	Annual Rate:	6.	Estimated Annual Activity Factor:	
7. Ma	aximum % Sulfur:	8. Maximum	% Ash:	9.	Million Btu per SCC Unit: 1,020 ¹	
10. Segment Comment: The aggregate maximum operating rate is 723 MMBtu/hr for Boiler Nos. 4, 5, and 6 with no individual boiler limits. During periods of outage of the cogeneration plant, Boiler Nos. 4, 5, and 6 may operate at a combined maximum operating rate of 864 MMBtu/hr. Max. Hourly Rate: 864 MMBtu/hr x 1 MM ft³ Burned /1020 MMBtu = 0.847 MM ft³ burned/hr for all boilers.						
Segme	ent Description and Ra	te: Segment 2	of <u>5</u>			
	gment Description (Procustion of AGS; a mixture					

See Segment Comment

1-02-013-01

3. SCC Units:

Thousand Gallons Burned

4. Maximum Hourly Rate: 5. Maximum Annual Rate: **See Segment Comment** 7. Maximum % Sulfur:

2. Source Classification Code (SCC):

6. Estimated Annual Activity Factor:

Maximum % Ash: 9. Million Btu per SCC Unit: 8.

10. Segment Comment:

AGS may be burned in Boiler No 4 and 5 only, in conjunction with burning of gas or fuel oil. Title V Permit No 0330040-029-AV limits combustion to a maximum of 8,000 pounds of AGS on an hourly basis. The equivalent annual rate based on 8760 hours of operation is 70,080,000 lbs per year.

DEP Form No. 62-210.900(1) - Form

¹ The natural gas heat content has ranged from 1010 Btu/cuft to 1040 Btu/cuft based on supplier data.

Section [10] Boiler Nos. 4, 5, 6

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 5

1. Segment Description (Pro KATT composite fuel, consisti Dimethyl Easters), Amines (fro residue (a mixture of alcohol a	ng of KATT (Keto om nylon and nyl	one Alcohol Top on intermediate:		
2. Source Classification Cod 1-02-013-01				ns Burned
4. Maximum Hourly Rate: See Segment Comment	5. Maximum See Segme	Annual Rate: nt Comment	6.	Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum	% Ash:	9.	Million Btu per SCC Unit:
KATT composite fuel may be I gas or fuel oil. Title V Permit N pounds of KATT composite fu	lo 0330040-029-A el on an hourly b	V limits combus		
Segment Description and Ra				
Segment Description (Pro Used Oil	cess/Fuel Type):			
2. Source Classification Cod 1-02-013-2	e (SCC):	3. SCC Units Thousand		ns Burned
4. Maximum Hourly Rate: See Segment Comment		Annual Rate: nt Comment		Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum	% Ash:	9.	Million Btu per SCC Unit

Boilers Nos. 4, 5, and 6 are permitted to burn on-specification used oil. On-specification used oil is defined as used oil that meets the specifications of 40 CFR 279 - Standards for the

DEP Form No. 62-210.900(1) - Form

Management of Used Oil, see APM-FUEL.

10. Segment Comment:

Section [10] Boiler Nos. 4, 5, 6

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 5 of 5

1.	Segment Description (Proc No. 6 Fuel Oil Combustion	cess/Fuel Type):			
2.	Source Classification Code (SCC): 1-02-004-01		3. SCC Units: Thousand Gallons Burned		
4.	Maximum Hourly Rate: 5.448	5. Maximum 2 38,987.9		6. Estimated Annual Activity Factor:	
7.	Maximum % Sulfur: 2.48	8. Maximum ⁶	% Ash:	9. Million Btu per SCC Unit: 158.6	

10. Segment Comment:

No. 6 fuel oil, blended with on-specification used oil, may be used as an alternate fuel provided the Department is notified in writing within seven days of the fuel change over.

The aggregate maximum operating rate is 723 MMBtu/hr for Boiler Nos. 4, 5, and 6 with no individual boiler limits. During periods of outage of the cogeneration plant, Boiler Nos. 4, 5, and 6 may operate at a combined maximum operating rate of 864 MMBtu/hr.

Max. Hourly Rate:

864 MMBtu/hr x 1,000 gallon /158.6 MMBtu = 5.448 x 10³ gallon burned/hr for all boilers.

DEP Form No. 62-210.900(1) – Form

Section [10] Boiler Nos. 4, 5, 6

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
		EL
	diame	NS
		NS
		EL
		NS
		EL
	Device Code	Device Code

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [1] of [6] PM/PM10

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Pollutant Emitted: PM/PM10	2. Total Percent Efficiency of Control:			
3. Potential Emissions:		•	netically Limited?	
lb/hour 24	0 tons/year	⊠ Ye	es 🗌 No	
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):			
6. Emission Factor: PSD Avoidance Limit			7. Emissions	
		ł	Method Code:	
Reference:			0	
8.a. Baseline Actual Emissions (if required):	8.b. Baseline			
tons/year 273.6	From: To: 1/	1/2003 to 1	2/31/2004	
9.a. Projected Actual Emissions (if required):	9.b. Projected		-	
tons/year	☐ 5 yea	urs 🔲 10 y	years	
10. Calculation of Emissions:				
11. Potential, Fugitive, and Actual Emissions C				
Potential emissions are for the powerhouse gro- Response 5/3/11).	up (Boilers 4, 5,	6, 7, 8, 9, a	ınd cogen) (see RAI	
Hesponse 5/3/11). Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison.				

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION

Section [10] **Boiler Nos. 4, 5, 6**

Page [1]

of [6] PM/PM10

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions 1 of 1

1.	Basis for Allowable Emissions Code: ESPSD	2.	Future Effective Date of Allowable Emissions:
3.	Allowable Emissions and Units: 240 tons/year	4.	Equivalent Allowable Emissions: 1b/hour 240 tons/year
5.	Method of Compliance:		
6.	Allowable Emissions Comment (Description Allowable emissions are for the powerhouse RAI Response 5/3/11).		
All	owable Emissions Allowable Emissions	<u> </u>	f
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 C	Operating Method):
All	owable Emissions Allowable Emissions	<u> </u>	f
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):

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [2] of [6] CO

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:				
3. Potential Emissions: lb/hour	tons/year	4. Synthetically Limited? ☐ Yes ☐ No			
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):				
6. Emission Factor:		7. Emissions Method Code:			
Reference:					
8.a. Baseline Actual Emissions (if required): tons/year 175.2		24-month Period: 1/2003 to 12/31/2004			
9.a. Projected Actual Emissions (if required): tons/year 231.36		l Monitoring Period: ars ☐ 10 years			
10. Calculation of Emissions:					
11. Potential, Fugitive, and Actual Emissions Comment: Potential emissions are for the powerhouse group (Boilers 4, 5, 6, 7, 8, 9, and cogen) (see RAI Response 5/3/11).					
Baseline and emissions include powerhouse gro Attachment A, Table 1a for complete emissions		include demand growth, see			

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION

Section [10] Boiler Nos. 4, 5, 6 Page

[2] of

[6] CO

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

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	n of Operating Method):
Allowable Emissions	of
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	
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	n of Operating Method):

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [3] of [6] VOC

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions					
1. Pollutant Emitted:	2. Total Percent Efficiency of Control:				
VOC					
3. Potential Emissions: lb/hour	tons/year	4. Synth ⊠ Ye	netically Limited?		
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):				
6. Emission Factor:			7. Emissions Method Code:		
Reference:					
8.a. Baseline Actual Emissions (if required): tons/year 47.7	8.b. Baseline 24-month Period: From: To: 1/1/2004 to 12/31/2005				
9.a. Projected Actual Emissions (if required): tons/year 63.55	9.b. Projected ☐ 5 yea	Monitorians ☐ 10	~		
10. Calculation of Emissions:					
11. Potential, Fugitive, and Actual Emissions Comment: Potential emissions are for the powerhouse group (Boilers 4, 5, 6, 7, 8, 9, and cogen) (see RAI Response 5/3/11).					
Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison.					

28

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION

Section [10] Boiler Nos. 4, 5, 6 Page [3]

of [6] VOC

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Al	lowable Emissions Allowable Emissions	c	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.			
Al	lowable Emissions Allowable Emissions	0	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		Sperating Method).
Al	lowable Emissions Allowable Emissions	c	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):

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [4] of [6] SO_2

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation 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 So ₂ 3. Potential Emissions: Ib/hour tons/year 4. Synthetically Limit Solution No					
3. Potential Emissions: Bhour 4. Synthetically Limit	ted?				
lb/hour tons/year ⊠ Yes ☐ No	ted?				
10/110di tollo/yedi = =					
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year					
6. Emission Factor: 57.5 tons per 24 hour period 7. Emission Method					
Reference: Title V Permit 0330040-029-AV					
8.a. Baseline Actual Emissions (if required): 8.b. Baseline 24-month Period:					
tons/year 3,563.9 From: To: 1/1/2003 to 12/31/2004					
9.a. Projected Actual Emissions (if required): tons/year 4603.99 9.b. Projected Monitoring Period: □ 5 years □ 10 years					
10. Calculation of Emissions:					
11. Potential, Fugitive, and Actual Emissions Comment: Potential emissions are for the powerhouse group (Boilers 4, 5, 6, 7, 8, 9, and cogen) (see RAI Response 5/3/11).					
Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison.	Baseline emissions include powerhouse group and do not include demand growth, see				

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [4] of [6] SO₂

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: RULE	2.	Future Effective Date of Allowable Emissions:	
3.	Allowable Emissions and Units: 57.5 tons per 24-hour period	4.	Equivalent Allowable Emissions: lb/hour tons/year	
5.	Method of Compliance:			
	Allowable Emissions Comment (Description gregate maximum total sulfur dioxide emissions in any 24-hour period.			
Al	lowable 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.	6. Allowable Emissions Comment (Description of Operating Method):			
Al	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.	5. Method of Compliance:			
6. Allowable Emissions Comment (Description of Operating Method):				

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [4] of [6] NOx

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions			
1. Pollutant Emitted:	2. Total Percent Efficiency of Control:		
NOX			
3. Potential Emissions:		4. Synthetically Limited?	
lb/hour	tons/year	⊠ Yes □ No	
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):		
6. Emission Factor:		7. Emissions Method Code:	
Reference:			
8.a. Baseline Actual Emissions (if required): 8.b. Baseline 24-month Period:			
tons/year 1,021.2	From: To: 1/	/1/2002 to 12/31/2003	
9.a. Projected Actual Emissions (if required): tons/year 1249.91	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years		
10. Calculation of Emissions:			
11. Potential, Fugitive, and Actual Emissions Comment: Potential emissions are for the powerhouse group (Boilers 4, 5, 6, 7, 8, 9, and cogen) (see RAI Response 5/3/11).			
Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison.			

DEP Form No. 62-210.900(1) - Form

Section [10]

POLLUTANT DETAIL INFORMATION Page [5] of [6]

Boiler Nos. 4, 5, 6

NOX

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -**ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

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.	6. Allowable Emissions Comment (Description of Operating Method):			
Al	lowable 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:			
0.	6. Allowable Emissions Comment (Description of Operating Method):			
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):				

POLLUTANT DETAIL INFORMATION
Page [6] of [6]
PM2.5

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Totential, Estimated Fugitive and Dasenne & Frojected Actual Emissions				
 Pollutant Emitted: PM2.5 	2. Total Perce	ent Efficie	ency of Control:	
3. Potential Emissions:		4. Synth	netically Limited?	
		⊠ Ye	*	
	3 tons/year			
5. Range of Estimated Fugitive Emissions (as	applicable):			
to tons/year				
6. Emission Factor: PSD Avoidance Limit			7. Emissions	
			Method Code:	
n . c			0	
Reference:				
8.a. Baseline Actual Emissions (if required):	8.b. Baseline 2			
tons/year 169.3	From: To: 1/1/	/2003 to 1	2/31/2004	
O. a. Projected Actual Emissions (if required)	Oh Projected	Manitaria	and Daminds	
9.a. Projected Actual Emissions (if required):	9.b. Projected		-	
tons/year	☐ 5 year	:s ∐ 10 :	years	
10. Calculation of Emissions:				
10. Calculation of Emissions.				
			ĺ	
11. Potential, Fugitive, and Actual Emissions C	omment:			
Potential emissions are for the powerhouse group (Boilers 4, 5, 6, 7, 8, 9, and cogen) (see RAI Response 5/3/11).				
Baseline emissions include powerhouse group and do not include demand growth, see				
Attachment A, Table 1a for complete emissions comparison.				

DEP Form No. 62-210.900(1) – Form

EMISSIONS UNIT INFORMATION Section [10]

POLLUTANT DETAIL INFORMATION Page [6] of [6]

Boiler Nos. 4, 5, 6

PM2.5

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions 1 of 1

1.	Basis for Allowable Emissions Code: ESPSD	2.	Future Effective Date of Allowable Emissions:
3.	Allowable Emissions and Units: 143 tons/year	4.	Equivalent Allowable Emissions: lb/hour 143 tons/year
5.	Method of Compliance:		
6.	Allowable Emissions Comment (Description Allowable emissions are for the powerhouse RAI Response 5/3/11).		
All	owable Emissions Allowable Emissions	o	f
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:		
0.	Allowable Emissions Comment (Description	. OI (Sperating Method).
<u>All</u>	owable Emissions Allowable Emissions	<u> </u>	f
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):

DEP Form No. 62-210.900(1) – Form

Section [10] **Boiler Nos. 4, 5, 6**

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

	SIDIC LAMBSIONS LAMBOUR. VISION LAMBON	ons Emmation Tol I	
1.	Visible Emissions Subtype: VE20- Visible Emissions	2. Basis for Allowable ⊠ Rule	Opacity: ☐Other
3.	Allowable Opacity: Normal Conditions: 20 % Ex Maximum Period of Excess Opacity Allower	ceptional Conditions:	40 % 2 min/hour
4.	Method of Compliance: EPA Method 9		
5.	Visible Emissions Comment:		
	Rule 62-296-406(1).		
Vis	sible Emissions Limitation: Visible Emissi	ons Limitation _of _	
1	Wigitala Danissiana Casherman		
1.	Visible Emissions Subtype:	2. Basis for Allowable ☐ Rule	Opacity: ☐ Other
_	Allowable Opacity:	☐ Rule	Other
_	Allowable Opacity:	Rule	± •
3.	Allowable Opacity: Normal Conditions: % Ex	Rule	Other
3.	Allowable Opacity: Normal Conditions: % Ex Maximum Period of Excess Opacity Allower	Rule	Other
3.	Allowable Opacity: Normal Conditions: % Ex Maximum Period of Excess Opacity Allowe Method of Compliance:	Rule	Other
3.	Allowable Opacity: Normal Conditions: % Ex Maximum Period of Excess Opacity Allowe Method of Compliance:	Rule	Other
3.	Allowable Opacity: Normal Conditions: % Ex Maximum Period of Excess Opacity Allowe Method of Compliance:	Rule	Other

36

DEP Form No. 62-210.900(1) – Form

Section [10] Boiler Nos. 4, 5, 6

H. CONTINUOUS MONITOR INFORMATION

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

<u>Cc</u>	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:		
7.	Continuous Monitor Comment:			
<u>Co</u>	ntinuous Monitoring System: Continuous	s 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:		
7.	Continuous Monitor Comment:			

37

DEP Form No. 62-210.900(1) – Form

Section [10] Boiler Nos. 4, 5, 6

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: Previously Submitted, Date 3/21/11
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: Previously Submitted, Date 3/21/11
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: Previously Submitted, Date 3/21/11
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
6.	Not Applicable Compliance Demonstration Reports/Records: ☐ Attached, Document ID: ☐ Test Date(s)/Pollutant(s) Tested: ☐ Previously Submitted, Date: ☐ Test Date(s)/Pollutant(s) Tested: ☐ 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.
7.	Other Information Required by Rule or Statute: Attached, Document ID: Not Applicable

DEP Form No. 62-210.900(1) – Form

Section [10] Boiler Nos. 4, 5, 6

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1.		is (Rules 62-212.400(10) and 62-212.500(7),
	F.A.C.; 40 CFR 63.43(d) and (e)): Attached, Document ID:	_ ⊠ Not Applicable
2.	Good Engineering Practice Stack Height	Analysis (Rules 62-212.400(4)(d) and 62-
	212.500(4)(f), F.A.C.): ☐ Attached, Document ID:	⊠ Not Applicable
3.		: (Required for proposed new stack sampling facilities
	only) Attached, Document ID:	_ ⊠ Not Applicable
Ac	Iditional Requirements for Title V Air	Operation Permit Applications
1.	Identification of Applicable Requirer Attached, Document ID:	
2.	Compliance Assurance Monitoring: Attached, Document ID:	_ ⊠ Not Applicable
3.	Alternative Methods of Operation: Attached, Document ID:	Not Applicable ■
4.	Alternative Modes of Operation (Em Attached, Document ID:	
Ad	lditional Requirements Comment	

39

DEP Form No. 62-210.900(1) – Form

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 an initial, revised or renewal 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. 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 an 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 or 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. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes 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.

DEP Form No. 62-210.900(1) – Form

Section [11] Boiler Nos. 8, 7

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 unregulated em	unit addressed in this Entissions unit.	missions Unit Information	on Section is an	
En	nissions Unit Descr	ription and Status			
1.	Type of Emissions	Unit Addressed in this	Section: (Check one)		
	process or proc	s Unit Information Section Unit Information Section Unit, or activity, ast one definable emissi	which produces one or	_	
	of process or p	s Unit Information Section roduction units and active vent) but may also produced	vities which has at least	e emissions unit, a group one definable emission	
	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.	2. Description of Emissions Unit Addressed in this Section: Two B & W Boilers each rated for 388 MMBtu/hour and 225,000 pounds/hour steam production.				
3.	Emissions Unit Ide	entification Number:			
	EU 003 (Boiler 8)	, EU 004 (Boiler 7)			
4.	Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 28	
8.	Federal Program Applicability: (Check all that apply)				
	☐ Acid Rain Unit ☐ CAIR Unit				
9.					
1.0	Manufacturer: Model Number:				
	10. Generator Nameplate Rating: MW				
11.	11. Emissions Unit Comment:				

DEP Form No. 62-210.900(1) – Form

Section [11] Boiler Nos. 8, 7

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description:
Low NOx Burners
2. Control Device or Method Code: 024
Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2. Control Device or Method Code:
Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2. Control Device or Method Code:
Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2. Control Device or Method Code:

DEP Form No. 62-210.900(1) – Form

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Thro	ughput Rate:	
2. Maximum Production Rate		
3. Maximum Heat Input Rate:	388 million Btu/hr ^a	
4. Maximum Incineration Rat	e:pounds/hr	
	tons/day	
5. Requested Maximum Oper	ating Schedule:	
	24 hours/day	7 days/week
	52 weeks/year	8,760 hours/year
6. Operating Capacity/Schedu	le Comment:	
For a period of ten years from heat input for EU 003 (Boiler 5), 016 (Boiler No. 6), 032 (Co	nd heat input rate provided per in the effective date of Permit N r No. 8), 004 (Boiler No. 7),014 (ogeneration Plant) and 099 (Bo u/yr from all fuels in any 12-mo	o. 0330040-036-AC, total (Boiler No. 4), 015(Boiler No. iler No. 9) shall not exceed

DEP Form No. 62-210.900(1) – Form

EMISSIONS UNIT INFORMATION Section [11]

Boiler Nos. 8, 7

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1.	Identification of Point on I Flow Diagram: 04, 03	Plot Plan or	2. Emission Point 7 2	Type Code:
3.	Descriptions of Emission			
4.	ID Numbers or Descriptio	ns of Emission Ur	nits with this Emission	n Point in Common:
5.	Discharge Type Code: V	Stack Height125 feet	:	 Exit Diameter: 12 feet
8.	Exit Temperature: 352°F ^a	9. Actual Volumetric Flow Rate: 237,845 acfm ^a		10. Water Vapor: %a
11.	Maximum Dry Standard F dscfm	low Rate:	12. Nonstack Emissi feet	on Point Height:
13.	Emission Point UTM Coo Zone: 17 East (km): North (km)		14. Emission Point I Latitude (DD/M) Longitude (DD/M)	·
15.	Emission Point Comment:		Longitude (DD/I	vivioo)
Data above for Boiler No. 7. Boiler No. 8 - 12 feet (exit diameter), 227,074 acfm, 369 deg. F Stack data based on September 2, 2010 TRC Emission Test Report				

DEP Form No. 62-210.900(1) – Form

Section [11]

Boiler Nos. 8, 7

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 3

1. Segment Description (Process/Fuel Type):					
Natural Gas Combustion					
2. Source Classification Code (SCC): 1-02-006-01			3. SCC Units: Million Cubic Feet		
4. Maximum Hourly Rate: 0.38 per boiler	5. Maximum . 1,100 per l		6.	Estimated Annual Activity Factor:	
7. Maximum % Sulfur:	8. Maximum	% Ash:	9.	Million Btu per SCC Unit: 1,020 ¹	
10. Segment Comment:	N / N / D / L / L				
Each boiler is rated for 388	MIMBUUNT.				
388 MMBtu/hr x 1 MMCuft informational purposes only	•	= 0.38 MMCui	ft /hr	per boiler (Estimated for	
Per Permit No. 0330040-029 1,100 million standard cubic	,		_	•	
Segment Description and Rate: Segment 2 of 3					
1. Segment Description (Proc Maleic Anhydride Production	• • •				
Maiere Amiyuride i Toddeno	JII OII-Gas				
2. Source Classification Code	e (SCC):	3. SCC Units		T	
1-02-007-99 4. Maximum Hourly Rate:	T ₅ Maximum	Million Co		Estimated Annual Activity	
6.5 per boiler		5. Maximum Annual Rate: 56,940 per boiler		Factor:	
7. Maximum % Sulfur:	8. Maximum % Ash:		9.	Million Btu per SCC Unit:	
10. Segment Comment: Per Permit No. 0330040-029-AV, Maleic is limited to 6.5 MMscf/hr gas flow rate to each boiler. 6.5 MMscf/hr x 8760 hr/year = 56,940 MMscf/year per boiler.					

 $^{^1}$ The natural gas heat content has ranged from 1010 Btu/cuft to 1040 Btu/cuft based on supplier data. DEP Form No. 62-210.900(1) – Form

Section [11] Boiler Nos. 8, 7

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 5

1. Segment Description (Pro	ocess/Fuel Type):			
Pentane Vapor Steam				
2. Source Classification Cod	de (SCC):	3. SCC Units	s:	
1-02-013001		Pounds per Hour		
4. Maximum Hourly Rate:	5. Maximum	Annual Rate:	6. Estimated Annual Activity	
886 per boiler	3,881		Factor:	
7. Maximum % Sulfur:	8. Maximum	% Ash:	9. Million Btu per SCC Unit:	
10. Segment Comment:				
Based on April 9, 1991 FDE		-	<u>-</u>	
		_	gas header. The maximum flow	
of pentane vapor is estimate	ea at ood id/nr to	o the natural ga	as neader system.	

DEP Form No. 62-210.900(1) – Form

Section [11] Boiler Nos. 8, 7

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
PM/PM ₁₀			EL
СО			EL
voc			EL
SO ₂			NS
NO _x	NO _x 024 -		EL
PM2.5			EL

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION
Page [1] of [6]
PM/PM₁₀

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM/PM ₁₀	2. Total Perc	ent Efficie	ency of Control:
3. Potential Emissions: 38.8 lb/hour 240 t			netically Limited?
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):		
6. Emission Factor: 0.1 lb/MMBtu Reference: Title V Permit 0330040-029-AV			7. Emissions Method Code: 0
8.a. Baseline Actual Emissions (if required): 273 tons/year	8.b. Baseline From: 1/1/200		Period: o:12/31/2004
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected [] 5 years	l Monitori s∏ 10 yea	•
10. Calculation of Emissions: Emissions provided per boiler. Each boiler is rated for 388 MMBtu/hr. 388 MMBtu/hr x0.1lb/MMBtu = 38.8 lb/hr per boiler * Potential annual emissions are for the powerhouse group (Boilers 4, 5, 6, 7, 8, 9, and cogen) (see RAI Response 5/3/11).			
11. Potential, Fugitive, and Actual Emissions Comment: Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison			

DEP Form No. 62-210.900(1) – Form

EMISSIONS UNIT INFORMATION POLLUTANT DETAIL INFORMATION Page [1] of PM/PM₁₀

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -**ALLOWABLE EMISSIONS**

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

		_	
1.	Basis for Allowable Emissions Code: OTHER	2.	Future Effective Date of Allowable Emissions:
3.	Allowable Emissions and Units:	4.	Equivalent Allowable Emissions:
	0.1 lb/MMBtu		38.8 lb/hour* tons/year*
5.	Method of Compliance: EPA Method 5		
6.	Allowable Emissions Comment (Description	of (Operating Method):
	*Per Boiler		
Al	lowable Emissions Allowable Emissions 2 of	f <u>2</u>	
1.	Basis for Allowable Emissions Code: ESPSD	2.	Future Effective Date of Allowable Emissions:
3.	Allowable Emissions and Units:	4.	Equivalent Allowable Emissions:
	240 tons/year		lb/hour 240 tons/year
5.	Method of Compliance:		
6.	Allowable Emissions Comment (Description Allowable annual emissions are for the pocogen) (see RAI Response 5/3/11).		-
All	lowable 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):

DEP Form No. 62-210.900(1) - Form

EMISSIONS UNIT INFORMATION Section [11]

Boiler Nos. 8, 7

POLLUTANT DETAIL INFORMATION
Page [2] of [6]

CO

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions 2. Total Percent Efficiency of Control: 1. Pollutant Emitted: CO 4. Synthetically Limited? 3. Potential Emissions: ⊠ Yes \prod No 54.8 lb/hour tons/year 5. Range of Estimated Fugitive Emissions (as applicable): tons/year 6. Emission Factor: 54.8 lb/hour 7. Emissions Method Code: Reference: Title V Permit 0330040-029-AV 8.b. Baseline 24-month Period: 8.a. Baseline Actual Emissions (if required): 175.2 tons/year From: 1/1/2003 to 12/31/2004 9.a. Projected Actual Emissions (if required): 9.b. Projected Monitoring Period: 231.36 tons/year \square 5 years \square 10 years 10. Calculation of Emissions: Lb/Hour Emissions provided per boiler. 11. Potential, Fugitive, and Actual Emissions Comment: Baseline actual emissions include powerhouse group and do not include demand

growth, see Attachment A, Table 1a for complete emissions comparison

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [2] of [6] CO

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

_=	<u> </u>				
1.	Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:			
3.	Allowable Emissions and Units:	4. Equivalent Allowable Emissions:			
	54.8 lb/hr	54.8 lb/hour tons/year			
5.	Method of Compliance: EPA Method 10				
6.	6. Allowable Emissions Comment (Description of Operating Method): Per Boiler				
<u>Al</u>	lowable 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.	6. Allowable Emissions Comment (Description of Operating Method):				
Al	lowable 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):			

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION
Page [3] of [6]
VOC

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive and Baseline &	Projected Actu	iai Emiss	<u>sions</u>
1. Pollutant Emitted: VOC	2. Total Perce	ent Efficie	ency of Control:
3. Potential Emissions: 7.04 lb/hour	tons/year	4. Synth ☐ Ye	netically Limited? es 🛭 No
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):		
6. Emission Factor: 7.04 lb/hour Reference: Title V Permit 0330040-	029-AV		7. Emissions Method Code: 0
8.a. Baseline Actual Emissions (if required): 47.7 tons/year	8.b. Baseline 2 From: 1/1/2004		
9.a. Projected Actual Emissions (if required): 63.55 tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years		
10. Calculation of Emissions: Lb/Hour Emissions provided per boiler.			
11. Potential, Fugitive, and Actual Emissions Comment: Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison			

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [3] of [6] VOC

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions 1 of 1

1.	Basis for Allowable Emissions Code: OTHER	2.	Future Effective Date of Allowable Emissions:
3.	Allowable Emissions and Units: 7.04 lb/hr	4.	Equivalent Allowable Emissions: 7.04 lb/hour tons/year
5.	Method of Compliance: EPA Method 25A		
6.	Allowable Emissions Comment (Description Per Boiler	of (Operating Method):
<u>Al</u>	lowable Emissions Allowable Emissions	_ o	f
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):
All	lowable Emissions Allowable Emissions	o:	f
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):

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [4] of [6] NO.

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive and Baseline &	Projected Acti	<u>iai Emiss</u>	<u>sions</u>
1. Pollutant Emitted: NO _x	2. Total Perce	ent Efficie	ency of Control:
3. Potential Emissions: 22.5 lb/hour	tons/year	4. Synth ☐ Ye	netically Limited? es ⊠ No
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):		
6. Emission Factor: 22.5 lb/hour Reference: Title V Permit 0330040-	.029-AV		7. Emissions Method Code: 0
8.a. Baseline Actual Emissions (if required): 1,021.2 tons/year	8.b. Baseline 24-month Period: From: 1/1/2002 to 12/31/2003		
9.a. Projected Actual Emissions (if required): 1249.91tons/year	9.b. Projected ☐ 5 year	Monitoring 10	-
10. Calculation of Emissions: Lb/Hour Emissions provided per boiler.			
11. Potential, Fugitive, and Actual Emissions Consideration Baseline emissions include powerhouse grant Attachment A, Table 1a for complete emissions	oup and do no		demand growth, see

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [4] of [6] NO_x

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: 22.5 lb/hr	4.	4. Equivalent Allowable Emissions: 22.5 lb/hour tons/year	
5.	Method of Compliance: EPA Method 7E			
6.	Allowable Emissions Comment (Description Per Boiler	of (Operating Method):	
Al	lowable Emissions Allowable Emissions	oi	f	
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):	
All	lowable Emissions Allowable Emissions	oi	-	
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):	

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [5] of [6] SO2

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive and Baseline &	Projected Act	<u>uai Emis</u> s	<u>sions</u>		
1. Pollutant Emitted: SO2	2. Total Percent Efficiency of Control:		ency of Control:		
3. Potential Emissions: lb/hour	tons/year	4. Synth	netically Limited?		
5. Range of Estimated Fugitive Emissions (as to tons/year	5. Range of Estimated Fugitive Emissions (as applicable):				
6. Emission Factor:			7. Emissions Method Code:		
Reference:]		
8.a. Baseline Actual Emissions (if required): 3,563.9 tons/year	8.b. Baseline 24-month Period: From: 1/1/2003 to 12/31/2004				
9.a. Projected Actual Emissions (if required): 4,603.99 tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years				
10. Calculation of Emissions:	-				
11. Potential, Fugitive, and Actual Emissions C	omment:				
Baseline and projected actual emissions in	nclude powerh	ouse grou	ıp and do not		
include demand growth, see Attachment a comparison	A, Table 1a for	r complete	e emissions		

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [5] of [6] SO2

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions of

THIS WADIC LIMBSIONS THIS WAS IS LIMBSION	
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 (Descr	iption of Operating Method):
Allowable Emissions Allowable Emission	ns 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 (Descri	iption of Operating Method):
Allowable Emissions Allowable Emission	ns 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 (Descri	iption of Operating Method):

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [6] of [6] PM2.5

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline &	z Projected Act	tual Emiss	<u>sions</u>
1. Pollutant Emitted: PM2.5	2. Total Perc	ent Efficie	ency of Control:
3. Potential Emissions:		4. Synth	netically Limited?
	3 tons/year	⊠ Ye	_
5. Range of Estimated Fugitive Emissions (as to tons/year	аррисаоте).	_	
6. Emission Factor: PSD Avoidance Limit			7. Emissions
			Method Code:
Reference:			0
8.a. Baseline Actual Emissions (if required):	8.b. Baseline	24-month	Period:
169.3 tons/year	From: 1/1/200:	3 to 12/31/2	2004
9.a. Projected Actual Emissions (if required):	9.b. Projected	Monitori	ng Period:
tons/year	☐ 5 yea	ars 🗌 10	years
10. Calculation of Emissions:	l		
		·	
11. Potential, Fugitive, and Actual Emissions C Potential annual emissions are for the po- cogen) (see RAI Response 5/3/11).		ıp (Boiler	s 4, 5, 6, 7, 8, 9, and
Baseline emissions include powerhouse g Attachment A, Table 1a for complete emi	-		demand growth, see

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [6] of [6] PM2.5

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: ESPSD	2.	Future Effective Date of Allowable Emissions:	
3.	Allowable Emissions and Units: 143 tons/year	4.	Equivalent Allowable Emissions: lb/hour 143 tons/year	
5.	Method of Compliance:			
6.	Allowable Emissions Comment (Description Allowable annual emissions are for the pocogen) (see RAI Response 5/3/11).			
<u>Al</u>	lowable Emissions Allowable Emissions	of	f	
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	
	Method of Compliance: Allowable Emissions Comment (Description	of (Operating Method):	
Al	owable Emissions Allowable Emissions	_ of	2	
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 C	Operating Method):	

DEP Form No. 62-210.900(1) - Form

Section [11] Boiler Nos. 8, 7

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1.	Visible Emissions Subtype: VE20	2. Basis for Allowable ⊠ Rule	Opacity: ☐Other
3.	Allowable Opacity: Normal Conditions: 20 % Ex Maximum Period of Excess Opacity Allower	xceptional Conditions: ed:	27 % 6 min/hour
4.	Method of Compliance: EPA Method 9		
5.	Visible Emissions Comment:		
	Rule 62-296.405(1)(a)		
T 7*	**************************************		
	sible Emissions Limitation: Visible Emissi		
1.	Visible Emissions Subtype:	2. Basis for Allowable	
		☐ Rule	Other
3.	Allowable Opacity:		
	Normal Conditions: % Ex	xceptional Conditions:	%
	Maximum Period of Excess Opacity Allow	ed:	min/hour
4.	Method of Compliance:		
		•	
5.	Visible Emissions Comment:		
٥.	Visible Dimissions Comment.		

DEP Form No. 62-210.900(1) – Form

Section [11] Boiler Nos. 8, 7

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor 1 of 1

1.	Parameter Code:	2. Pollutant(s):
	EM	co
3.	CMS Requirement:	⊠ Rule □ Other
4.	Monitor Information	
	Manufacturer: Thermo Electron Corpo	ration
:	Model Number: 48i-ANSCB	Serial Number: 0710021365 -Boiler 7
	TAOGOT TURNOOT. TOT TATUS OF	0710021364 -Boiler8
<u> </u>		
5.	Installation Date:	6. Performance Specification Test Date:
	9/27/07	12/14/10
7.	Continuous Monitor Comment:	
	Per Title V Permit 0330040-029-AV, Con-	struction Permit AC17-250268
<u>Co</u>	ontinuous Monitoring System: Continuous	Monitor of
1.	Parameter Code:	2. Pollutant(s):
3.	CMS Requirement:	Rule Other
4.	Monitor Information	
	Manufacturer:	
	Model Number:	Serial Number:
	MODEL NUMBER:	Senai Number.
_		
5.	Installation Date:	6. Performance Specification Test Date:
	Installation Date:	
5. 7.	Installation Date:	
	Installation Date:	

DEP Form No. 62-210.900(1) – Form

Section [11] Boiler Nos. 8, 7

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) ☐ Previously Submitted, Date 3/21/11
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: Previously Submitted, Date 3/21/11
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: Previously Submitted, Date 3/21/11
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 <u>3/21/11</u>
_	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 3/21/11
	☐ Not Applicable
6.	Compliance Demonstration Reports/Records: Attached, Document ID: Test Date(s)/Pollutant(s) Tested: Test Date(s)/Pollutant(s) Tested:
	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:

DEP Form No. 62-210.900(1) – Form

Section [11] Boiler Nos. 8, 7

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7),
F.A.C.; 40 CFR 63.43(d) and (e)): ☐ Attached, Document ID: ☐ Not Applicable
Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-
212.500(4)(f), F.A.C.):
☐ Attached, Document ID: ⊠ Not Applicable
Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only)
☐ Attached, Document ID: ⊠ Not Applicable
Iditional Requirements for Title V Air Operation Permit Applications
Identification of Applicable Requirements:
Attached, Document ID: <u>APM-FI-C5</u> Not Applicable
Compliance Assurance Monitoring:
☐ Attached, Document ID: ☐ Not Applicable
Alternative Methods of Operation:
Attached, Document ID: Not Applicable
Alternative Modes of Operation (Emissions Trading):
☐ Attached, Document ID: ⊠ Not Applicable
ditional Requirements Comment

DEP Form No. 62-210.900(1) – Form

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 an initial, revised or renewal 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. 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 an 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 or 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. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes 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.

DEP Form No. 62-210.900(1) – Form

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1.	•	gulated Emissions Unit? air operation permit. Slonly.)		-	
	☐ The emissions emissions unit.		missions Unit Information	on Section is a regulated	
	☐ The emissions unregulated em	unit addressed in this Entissions unit.	missions Unit Informatio	on Section is an	
<u>En</u>	nissions Unit Descr	ription and Status			
1.	Type of Emissions	Unit Addressed in this	Section: (Check one)		
	process or proc	s Unit Information Section Unit Information Section Unit, or activity, ast one definable emissi	which produces one or i	_	
	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.	2. Description of Emissions Unit Addressed in this Section: Boiler No. 9. Natural gas fired boiler with maximum heat input of 344 million Btu per hour, with a design rating of 250,000 pounds per hour steam.				
3.	. Emissions Unit Identification Number:				
	EU 099 (Boiler 9)				
4.	Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 28	
8.	Federal Program A	applicability: (Check all	that apply)		
	☐ Acid Rain Unit	CAIR Unit			
9.	Package Unit: Manufacturer: Ind	eck/Volcano	Model Number: A5-25	0-S	
10.	Generator Namepla	ate Rating: MW			
11.	Emissions Unit Co	emment:			

DEP Form No. 62-210.900(1) – Form

Emissions Unit Control Equipment/Method: Control 1 of 2

1. Control Equipment/Method Description:
Low NOx Burners
2. Control Device or Method Code: 024
Emissions Unit Control Equipment/Method: Control 2 of 2
1. Control Equipment/Method Description:
Flue gas recirculation
2. Control Device or Method Code:026
Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2. Control Device or Method Code:
Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2. Control Device or Method Code:

DEP Form No. 62-210.900(1) – Form

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

	ighput Rate:	
2. Maximum Production Rates		
3. Maximum Heat Input Rate:	344 million Btu/hr (monthly av	verage)
4. Maximum Incineration Rate	e: pounds/hr	
	tons/day	
5. Requested Maximum Opera	ating Schedule:	
	24 hours/day	7 days/week
	52 weeks/year	8,760 hours/year
6. Operating Capacity/Schedu	le Comment:	
i i di a delloù di teli veais il dii	n the effective date of Permit N	`o_0330040_036.AC_total

DEP Form No. 62-210.900(1) – Form Effective: 03/11/2010

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1.	Identification of Point on	Plot Plan or	2. Emission Point 7	Гуре Code:		
	Flow Diagram: 99		1			
3.	Descriptions of Emission	Points Comprising	g this Emissions Unit	for VE Tracking:		
4.	ID Numbers or Descriptio	ns of Emission Ur	nits with this Emission	Point in Common:		
5.	Discharge Type Code: V	6. Stack Height 60 feet	•	7. Exit Diameter: 6 feet		
8.	Exit Temperature: 379°F	9. Actual Volur 72,948 cfm	netric Flow Rate:	10. Water Vapor: %		
11.	Maximum Dry Standard F dscfm	low Rate:	12. Nonstack Emission Point Height: feet			
13.	Emission Point UTM Coo	rdinates	14. Emission Point I	Latitude/Longitude		
	Zone: East (km):		Latitude (DD/MI	M/SS)		
	North (km)	:	Longitude (DD/N	MM/SS)		
15.	Emission Point Comment					

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D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type):								
Natural Gas Combustion	Natural Gas Combustion							
2. Source Classification Cod 1-02-006-02	e (SCC):	3. SCC Units MCuft Bu						
4. Maximum Hourly Rate:	5. Maximum 1,845,732	Annual Rate:	6. Estimated Annual Act Factor:	ivity				
7. Maximum % Sulfur:	8. Maximum	% Ash:	9. Million Btu per SCC 1,020 ¹	Unit:				
As a result of elimination of boilers combined (Boiler No In Phase I, Boiler No. 9 shall month rolling period (MSCI	. 9 and Boiler N l not exceed 1,84	o. 10) is now p 15,732 thousan	proposed as Boiler No. 9 on	ly.				

Segment Description and Rate: Segment of

1.	1. Segment Description (Process/Fuel Type):							
2.	Source Classification Cod	e (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:							

DEP Form No. 62-210.900(1) – Form

 $^{^{1}}$ The natural gas heat content has ranged from 1010 Btu/cuft to 1040 Btu/cuft based on supplier data.

Section [13] Boiler No. 9

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM/PM ₁₀	40-pa	====	EL
PM2.5			EL
CO	026		EL
VOC	026		NS
SO ₂			NS
NO _x	024	026	EL
	<u> </u>		

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [1] of PM/PM₁₀

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions						
1. Pollutant Emitted: PM/PM ₁₀	2. Total Perc	ent Efficie	ency of Control:			
3. Potential Emissions: lb/hour 240	tons/year	4. Synth ⊠Ye	netically Limited? s			
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year						
6. Emission Factor: PSD Avoidance Limit Reference:			7. Emissions Method Code: 0			
8.a. Baseline Actual Emissions (if required): 273 tons/year	8.b. Baseline From: 1/1/200		Period: Fo:12/31/2004			
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected 5 years	l Monitori s [] 10 yea	•			
10. Calculation of Emissions:						
11. Potential, Fugitive, and Actual Emissions Comment: Potential annual emissions are for the powerhouse group (Boilers 4, 5, 6, 7, 8, 9, and cogen) (see RAI Response 5/4/11). Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison						

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [1] of [6] PM/PM₁₀

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: ESPSD	2. Future Effective Date of Allowable Emissions:			
3.	Allowable Emissions and Units:	4.	Equivalent Allowable Emissions:		
	240 tons/year		lb/hour* 240 1tons/year*		
5.	Method of Compliance:				
6.	Allowable Emissions Comment (Description Allowable annual emissions are for the pocogen) (see RAI Response 5/3/11).		<u> </u>		
Al	lowable Emissions Allowable Emissions 2 of	f <u>2</u>			
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		
	Method of Compliance: Allowable Emissions Comment (Description	of	Operating Method):		
Al	lowable Emissions Allowable Emissions	of			
	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):		

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [2] of [6] PM2.5

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1 otential, Estimated 1 agrice, and Dasenne e							
1. Pollutant Emitted: PM2.5	2. Total Percent Efficiency of Control:						
3. Potential Emissions:		4. Syntl	hetically Limited?				
	tons/year	⊠Ye	es 🔲 No				
5. Range of Estimated Fugitive Emissions (as	<u>_</u>	L					
to tons/year	аррисаоте).						
6. Emission Factor: PSD Avoidance Limit			7. Emissions				
			Method Code:				
Reference:			0				
8.a. Baseline Actual Emissions (if required):	8.b. Baseline	24-month	Period:				
169.3 tons/year	From: 1/1/200)3	Γο: 12/31/2004				
9.a. Projected Actual Emissions (if required):	9.b. Projected	d Monitori	ing Period:				
tons/year	☐ 5 years☐ 10 years						
10. Calculation of Emissions:							
10. Calculation of Emporolis.							
11. Potential, Fugitive, and Actual Emissions Co	mment:						
Potential annual emissions are for the pow) (Boilers	4, 5, 6, 7, 8, 9, and				
cogen) (see RAI Response 5/4/11).	4 g	, (= 0	., ., ., ., .,				
•							
Baseline emissions include powerhouse group and do not include demand growth, see							
Attachment A, Table 1a for complete emissions comparison							

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [2] of [6] PM2.5

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Al	lowal	ble	Emis	ssions	Al	lowal	ble	Em	issic	ns	1	of	1

1.	Basis for Allowable Emissions Code: ESPSD	2. Future Effective Date of Allowable Emissions:				
3.	Allowable Emissions and Units:	4.	Equivalent Allowable Emissions:			
	143 tons/year		lb/hour* 143 tons/year*			
5.	Method of Compliance:					
6.	Allowable Emissions Comment (Description	of C	Operating Method):			
	Allowable annual emissions are for the po	wer	house group (Boilers 4, 5, 6, 7, 8, 9, and			
	cogen) (see RAI Response 5/3/11).					
Al	lowable Emissions Allowable Emissions 2 of	f <u>2</u>				
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 C	Operating Method):			
Al	lowable 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 C	perating Method):			

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [3] of [6]

CO

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions						
1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:					
3. Potential Emissions: lb/hour	tons/year applicable):	netically Limited? es 🛛 No				
6. Emission Factor: 93.9 tons/yr Reference: Permit No. 0330040-029-AV			7. Emissions Method Code: 0			
8.a. Baseline Actual Emissions (if required): 175.2 tons/year	8.b. Baseline 24-month Period: From: 1/1/2003 to 12/31/2004					
9.a. Projected Actual Emissions (if required): 231.36 tons/year	9.b. Projected Monitoring Period: 5 years 10 years					
10. Calculation of Emissions:						
11. Potential, Fugitive, and Actual Emissions Comment: Baseline actual emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison						

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [3] of [6] CO

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

Basis for Allowable Emissions Code: ESCPSD	2. Future Effective Date of Allowable Emissions:			
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions:			
93.9 tons/year	lb/hour 93.9 tons/year			
5. Method of Compliance:				
6. Allowable Emissions Comment (Description of Operating Method):				
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 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):				

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION
Page [4] of [6]
VOC

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions				
1. Pollutant Emitted:	2. Total Percent Efficiency of Control:			
VOC				
3. Potential Emissions:	4. Synthetically Limited?		· ·	
lb/hour	tons/year		es 🛛 No	
5. Range of Estimated Fugitive Emissions (as applicable):				
to tons/year				
6. Emission Factor:			7. Emissions	
			Method Code:	
Reference:				
8.a. Baseline Actual Emissions (if required):	8.b. Baseline 24-month Period:			
47.7 tons/year	From: 1/1/2004 to 12/31/2005			
9.a. Projected Actual Emissions (if required):	9.b. Projected Monitoring Period:			
63.55 tons/year	☐ 5 years ☐ 10 years			
10.01.17 (55.77)				
10. Calculation of Emissions:				
			=	
11. Potential, Fugitive, and Actual Emissions Comment:				
Baseline emissions include powerhouse group and do not include demand growth, see				
Attachment A, Table 1a for complete emissions comparison				

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [4] of [6] VOC

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions of

1.	Basis for Allowable Emissions Code:	2.	Future Effective Date of Allowable Emissions:
3.	Allowable Emissions and Units: lb/hr	4.	Equivalent Allowable Emissions: 7.04 lb/hour tons/year
5.	Method of Compliance:		
6.	Allowable Emissions Comment (Description		
All	lowable Emissions Allowable Emissions		
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		
Al	lowable Emissions Allowable Emissions	0	f
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):

DEP Form No. 62-210.900(1) - Form

EMISSIONS UNIT INFORMATION Section [13] Boiler No. 9

POLLUTANT DETAIL INFORMATION Page [5] of [6] SO2

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive and Dasenne &	Projected Act	uai emis	HUIIS	
1. Pollutant Emitted:	2. Total Percent Efficiency of Control:			
SO2				
3. Potential Emissions:		4. Synth	netically Limited?	
lb/hour	tons/year	⊠ Ye	es 🗌 No	
5. Range of Estimated Fugitive Emissions (as	applicable):			
to tons/year	-гри			
6. Emission Factor:			7. Emissions	
			Method Code:	
Reference:				
8.a. Baseline Actual Emissions (if required):	8.b. Baseline	24-month	Period:	
3,563.9 tons/year	From: 1/1/2003	3 to 12/31/2	2004	
9.a. Projected Actual Emissions (if required):	9.b. Projected	l Monitorii	ng Period:	
4,603.99 tons/year	☐ 5 yea	ars 🔲 10	years	
10. Calculation of Emissions:				
11. Potential, Fugitive, and Actual Emissions Comment:				
Baseline actual emissions include powerhouse group and do not include demand				
growth, see Attachment A, Table 1a for complete emissions comparison				

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [5] of [6]

SO₂

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions of

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 Mathad of Compliance				
5. Method of Compliance:				
6. Allowable Emissions Comment (Description	n of Operating Method):			
Allowable Emissions Allowable Emissions				
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	n of Operating Method):			
6. Allowable Emissions Comment (Description of Operating Method):				
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):			
o. Thomasic Emissions Comment (Description				

DEP Form No. 62-210.900(1) - Form

EMISSIONS UNIT INFORMATION Section [13] Boiler No. 9

POLLUTANT DETAIL INFORMATION Page [6] of [6] NO_x

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions					
1. Pollutant Emitted: NO _x	2. Total Perc	ent Efficie	ency of Control:		
3. Potential Emissions: lb/hour 34.0	6 tons/year	4. Synth ☐ Ye	es ⊠ No		
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):				
6. Emission Factor: 34.6			7. Emissions Method Code:		
Reference: Permit No. 0330040-029	P-AV		0		
8.a. Baseline Actual Emissions (if required): 1,021.2 tons/year	8.b. Baseline 24-month Period: From: 1/1/2002 to 12/31/2003				
9.a. Projected Actual Emissions (if required): 1249.91tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years				
10. Calculation of Emissions:					
11. Potential, Fugitive, and Actual Emissions Comment: Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison					

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [6] of [6] NO_x

2. Future Effective Date of Allowable

Emissions:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code:

RULE

3.	Allowable Emissions and Units:	4. Equivalent Allowable Emissions:		
	0.2 lb/MMBtu* (30-day rolling average)		lb/hour	tons/year
5.	Method of Compliance:			
	NOx CEMs			
	All II F i i i Co (Douisie	- 6.4	Described Markethy	
	Allowable Emissions Comment (Description (Ox emissions are limited to 0.2 lbs per MM			a) by 40 CFP 60
	bpart Db.	Dtu	(30-day rolling averag	e), by 40 CFR 00
<i>-</i>	Spart 20.			
All	lowable Emissions Allowable Emissions 2 of	f <u>2</u>		
1.	Basis for Allowable Emissions Code:	2.	Future Effective Date o	f Allowable
	ESCPSD		Emissions:	
3.	Allowable Emissions and Units:	4.	Equivalent Allowable E	
	34.6 tons/year		lb/hour	34.6tons/year
5.	Method of Compliance:			
	All problems of the Company of the control of the c	- F (Da	
о.	Allowable Emissions Comment (Description	OI C	operating Method):	
All	lowable Emissions Allowable Emissions	01	f	
1.	Basis for Allowable Emissions Code:	2.	Future Effective Date o	f Allowable
			Emissions:	
3.	Allowable Emissions and Units:	4.	Equivalent Allowable E	
			lb/hour	tons/year
5.	Method of Compliance:			
6.	Allowable Emissions Comment (Description	of (Operating Method):	

DEP Form No. 62-210.900(1) – Form

Section [13] Boiler No. 9

G. VISIBLE EMISSIONS INFORMATION

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

<u>Visible Emissions Limitation:</u> Visible Emissions Limitation of 1. Visible Emissions Subtype: 2. Basis for Allowable Opacity: ⊠ Rule **VE20** Other 3. Allowable Opacity: 27 % **Normal Conditions:** 20 % **Exceptional Conditions:** 6 min/hour Maximum Period of Excess Opacity Allowed: 4. Method of Compliance: 5. Visible Emissions Comment: FDEP Rule 62-296.405(1)(a). <u>Visible Emissions Limitation:</u> Visible Emissions Limitation of _ 2. Basis for Allowable Opacity: 1. Visible Emissions Subtype: ☐ Rule ☐ Other 3. Allowable Opacity: **Normal Conditions:** % **Exceptional Conditions:** __ % Maximum Period of Excess Opacity Allowed: min/hour 4. Method of Compliance: 5. Visible Emissions Comment:

DEP Form No. 62-210.900(1) – Form

Section [13] Boiler No. 9

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor 1 of 1

	Parameter Code: EM	2.	Pollutant(s): NOx		
3.	CMS Requirement:	\boxtimes	Rule		
4.]	Monitor Information Manufacturer: Thermo Electron		,		
	Model Number: 42i		Serial Number: 0701720041		
	Installation Date: May 31, 2007	6.	Performance Specification Test Date: July 27, 2010		
NO2	7. Continuous Monitor Comment: NOx CEM as per 40 CFR Part 60 Subpart Db. Note Subpart Db requires an oxygen CEMS, data as follows: Yokagawa Oxygen analyzer serial # 0701720041, installation and performance testing same as above.				
<u>Con</u>	tinuous Monitoring System: Continuous	Mo	nitor_of_		
1. 1	Parameter Code:		2. Pollutant(s):		
3. (CMS Requirement:		Rule		
4.]	Monitor Information Manufacturer: Thermo Electron Model Number:		Serial Number:		
5. 1	Installation Date:		6. Performance Specification Test Date:		
7.	Continuous Monitor Comment:				

DEP Form No. 62-210.900(1) – Form

EMISSIONS UNIT INFORMATION Section [13]

Boiler No. 9

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: Previously Submitted, Date 3/21/11
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: Previously Submitted, Date 3/21/11
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: Previously Submitted, Date 3/21/11
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 3/21/11
	☐ 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 3/21/11
	☐ Not Applicable
6.	Compliance Demonstration Reports/Records: Attached, Document ID: Test Date(s)/Pollutant(s) Tested: Previously Submitted, Date: Test Date(s)/Pollutant(s) Tested:
]	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.
7.	Other Information Required by Rule or Statute: Attached, Document ID: Not Applicable

DEP Form No. 62-210.900(1) – Form

Section [13] Boiler No. 9

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1.				
	F.A.C.; 40 CFR 63.43(d) and (e)):			
	Attached, Document ID: Not Applicable			
2.		2.400(4)(d) and 62-		
	212.500(4)(f), F.A.C.):			
	☐ Attached, Document ID: ⊠ Not Applicable	.e		
3.	3. Description of Stack Sampling Facilities: (Required for propose only)	d new stack sampling facilities		
	☐ Attached, Document ID: ⊠ Not Applicable	e		
<u>Ac</u>	Additional Requirements for Title V Air Operation Permit Ap	<u>olications</u>		
1.	1. Identification of Applicable Requirements:			
	Attached, Document ID: <u>APM-FI-C5</u> Not Applicable	;		
2.	2. Compliance Assurance Monitoring:			
	☐ Attached, Document ID: ☒ Not Applicable			
3.	1			
	☐ Attached, Document ID: ☒ Not Applicable			
4.	4. Alternative Modes of Operation (Emissions Trading):			
	☐ Attached, Document ID: ⊠ Not Applicable	;		
Ac	Additional Requirements Comment			
l				
l				

DEP Form No. 62-210.900(1) – Form

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 an initial, revised or renewal 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. 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 an 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 or 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. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes 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.

DEP Form No. 62-210.900(1) – Form

Section [12] Cogeneration

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 emissions unit.	unit addressed in this En	nissions Unit Informati	on Section is a regulated	
	☐ The emissions unregulated em	unit addressed in this Entissions unit.	nissions Unit Informati	on Section is an	
<u>En</u>	nissions Unit Descr	iption and Status			
1.	Type of Emissions	Unit Addressed in this	Section: (Check one)		
	process or proc	S Unit Information Section Unit Information Section Unit, or activity, ast one definable emissi	which produces one or		
	of process or p		rities which has at least	e emissions unit, a group one definable emission	
		Unit Information Section r production units and a		e emissions unit, one or fugitive emissions only.	
2.	2. Description of Emissions Unit Addressed in this Section: Cogeneration Plant.				
3.	Emissions Unit Ide EU 032	entification Number:			
4.	Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 28	
8.	Federal Program A	pplicability: (Check all	that apply)		
	☐ Acid Rain Unit	CAIR Unit			
9.	Package Unit: Manufacturer: Ger	neral Electric	Model	Number: Frame 7A	
10.	Generator Namepla	ate Rating: 86 MW			
11.	heat recovery stea	plant consists of one com om Generator with duc es steam to the manufa	t burner. The heat rec	covery steam	

DEP Form No. 62-210.900(1) – Form

EMISSIONS UNIT INFORMATION Section [12]

Cogeneration

Emissions Unit Control Equipment/Method: Control **1** of **1**

1. Control Equipment/Method Description:
Steam Injection, Low NOx Burners (duct burners)
2. Control Device or Method Code: 28, 24
Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2. Control Device or Method Code:
Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2. Control Device or Method Code:
Emissions Unit Control Equipment/Method: Control of
1. Control Equipment/Method Description:
2 Control Daviso or Mathed Code

DEP Form No. 62-210.900(1) – Form

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1.	Maximum Process or Throughput Rate:		
2.	2. Maximum Production Rate:		
3.	3. Maximum Heat Input Rate: million Btu/hr ^a		
4.	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:

^aThe maximum allowable heat input is 184 MMBtu per hour for the heat recovery steam generator Duct Burner. The maximum allowable heat input for the Combustion Turbine varies with the ambient air temperature as specified in Table A-1 of Permit No. 0330040-029-AV. Table A-1 is used to determine rated capacity. Ambient temperatures other than table values can be linearly interpolated or extrapolated.

For a period of ten years from the effective date of Permit No. 0330040-036-AC, total heat input for EU 003 (Boiler No. 8), 004 (Boiler No. 7),014 (Boiler No. 4), 015(Boiler No. 5), 016 (Boiler No. 6), 032 (Cogeneration Plant) and 099 (Boiler No. 9) shall not exceed more than 16,360,362 MMBtu/yr from all fuels in any 12-month rolling period.

DEP Form No. 62-210.900(1) – Form

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on	Plot Plan or	2. Emission Point	Гуре Code:	
Flow Diagram: 32		1		
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: 4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:				
5. Discharge Type Code: v	6. Stack Height 100 feet	:	7. Exit Diameter: 15 feet	
8. Exit Temperature: 332°F ^a	9. Actual Volum 826,004 acfm	metric Flow Rate:	10. Water Vapor:	
11. Maximum Dry Standard F dscfm	Flow Rate:	12. Nonstack Emission Point Height: feet		
13. Emission Point UTM Coo			_atitude/Longitude	
Zone: 16 East (km):	476	Latitude (DD/MM/SS)		
North (km)	: 3385	Longitude (DD/I	MM/SS)	
15. Emission Point Comment:	:			
^a Fields No. 8 and No. 9 per TRC Emission Test Report dated September 17, 2010, (field No. 9 will vary with ambient temperature).				

DEP Form No. 62-210.900(1) – Form

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type):

Natural Gas Combustion - Turbine					
2. Source Classification Code (SCC):		3. SCC Units:			
	2-02-002-01		Million Cu	ıbic i	Feet
4.	Maximum Hourly Rate:	5. Maximum	Annual Rate:	6.	Estimated Annual Activity
	1.061				Factor:
7.	Maximum % Sulfur:	8. Maximum	% Ash:	9.	Million Btu per SCC Unit: 1,020 ¹
10.	Segment Comment:	-			
air	e maximum allowable hea temperature as specified g. F ambient temperature.	in Table A-1_of			ne varies with the ambient 0-029-AV. Based on 20
<u>Se</u> :	Segment Description and Ra Segment Description (Proc Natural Gas Combustion	cess/Fuel Type):			
	Matural Gas Combustion	i – Duct Durner			
2.	Source Classification Code	e (SCC):	3. SCC Units	:	,
	2-88-888-02	,	Million Cu	ıbic	Feet
4.	Maximum Hourly Rate: 0.18	5. Maximum	Annual Rate:	6.	Estimated Annual Activity Factor:
7.	Maximum % Sulfur:	8. Maximum	% Ash:	9.	Million Btu per SCC Unit: 1,020
10. Segment Comment: The maximum allowable heat input is 184 MMBtu per hour for the heat recovery steam generator Duct Burner. 184 MMBtu/hr x 1MMCuFt/1,020 MMBTU Burned = 0.18 MMCuft burned/hr					

 $^{^1}$ The natural gas heat content has ranged from 1010 Btu/cuft to 1040 Btu/cuft based on supplier data. DEP Form No. 62-210.900(1) - Form

Section [12] Cogeneration

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control	3. Secondary Control	4. Pollutant
	Device Code	Device Code	Regulatory Code
PM/PM ₁₀			EL
PM2.5			EL
СО		4224	EL
VOC			EL
SO ₂			NS
NO _x	028	024	EL
-			

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [1] of [6] PM/PM₁₀

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions					
1. Pollutant Emitted:	2. Total Percent Efficiency of Control:				
PM/PM ₁₀			·		
3. Potential Emissions:		4. Synth	netically Limited?		
{	tons/year	⊠Ye	s 🗌 No		
5. Range of Estimated Fugitive Emissions (as	applicable):	· -	·		
to tons/year					
6. Emission Factor: PSD Avoidance Limit			7. Emissions		
		1	Method Code:		
Reference:			0		
8.a. Baseline Actual Emissions (if required):	8.b. Baseline	24-month	Period:		
273 tons/year	From: 1/1/200	3 7	To: 12/31/2004		
9.a. Projected Actual Emissions (if required):	9.b. Projected	l Monitori	ng Period:		
tons/year	5 years 10 years				
10. Calculation of Emissions:					
11. Potential, Fugitive, and Actual Emissions Co			0 0		
Potential annual emissions are for the powerhouse group (Boilers 4, 5, 6, 7, 8, 9, and					
cogen) (see RAI Response 5/3/11).					
Baseline emissions include powerhouse group and do not include demand growth, see					
Attachment A, Table 1a for complete emiss	_		delinated St. o Welly Boo		
,	•				

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [1] of [6] PM/PM₁₀

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

	Allowabl	<u>e Emissions</u>	Allowable	Emissions	1 01	t <u>1</u>
--	----------	--------------------	-----------	-----------	-------------	------------

1.	Basis for Allowable Emissions Code: ESPSD	2.	Future Effective Date of Allowable Emissions:
3.	Allowable Emissions and Units:	4.	Equivalent Allowable Emissions:
	240 tons/year		lb/hour* 240 Itons/year*
5.	Method of Compliance:		
6.	` 1		•
	Allowable annual emissions are for the pocogen) (see RAI Response 5/3/11).	wer	house group (Boilers 4, 5, 6, 7, 8, 9, and
Al	lowable Emissions Allowable Emissions 2 of	f <u>2</u>	
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):
Al	lowable 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):

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION
Page [2] of [6]
PM2.5

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Pollutant Emitted: PM2.5	2. Total Percent Efficiency of Control:				
3. Potential Emissions: lb/hour 143	tons/year 4.	Synthetically Limited? ⊠Yes □ No			
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):				
6. Emission Factor: PSD Avoidance Limit		7. Emissions Method Code:			
Reference:		0			
8.a. Baseline Actual Emissions (if required):	8.b. Baseline 24-	month Period:			
169.3 tons/year	From: 1/1/2003	To:12/31/2004			
9.a. Projected Actual Emissions (if required):	9.b. Projected Mo	onitoring Period:			
tons/year	5 years 10 years				
10. Calculation of Emissions:					
11. Potential, Fugitive, and Actual Emissions Comment: Potential annual emissions are for the powerhouse group (Boilers 4, 5, 6, 7, 8, 9, and cogen) (see RAI Response 5/3/11).					
Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison					

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION Page [2] of [6] PM2.5

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable 1	Emissions	Allowable	Emissions	1 of	1

1.	Basis for Allowable Emissions Code: ESPSD	2.	Future Effective Date of Allowable Emissions:
3.	Allowable Emissions and Units:	4.	Equivalent Allowable Emissions:
	143 tons/year		lb/hour* 143 tons/year*
5.	Method of Compliance:		
6.	Allowable Emissions Comment (Description Allowable annual emissions are for the po		
	cogen) (see RAI Response 5/3/11).		
Al	lowable Emissions Allowable Emissions 2 of	f <u>2</u>	
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
	Method of Compliance: Allowable Emissions Comment (Description	of (Operating Method):
All	owable 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 C	Operating Method):

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION
Page [3] of [6]

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions 2. Total Percent Efficiency of Control: Pollutant Emitted: CO 4. Synthetically Limited? 3. Potential Emissions: ☐ Yes ⊠ No 83.5 lb/hour **365.7** tons/year 5. Range of Estimated Fugitive Emissions (as applicable): tons/year 6. Emission Factor: 83.5 lb/hr 7. Emissions Method Code: Reference: Permit 0330040-029-AV 8.a. Baseline Actual Emissions (if required): 8.b. Baseline 24-month Period: 175.2 tons/year From: 1/1/2003 to 12/31/2004 9.a. Projected Actual Emissions (if required): 9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years 231.36 tons/year 10. Calculation of Emissions: [83.5 lb/hour x 8,760 hours/yr x 1 ton/2,000 lb] = 365.7 TPY (Estimated for informational purposes only.) 11. Potential, Fugitive, and Actual Emissions Comment: Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION

Page

[3] of

[6]

Cogeneration

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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:	2. Future Effective Date of Allowable
1.	OTHER	Emissions:
3.	Allowable Emissions and Units:	4. Equivalent Allowable Emissions:
	83.5 lb/hr	lb/hour tons/year
5.	Method of Compliance:	
	EPA Method 10, testing is required only u	pon permit renewal
6.	Allowable Emissions Comment (Description	of Operating Method):
	Permit No. 0330040-029-AV, AC17-213374	4
All	owable 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:	
	The state of the s	
6.	Allowable Emissions Comment (Description	of Operating Method):
		, F
All	lowable 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:
٥.	Anowable Emissions and Omits.	lb/hour tons/year
)	10/110ti tolls/year
5.	Method of Compliance:	
6.	Allowable Emissions Comment (Description	of Operating Method):

DEP Form No. 62-210.900(1) - Form

POLLUTANT DETAIL INFORMATION
Page [4] of [6]
VOC

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

1. Pollutant Emitted:

2. Total Percent Efficiency of the Projected Actual Emissions of the Projected A

1. Pollutant Emitted: 2. Total Perc		ent Efficiency of Control:			
3. Potential Emissions: 10.9 lb/hour 47.	7 tons/year 4. Synt	hetically Limited? es			
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):				
6. Emission Factor: 10.9 lb/hr Reference: Permit AC17-213374		7. Emissions Method Code: 0			
8.a. Baseline Actual Emissions (if required): 47.7 tons/year	8.b. Baseline 24-month Period: From: 1/1/2004 to 12/31/2005				
9.a. Projected Actual Emissions (if required): 63.55 tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years				
10. Calculation of Emissions: [10.9 lb/hour x 8,760 hours/yr x 1 ton/2,000 lb] = 47.7 TPY (Estimated for informational purposes only.)					
11. Potential, Fugitive, and Actual Emissions Comment: Baseline emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison					

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [4] of [6] VOC

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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: 10.9 lb/hr	4.	Equivalent Allowable Emissions: lb/hour tons/year
5.	Method of Compliance: EPA test Method 25A. Testing is required	l on	ly upon permit renewal.
6.	Allowable Emissions Comment (Description Permit No. 0330040-029-AV	of (Operating Method):
Al	lowable Emissions Allowable Emissions	o:	f
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):
Al	lowable Emissions Allowable Emissions	0	f
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):

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION
Page [5] of [6]
NO.

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions					
1. Pollutant Emitted:	2. Total Percent Efficiency of Control:				
NO _x					
3. Potential Emissions:		•	netically Limited?		
106.6 lb/hour 466.9	tons/year	☐ Ye	es 🛭 No		
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):				
6. Emission Factor: 106.6 lb/hour			7. Emissions Method Code:		
Reference: 0330040-029-AV		:	2		
8.a. Baseline Actual Emissions (if required):	8.b. Baseline 2	24-month	Period:		
1,021.2 tons/year	1,021.2 tons/year From: 1/1/2002 to 12/31/2003				
9.a. Projected Actual Emissions (if required):	9.b. Projected		C		
1249.91 tons/year	☐ 5 years ☐ 10 years				
tons/year					
10. Calculation of Emissions:	*** * *** ***	**	. 10		
[106.6 lb/hour x 8,760 hours/yr x 1 ton/2,000	lb] = 466.9 TP	Y (Estim	ated for		
informational purposes only.)					
11. Potential, Fugitive, and Actual Emissions Comment: Baseline emissions include powerhouse group and do not include demand growth, see					
Attachment A, Table 1a for complete emi			demand growth, see		
Attachment A, Table 1a 101 complete emi	ssions compani	30II			

DEP Form No. 62-210.900(1) – Form

POLLUTANT DETAIL INFORMATION Page [5] of [6] NO_x

2. Future Effective Date of Allowable

Emissions:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 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

3.	Allowable Emissions and Units:	4. Equivalent Allowable Emissions:			
	106.6 lb/hr		lb/hour	tons/year	
5.	Method of Compliance:				
	Test method 20 or 7e, testing is required only upon permit renewal				
1	Allowable Emissions Comment (Description				
C	ombined emissions (combustion turbine &	duci	Durner)		
Al	lowable Emissions Allowable Emissions 2 of	f <u>2</u>			
1.	Basis for Allowable Emissions Code:	2.	Future Effective Date of	Allowable	
	RULE		Emissions:		
3.		4.	Equivalent Allowable En		
	0.2 lb/MMBtu		lb/hour	tons/year	
5.	Method of Compliance:				
	Test method 20 or 7e, testing is required o	nly	upon permit renewal		
6.	6. Allowable Emissions Comment (Description of Operating Method):				
	Duct Burner: 36.8 lb/hr (at maximum allowable operating rate of 184 MMBtu/hr heat input)				
	lowable Emissions Allowable Emissions		f		
1.	Basis for Allowable Emissions Code:	2.	Future Effective Date of	Allowable	
<u> </u>		<u> </u>	Emissions:		
3.	Allowable Emissions and Units:	4.	Equivalent Allowable Em		
			lb/hour	tons/year	
5.	Method of Compliance:				
6.	6. Allowable Emissions Comment (Description of Operating Method):				
Щ.					

DEP Form No. 62-210.900(1) – Form Effective: 03/11/2010

EMISSIONS UNIT INFORMATION Section [12]

Cogeneration

POLLUTANT DETAIL INFORMATION
Page [6] of [6]
SO2

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive and Baseline & Projected Actual Emissions

rotential, Estimated rugitive and dasenne &		at the same of the same of the same of the same		
1. Pollutant Emitted:	2. Total Percent Efficiency of Control:			
SO2				
3. Potential Emissions: lb/hour	tons/year	4. Synth ⊠ Ye	netically Limited? es	
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):			
6. Emission Factor:			7. Emissions Method Code:	
Reference:				
8.a. Baseline Actual Emissions (if required): 3,563.9 tons/year	8.b. Baseline From: 1/1/2003			
9.a. Projected Actual Emissions (if required): 4,603.99 tons/year	9.b. Projected ☐ 5 yea	Monitori ars □ 10	•	
10. Calculation of Emissions:				
11. Potential, Fugitive, and Actual Emissions Comment: Baseline actual emissions include powerhouse group and do not include demand growth, see Attachment A, Table 1a for complete emissions comparison				

DEP Form No. 62-210.900(1) - Form

EMISSIONS UNIT INFORMATION Section [12]

POLLUTANT DETAIL INFORMATION
Page [6] of [6]
SO2

Cogeneration

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

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:		ionioui tono y ou
	without of Compilation.		
6.	Allowable Emissions Comment (Description	of (Operating Method):
All	lowable Emissions Allowable Emissions	0:	f
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):
All	lowable Emissions Allowable Emissions	o:	 f
1.	Basis for Allowable Emissions Code:	2.	Future Effective Date of Allowable
		L	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):
1			

DEP Form No. 62-210.900(1) - Form

Section [12] Cogeneration

G. VISIBLE EMISSIONS INFORMATION

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

<u>Visible Emissions Limitation:</u> Visible Emissions Limitation <u>1</u> of <u>1</u>

_=			
1.	Visible Emissions Subtype:	2. Basis for Allowable	Opacity:
	VE20 – Visible Emissions	□ Rule	Other
3.	Allowable Opacity:		
	± •	ceptional Conditions:	27 %
	Maximum Period of Excess Opacity Allowe	ed:	6 min/hour
4.	Method of Compliance:		
	Annual VE Test EPA Method 9		
<u>5.</u>	Visible Emissions Comment:		
5.	Visible Limssions Comment.		
	FDEP Rule 62-296.406(1) and Permit No.	033040-029-AV	
	, ,		
L			
Vi	sible Emissions Limitation: Visible Emissi	ons Limitation _of	
$\overline{1}$.	Visible Emissions Subtype:	2. Basis for Allowable	Opacity:
		☐ Rule	Other
3.	Allowable Opacity:		
	Normal Conditions: % Ex	ceptional Conditions:	%
	Maximum Period of Excess Opacity Allowe	ed:	min/hour
4.	Method of Compliance:		
<u> </u>	W. The France Community	·	
5.	Visible Emissions Comment:	·	

DEP Form No. 62-210.900(1) - Form

Section [12] Cogeneration

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor 1 of 1

		r		·
1.	Parameter Code: Rule	2.		utant(s): am/Fuel Ratio
3.	CMS Requirement:		Rule	Other
4.	Monitor Information Manufacturer:			
	Model Number:		S	erial Number:
5.	Installation Date:	6.	Perfo	ormance Specification Test Date:
7.	Continuous Monitor Comment:			
!	Dulas (2.212.4404) and (2.210.700 E.A.	\mathbf{C}		
	Rules 62-213.4404), and 62-210.700, F.A.	.		
Continuous Monitoring System: Continuous Monitor of				of
1.	Parameter Code:		2. P	Pollutant(s):
3.	CMS Requirement:		Rule	Other
4.	Monitor Information Manufacturer:			
	Model Number:		Se	Serial Number:
5.	Installation Date:		6. P	Performance Specification Test Date:
7.	Continuous Monitor Comment:			
ŀ				

DEP Form No. 62-210.900(1) – Form

Section [12]

Cogeneration

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: ☐ Previously Submitted, Date 3/21/11
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: Previously Submitted, Date 3/21/11
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: Previously Submitted, Date 3/21/11
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 <u>3/21/11</u>
	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 3/21/11
	☐ Not Applicable
6.	Compliance Demonstration Reports/Records: Attached, Document ID: Test Date(s)/Pollutant(s) Tested: Previously Submitted, Date: Test Date(s)/Pollutant(s) Tested: To be Submitted, Date (if known):
	Test Date(s)/Pollutant(s) Tested:
	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

DEP Form No. 62-210.900(1) – Form

Section [12]

Cogeneration

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1.	5				
	F.A.C.; 40 CFR 63.43(d) and (e)): Attached, Document ID:	Not Applicable			
2.					
-:	212.500(4)(f), F.A.C.):				
L	Attached, Document ID:	Not Applicable ■ Output Description: Output Description: D			
3.	, , ,	(Required for proposed new stack sampling facilities			
	only) Attached, Document ID:	Not Applicable			
L					
_=	<u>dditional Requirements for Title V Air Op</u>				
1.	Identification of Applicable Requirements:				
<u> </u>	☐ Attached, Document ID: ☐ Not Appli	cable			
2.	 Compliance Assurance Monitoring: ☐ Attached, Document ID: ☒ Not Applic 	o de la constanta de la consta			
3.		aut			
3.	Attached, Document ID:] Not Applicable			
4.	. Alternative Modes of Operation (Emission				
	Attached, Document ID:	☐ Not Applicable			
<u>Ac</u>	dditional Requirements Comment				

DEP Form No. 62-210.900(1) – Form

ATTACHMENT 2 REVISED APPLICATION PAGES

APPLICATION INFORMATION

Scope of Application

Emissions		Air	Air Permit
Unit ID	Description of Emissions Unit	Permit	Processing
Number	<u>-</u>	Type	Fee
002	Area II Adipic Acid/TRU/SCR II	AC1B	NA
020	Cyclohexane Oxidation Process	AC1B	NA
042	Nitric Acid Plant	AC1B	NA
088 and 089	Area 480 KA and Area 480 KA Fugitives	AC1E	NA
081	Continuous Nylon Polymerization Lines	AC1C	NA
082	Batch Nylon Polymerization Lines	AC1C	NA
	Therminol Vaporizer No. 9	AC1E	NA
	Hydrogen Generating Plant No. 2	AC1D	NA
	Area II Adipic Acid – 1080 MAR Project Fugitive Emissions	AC1F	NA
014, 015, 016	Boilers Nos. 4, 5, and 6	AC1B	NA
004, 003	Boilers Nos. 7 and 8	AC1B	NA
099	Boilers No. 9	AC1B	NA
032	Cogeneration Plant	AC1B	NA

Application Processing Fee		
Check one: Attached - Amount: \$	X	Not Applicable

DEP Form No. 62-210.900(1) – Form

Effective: 03/11/2010 3

Section [1] EU 002 – Area II Adipic Acid

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1.	Identification of Point on Flow Diagram: 02, 02A	Plot Plan or	2. Emission Point 7	Гуре Code:	
3.	Descriptions of Emission	Points Comprising	this Emissions Unit	for VE Tracking:	
4.	ID Numbers or Description Nitric acid reaction and Control of the Nitric acid reaction acid reac				
5.	Discharge Type Code: V	6. Stack Height 85 feet	:	7. Exit Diameter: 7 feet	
8.	Exit Temperature: 434°F	9. Actual Volur 98,000 acfm	netric Flow Rate:	10. Water Vapor: %	
11.	Maximum Dry Standard F dscfm	Flow Rate:	12. Nonstack Emissi feet	on Point Height:	
13.	Emission Point UTM Coo Zone: 17 East (km): North (km)	:	14. Emission Point I Latitude (DD/M) Longitude (DD/I)	,	
15.	15. Emission Point Comment: Based on September 28, 2010 Engineering Test. Stack discharge parameters may change with the addition of SNCR control technology.				
Sta	Stack parameters are for the TRU (ID 02).				

DEP Form No. 62-210.900(1) – Form

EMISSIONS UNIT INFORMATION Section [2] Cyclohexane Oxidation Process

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: 02, 20A, LP 401, LP461, EV401, EV461		2. Emission Point	Гуре Code: 2	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:				
4. ID Numbers or Descriptio Cyclohexane oxidation off				
Discharge Type Code:V	6. Stack Height 85 feet	•	7. Exit Diameter: 7 feet	
8. Exit Temperature: 434 °F	9. Actual Volur 98,000 acfm	metric Flow Rate:	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet		
13. Emission Point UTM Coo Zone: East (km):	rdinates	14. Emission Point I Latitude (DD/M)	Latitude/Longitude	
North (km)	:	Longitude (DD/MM/SS)		
15. Emission Point Comment: Stack parameters are for the TRU (ID 02). Stack parameters based on September 28, 2010 engineering test. VOC and CO emissions are controlled by TRU. When TRU is down VOC and CO emissions are controlled by				
OBUD. Parameters above are for TRU. Stack parameters for OBUD: 50 ft stack height; 5.5 ft stack diameter; 1,300 °F and 59,000 acfm. Venting from the high pressure scrubber occurs during change from TRU to OBUD during emergency events.				

DEP Form No. 62-210.900(1)

Effective: 03/11/2010 37

POLLUTANT DETAIL INFORMATION Page [2] of [2] Continuous and Batch Nylon Polymerization Line **PM/PM10**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential Estimated Eugitive and Possiine & Projected Actual Emissions

Potential, Estimated Fugitive, and Dasenne d	c i i o jecteu zit	tual Ellins	310113	
1. Pollutant Emitted: PM/PM10	2. Total Percent Efficiency of Control:			
3. Potential Emissions: lb/hour	tons/year		netically Limited? Tes X No	
5. Range of Estimated Fugitive Emissions (as to tons/year	s applicable):			
6. Emission Factor:			7. Emissions Method Code:	
Reference:				
8.a. Baseline Actual Emissions (if required):	8.b. Baseline	24-month	Period:	
22.68 tons/year	From: 1/1/200)3 1	To: 12/31/2004	
9.a. Projected Actual Emissions (if required):	9.b. Projected	1 Monitori	ng Period:	
73.21 tons/year		ars X	10 years	
10. Calculation of Emissions: Projected actual emissions include emissions from continuous and batch polymerization lines and 7.95 TPY from recent line conversion projects. CP27 Conversion project (Permit No. 0330040-020-AC) — 0.5 TPY CP26 Conversion project (Permit No. 0330040-021-AC) — 1.0 TPY CP24&25 Conversion project (Permit No. 0330040-023-AC) — 1.5 TPY CP28&29 Conversion project (Permit No. 0330040-025-AC) — 1.45 TPY CP22&23 Conversion project (Permit No. 0330040-030-AC) — 1.8 TPY CP16&17 Conversion project (Permit No. 0330040-033-AC) — 1.7 TPY Total 7.95 TPY				
complete baseline, demand growth and projected actual emissions comparison.				

EMISSIONS UNIT INFORMATION Section [5]

POLLUTANT DETAIL INFORMATION Page [2] of [2] ne PM/PM10

Continuous and Batch Nylon Polymerization Line

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

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	on of Operating Method):
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	on 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	on of Operating Method):

EMISSIONS UNIT INFORMATION Section [5]

POLLUTANT DETAIL INFORMATION
Page [2] of [2]

Continuous and Batch Nylon Polymerization Line

PM2.5

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1 Otential, Estimated I agreeve, and Dasenne o	7 1 0 00000 1200000 22000			
1. Pollutant Emitted: PM2.5	2. Total Percent Efficiency of Control:			
3. Potential Emissions:		hetically Limited?		
lb/hour	tons/year	. CS X 110		
5. Range of Estimated Fugitive Emissions (as to tons/year	applicable):			
6. Emission Factor:		7. Emissions Method Code:		
Reference:				
8.a. Baseline Actual Emissions (if required):	8.b. Baseline 24-month	Period:		
22.68 tons/year	From: 1/1/2003	Γο: 12/31/2004		
9.a. Projected Actual Emissions (if required):	9.b. Projected Monitori	ng Period:		
68.74 tons/year	5 years X	10 years		
10. Calculation of Emissions: Projected actual emissions include emissions from continuous and batch polymerization lines and 3.48 TPY from recent line conversion projects.				
11. Potential, Fugitive, and Actual Emissions Comment: Baseline emissions do not include demand growth, see Attachment A, Table 1 for complete baseline, demand growth and projected actual emissions comparison.				

EMISSIONS UNIT INFORMATION Section [5]

POLLUTANT DETAIL INFORMATION
Page [2] of [2]
ne PM2.5

Continuous and Batch Nylon Polymerization Line

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

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	
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):

EMISSIONS UNIT INFORMATION Section [7]

Hydrogen Generating Plant No. 2

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Flow Diagram: H2A, H2		2. Emission Point	Гуре Code: 1	
3. Descriptions of Emission4. ID Numbers or Description				
5. Discharge Type Code: V	6. Stack Height TPD feet	:	7. Exit Diameter: TBD feet	
8. Exit Temperature: TBD °F	9. Actual Volumetric Flow Rate: TBD acfm		10. Water Vapor: %	
11. Maximum Dry Standard F dscfm	low Rate:	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:				
TBD = To be determined. Project currently under engineering review.				

DEP Form No. 62-210.900(1)

EMISSIONS UNIT INFORMATION Section [3] Nitric Acid Plant

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

Identification of Point on I Flow Diagram: 42	Plot Plan or	2. Emission Point	Гуре Code: 1	
Descriptions of Emission ID Numbers or Descriptio				
5. Discharge Type Code:	6. Stack Height	:	7. Exit Diameter: 5 feet	
8. Exit Temperature: 354 °F			10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: 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 based on stack test dated December 7, 2010.				

DEP Form No. 62-210.900(1)

EMISSIONS UNIT INFORMATION Section [4] Area 480 KA

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1.	Identification of Point on Flow Diagram: 88	Plot Plan or	2. Emission Point	Гуре Code: 1
3.	Descriptions of Emission Flare #1 and Flare #2 ID Numbers or Description			
5.	Discharge Type Code:	6. Stack Height	:	7. Exit Diameter:
	V	60 feet	-	2 feet
8.	Exit Temperature:	9. Actual Volum	metric Flow Rate:	10. Water Vapor: %
11.	Maximum Dry Standard F dscfm	Flow Rate:	12. Nonstack Emissi Feet	on Point Height:
13.	Emission Point UTM Coo Zone: East (km): North (km)		14. Emission Point I Latitude (DD/M Longitude (DD/M	•
15.	Emission Point Comment:		Longitude (DDI)	vivi/30)
7				

DEP Form No. 62-210.900(1)

EMISSIONS UNIT INFORMATION

Section [5]

Continuous and Batch Nylon Polymerization Lines

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1.	Identification of Point on Flow Diagram: 17, 18, 19		2. Emission Point 7	ype Code: 3	
25	, 26, 27, 78, 81, 48, EL1, E				
	.5, EL6, EL7, EL8, DPPC				
	PM-2, PM-3, PM-4, PM-5	,		:	
3.	Descriptions of Emission	Points Comprising	this Emissions Unit	for VE Tracking:	
	Distillation column cont	trols emissions f	rom continuous pol	ymerization evaporator	
	and pre-reactors and fro	m batch polymer	evaporator and aut	oclaves.	
4.	ID Numbers or Descriptio	ns of Emission Ur	nits with this Emission	Point in Common:	
5.	Discharge Type Code:	6. Stack Height	•	7. Exit Diameter:	
٠.	V	45 feet		2 feet	
8.	Exit Temperature:	9. Actual Volur	netric Flow Rate:	10. Water Vapor:	
	212 °F	16,920 acfm		%	
11.	. Maximum Dry Standard F dscfm	low Rate:	12. Nonstack Emissi feet	on Point Height:	
13.	Emission Point UTM Coo	rdinates	14. Emission Point I	atitude/Longitude	
	Zone: East (km):		Latitude (DD/MM/SS)		
	North (km)	:	Longitude (DD/MM/SS)		
15.	Emission Point Comment:				
	Stack parameters are fo	r the yarn plant (distillation column (l	D 81).	
	-	• •	·		

DEP Form No. 62-210.900(1)

EMISSIONS UNIT INFORMATION Section [6]

Therminol Vaporizers No. 9

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1.	Identification of Point on Flow Diagram: VAP9	Plot	Plan or	2. Emission Point	Гуре Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Therminol Vaporizer No. 9						
<u> </u>		_				
	ID Numbers or Descriptio					
5.	Discharge Type Code: V	6.	Stack Height TBD feet	•	7. Exit Diameter: TBD feet	
8.	Exit Temperature: TBD °F	9.	Actual Volum TBD acfm	netric Flow Rate:	10. Water Vapor: %	
11.	. Maximum Dry Standard F dscfm	low	Rate:	12. Nonstack Emission Point Height: feet		
13.	Emission Point UTM Coo Zone: East (km):	rdin	ates	14. Emission Point Latitude/Longitude Latitude (DD/MM/SS)		
	North (km)	:		Longitude (DD/MM/SS)		
15.	Emission Point Comment:					
TB	BD = To be determined. Pr	roje	ct currently ı	ınder engineering re	view.	
:						
}						

DEP Form No. 62-210.900(1)

POLLUTANT DETAIL INFORMATION Page [1] of [1] NOx

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Potential, Estimated Fugitive, and Dasenne o	t Hojecteu At	tuai Eiiii	5510115	
1. Pollutant Emitted:	2. Total Percent Efficiency of Control:			
NOx				
3. Potential Emissions:	-	4. Syntl	netically Limited?	
lb/hour 285	5 tons/year	х	Yes No	
5. Range of Estimated Fugitive Emissions (as	s applicable):			
to tons/year				
6. Emission Factor: 3 lb per ton 100% Nitric	Acid		7. Emissions	
			Method Code:	
Reference: Title V Permit 0330040-029-AV;	40 CFR 60.72(a)(1)	0	
8.a. Baseline Actual Emissions (if required):	8.b. Baseline	24-month	Period:	
316.7 tons/year	From: 1/1/200	2 To:12/3	1/2003	
9.a. Projected Actual Emissions (if required):	9.b. Projected	l Monitori	ng Period:	
tons/year		ars 🔲 1	0 years	
10. Calculation of Emissions:				
11. Potential, Fugitive, and Actual Emissions Co	omment:			
Potential emissions based on requested limit of 285 TPY.				

DEP Form No. 62-210.900(1)

POLLUTANT DETAIL INFORMATION Page [1] of [1] NOx

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions 1 of 3

1.	Basis for Allowable Emissions Code: RULE	2.	Future Effective D Emissions:	Date of Allowable
All	owable Emissions and Units:	4.	Equivalent Allowa	able Emissions:
	3 lb per ton 100% Nitric Acid		lb/hour	285 tons/year
5.	Method of Compliance:			
	NOx CEM			
6.	Allowable Emissions Comment (Description A limit of 3 lb per ton 100% Nitric Acid is allow			

Allowable Emissions 2 of 3

1.	Basis for Allowable Emissions Code: ESPSD	2.	Future Effective Da Emissions:	ate of Allowable
3.	Allowable Emissions and Units: 285 tons per year	4.	Equivalent Allowab lb/hour	ole Emissions: 285 tons/year
5.	Method of Compliance:			
6.	Allowable Emissions Comment (Description Emissions based on projected actual emiss			

Allowable Emissions 3 of 3

1.	Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:						
3.	Allowable Emissions and Units: 643.5 lb of NO/ 594 lb of NO ₂ , per Event	4.	Equivalent Allowab lb/hour	ole Emissions: tons/year				
5.	Method of Compliance:							
Ev	Allowable Emissions Comment (Description ent is equal to startup, shutdown, or malfurhour period. 40 CFR 60.73(e), Rule 62-210	ncti	on and may not exc	eed 3 hours in any				

DEP Form No. 62-210.900(1)

POLLUTANT DETAIL INFORMATION Page [2] of [2] VOC

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1 otential, Estimated Fugitive, and Baseine & 1 tojected Actual Emissions								
1. Pollutant Emitted: VOC	2. Total Percent Efficiency of Control:							
VOC								
3. Potential Emissions:	4. Synthetically Limited?							
lb/hour 94.2 2	tons/year X Yes No							
5. Range of Estimated Fugitive Emissions (as to tons/year	s applicable):							
6. Emission Factor:	7. Emissions							
	Method Code:							
Reference:	0							
8.a. Baseline Actual Emissions (if required):	8.b. Baseline 24-month Period:							
101.7 tons/year	From: 1/1/2004 To: 12/31/2005							
9.a. Projected Actual Emissions (if required):	9.b. Projected Monitoring Period:							
tons/year	5 years 10 years	10 years						
10. Calculation of Emissions:								
10. Calculation of Emissions: Baseline emissions do not include demand growth, see Attachment A, Table 1 for complete emission calculations.								
11. Potential, Fugitive, and Actual Emissions Comment:								
Potential emissions based on requested limit of 94.21 TPY. Sum of HP, LP, and Tank Emissions.								

DEP Form No. 62-210.900(1)

Effective: 03/11/2010

POLLUTANT DETAIL INFORMATION Page [2] of [2] VOC

2. Future Effective Date of Allowable

Emissions:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code:

OTHER

3.	Allowable Emissions and Units:	4.	Equivalent Allowable Emissions:
į	10.4 lb/hr based on 24-hour average (OBUD only)		10.4 lb/hour 45.5 tons/year
5.	Method of Compliance: EPA Method 25A		
6.	Allowable Emissions Comment (Description	of (Operating Method):
	r Title V Permit 0330040-029-AV emission idizer (OBUD) only.	limi	tations are from the backup thermal
Al	lowable Emissions Allowable Emissions 2 of	f <u>2</u>	
1.	Basis for Allowable Emissions Code: ESPSD	2.	Future Effective Date of Allowable Emissions:
3.	Allowable Emissions and Units: 94.21 tons/year	4.	Equivalent Allowable Emissions: lb/hour 94.21 tons/year
5.	Method of Compliance: Sum of HP, LP, an	d T	ank Emissions.
<u>Al</u>	lowable 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):

DEP Form No. 62-210.900(1) Effective: 03/11/2010 ATTACHMENT 3
REVISED PLOT PLAN

ATTACHMENT 4 SNCR MANUFACTURER INFORMATION



International Headquarters PO Box 21220 Tulsa, OK 74121-1220 918/234-1800

Chris Buechler Ascend Performance Materials PO Box 97 Gonzalez, FL 32560 April 6, 2011

Chris,

Please see performance guarantee below:

John Zink/KEU SNCR - DeNOx-system:

Guarantee of Emissions

John Zink Company guarantees the performance as follows provided that the equipment is operated in compliance with John Zink operating and maintenance manual parameters, temperature parameters of between 960°C and 980°C, and within the normal design conditions. The operating and maintenance manual will be provided with the equipment order.

	Unit	Guaranteed	Expected
Outlet NO _x	ppmv	100	50
NH ₃ SLIP	ppmvd@ 7% vol Dry O₂	40	<10

John Zink Company is responsible only for those emissions that pass through the thermal oxidizer system. Performance testing shall be conducted by the customer within sixty (60) days after the equipment has been placed in operation or no longer than one year after notification to ship, whichever occurs first. If performance tests are not executed within this time period, the Performance Guarantee shall be considered to have been met. Test protocol shall be mutually agreed upon. John Zink shall be notified in writing two weeks prior to any testing. It shall be the customer's responsibility to maintain equipment in good working order prior to and during testing. Performance testing is the customer's responsibility.

Subject to the provisions of John Zink Company's Limitation of Liability Clause, should the equipment not meet the Performance Guarantee, John Zink Company, in accordance with recognized engineering procedures and practices shall determine any design deficiencies. John Zink Company shall take such action as it may determine necessary to correct the equipment to meet such guarantees. Customer agrees to provide John Zink Company all necessary operating and historical data and access to the equipment when requested for the purpose of taking corrective action.

Doug Kenney

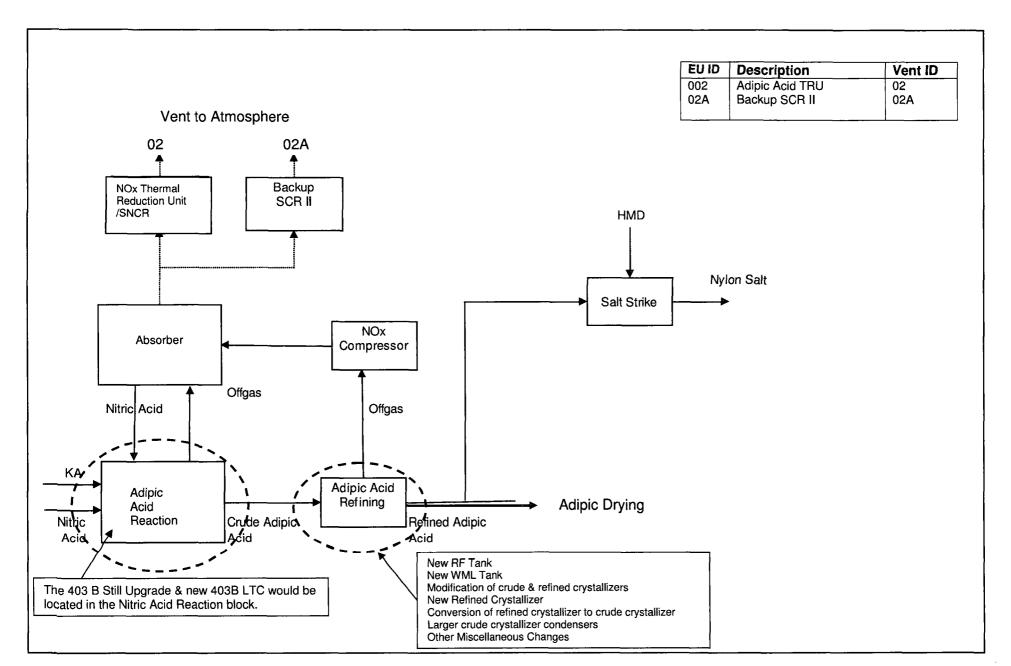
John Zink Company LLC

Director Aftermarket Sales and Service

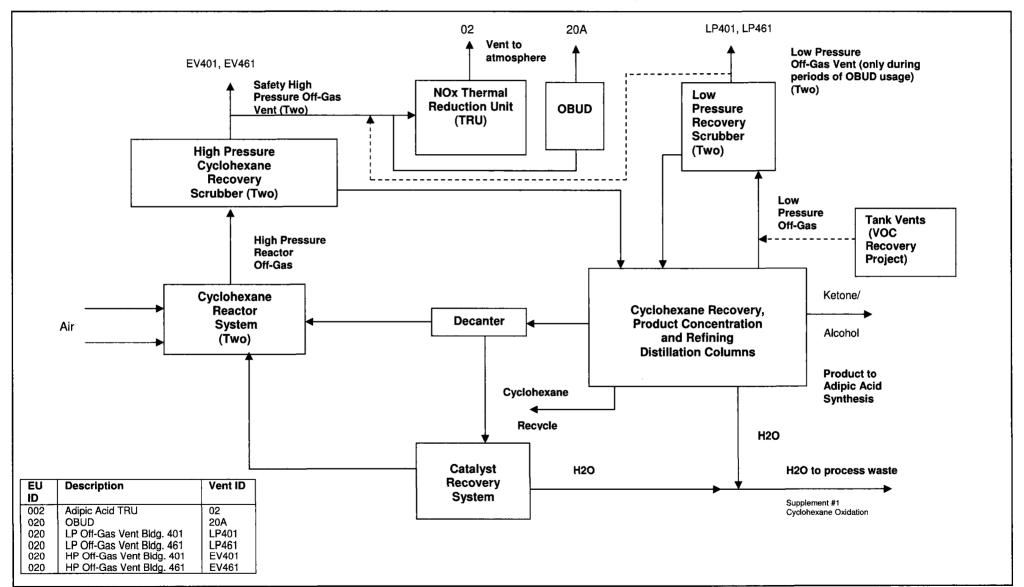
Thermal Oxidizer Systems

ATTACHMENT 5
REVISED PROCESS FLOW DIAGRAMS (PFDS)

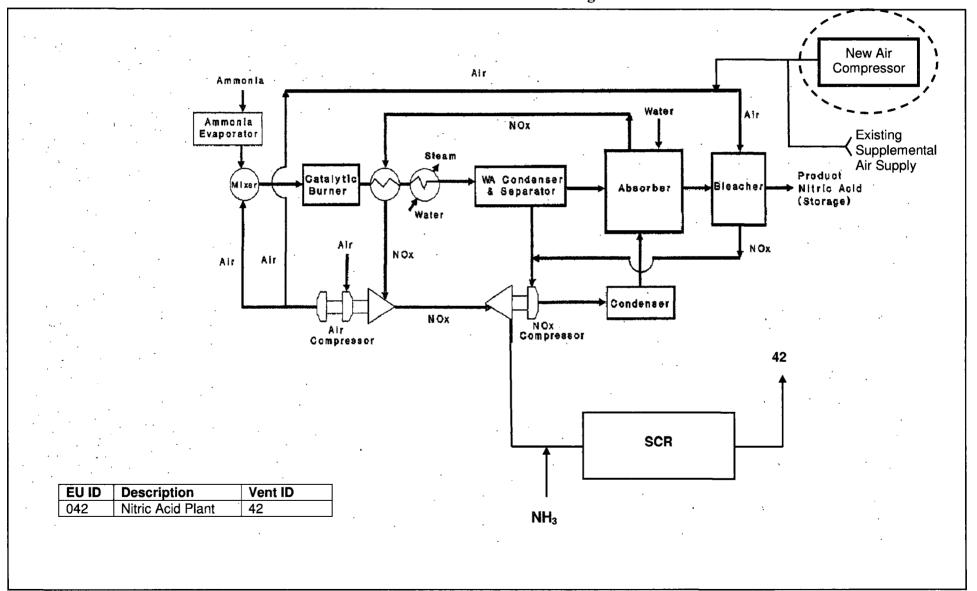
ATTACHMENT APM-EU1-I1 Adipic Acid Process Flow Diagram



ATTACHMENT APM-EU2-I1 Cyclohexane Oxidation Process Flow Diagram

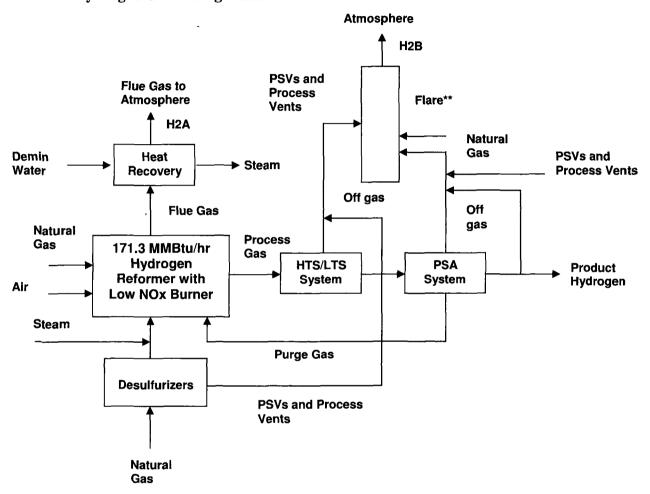


ATTACHMENT APM-EU3-I1 Nitric Acid Plant Process Flow Diagram



ATTACHMENT APM-EU7-I1 Process Flow Diagram

Hydrogen Generating Plant

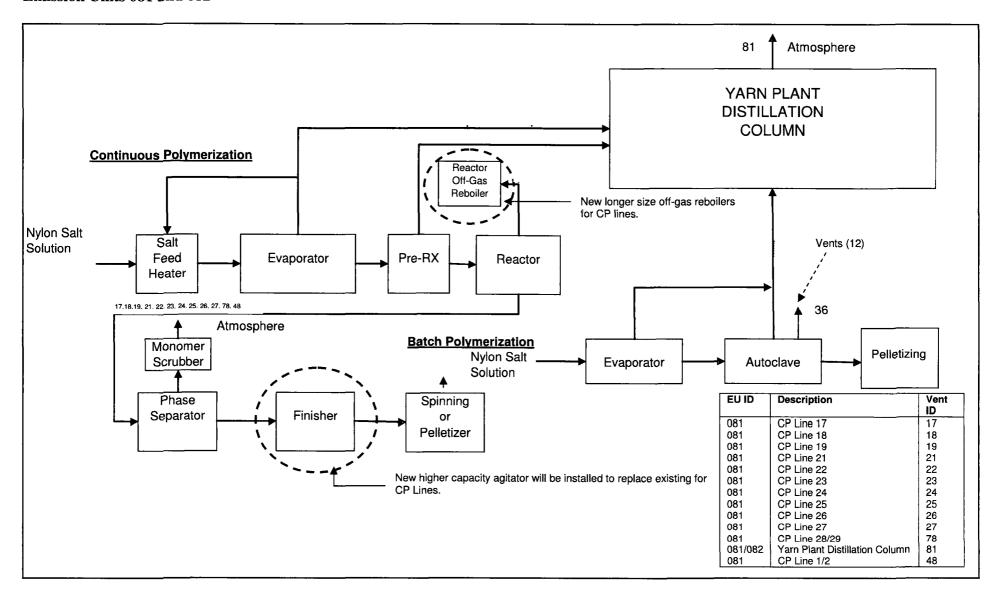


*New plant will most likely not have LTS Rx.

**Flare will we used to collect and dispose of combustible gases vented during SSM events.

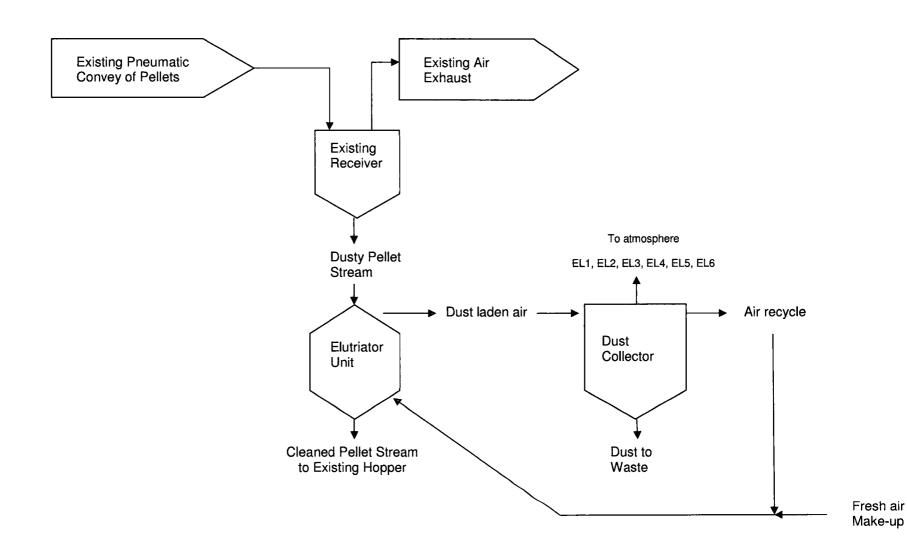
ATTACHMENT APM-EU5-I1 Continuous/Batch Polymerization Process Flow Diagram

Emission Units 081 and 082



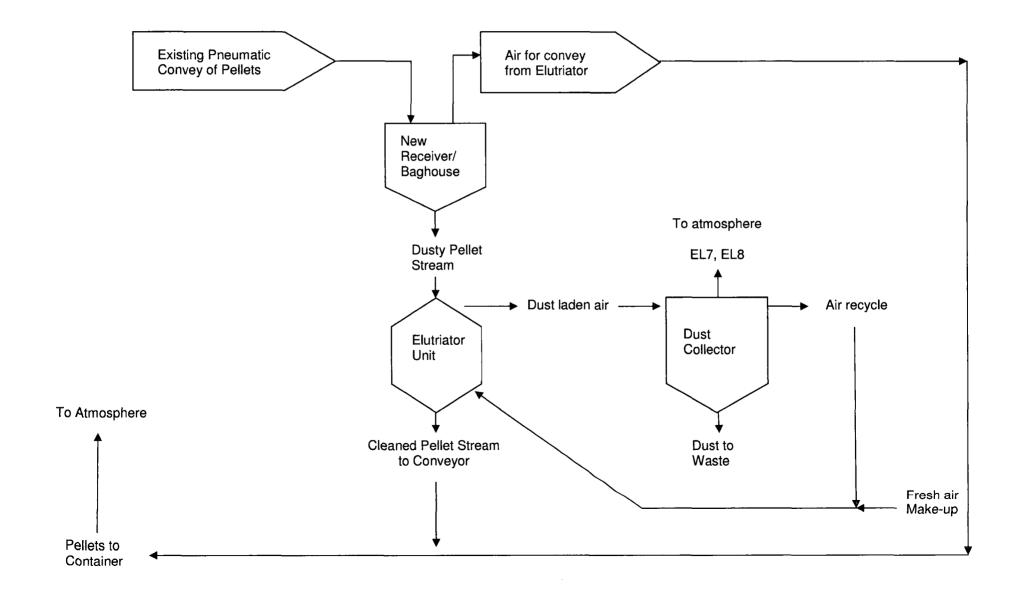
ATTACHMENT APM-EU5-I1 Emission Units 081 and 082

Elutriator & Dust Collector With Gravity Pellet Discharge - Six Total



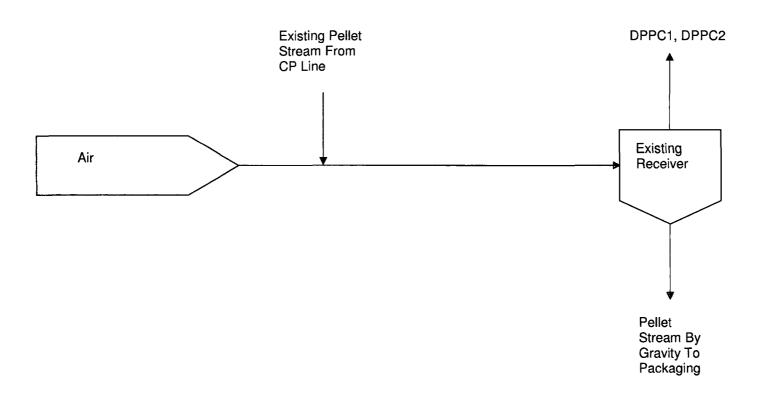
ATTACHMENT APM-EU5-I1 Emission Units 081 and 082

Elutriator & Dust Collector With Pneumatic Discharge - Two Total



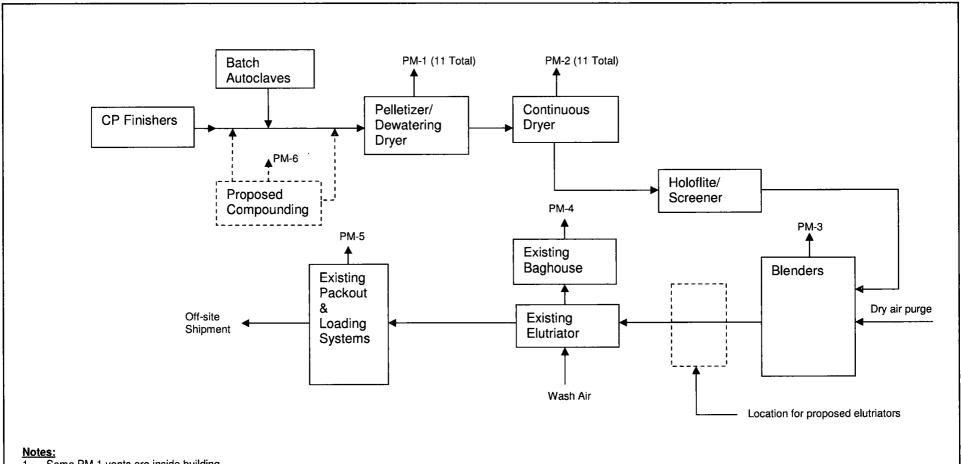
ATTACHMENT APM-EU5-I1 Emission Units 081 and 082

<u>Dilute Phase Pneumatic Conveyors - Two Total</u>



ATTACHMENT APM-EU5-I1 Continuous/Batch Polymerization Process Flow Diagram

Emission Units 081 and 082



- Some PM-1 vents are inside building.
- Continuous dryer and holoflite not installed on all lines.
- PM-3 vents are from various blender/silos on site (may have cyclone separators on top of blenders).
- PM-4 vents are from existing elutriator and baghouse for CP 16/17 and some batch products, proposed new elutriators will be between blenders and packaging and use bag filters.
- PM-5 vents are from conveyed material to 3 packaging/loading areas.
- Proposed vent PM-6 is for the HEAF filter (including VOCs).

ATTACHMENT 6
NATURAL GAS SULFUR ANALYSIS



Report of Analysis

Client Reference Number:

NONE

Client: Ascend Performance Materials, LLC

Intertek
James Herring, Laboratory Manager

Job Location: Mobile, AL, USA

Sample Designated As: NATURAL GAS Vessel/Location: SUBMITTED NATURAL GAS	Date Submitted:09-March-201
Vessel/Location: SUBMITTED NATURAL GAS	
	Date Tested: 09-March-201
Representing: NATURAL GAS - ASCEND	Drawn By:Client
Method Test	Result Units
TM 6016 Determination of Sulfur by Gas Chi	romatography
Total Sulfur	< 1.0 ppm

ATTACHMENT 7
REVISED EMISSION CALCULATION TABLES

WASTEWATER TREATMENT SUMMARY I 03-08-2011 11:17:23

Project Q:\Halcon VOC Emis COMPOUND		Tank WATER9 Calculations 2004 Fraction							
(g/s)	Air Removal Exit	Adsorb error	emissions						
CYCLOHEXANE	2.29E-01 .26 .	.7362 0.000	0 0.0000 (7.21E+00 Mg/yr)						
CYCLOHEXANOL	3.02E-02.00.	.9972 0.00	00 0.0000 (9.54E-01 Mg/yr)						
CYCLOHEXANONE	2.04E-04.00 .	.9982 0.00	000 0.0000 (6.44E-03 Mg/yr)						
FORMIC ACID	2.90E-03 .00 .	.9993 0.0000	0.0000 (9.14E-02 Mg/yr)						
TOTAL ALL COMPOUNDS	S 2.62E-01 g	/s air emissions							
TOTAL ALL COMPOUNDS	8.27E+00 N	8.27E+00 Mg/vr air emissions							

TANKS 4.0.9d

Emissions Report - Detail Format Tank Indentification and Physical Characteristics

Identification

User Identification: 481TA56A City: Pensacola State: Florida

Company: Ascend Performance Materials Type of Tank: Vertical Fixed Roof Tank

Description: A Slurry Tank

Tank Dimensions

 Shell Height (ft):
 5.35

 Diameter (ft):
 8.50

 Liquid Height (ft):
 2.10

 Avg. Liquid Height (ft):
 2.10

 Volume (gallons):
 891.42

 Turnovers:
 238.50

 Net Throughput(gal/yr):
 212,602.62

Is Tank Heated (y/n): Y

Paint Characteristics

Shell Color/Shade: Aluminum/Specular

Shell Condition Good

Roof Color/Shade: Aluminum/Specular

Roof Condition: Good

Roof Characteristics

Type: Cone

Height (ft) 0.00
Slope (ft/ft) (Cone Roof) 0.00

Breather Vent Settings
Vacuum Settings (psig): 0.00
Pressure Settings (psig) 0.00

Meterological Data used in Emissions Calculations: Pensacola, Florida (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d

Emissions Report - Detail Format Liquid Contents of Storage Tank

481TA56A - Vertical Fixed Roof Tank Pensacola, Florida

			ily Liquid Si perature (d		Liquid Bulk Temp	Vapo	r Pressure	(psia)	Vapor Mol.	Liquid Mass	Vapor Mass	Mol.	Basis for Vapor Pressure
Mixture/Component	Month	Avg.	Min.	Max.	(deg F)	Avg.	Min.	Max.	Weight.	Fract.	Fract.	Weight	Calculations
Cyclohexane	All	122.00	122.00	122.00	122.00	5.2544	5.2544	5.2544	84.1600			84.16	Option 2: A=6.841, B=1201.53, C=222.65

TANKS 4.0.9d

Emissions Report - Detail Format Detail Calculations (AP-42)

481TA56A - Vertical Fixed Roof Tank Pensacola, Florida

Annual Emission Calcaulations	
Standing Losses (lb):	0.0000
Vapor Space Volume (cu ft):	184.4213
Vapor Density (ib/cu ft):	0.0708
Vapor Space Expansion Factor:	0.000.0
Vented Vapor Saturation Factor:	0.5249
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	184,4213
Tank Diameter (ft):	8.5000
Vapor Space Outage (ft):	3.2500
Tank Shell Height (ft):	5.3500
Average Liquid Height (ft):	2,1000
Roof Outage (ft):	0.0000
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0000
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	4.2500
Vapor Density	
Vapor Density (lb/cu ft):	0.0708
Vapor Molecular Weight (lb/lb-mole):	84.1600
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5,2544
Daily Avg. Liquid Surface Temp. (deg. R):	581.6700
Daily Average Ambient Temp. (deg. F):	67.6708
Ideal Gas Constant R	
(psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	581.6700
Tank Paint Solar Absorptance (Shell):	0.3900
Tank Paint Solar Absorptance (Roof):	0.3900
Daily Total Solar Insulation	
Factor (Btu/sqft day):	1,384.3333

Vapor Space Expansion Factor

Vapor Space Expansion Factor:	0.0000
Daily Vapor Temperature Range (deg. R):	0.0000
Daily Vapor Pressure Range (psia):	0.000
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5.2544
Vapor Pressure at Daily Minimum Liquid	
Surface Temperature (psia):	5.2544
Vapor Pressure at Daily Maximum Liquid	*****
Surface Temperature (psia):	5.2544
Daily Avg. Liquid Surface Temp. (deg R):	581.6700
Daily Min, Liquid Surface Temp. (deg R):	581,6700
Daily Max. Liquid Surface Temp. (deg R):	581.6700
Daily Ambient Temp. Range (deg. R):	17.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.5249
Vapor Pressure at Daily Average Liquid:	0.0243
Surface Temperature (psia):	5.2544
Vapor Space Outage (ft):	3.2500
Working Losses (lb):	654,6480
Vapor Molecular Weight (lb/lb-mole):	84.1600
Vapor Pressure at Daily Average Liquid	04.1000
Surface Temperature (psia):	5.2544
Annual Net Throughput (gal/yr.);	212,602,6175
Annual Turnovers:	238.5000
Tumover Factor:	0.2925
Maximum Liquid Volume (gal):	891.4156
Maximum Liquid Height (ft):	2.1000
Tank Diameter (ft):	8.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	654.6480
roter cooper (iv).	004.0400

TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: Annual

481TA56A - Vertical Fixed Roof Tank Pensacola, Florida

	Losses(lbs)							
Components	Working Loss	Breathing Loss	Total Emissions					
Cyclohexane	654.65	0.00	654.65					

TANKS 4.0.9d

Emissions Report - Detail Format Tank Indentification and Physical Characteristics

Identification

User Identification: 481TA56B City: Pensacola State: Florida

Company: Ascend Performance Materials Type of Tank: Vertical Fixed Roof Tank

Description: B Slurry Tank

Tank Dimensions

 Shell Height (ft):
 5.35

 Diameter (ft):
 8.50

 Liquid Height (ft):
 2.10

 Avg. Liquid Height (ft):
 2.10

 Volume (gallons):
 891.42

 Turnovers:
 217.40

 Net Throughput(gal/yr):
 193,793.75

Is Tank Heated (y/n):

Paint Characteristics

Sheli Color/Shade: Aluminum/Specular

Shell Condition Good

Roof Color/Shade: Aluminum/Specular

Roof Condition: Good

Roof Characteristics

Type: Cone

Height (ft) 0.00
Slope (ft/ft) (Cone Roof) 0.00

Breather Vent Settings
Vacuum Settings (psig): 0.00
Pressure Settings (psig) 0.00

Meterological Data used in Emissions Calculations: Pensacola, Florida (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d

Emissions Report - Detail Format Liquid Contents of Storage Tank

481TA56B - Vertical Fixed Roof Tank Pensacola, Florida

			nily Liquid S perature (d		Liquid Bulk Temp	Vapo	or Pressure	(psia)	Vapor M ol.	Liquid Mas s	Vapor Mass	Mol.	Basis for Vapor Pressure
Mixture/Component	Month	Avg.	Min.	Max.	(deg F)	Avg.	Min.	Max.	Weight.	Fract.	Fract.	Weight	Calculations
Cyclohexane	All	122.00	122.00	122.00	122.00	5.2544	5.2544	5.2544	84.1600			84.16	Option 2: A=6.841, B=1201.53, C=222.65

TANKS 4.0.9d

Emissions Report - Detail Format Detail Calculations (AP-42)

481TA56B - Vertical Fixed Roof Tank Pensacola, Florida

Annual Emission Calcaulations	
Standing Losses (lb):	0.0000
Vapor Space Volume (cu ft):	184.4213
Vapor Density (lb/cu ft):	0.0708
Vapor Space Expansion Factor:	0.0000
Vented Vapor Saturation Factor:	0.5249
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	184.4213
Tank Diameter (ft):	8.5000
Vapor Space Outage (ft):	3.2500
Tank Shell Height (ft):	5.3500
Average Liquid Height (ft):	2.1000
Roof Outage (ft):	0.0000
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0000
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	4.2500
Vapor Density	
Vapor Density (lb/cu ft):	0.0708
Vapor Molecular Weight (lb/lb-mole):	84.1600
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5.2544
Daily Avg. Liquid Surface Temp. (deg. R):	581.6700
Daily Average Ambient Temp. (deg. F):	67.6708
Ideal Gas Constant R	
(psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	581.6700
Tank Paint Solar Absorptance (Shell):	0.3900
Tank Paint Solar Absorptance (Roof):	0.3900
Daily Total Solar Insulation	4 204 2222
Factor (Btu/sqft day):	1,384.3333

Vapor Space Expansion Factor

Vapor Space Expansion Factor: 0.0000 Daily Vapor Temperature Range (deg. R): 0.0000 Daily Vapor Pressure Range (psia): 0.0000 Breather Vent Press. Setting Range(psia): 0.0000 Vapor Pressure at Daily Average Liquid 5.2544 Vapor Pressure at Daily Mainmum Liquid 5.2544 Vapor Pressure at Daily Mainmum Liquid 5.2544 Vapor Pressure at Daily Maximum Liquid 5.2544 Surface Temperature (psia): 5.2544 Vapor Pressure at Daily Maximum Liquid 5.2544 Surface Temperature (psia): 5.2544 Daily Myn. Liquid Surface Temp. (deg R): 581.6700 Daily Min. Liquid Surface Temp. (deg R): 581.6700 Daily Ambient Temp. Range (deg. R): 17.6917 Vented Vapor Saturation Factor 0.5249 Vapor Pressure at Daily Average Liquid: 0.5249 Vapor Space Outage (ft): 3.2500 Working Losses (lb): 621.6418 Vapor Pressure at Daily Average Liquid 5.2544 Vapor Pressure at Daily Average Liquid 5.2544 Vapor Pressure at Daily Average Liquid 5.2544 Vapor		
Daily Vapor Pressure Range (psia): 0.0000 Breather Vent Press. Setting Range(psia): 0.0000 Vapor Pressure at Daily Average Liquid Surface Temperature (psia): 5.2544 Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): 5.2544 Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): 5.2544 Daily Avg. Liquid Surface Temp. (deg R): 581.6700 Daily Mn. Liquid Surface Temp. (deg R): 581.6700 Daily Mn. Liquid Surface Temp. (deg R): 581.6700 Daily Mn. Liquid Surface Temp. (deg R): 7.6917 Vented Vapor Saturation Factor Vented Vapor Saturation Factor Vapor Pressure at Daily Average Liquid: 3.2500 Working Losses (lb): 6.21.6418 Vapor Molecular Weight (lb/lb-mole): 84.1600 Vapor Pressure at Daily Average Liquid Surface Temperature (psia): 5.2544 Annual Net Throughput (gallyr.): 193,793,7486 Annual Tumovers: 217,4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Volume (gal): 81.5000 Working Loss Product Factor: 1.0000	Vapor Space Expansion Factor:	0.0000
Breather Vent Press. Setting Range(psia): 0.0000	Daily Vapor Temperature Range (deg. R):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia): 5.2544 Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): 5.2544 Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): 5.2544 Daily Avg. Liquid Surface Temp. (deg R): 581.6700 Daily Man. Liquid Surface Temp. (deg R): 581.6700 Daily Ambient Temp. Range (deg. R): 17.6917 Vented Vapor Saturation Factor 0.5249 Vapor Pressure at Daily Average Liquid: 0.5249 Vapor Space Outage (ft): 3.2500 Working Losses (lb): 621.6418 Vapor Molecular Weight (lb/lb-mole): 84.1600 Vapor Pressure at Daily Average Liquid 5.2544 Surface Temperature (psia): 5.2544 Annual Net Throughput (gal/yr.): 193.793.7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Height (ft):		0.0000
Surface Temperature (psia): Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): Daily Avg. Liquid Surface Temp. (deg R): Daily May. Liquid Surface Temp. (deg R): S81.6700 Daily Min. Liquid Surface Temp. (deg R): S81.6700 Daily Max. Liquid Surface Temp. (deg R): Daily Ambient Temp. Range (deg. R): Vented Vapor Saturation Factor Vented Vapor Saturation Factor: Vapor Pressure at Daily Average Liquid: Surface Temperature (psia): Surface Temperature	Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia): 5.2544 Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): 5.2544 Daily Avg. Liquid Surface Temp. (deg R): 581.6700 Daily Min. Liquid Surface Temp. (deg R): 581.6700 Daily Max. Liquid Surface Temp. (deg R): 581.6700 Daily Max. Liquid Surface Temp. (deg R): 581.6700 Daily Ambient Temp. Range (deg. R): 17.6917 Vented Vapor Saturation Factor: 0.5249 Vapor Pressure at Daily Average Liquid: 0.5249 Surface Temperature (psia): 5.2544 Vapor Space Outage (ft): 3.2500 Working Losses (lb): 621.6418 Vapor Molecular Weight (lb/lb-mole): 84.1600 Vapor Pressure at Daily Average Liquid 5.2544 Surface Temperature (psia): 5.2544 Annual Net Throughput (gallyr.): 193,793,7486 Annual Tumovers: 217,4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891,4156 Maximum Liquid Height (ft): 2,1000 Tank Diameter (ft): 8,5000 Working Loss P	Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	Surface Temperature (psia):	5.2544
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): Daily Avg. Liquid Surface Temp. (deg R): Daily Min. Liquid Surface Temp. (deg R): Daily May. Liquid Surface Temp. (deg R): Daily Max. Liquid Surface Temp. (deg R): Surface Temp. Range (deg. R): Vented Vapor Saturation Factor: Vapor Pressure at Daily Average Liquid: Surface Temperature (psia): Vapor Space Outage (ft): Surface Temperature (psia): Vapor Molecular Weight (lb/lb-mole): Vapor Molecular Weight (lb/lb-mole): Vapor Pressure at Daily Average Liquid Surface Temperature (psia): Annual Net Throughput (gallyr.): 193,793,7488 Annual Tumovers: Tumover Factor: Maximum Liquid Volume (gal): Maximum Liquid Volume (gal): Tank Diameter (ft): 8.5000 Working Loss Product Factor:	Vapor Pressure at Daily Minimum Liquid	
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia): Daily Avg. Liquid Surface Temp. (deg R): Daily Min. Liquid Surface Temp. (deg R): Daily May. Liquid Surface Temp. (deg R): Daily Max. Liquid Surface Temp. (deg R): Surface Temp. Range (deg. R): Vented Vapor Saturation Factor: Vapor Pressure at Daily Average Liquid: Surface Temperature (psia): Vapor Space Outage (ft): Surface Temperature (psia): Vapor Molecular Weight (lb/lb-mole): Vapor Molecular Weight (lb/lb-mole): Vapor Pressure at Daily Average Liquid Surface Temperature (psia): Annual Net Throughput (gallyr.): 193,793,7488 Annual Tumovers: Tumover Factor: Maximum Liquid Volume (gal): Maximum Liquid Volume (gal): Tank Diameter (ft): 8.5000 Working Loss Product Factor:	Surface Temperature (psia):	5.2544
Daily Avg. Liquid Surface Temp. (deg R): \$81.6700 Daily Man. Liquid Surface Temp. (deg R): \$81.6700 Daily Man. Liquid Surface Temp. (deg R): \$81.6700 Daily Max. Liquid Surface Temp. (deg R): \$81.6700 Daily Ambient Temp. Range (deg. R): 17.6917 Vented Vapor Saturation Factor Vented Vapor Saturation Factor: 0.5249 Vapor Pressure at Daily Average Liquid: Surface Temperature (psia): 5.2544 Vapor Space Outage (ft): 3.2500 Working Losses (lb): 621.6418 Vapor Molecular Weight (lb/lb-mole): 84.1600 Vapor Pressure at Daily Average Liquid Surface Temperature (psia): 5.2544 Annual Net Throughput (gallyr.): 193.793.7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Vapor Pressure at Daily Maximum Liquid	
Daily Man. Liquid Surface Temp. (deg R): 581.6700	Surface Temperature (psis):	5.2544
Daily Man. Liquid Surface Temp. (deg R): 581.6700	Daily Avg. Liquid Surface Temp. (deq R):	581,6700
Daily Ambient Temp. Range (deg. R): 17.6917	Daily Min. Liquid Surface Temp. (deg R):	581.6700
Vented Vapor Saturation Factor 0.5249 Vented Vapor Saturation Factor: 0.5249 Vapor Pressure at Daily Average Liquid: 5.2544 Surface Temperature (psia): 3.2500 Working Losses (fb): 621.6418 Vapor Molecular Weight (Ib/Ib-mole): 84.1600 Vapor Pressure at Daily Average Liquid 5.2544 Annual Net Throughput (gal/yr.): 193.793.7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4158 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Daily Max. Liquid Surface Temp. (deg R):	581.6700
Vented Vapor Saturation Factor: 0.5249 Vapor Pressure at Daily Average Liquid: 5.2544 Surface Temperature (psia): 5.2544 Vapor Space Outage (ft): 3.2500 Working Losses (lb): 621.6418 Vapor Molecular Weight (lb/lb-mole): 84.1600 Vapor Pressure at Daily Average Liquid 5.2544 Surface Temperature (psia): 193.793.7486 Annual Net Throughput (gal/yr.): 193.793.7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Daily Ambient Temp. Range (deg. R):	17.6917
Vented Vapor Saturation Factor: 0.5249 Vapor Pressure at Daily Average Liquid: 5.2544 Surface Temperature (psia): 5.2544 Vapor Space Outage (ft): 3.2500 Working Losses (lb): 621.6418 Vapor Molecular Weight (lb/lb-mole): 84.1600 Vapor Pressure at Daily Average Liquid 5.2544 Surface Temperature (psia): 193.793.7486 Annual Net Throughput (gal/yr.): 193.793.7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	• • • • • •	
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia): 5.2544 Vapor Space Outage (ft): 3.2500 Working Losses (lb): 621.6418 Vapor Molecular Weight (lb/lb-mole): 84.1600 Vapor Pressure at Daily Average Liquid Surface Temperature (psia): 5.2544 Annual Net Throughput (gal/yr.): 193,793,7486 Annual Tumovers: 217,4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4158 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Vented Vapor Saturation Factor	
Surface Temperaturé (psia): 5.2544 Vapor Space Outage (ft): 3.2500 Working Losses (lb): 621.6418 Vapor Molecular Weight (lb/lb-mole): 84.1600 Vapor Pressure at Daily Average Liquid Surface Temperature (psia): 5.2544 Annual Net Throughput (gallyr.): 193,793,7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Vented Vapor Saturation Factor:	0.5249
Vapor Space Outage (ft): 3.2500 Working Losses (lb): 621.6418 Vapor Molecular Weight (lb/lb-mole): 84.1600 Vapor Pressure at Daily Average Liquid 5.2544 Annual Net Throughput (gal/yr.): 193.793.7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Vapor Pressure at Daily Average Liquid:	
Working Losses (Ib): 621.6418 Vapor Molecular Weight (Ib/Ib-mole): 84.1600 Vapor Pressure at Daily Average Liquid Surface Temperature (psia): 5.2544 Annual Net Throughput (gal/yr.): 193,793,7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4158 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Surface Temperature (psia):	5.2544
Vapor Molecular Weight (Ib/Ib-mole): 84.1600 Vapor Pressure at Daily Average Liquid 5.2544 Surface Temperature (psia): 193,793.7486 Annual Net Throughput (gallyr.): 193,793.7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Vapor Space Outage (ft):	3.2500
Vapor Molecular Weight (Ib/Ib-mole): 84.1600 Vapor Pressure at Daily Average Liquid 5.2544 Surface Temperature (psia): 5.2544 Annual Net Throughput (gal/yr.): 193,793,7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loas Product Factor: 1.0000	Working Losses (lb):	621.6418
Vapor Pressure at Daily Äverage Liquid Surface Temperature (psia): 5.2544 Annual Net Throughput (gal/yr.): 193,793.7486 Annual Tumovers: 217.4000 Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000		84.1600
Annual Net Throughput (gal/yr.): 193,793.7486 Annual Turnovers: 217.4000 Turnover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000		
Annual Turnovers: 217.4000 Turnover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Volume (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Surface Temperature (psia):	5.2544
Tumover Factor: 0.3047 Maximum Liquid Volume (gal): 891.4156 Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Annual Net Throughput (gal/yr.):	193,793.7486
Meximum Liquid Volume (gal): Maximum Liquid Height (ft): Tank Diameter (ft): Working Loss Product Factor: 891.4158 2.1000 3.5000 4.0000	Annual Turnovers:	217.4000
Maximum Liquid Height (ft): 2.1000 Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Tumover Factor:	0.3047
Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Maximum Liquid Volume (qal):	891.4156
Tank Diameter (ft): 8.5000 Working Loss Product Factor: 1.0000	Maximum Liquid Height (ft):	2.1000
·		8.5000
Total Losses (lb): 621.6418	Working Loss Product Factor:	1.0000
Total Losses (lb): 621.6418		
	Total Losses (Ib):	621.6418

TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: Annual

481TA56B - Vertical Fixed Roof Tank Pensacola, Florida

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Cyclohexane	621.64	0.00	621.64

Emissions Report - Detail Format Tank Indentification and Physical Characteristics

Identific	ation
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User Identification: 481TA108 City: Pensacola State: Florida

Company: Ascend Performance Materials
Type of Tank: Vertical Fixed Roof Tank
Description: Flasher Condensate Tank

Tank Dimensions

 Shell Height (ft):
 5.70

 Diameter (ft):
 5.91

 Liquid Height (ft):
 2.00

 Avg. Liquid Height (ft):
 2.00

 Volume (gallons):
 410.42

 Turnovers:
 101.00

 Net Throughput(gal/yr):
 39,810.70

 Is Tank Heated (y/n):
 Y

Paint Characteristics

Shell Color/Shade: Aluminum/Specular

Shell Condition Good

Roof Color/Shade: Aluminum/Specular

Roof Condition: Good

Roof Characteristics

Type: Dome

Height (ft) 0.00
Radius (ft) (Dome Roof) 5.91
Breather Vent Settings

Vacuum Settings (psig):

Pressure Settings (psig)

0.00

0.00

Meterological Data used in Emissions Calculations: Pensacola, Florida (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d

Emissions Report - Detail Format Liquid Contents of Storage Tank

			aily Liquid S perature (d		Liquid Bulk Temp	Vapo	r Pressure	(psia)	Vapor Moi.	Liquid Mass	Vapor Mass	Mol.	Basis for Vapor Pressure
Mixture/Component	Month	Avg.	Min.	Max.	(deg F)	Avg.	Min.	Max.	Weight.	Fract.	Fract.	Weight	Calculations
Cyclohexane	Ali	149.00	113.00	158.00	149.00	8.9193	4.3471	10.5123	84.1600			84.16	Option 2: A=6.841. B=1201.53. C=222.65

Emissions Report - Detail Format Detail Calculations (AP-42)

Annual Emission Calcaulations	
Standing Losses (lb):	1,822.6414
Vapor Space Volume (cu ft):	112.6204
Vapor Density (lb/cu ft):	0.1149
Vapor Space Expansion Factor:	1.1346
Vented Vapor Saturation Factor:	0.3401
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	112.6204
Tank Diameter (ft):	5.9100
Vapor Space Outage (ft):	4.1054
Tank Shell Height (ft):	5.7000
Average Liquid Height (ft):	2.0000
Roof Outage (ft):	0.4054
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.4054
Dome Radius (ft):	5.9100
Shell Radius (ft):	2.9550
Vapor Density	
Vapor Density (lb/cu ft):	0.1149
Vapor Molecular Weight (lb/lb-mole):	84.1600
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	8.9193
Daily Avg. Liquid Surface Temp. (deg. R):	608.6700
Daily Average Ambient Temp. (deg. F):	67.6708
Ideal Gas Constant R	
(psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	608.6700
Tank Paint Solar Absorptance (Shell):	0.3900
Tank Paint Solar Absorptance (Roof):	0.3900
Daily Total Solar Insulation	
Factor (Btu/sqft day):	1,384.3333
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	1.1346

Daily Vapor Temperature Range (deg. R):	45.0000
Daily Vapor Pressure Range (psia):	6.1651
Breather Vent Press. Setting Range(psia):	0.000.0
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	8.9193
Vapor Pressure at Dally Minimum Liquid	
Surface Temperature (psia):	4.3471
Vapor Pressure at Daily Maximum Liquid	
Surface Temperature (psia):	10.5123
Daily Avg. Liquid Surface Temp. (deg R):	608.6700
Daily Min. Liquid Surface Temp. (deg R):	572.6700
Daily Max. Liquid Surface Temp. (deg R):	617.6700
Daily Ambient Temp. Range (deg. R):	17.6917
Daily Ambient Tomp. (Valley Gog. 11).	17.0317
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.3401
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	8.9193
Vapor Space Outage (ft):	4.1054
Working Losses (Ib):	329.9286
Vapor Molecular Weight (lb/lb-mole):	84.1600
Vapor Pressure at Daily Average Liquid	04.1000
Surface Temperature (psia):	8.9193
Annual Net Throughput (gal/yr.):	39.810.6959
Annual Tumovers:	101.0000
Turnover Factor:	0.4637
	•
Maximum Liquid Volume (gal):	410.4195
Maximum Liquid Height (ft):	2.0000
Tank Diameter (ft):	5.9100
Working Loss Product Factor:	1.0000
Total Losses (lb):	2.152.5700
	-, ·oe.o.

TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: Annual

		Losses(lbs)	
Components	Working Loss	Breathing Loss	Total Emissions
Cyclohexane	329.93	1,822.64	2,152.57 ⁻

High Pressure Offgas Composition

VOC Calcs

Component	Mass Fraction in Offgas	Calc lb VOC emissions/yr/@ 15 SCFH (1.1714 pph) purgi flow
Methane (1)	7.370E-05	
Ethane (1)	2.530E-04	
Propane (1)	5.830E-04	5.98
Butane (2)	0.000E+00	
Pentane (2)	0.000E+00	
Hexane (1)	1.200E-06	0.01
Cyclohexane (1)	1.345E-03	13.80
Acetaldehyde (1)	2.027E-04	2.08
Acetone (2)	0.000E+00	
MEK (1)	1.037E-04	1.06
Formaldehyde (1)	9.100E-07	0.01
Methanol (1)	6.600E-06	0.07
Cyclohexanol (1)	1.027E-04	1.05
Propionaldehyde (1)	5.680E-05	0.58
Benzene (1)	8.460E-07	
Butanol (1)	2.844E-04	2.92
OTHER (2)	0.000E+00	
TOTAL ORGANICS		TOTAL VOCS 27.57

WASTEWATER TREATMENT SUMMARY I 03-08-2011 11:53:42

Project Q:\Halcon VOC Emissions\Amy's Calculations\481\481TA54B Boric Mother Liquor Tank\BML Tank WATER9 Calculations 2005

COMPOUND	RATE	Fraction
(g/s)	Air Removal Exit	Adsorb error emissions
CYCLOHEXANE	2.59E-01 .25 .	.7427 0.0000 0.0000 (8.17E+00 Mg/yr)
CYCLOHEXANOL	3.40E-02.00.	.9973 0.0000 0.0000 (1.07E+00 Mg/yr)
CYCLOHEXANONE	2.29E-04.00.	.9983 0.0000 0.0000 (7.24E-03 Mg/yr)
FORMIC ACID	3.26E-03.00.	.9994 0.0000 0.0000 (1.03E-01 Mg/yr)
TOTAL ALL COMPOUNDS	2.96E-01 g	/s air emissions
TOTAL ALL COMPOUNDS	9.36E+00 l	Mg/yr air emissions

Emissions Report - Detail Format Tank Indentification and Physical Characteristics

Identification

User Identification: 481TA56A City: Pensacola State: Florida

Company: Ascend Performance Materials Type of Tank: Vertical Fixed Roof Tank

Description: A Slurry Tank

Tank Dimensions

 Shell Height (ft):
 5.35

 Diameter (ft):
 8.50

 Liquid Height (ft):
 2.10

 Avg. Liquid Height (ft):
 2.10

 Volume (gallons):
 891.42

 Turnovers:
 211.40

 Net Throughput(gal/yr):
 188,445.26

Is Tank Heated (y/n):

Paint Characteristics

Shell Color/Shade: Aluminum/Specular

Shell Condition Good

Roof Color/Shade: Aluminum/Specular

Roof Condition: Good

Roof Characteristics

Type: Cone

Height (ft) 0.00
Slope (ft/ft) (Cone Roof) 0.00
Breather Vent Settings
Vacuum Settions (psig): 0.00

Vacuum Settings (psig): 0.00
Pressure Settings (psig) 0.00

Meterological Data used in Emissions Calculations: Pensacola, Florida (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d

Emissions Report - Detail Format Liquid Contents of Storage Tank

***************************************			nily Liquid Seperature (de		Liquid Bulk Temp	Vapo	r Pressure	(psia)	Vapor Mol.	Liquid Mass	Vapor Mass	Mol.	Basis for Vapor Pressure
Mixture/Component	Month	Avg.	Min.	Max.	(deg F)	Avg.	Min.	Max.	Weight.	Fract.	Fract.	Weight	Calculations
Cyclohexane	All	122.00	122.00	122.00	122.00	5.2544	5.2544	5.2544	84.1600			84.16	Option 2: A=6.841, B=1201.53, C=222.65

Emissions Report - Detail Format Detail Calculations (AP-42)

Standing Losses (lb):	0.0000
Vapor Space Volume (cu ft):	184.4213
Vapor Density (lb/cu ft):	0.0708
Vapor Space Expansion Factor:	0.0000
Vented Vapor Saturation Factor:	0.5249
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	184.4213
Tank Diameter (ft):	8.5000
Vapor Space Outage (ft):	3.2500
Tank Shell Height (ft):	5.3500
Average Liquid Height (ft):	2.1000
Roof Outage (ft):	0.0000
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0000
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	4.2500
Vapor Density	
Vapor Density (lb/cu ft):	0.0708
Vapor Molecular Weight (lb/lb-mole):	84.1600
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5.2544
Daily Avg. Liquid Surface Temp. (deg. R):	581.6700
Daily Average Ambient Temp. (deg. F):	67.6708
Ideal Gas Constant R	
(psia cuft / (lb-mol-deg R));	10.73
Liquid Bulk Temperature (deg. R):	581.6700
Tank Paint Solar Absorptance (Shell):	0.3906
Tank Paint Solar Absorptance (Roof):	0.3900
Daily Total Solar Insulation	
Factor (Btu/soft day):	1,384.333

Vapor Space Expansion Factor: Daily Vapor Temperature Range (deg. R): Daily Vapor Pressure Range (psia): Breather Vent Press. Setting Range(psia):	0.0000 0.0000 0.0000 0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia): Vapor Pressure at Dally Minimum Liquid	5.2544
Surface Temperature (psia): Vapor Pressure at Daily Maximum Liquid	5.2544
Surface Temperature (psia):	5.2544
Daily Avg. Liquid Surface Temp. (deq R):	581.6700
Daily Min. Liquid Surface Temp. (deg R):	581.6700
Daily Max. Liquid Surface Temp. (deg R):	581.6700
Daily Ambient Temp. Range (deg. R):	17.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.5249
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	5.2 544
Vapor Space Outage (ft):	3.2500
Working Losses (lb):	612.2562
Vapor Molecular Weight (Ib/Ib-mole): Vapor Pressure at Daily Average Liquid	84.1600
Surface Temperature (psia):	5,2544
Annual Net Throughput (gal/yr.):	188,445,2551
Annual Turnovers:	211.4000
Tumover Factor:	0.3086
Maximum Liquid Volume (gal):	891.4156
Maximum Liquid Height (ft):	2.1000
Tank Diemeter (ft):	8.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	612.2562

TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: Annual

		Losses(lbs)	
Components	Working Loss	Breathing Loss	Total Emissions
Cyclohexane	612.26	0.00	612.26

Emissions Report - Detail Format Tank Indentification and Physical Characteristics

1.4		414	ica	42.	
ın	ÐΠ	TIT	ıca	TIC	'n

User Identification: 481TA56B City: Pensacola State: Florida

Company: Ascend Performance Materials
Type of Tank: Vertical Fixed Roof Tank

Description: B Slurry Tank

Tank Dimensions

 Shell Height (ft):
 5.35

 Diameter (ft):
 8.50

 Liquid Height (ft):
 2.10

 Avg. Liquid Height (ft):
 2.10

 Volume (gallons):
 891.42

 Turnovers:
 230.70

 Net Throughput(gal/yr):
 193,793.75

Is Tank Heated (y/n):

Paint Characteristics

Shell Color/Shade: Aluminum/Specular

Shell Condition Good

Roof Color/Shade: Aluminum/Specular

Roof Condition: Good

Roof Characteristics

Type: Cone

Height (ft) 0.00
Slope (ft/ft) (Cone Roof) 0.00

Breather Vent Settings
Vacuum Settings (psig): 0.00
Pressure Settings (psig) 0.00

Meterological Data used in Emissions Calculations: Pensacola, Florida (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d

Emissions Report - Detail Format Liquid Contents of Storage Tank

			ily Liquid S perature (d		Liquid Bulk Temp	Vapo	r Pressure	(psia)	Vapor Mol.	Liquid Mass	Vapor Mass	Mol.	Basis for Vapor Pressure
Mixture/Component	Month	Avg.	Min.	Max.	(deg F)	Avg.	Min.	Max.	Weight.	Fract.	Fract.	Weight	Calculations
Cyclohexane	All	122.00	122.00	122.00	122.00	5.2544	5.2544	5.2544	84,1600			84.16	Option 2: A=6.841, B=1201.53, C=222.65

Emissions Report - Detail Format Detail Calculations (AP-42)

Annual Emission Calcaulations	
Standing Losses (lb):	0.0000
Vapor Space Volume (cu ft):	184.4213
Vapor Density (lb/cu ft):	0.0708
Vapor Space Expansion Factor:	0.0000
Vented Vapor Saturation Factor:	0.5249
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	184.4213
Tank Diameter (ft):	8.5000
Vapor Space Outage (ft):	3.2500
Tank Shell Height (ft):	5.3500
Average Liquid Height (ft):	2.1000
Roof Outage (ft):	0.0000
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0000
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0000
Shell Radius (ft):	4.2500
Vapor Density	
Vapor Density (lb/cu ft):	0.0708
Vapor Molecular Weight (lb/lb-mole):	84.1600
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5.2544
Daily Avg. Liquid Surface Temp. (deg. R):	581.6700
Daily Average Ambient Temp. (deg. F):	67.6708
Ideal Gas Constant R	
(psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	581.6700
Tank Paint Solar Absorptance (Shell):	. 0.3900
Tank Paint Solar Absorptance (Roof):	0.3900
Daily Total Solar Insulation	
Factor (Btu/sqft day):	1,384.333

Vapor Space Expansion Factor:	00000.0
Daily Vapor Temperature Range (deg. R):	0.0000
Daily Vapor Pressure Range (psia):	0.0000
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5.2544
Vapor Pressure at Daily Minimum Liquid	
Surface Temperature (psia):	5.2544
Vapor Pressure at Daily Maximum Liquid	
Surface Temperature (psia):	5.2544
Daily Avg. Liquid Surface Temp. (deg R):	581.6700
Daily Min. Liquid Surface Temp. (deg R):	581.6700
Daily Max, Liquid Surface Temp. (deg R):	581.6700
Daily Ambient Temp. Range (deg. R):	17.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.5249
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	5.2544
Vapor Space Outage (ft):	3.2500
Working Losses (lb):	605.4092
Vapor Molecular Weight (lb/lb-mole):	84.1600
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5.2544
Annual Net Throughput (gal/yr.):	193,793.7486
Annual Turnovers:	230.7000
Tumover Factor:	0.2967
Maximum Liquid Volume (gal):	891.4156
Maximum Liquid Height (ft):	2.1000
Tank Diameter (ft):	8.5000
Working Loss Product Factor:	1.0000
Total Losses (lb):	605.4092

TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: Annual

		Losses(lbs)	,
Components	Working Loss	Breathing Loss	Total Emissions
Cyclohexane	605.41	0.00	605.41

Emissions Report - Detail Format Tank Indentification and Physical Characteristics

Identification

User Identification: 481TA108
City: Pensacola
State: Florida

Company: Ascend Performance Materials
Type of Tank: Vertical Fixed Roof Tank
Description: Flasher Condensate Tank

Tank Dimensions

 Shell Height (ft):
 5.70

 Diameter (ft):
 5.91

 Liquid Height (ft):
 2.00

 Avg. Liquid Height (ft):
 2.00

 Volume (gallons):
 410.42

 Turnovers:
 111.80

 Net Throughput(gal/yr):
 45,884.91

Υ

Is Tank Heated (y/n):

Paint Characteristics

Shell Color/Shade: Aluminum/Specular

Shell Condition Good

Roof Color/Shade: Aluminum/Specular

Roof Condition: Good

Roof Characteristics

Type: Dome

 Height (ft)
 0.00

 Radius (ft) (Dome Roof)
 5.91

Breather Vent Settings

Vacuum Settings (psig): 0.00
Pressure Settings (psig) 0.00

Meterological Data used in Emissions Calculations: Pensacola, Florida (Avg Atmospheric Pressure = 14.73 psia)

TANKS 4.0.9d

Emissions Report - Detail Format Liquid Contents of Storage Tank

			illy Liquid S perature (d		Liquid Bulk Temp	Vapo	or Pressure	(psia)	Vapor Mol.	Liquid Mass	Vapor Mass	Mol.	Basis for Vapor Pressure
Mixture/Component	Month	Avg.	Min.	Max.	(deg F)	Avg.	Min.	Max.	Weight.	Fract.	Fract.	Weight	Calculations
Cyclohexane	Ali	149.00	113.00	158.00	149.00	8.9193	4.3471	10.5123	3 84.1600			84.16	Option 2: A=6.841, B=1201.53, C=222.65

TANKS 4.0.9d Emissions Report - Detail Format

Detail Calculations (AP-42)

Annual Emission Calcaulations	
Standing Losses (Ib):	1,822.6414
Vapor Space Volume (cu ft):	112.6204
Vapor Density (lb/cu ft):	0.1149
Vapor Space Expansion Factor:	1.1346
Vented Vapor Saturation Factor:	0,3401
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	112.6204
Tank Diameter (ft):	5.9100
Vapor Space Outage (ft):	4.1054
Tank Shell Height (ft):	5.7000
Average Liquid Height (ft):	2.0000
Roof Outage (ft):	0.4054
Roof Outage (Dome Roof)	
Roof Outage (ft):	0.4054
Dome Radius (ft):	5.9100
Shell Radius (ft):	2.9550
Vapor Density	
Vapor Density (lb/cu ft):	0.1149
Vapor Molecular Weight (lb/lb-mole):	84.1600
Vapor Pressure at Dally Average Liquid	
Surface Temperature (psia):	8.9193
Daily Avg. Liquid Surface Temp. (deg. R):	608.6700
Daily Average Ambient Temp. (deg. F): Ideal Gas Constant R	67.6708
(psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	608.6700
Tank Paint Solar Absorptance (Shell):	0.3900
Tank Paint Solar Absorptance (Roof): Daily Total Solar Insulation	0.3900
Factor (Btu/sqft day):	1,384.3333
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	1.1346

Daily Vapor Temperature Range (deg. R): Daily Vapor Pressure Range (psia): Breather Vent Press. Setting Range(psia):	45.0000 6.1651 0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia): Vapor Pressure at Daily Minimum Liquid	8.9193
Surface Temperature (psia): Vapor Pressure at Daily Maximum Liquid	4.3471
Surface Temperature (psia):	10.5123
Daily Avg. Liquid Surface Temp. (deg R):	608.6700
Daily Min. Liquid Surface Temp. (deq R):	572.6700
Daily Max. Liquid Surface Temp. (deg R):	617.6700
Daily Ambient Temp. Range (deg. R):	17.6917
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.3401
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	8.9193
Vapor Space Outage (ft):	4.1054
Working Losses (lb):	356.7374
Vapor Molecular Weight (lb/lb-mole):	84.1600
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	8.9193
Annual Net Throughput (gal/yr.):	45,884.9051
Annual Turnovers:	111.8000
Turnover Factor:	0.4350
Maximum Liquid Volume (gal):	410.4195
Maximum Liquid Height (ft):	2.0000
Tank Diameter (ft):	5.9100
Working Loss Product Factor:	1.0000
Total Losses (lb):	2,179.3787

TANKS 4.0.9d Emissions Report - Detail Format Individual Tank Emission Totals

Emissions Report for: Annual

		Losses(lbs)	
Components	Working Loss	Breathing Loss	
Cyclohexane	356.74	1,822.64	2,179.38

High Pressure Offgas Composition

Cyclohexanol (1)

Propionaldehyde (1)

Benzene (1)

Butanol (1)

OTHER (2)

TOTAL ORGANICS

Mass Fraction in Offgas Component 7.370E-05 Methane (1) Ethane (1) 2.530E-04 Propane (1) 5.830E-04 0.000E+00 Butane (2) 0.000E+00 Pentane (2) 1.200E-06 Hexane (1) Cyclohexane (1) 1.345E-03 Acetaldehyde (1) 2.027E-04 Acetone (2) 0.000E+00 **MEK (1)** 1.037E-04 Formaldehyde (1) 9.100E-07 Methanol (1) 6.600E-06

1.027E-04

5.680E-05

8.460E-07

2.844E-04

0.000E+00

VOC Calcs

	Calc lb VOC emissions/yr @ 15 SCFH (1.1714 pph) purge flow
1	5.98
1	0.01
1	13.80
1	1.06
	0.01 0.07
}	1.05 0.58
	2.92
TOTAL VOC's	27.57

ATTACHMENT 8
FLARE VENDOR DATA

I. PROJECT DESCRIPTION

1. Job Summary:

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FII Job #	99-258	
Customer PO#	99824-56314	
Customer Name	PSI Construction	
Customer Address	1790 Kirby Parkway, Suite 300	-
	Memphis, TN 38138	
Job Location	Solutia – Pensacola, Fl.	
Date Ordered	September 23, 1999	
Date Shipped	February 2, 2000	

Flare Industries, Inc. was contracted by PSI Construction to engineer, design, fabricate, and supply two (2) Enclosed Flares with the required controls for automated operation.

The enclosed flares were designed by FII using engineering criteria supplied by PSI Construction. The flares incorporate the use of the FII Biogas burner element which provides for efficient combustion of digester gas composed of 60-70% methane. The element is constructed of 310 Stainless Steel to prevent premature degradation due to heat or chemical corrosion from the H_2S content.

Each flare uses three (3) Model MR-1000 electronic ignitors along with a control system to provide ignition of the pilot gases. A UV scanner proves the pilot source before combustion of the biogas can proceed.

The flares were engineered by FII with one (1) air damper each to add combustion and cooling air to the Biogas burner element.

The flare has one (1) thermocouple that will monitor internal combustion temperature, which is transmitted to the PLC in the control panel. If the temperature increases above 1,450° F, the manual damper will need to be adjusted to maintain 1,450° F. If the temperature increases above 1,800° F, the entire flare system will shut down.

The enclosed flares were engineered by FII with a 1/8" corrosion allowance and are able to withstand 130 mph wind conditions with minimum deflection. The base section of the Flare is equipped with a base plate assembly to resist the bending loads produced by the wind.

2. Scope of Supply

Item	Qty.	Equipment Item	Note:
1	2	Model 648 Enclosed Flare	48" Dia. x 60' O.A.H.
2	6	FII Bio-Gas burner; 310SS	(3) inside each flare
3	6	MR-1000 pilots w/ valve train	Attached to flare for main gas ignition
4	6	UV Scanner (Self Check)	Attached to flare. Used to verify pilot
			flame before allowing waste gas to inter
			the flare
5	6	Transformer	(3) per flare. Attached to flare, next to
			pilot. Used to convert 120 VAC to 10K
	ļ		VAC for spark needed for pilot ignition
6	2	Control Panel; NEMA 4X	To control flare operation
7	2	Thermocouple	(1) on each stack; Generates temperature
1		1	signal
8	2	Air Dampers	(1) lever actuated on each stack;
	1		Maintains temperature
9	2	Purge Blowers	Located at the base of the stack;
	1		Required to purge 4 volumes of air
			before each start-up

3. Process Conditions

Design Flow Rate	816 Lbs/Hr
Inlet Pressure	12" WC
Inlet Temperature	68° F to 123° F

4. Site Conditions

Design Wind Speed	130 MPH
Elevation	Sea Level
Exposure	C
Seismic Zone	0
Humidity	High

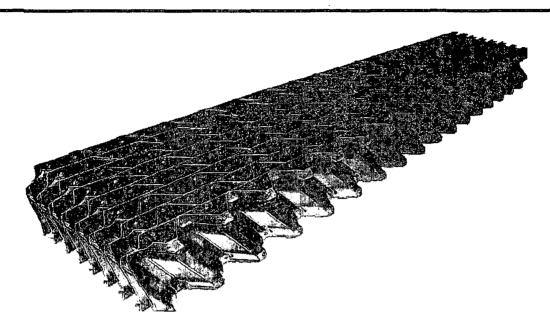
5. Utility Requirements

Fuel Gas- Pilots	Natural Gas; 44 SCFH @ 8-250 PSIG
Electrical-1 Phase	120 VAC / 60 HZ
Electrical Classification	NEMA 4

ATTACHMENT 9 COOLING TOWER INFORMATION



XF-150MAx High-Efficiency Crossflow **Drift Eliminator**



Brentwood Industries is pleased to introduce the XF-150Max, a high-efficiency, cellular drift eliminator specifically designed for crossflow tower applications. Its design maximizes drift reduction by providing an upward flow path and discharge angle of 40°-55° from the horizontal depending on installation angle. It can also be installed vertically and be fully effective. The upward flow path and molded-in drainage channels keep drift emissions minimized by directing the collected drift back to the wet section of the tower, even when impacted with water spray. It also incorporates our patented MA (mechanical assembly) technology which provides a number of benefits, including environmental. With its fully nesting design, Dri Seals, and careful installation, a properly designed crossflow cooling tower can achieve 0.001% drift emissions or less per the CTI STD-140 test method. In retrofit projects, older cooling towers will also see a vast improvement of drift emissions. Made from rigid, UV protected PVC that meets CTI STD-136, the XF-150MAx is offered in two material gauges; 15 mil (0.38mm) standard gauge and 20 mil (0.51mm) heavy duty gauge.

Example Specification

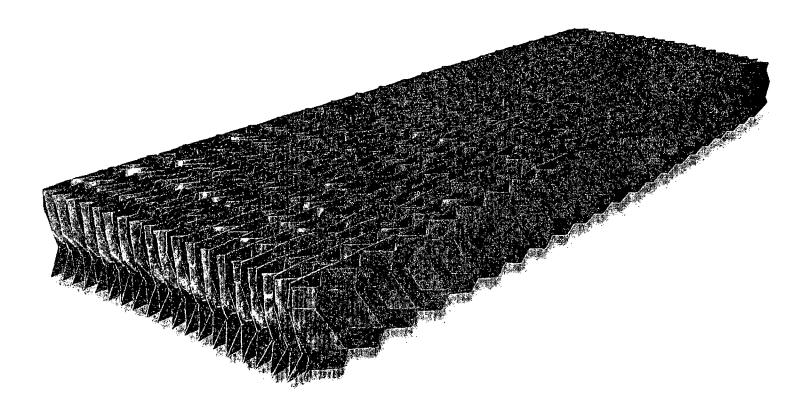
Drift eliminators shall be of the cellular type, Brentwood XF-150MAx or approved equal and be designed specifically for crossflow cooling towers. The modules shall be made from selfextinguishing, rigid PVC that meets CTI STD-136 with UV protection and be assembled without adhesives or solvents. It shall have a flame spread rating of 15 or less (per ASTM E-84) and be designed to nest to prevent driftbypass between modules. The air passageways shall cause the air to make at least three directional changes and provide an upward discharge flow path angle of at least 40°. Water management drainage channels shall be integral to the design.

In the standard 10° from vertical crossflow configuration, the modules shall be able to be supported on up to 96" centers with minimal deflection (up to 120" spans with optional heavy duty material). The drift eliminator modules shall measure 5.25" deep, up to 18" wide, and up to 144" long.



phone: (610) 236-1100

/ Marley XCEL plus Eliminator /



Marley developed the first cellular drift eliminator in the 1970s when eliminator designs were primarily ineffective blade type configurations. Next, Marley patented the XCEL generation of eliminators in the early 80s. No other eliminator could come close to XCEL eliminator's low drift rate and low pressure drop. Now, virtually every eliminator is a nesting cellular PVC type design.

XCEL*plus* is a more advanced design that meets or exceeds today's demanding specifications for drift emissions without sacrificing fan horsepower. Now you can have drift rates half of the original XCEL with equivalent pressure drop.

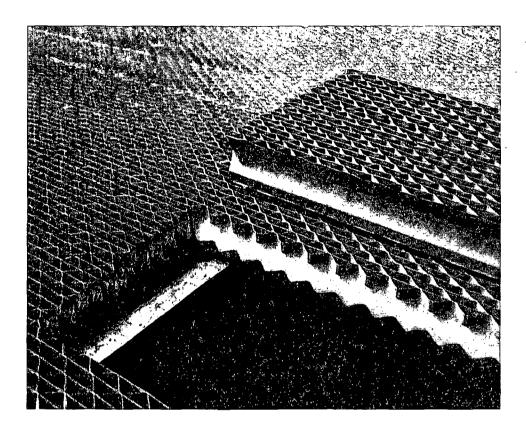
The eliminator discharge angle is important enough to warrant two separate eliminator designs—one for crossflow and one for counterflow towers. Tests show the air direction leaving the eliminator is extremely important—imperfect designs create additional work for the fan. This means either increased fan horsepower—or reduced cooling tower performance. The crossflow version features drainage slots within the eliminator pack to insure trapped drift is returned to the wet side of the cooling tower.

Low drift rate is the primary goal of eliminator design. XCELplus boasts typical drift rates of .001% of the total GPM. Lower drift rates are available depending upon tower configuration.

Considering low drift rates and low pressure drop, XCEL*plus* is the most effective cooling tower drift eliminator available in the market place today.



/ Marley XCELplus Eliminator /



/ Suggested Specification /

Drift eliminators shall be of cellular type, Marley XCEL*plus* or approved equal. The eliminators shall be thermoformed from 17 mil (.017") PVC (polyvinyl chloride) material into a configuration providing at least three changes of air direction and solvent welded into multiple sheet packs. Flame spread rating of the material must not exceed 25 per ASTM E-84.

Eliminators used in crossflow towers must provide a discharge angle (as defined by the angle of the last section of the eliminator itself) of at least 42° from the horizontal when installed.

The mass drift quantity, determined by the CTI Drift Test Code ATC-140 shall not exceed _____% of the total GPM and shall be guaranteed for all operating conditions.

The eliminator packs shall be able to span 66" unsupported for counterflow configurations and 72" for crossflow, with minimal deflection at design conditions. Eliminators shall be FM approved.

Eliminator packs shall measure up to 24" wide, 5.75" in depth and up to 12'-0" long.



7401 WEST 129 STREET | OVERLAND PARK, KANSAS 66213 UNITED STATES | 913 664 7400 | spxcooling@spx.com | spxcooling.com