

Pratt & Whitney Rocketdyne  
P.O. Box 109600  
West Palm Beach, FL 33410-9600



**Pratt & Whitney**  
A United Technologies Company

CERTIFIED MAIL

February 5, 2010

Florida Department of Environmental Protection  
Attention: Mr. Syed Arif, P.E.  
New Source Review Section  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

RE: Pratt & Whitney Rocketdyne  
Facility ID No. 0990021  
Project: 0990021-017-AV (PSD-FL-410)  
Response to for RAI for PSD Permit Application

RECEIVED  
FEB 10 2010  
BUREAU OF AIR REGULATION

Dear Mr. Arif:

Pratt & Whitney Rocketdyne respectfully submits our reply to your recent request for additional information on our PSD permit application. The attached response was prepared by Golder Associates, our air permitting consultant in conjunction with our staff.

Your support on this project is greatly appreciated.

If you should have any questions or comments please contact Dean Gee at (561) 796-2108.

Sincerely,

Steven Bouley  
Vice President,  
Pratt & Whitney Rocketdyne, Launch Vehicle and Hypersonic Systems

cc:  
Laxmana Tallam, Palm Beach County Health Dept.  
Palm Beach County Health Department  
Division of Environmental Health and Engineering  
Air Quality Division  
800 Clematis  
P.O. Box 29  
West Palm Beach, Florida 33402

File 9.2.6.1.4



February 3, 2010

093-87550

Mr. Syed Arif, P.E., New Source Review Section  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

**RE: RESPONSE TO DEPARTMENT REQUEST FOR ADDITIONAL INFORMATION  
PRATT & WHITNEY ROCKETDYNE, FILE NO. 0990021-017-AC (PSD-FL-410)  
INCREASE IN OPERATING HOURS FOR THE GG4-9A TURBINE ENGINES**

Dear Syed:

On behalf of Pratt & Whitney Rocketdyne (P&W), Golder Associates Inc. (Golder) presents this response to the Department's series of Requests for Additional Information (RAI) in letters dated October 8, 2009; October 9, 2009; and October 26, 2009. This response is provided in the order requested in the three referenced correspondences. In each case, the Department request is repeated in *italics* with the response immediately following in **bold**.

1. *Section 1.0 – Introduction: This application indicates that the GG4-9A turbine engines are located adjacent to test stands A-8 and A-9, which are part of the eight sea level test stands used in the development testing of commercial and military jet engines. Please explain the differences between a test stand and a test cell. Also, explain how each operates. Additionally, explain the differences between sea level testing and altitude testing, and indicate if altitude testing is also done at A-8 and A-9 test stands. [Rule 62-4.070, F.A.C. Reasonable Assurance]*

**Response No. 1:** The term "test stand" and "test cell" are used interchangeably to describe a facility at the P&W site designed to accept and test (in this case) a jet engine for the purpose of research and development. During a test, the jet engine is mounted in the stand and fitted with hundreds of pieces of instrumentation in order to monitor, record, and analyze engine operation and design parameters. Each engine test requires detailed planning and scheduling, so efforts are made to obtain the maximum data from each test. Because of the location of the P&W site (Jupiter, Florida), all engine test stands are designed for sea-level testing. This involves running a test engine at near zero altitude. In contrast, altitude testing is anything above sea-level - in other words any height the aircraft/engine would experience after take-off throughout its flight. P&W can simulate some altitude and velocity conditions with the RAM facility at the A-8 or A-9 stands by pressurizing ("ramming") the inlet of the test engine with high velocity pressurized air from the RAM facility. This is a close simulation of specific points the aircraft/engine would experience after take-off, but avoids the expensive cost of truly running the test engine in flight at altitude.

2. *Section 1.0 – Introduction: The application indicates that the GG4-9A turbine engines were manufactured in 1966. Please submit documentation to the Department that shows the manufactured date of the two turbine engines. [Rule 62-4.070, F.A.C. Reasonable Assurance]*

**Response No. 2:** These two engines were originally installed by P&W in East Hartford, Connecticut. Documentation of installation date of these two engines is provided by copies of Connecticut Department of Environmental Protection air permit registration forms in their original installed location. The forms show the February and March 1968 startup dates that support the 1966 manufacture date. Please refer to Attachment 1 (2 pages) and the dates circled in red.



Golder Associates Inc.  
6026 NW 1st Place  
Gainesville, FL 32607 USA  
Tel: (352) 336-5600 Fax: (352) 336-6603 www.golder.com



3. Section 2.2 – RAM Test Facility: The application indicates that various engine load conditions are required as part of the normal test stand operations with the estimated hours of operation for each load. The load conditions vary between idle and 31 pounds per square inch absolute (psia) pressure reading. The fuel usage rate also varies between idle conditions and other load conditions. Please indicate the procedures for showing compliance with the varied load conditions, fuel usage rate and associated hours of operation under each load condition. Additionally, the total hours of operation at the test stand will be limited to 3000 hours per year (hrs/yr). Is the 3000 hrs/yr for the two test stands combined or for each test stand? What is the estimate of the actual annual hours of operation for the two turbine engines? [Rule 62-4.070, F.A.C. Reasonable Assurance]

**Response No. 3:** The various load conditions and fuel usage are tracked real-time using the test stand's facility control system. In other words, whenever the RAM facility is running the facility control system computer is recording the real-time operating conditions including load (pressure), run hours, and fuel usage and then calculates the associated emissions output based on the stack test data results. A running total of data is continuously updated and recorded whenever the RAM facility is operating. A summary of operating data is provided to P&W's Environment, Health and Safety (EHS) Department on a monthly basis for recordkeeping and reporting purposes.

The requested 3,000 hrs/yr is for the RAM facility itself no matter which test stand (i.e., A-8 or A-9) is used. When permitted, the operating hours for the two GG4-9A turbine engines combined would not be allowed to exceed the requested 3,000 hrs/yr. The test stands A-8 and A-9 are covered by Emission Unit 069 (EU 069) and do not have a limit on the annual operating hours in the permit.

4. Section 2.3 – Proposed Source Emissions and Stack Parameters: The application indicates that nitrogen oxides (NO<sub>x</sub>) and carbon monoxide (CO) emission factors were developed as a result of the July 31, 2008 stack test data. Please provide the stack test report for review. Was similar testing done to ascertain the emission factors for particulate matter (PM), sulfur dioxide (SO<sub>2</sub>) and volatile organic compounds (VOC) for these particular turbine engines? If so, please provide the results. [Rule 62-4.070, F.A.C. Reasonable Assurance]

**Response No. 4:** A copy of the stack test report is provided as Attachment 2. CO and NO<sub>x</sub> are the air pollutants of concern during operation of the GG4-9A turbine engines, hence the testing to determine an accurate emission rate for these pollutants. To be conservative in estimating all potential emissions resulting from the GG4-9A turbine engines operations, the Environmental Protection Agency's (EPA's) AP-42 emission factors for VOC, PM, SO<sub>2</sub>, particulate matter of 10 microns or less in diameter (PM<sub>10</sub>), and hazardous air pollutants (HAP) were used in the application. Testing of these pollutants was not performed.

5. Table 2-1 – Estimated Hourly Emissions: The table indicates that the NO<sub>x</sub> emissions are 149.9 pounds per hour (lb/hr) at 31 psia load condition. Please indicate the parts per million volume dry at 15% oxygen (ppmvd @ 15% O<sub>2</sub>) value of NO<sub>x</sub> emissions at that load condition. Additionally, provide time-weighted average test profile, which shall include the time-weighted average emission factors in lb pollutant per 1000 lb fuel for the turbine engines. [Rule 62-4.070, F.A.C. Reasonable Assurance]

**Response No. 5:** From the "Source Test Report for Oxides of Nitrogen and Carbon Monoxide Emissions" report provided by Air Consulting and Engineering, Inc. regarding tests conducted on July 31, 2008 (refer to Attachment 2, Table 1), the concentration of NO<sub>x</sub> emissions present at the 31 psia load condition was measured as 117.9 ppmvd at 16.82 percent O<sub>2</sub>. The adjusted value for 15 percent O<sub>2</sub>, as requested is as follows:

$$C_C = C_M \times (21 - O_{2C}) / (21 - O_{2M}), \text{ where}$$

$C_C$  = corrected concentration, ppmvd @15% O<sub>2</sub>  
 $C_M$  = measured concentration, ppmvd @15% O<sub>2</sub>  
 $O_{2C}$  = corrected oxygen content, 15 percent  
 $O_{2M}$  = measured oxygen content, actual percent

$$C_C = (117.9 \text{ ppmvd}) \times (21 - 15) / (21 - 16.82) = 169.2 \text{ ppmvd @ 15\% O}_2$$

In response to the second part of the Department's request, the conservative emission estimates presented in Table 2-4 (refer to Response No. 6), for "Idle" and "All Other" test load conditions, were used to calculate the requested emission factors. A heating value of 19,910 British thermal units per pound (Btu/lb) and a density of 6.7 pounds per gallon (lb/gal) were used in the calculations. It is assumed that the Department's request of units of lb pollutant/1000 gallons fuel instead of lb pollutant/1000 lb of fuel, but the table also includes a calculation of the emission factor using both units.

Pollutant	Hourly Emission (lb/MMBtu)	Fuel Usage (gal/min)	Emission Factor (lb pollutant/1000 gal fuel)	Emission Factor (lb pollutant/1000 lb fuel)
<b>I. Idle Test Load Condition</b>				
CO	7.463	5.0	995.5	148.6
NO <sub>x</sub>	0.062	5.0	8.27	1.23
PM	7.20 x 10 <sup>-3</sup>	5.0	0.960	0.143
PM <sub>10</sub>	4.30 x 10 <sup>-3</sup>	5.0	0.574	0.0856
SO <sub>2</sub>	0.114	5.0	15.2	2.27
VOC	4.10 x 10 <sup>-4</sup>	5.0	0.0547	0.00816
<b>II. All Other Test Conditions</b>				
CO	0.327	29.0	43.6	6.51
NO <sub>x</sub>	0.646	29.0	86.2	12.9
PM	7.20 x 10 <sup>-3</sup>	29.0	0.960	0.143
PM <sub>10</sub>	4.30 x 10 <sup>-3</sup>	29.0	0.574	0.0856
SO <sub>2</sub>	0.114	29.0	15.2	2.27
VOC	4.10 x 10 <sup>-4</sup>	29.0	0.0547	0.00816

Sample calculations for the above tabulated data are as follows:

$$\text{Emission Factor (lb pollutant/1000 gal fuel)} = (7.463 \text{ lb CO/MMBtu}) \times (19,910 \text{ Btu/lb fuel}) \times (\text{MMBtu}/1 \times 10^6 \text{ Btu}) \times (6.7 \text{ lb fuel/gal}) \times (1,000 \text{ gal}) = 995.5 \text{ lb CO}/1,000 \text{ gal fuel}$$

and,

$$\text{Emission Factor (lb pollutant/1000 lb fuel)} = (7.463 \text{ lb CO/MMBtu}) \times (19,910 \text{ Btu/lb fuel}) \times (\text{MMBtu}/1 \times 10^6 \text{ Btu}) \times (1,000 \text{ lb}/1000 \text{ lb fuel}) = 148.6 \text{ lb CO}/1000 \text{ gal fuel}$$

6. *Table 2-4 – Annual Emissions Summary: Annual emissions in tons per year listed for all the pollutants in Table 2-4 does not match with the emissions listed in Table 2-2. Please explain the discrepancy and include the new calculations to support the emission numbers in Table 2-4. [Rule 62-4.070, F.A.C. Reasonable Assurance]*

**Response No. 6:** The methodologies used in the calculations of Table 2-2 and Table 2-4 are different, where Table 2-4 is the more conservative estimate and is used in the remainder tables and in the permit application.

Table 2-2 gives emissions based on actual test data for various load conditions, and emission factors are specific to the test conditions of the test. For example, the CO emission factors used in the total emissions calculations included the following:

- Idle – 7.463 pounds CO per million British thermal units (lb CO/MMBtu)
- 16 psia – 0.327 lb CO/MMBtu
- 18 psia – 0.293 lb CO/MMBtu
- 20 psia – 0.291 lb CO/MMBtu
- 23 psia – 0.261 lb CO/MMBtu
- 26 psia – 0.215 lb CO/MMBtu
- 31 psia – 0.190 lb CO/MMBtu

In Table 2-4 a “worst-case” scenario was used as a conservative estimate of the maximum total emissions resulting from the project. In these scenarios only two emission factors were used. Recognizing that emissions during an idle test condition were higher than any load conditions during normal operations (i.e., all other test conditions), the two emission factors used in the calculations were “Idle” and the maximum of “All Other” load conditions. In the example of CO, the two emission factors used were as follows:

- Idle – 7.463 lb CO/MMBtu
- All Other – 0.327 lb CO/MMBtu

These differences are only applicable to CO and NO<sub>x</sub> emissions, based on the stack testing results for those pollutants. For all other pollutant emission factors from AP-42 were used, and there are no differences in emission factors, as shown in both tables.

Additional differences in the methodologies used in the calculations of Table 2-2 and Table 2-4 include the values used for fuel usage rates in million British thermal units per hour (MMBtu/hr). In Table 2-2, the fuel usage rate was specific to the test condition as follows:

- Idle – 40.02 MMBtu/hr
- 16 psia – 203.3 MMBtu/hr
- 18 psia – 204.1 MMBtu/hr

- 20 psia – 207.3 MMBtu/hr
- 23 psia – 212.9 MMBtu/hr
- 26 psia – 221.7 MMBtu/hr
- 31 psia – 232.1 MMBtu/hr

In Table 2-4, as a conservative estimate, the maximum fuel usage rate was used (232.1 MMBtu/hr). For the purpose of the application, the total annual emissions in Table 2-4 were used as the conservative estimate.

7. Section 3.5 – Source Applicability: *The application does not discuss the applicability of the project to 40 Code of Federal Regulations (CFR) 63, Subpart P P P P P – Engine Test Cell/Standards. Please explain.*

**Response No. 7:** As demonstrated historically in the facility's Annual Operating Reports (AOR), the facility is not a major source of hazardous air pollutant (HAP) emissions. The facility will be submitting a permit renewal application requesting a non-major source status for HAPs and will provide historical and potential-to-emit emissions estimates that indicate the facility has not been a major source for HAP since 2001 and will not be a major source of HAP emissions in the future. Therefore, Subpart P P P P P is not applicable and this determination should be documented in the renewal approval.

8. Section 4.2 – Overview of Proposed BACT: *Best Available Control technology or BACT is defined in Rule 62-210.200, Florida Administrative Code (F.A.C.) as "an emission limitation, including a visible emissions standard, based on the .....". The applicant did not propose a BACT visible emissions standard for the two turbine engines. Please redo the BACT analysis to include a visible emissions standard for the two engines. [Rule 62-212.400(4)(c), F.A.C. Prevention of Significant Deterioration (PSD)]*

**Response No. 8:** Rule 62-210.200(40), F.A.C. provides a definition of BACT and states that a visible emissions standard can also be a BACT emissions limitation. Part 40, Section 52.21(b)(12) of the Code of Federal Regulations [40 CFR 52.21(b)(12)] defines BACT as "an emissions limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under the Act, which would be emitted by any proposed major stationary source or major modification...". In other words, BACT is pollutant-specific and applies to pollutants subject to PSD review. For the proposed project, pollutants subject to PSD review and BACT analysis are CO, NO<sub>x</sub>, and SO<sub>2</sub>, all of which have been addressed in Section 4.0, Control Technology Review. A visible emissions (VE) limit is typically applied as an emissions limit for PM. PM is not subject to BACT review for the proposed project and as a result, a VE limit does not have to be proposed under the BACT review.

9. Section 4.4.1 – BACT Analysis for CO: *The application indicates that combustion control is not technically feasible for the turbine engines since most of the CO emissions are due to idling and low load conditions. Please explain if any work practices can be developed to keep idling to a minimum. What will be the frequencies of each test and what is the maximum idle time expected between the tests? Please explain the problems encountered if the turbines are shut down and restarted for each test instead of idling. What is the exhaust temperature of the turbine engine under idle mode? [Rule 62-4.070, F.A.C. Reasonable Assurance]*

**Response No. 9** Idling is currently being kept to a minimum by shutting down the turbines between major changes in a test program, between shifts, and on weekends. The turbines do not operate unless an engine test is in progress. Idle time is also minimized to a first start warm-up and final cool down. After the idle warm-up the turbines are brought up in power since the idle condition will not meet any of the test engine's operational requirements. Idle time is also

minimized to reduce unnecessary operation in order to further the life span of the facility. Once a test is complete, the turbines are brought to idle for a brief cool down and then completely shut down until the next test is ready to commence. Test frequencies will be on a daily basis with turbine idle time minimized to initial warm-up and final cool down only. The exhaust temperature of the turbines at idle condition is nominally 540°F.

10. Section 4.4.2 – BACT Analysis for NO<sub>x</sub>: The application states that the potentially available NO<sub>x</sub> control technologies are Water and Steam injection, Selective Catalytic Reduction (SCR), SCONOX™ process and Selective No-Catalytic Reduction (SNCR). Some of the other methods of control that were not considered in the application are Low-NO<sub>x</sub> combustors, Reburn and Vermiculite – Magnesium Oxide sorbent bed technologies as detailed in the referenced EPA Report No. 453/R-94-068 of the application. Please redo the NO<sub>x</sub> BACT analysis to include the additional methods of control and include the cost effectiveness estimates in dollars per ton of NO<sub>x</sub> removed. [Rule 62-4.070, F.A.C. Reasonable Assurance]

**Response No. 10:** Dry Low NO<sub>x</sub> (DLN) combustors work on the principle of reduced peak temperature. Air and fuel are premixed to create a lean fuel mixture before being injected into the combustion chamber. The completely homogeneous lean mixture of fuel and air significantly reduces peak flame temperature and thermal NO<sub>x</sub> formation. Due to flame instability limitations of the DLN combustor at low-load (<approximately 50% load) conditions, DLM combustors are effective for high load operation. The proposed GG4-9A turbine engines operate through rapid load changes, when the engines are taken from idle to full load within a few seconds based on the test conditions. Due to the demand of operation at various loads, DLN combustors are not feasible for the proposed turbine engines and were not considered.

Reburning is a combustion modification process where additional fuel is added in a separate reburn zone, where fuel-rich conditions lead to the reduction of NO<sub>x</sub> formed in the normal combustion zone. NO<sub>x</sub> generated in the primary combustion zone chemically converts to molecular nitrogen. Reburning is typically used as a NO<sub>x</sub> control technology for large utility boilers, which have large combustion zones. There are no known applications of the reburn technology to control NO<sub>x</sub> emissions from gas turbines. Since it is not a demonstrated technology, reburning was not considered for the project's gas turbines.

The vermiculite-magnesium oxide sorbent bed post-combustion NO<sub>x</sub> control technology was developed in early 90's, which removes NO<sub>x</sub> from the gas stream by adsorption onto the bed material. The exhaust gas passes through a bed of vermiculite impregnated with magnesium oxide. The NO<sub>x</sub> is adsorbed on the bed and forms magnesium nitrate. When used with a bed of virgin vermiculite upstream of the one containing magnesium oxide, a removal efficiency of 50 to 70 percent has been reported. However, this technology has not been demonstrated on a full-scale working test cell. Based on a search of the EPA's RACT/BACT/LAER Clearinghouse (RBLC) database, there is no application of the vermiculite-magnesium oxide sorbent technology to control NO<sub>x</sub> emissions from gas turbines. As a result, this technology was not considered for the project's gas turbines.

11. Section 4.4.3 – BACT Analysis for SO<sub>2</sub>: The application states that additional fuel treatment is not necessary as the sulfur content of the JP-8 fuel is already very low at 0.11 weight percent sulfur. The Department presently in the BACT determinations, is requiring applicants to use ultra low sulfur diesel fuel oil with a sulfur content of 0.0015 weight percent. Please explain the additional fuel treatment possible with JP-8 fuel in lowering the sulfur content of the fuel. Include cost effectiveness estimates in dollars per ton of SO<sub>2</sub> removed. [Rule 62-4.070, F.A.C. Reasonable Assurance]

**Response No. 11:** Jet fuel is a type of aviation fuel designed for use in aircraft powered by gas-turbine engines. The most common fuels are Jet A and Jet A-1. Jet Propellant 8 (JP-8) is the military equivalent of Jet A-1, which is used by the United States Air Force. Typical sulfur content of JP-8 is 3,000 ppm or less. EPA's final rule regulating emissions from non-road diesel engines

and sulfur content in non-road diesel fuel does not include jet fuel and jet fuel with 15 ppm sulfur is currently not available. Ultra Low Sulfur Diesel fuel is not used in aircraft engines.

12. Appendix A – Application for the Air Permit: The allowable emissions pages for all the pollutants in the pollutant detail information were not filled out. Please complete those application pages.

**Response No. 12:** Please refer to Attachment 3 for revised application pages.

13. Section 6.0 – Air Quality Impact Analysis: In Table 6.6 the maximum predicted nitrogen dioxide (NO<sub>2</sub>) concentration of 0.66 ug/m<sup>3</sup> is based on a nitrogen oxide (NO<sub>x</sub>) emission rate of 229.1 lb/hr for both units. However the NO<sub>x</sub> emission rate given in Table 2-1 is 299.1 lb/hr for both units. Please explain the difference between the values.

**Response No. 13:** The NO<sub>x</sub> emission rate of 229.1 lb/hr is based on a NO<sub>x</sub> annual emission rate of 343.7 tons per year (TPY) for both units and calculated as follows:

$$(343.7 \text{ TPY}) \times (2,000 \text{ lb/ton}) / (3,000 \text{ hr/yr}) = 229.1 \text{ lb/hr}$$

Since NO<sub>2</sub> has an annual ambient air quality standard only, the annual emission rate of 343.7 TPY or effectively 229.1 lb/hr was used in the air quality impact analysis.

The emission rate of 299.9 lb/hr provided in Table 2-1 (and in Table 2-4) is the worst- case hourly rate, not an annual rate.


In addition, The Environmental Protection Agency (EPA) requested the following information in a letter to FDEP dated October 20, 2009, and forwarded to the facility in a letter from FDEP to P&W dated October 26, 2009.


EPA Request No. 1: Section 1.0 states that "The RAM Test Facility consists of two gas turbines fueled by JP 8 jet fuel, two air compressors, assorted air transfer ducting and valves, water-cooled heat exchangers, and a forced draft cooling tower." However, no indication is given that any components other than the turbines were evaluated with respect to potential emissions. Each potential source of emissions should be fully evaluated. If the additional test facility components will not potentially contribute to emissions, a statement should be added for clarification.

**EPA Response No. 1:** The facility has evaluated the test stand components and based on similar operations at other P&W facilities, and other related data, additional test stand components do not contribute to the potential emissions resulting from the project.

Should you have any additional questions or comments, please feel free to give our office a call at (352) 336-5600.

**GOLDER ASSOCIATES INC.**

  
Brian A. Storey, P.E.  
Project Engineer

  
Benny Susi, P.E.  
Senior Engineer

cc: Dean Gee, Pratt & Whitney Rocketdyne

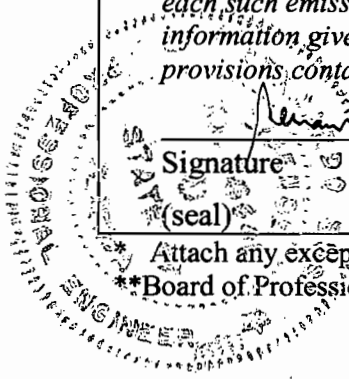
Attachments

BAS/tz



**APPLICATION INFORMATION**

**Professional Engineer Certification**

1. Professional Engineer Name: <b>Bernardo Susi</b> Registration Number: <b>35042</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>Golder Associates Inc.**</b> Street Address: <b>6026 NW 1st Place</b> City: <b>Gainesville</b> State: <b>FL</b> Zip Code: <b>32607</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(352) 336-5600</b> ext. <b>21125</b> Fax: <b>(352) 336-6603</b>
4. Professional Engineer E-mail Address: <b>bsusi@golder.com</b>
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(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</i> <i>(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.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/> , 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.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/> , 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 <input type="checkbox"/> , 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.</i> <i>(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 <input type="checkbox"/> , 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.</i>   _____ Signature (seal)  _____ Date <i>2/4/2010</i>

Attach any exception to certification statement.

\*\*Board of Professional Engineers Certificate of Authorization #00001670.

**ATTACHMENT 1**  
**CONNECTICUT DEP EMISSION UNIT REGISTRATION FORMS**

Environmental Protection, Air Compliance Section, State Office Bldg.,

Conn. 06115. Tel. 566-2690

WL-R-018

LEGAL NAME: **United Aircraft Corp.**  
 BUSINESS ADDRESS (No. & Street, City, Zip Code): **400 Main Street, E. Hartford, Ct. 06108**  
 PHONE: **565-4321**

ON: **Pratt & Whitney Aircraft**

TYPE OF EQUIPMENT (e.g., boiler): **Exhauster Drive Engine #1 (FTAAB)\***

ANNUAL USAGE (Tons, Gals., or Cu. Ft.): **1,590,000**

MAXIMUM FIRING RATE (Lbs., Gals., or Cu. Ft./hr.): **2260 gpm**

SEASONAL USE: **296 x 106**

FUEL SUPPLIER: **Exxon**

ACTIVITY FIRM:  MFG.  OFFICE  RETAIL OR WHLSE. STORE  SCHOOL OR CHURCH  HOTEL/MOTEL  HOSPITAL OR LAB.  WAREHOUSE  RESIDENCE OR APTS.  OTHER (Specify)

FUEL	GRADES (A)	SULFUR CONTENT	ASH CONTENT	ANNUAL USAGE (Tons, Gals., or Cu. Ft.)	MAXIMUM FIRING RATE		SEASONAL USE			FUEL SUPPLIER	
					(Lbs., Gals., or Cu. Ft./hr.)	(BTU/hr.)	Month	to	Month	Name	City or Town
COAL <input type="checkbox"/>	Bituminous	. %	. %								
	Anthracite	. %	. %								
	Kerosene	. %	. %								
OIL <input type="checkbox"/>	2	. %	. %								
	4	. %	. %								
	5	. %	. %								
	6	. %	. %								
NAT. GAS <input type="checkbox"/>											
OTHER <input checked="" type="checkbox"/>	Jet A	.033%	.006%	1,590,000	2260 gpm	296 x 106	All			Exxon	BURNER ROVER, CT

ARE OIL HEATERS USED?  YES  NO

OIL TEMPERATURE BEFORE INJECTION: **NA**

BURNER MANUFACTURER: **P & W Jet Engine**

OF INER:  HAND FIRED  UNDERFEED STOKER  TRAVELING GRATE  CHAIN GRATE  SPREADER STOKER  STOKER WITH OAB RENJECTION  CYCLONE FURNACE  PULVERIZED COAL  OTHER (Specify)

OF ER:  PRESSURE OR GUN  ROTARY CUP  STEAM ATOMIZER  AIR ATOMIZER  TANGENTIALLY FIRED  OTHER (Specify)

EXHAUSTION:  YES  NO

TYPE:  TIME SWITCHED  SMOKE INDICATOR  MANUAL  OTHER (Specify)

TYPE OF DRAFT:  FORCED  INDUCED  NATURAL

MATERIAL	RATE OF EMISSIONS (Tons/Yr.)	METHOD USED TO DETERMINE EMISSIONS	DATE SOURCE STARTED UP	EXHAUST GAS TEMPERATURE (°F)	No. Of IDENTICAL UNITS
CO	9.50	Estimated from mfg's data @ avg. fuel rate	February 1968	760°F	0
THC	9.50	(official source test)			
NOx	64.50*				
Particulates	7.86*				
SOx	6.50*	calculated from sulfur content of fuel			

STACK EXIT DIRECTION:  HORIZ.  VERT.

STACK EXIT DIMENSIONS: **11" x 11"**

STACK HEIGHT (ft.): **81**

IS STACK EQUIPPED WITH RAIN HAFT?  YES  NO

SMOKE INDICATOR IN STACK:  YES  NO

MAKE AND MODEL NO.: **N/A**

STACK BUILDING:  METAL  REFRACTORY  OTHER (Specify)

Name of nearest intersecting street: **High St./Pent Rd.**

Distance to stack from intersection: **1500** FT.

DIRECTION TO STACK: **N, NE, E, SE, S, SW, W, NW**

I certify that I have examined the above information and that to the best of my knowledge it is true and complete. (Signature subjects signer to provisions of the General Statutes regarding false and misleading statements).

SIGNER: **UNITED AIRCRAFT CORPORATION**

NAME: **E. L. Davis**

TITLE: **Asst. Secretary**

DATE: **8/17/74**

\* Revision to form submitted 9/29/72.

P. 01/03

TO 77501

OCT 14 2009 11:26 FR

APPLICANT

WL-R-019

P. 02/03

TO 77501  
ID 34

OCT 14 2009 11:27 FR

APPLICANT

LEGAL NAME: **United Aircraft Corp. Pratt & Whitney Aircraft**

BUSINESS ADDRESS (No. & Street, City, Zip Code): **400 Main St., E. Hartford, Conn. 06108**

PHONE: **565-1931**

LOCATION: **PSVA - Willough Laboratory**

TYPE OF EQUIPMENT (e.g. boiler): **Exhauster Drive Engine #2 (FT5AB)**

AIR POLLUTION CONTROL EQUIPMENT USED (If "Yes," See Form EPA-7):  YES  NO

ACTIVITY TYPE:  MFG.  OFFICE  RETAIL OR WHOLE STORE  SCHOOL OR CHURCH  HOTEL/MOTEL  HOSPITAL OR LAB.  WAREHOUSE  RESIDENCE OR APTS.  OTHER (Specify)

FUEL	GRADES (a)	SULFUR CONTENT	ASH CONTENT	ANNUAL USAGE (Tons, Gals. or Cu. Ft.)	MAXIMUM FIRING RATE (lbs., Gals., Cu. Ft./hr.)	SEASONAL USE (BTU/hr.)	SEASONAL USE			FUEL SUPPLIER	
							Month	to	Month	Name	City or Town
COAL <input type="checkbox"/>	Bituminous Anthracite	. % . %	. % . %								
OIL <input type="checkbox"/>	Kerosene	. %	. %								
	2	. %	. %								
	4	. %	. %								
	5	. %	. %								
NAT. GAS <input type="checkbox"/>											
OTHER <input checked="" type="checkbox"/>	Jet A*	.093*	.006*	1,530,000	2260 GPH	296 X 10 <sup>9</sup> all				Exxon	New Haven, Ct

ARE OIL WEATHERS USED?  YES  NO

OR TEMPERATURE BEFORE IGNITION: **NA**

BURNER MANUFACTURER: **P & WA Jet Engine**

BURNER MODEL NO.: **RA**

FIRING METHOD:  HAND FIRED  UNDERFEED STOKER  TRAVELING GRATE  CHAIN GRATE  SPREADER STOKER  STOKER WITH GAS REINJECTION  CYCLONE FURNACE  PULVERIZED COAL  OTHER (Specify) **NA**

IGNITION:  PRESSURE OR GUN  ROTARY CUP  STEAM ATOMIZER  AIR ATOMIZER  TANGENTIALLY FIRED  OTHER (Specify)

EXHAUST CONTROL:  YES  NO

TYPE:  TIME SWITCHED  SMOKE INDICATOR  MANUAL  OTHER (Specify)

TYPE OF DRAFT:  FORCED  INDUCED  NATURAL

MATERIAL	RATE OF EMISSIONS (Tons/Yr.)	METHOD USED TO DETERMINE EMISSIONS	top of stack	DATE SOURCE STARTED UP	No. OF IDENTICAL UNITS
CO	9.50	Est. from mfg's data	750°F	March 1968	0
THC	9.50	# avg. fuel rate			
NOx	64.50	official source test			
Particulates	7.86	10/16/73			
SOx	6.50	Calculated from sulfur content of fuel			

15. EQUIPMENT INFORMATION: **top of stack**

EXHAUST GAS FLOW RATE (ACFM): **19200**

OPERATING HOURS PER DAY: **32800**

HOURS PER YEAR: **1000**

STACK EXIT DIRECTION:  HORIZ.  VERT.

STACK EXIT DIMENSIONS: **10.5' 11" x 97.6" in. x in.**

SMOKE INDICATOR IN STACK:  YES  NO

MAKE AND MODEL NO.: **NA**

STACK LINING:  METAL  REFRACTORY  OTHER (Specify)

Name of nearest intersecting street: **High St./Pant Rd.**

Distance to stack from intersection: **1500 FT.**

DIRECTION TO STACK: (Circle one) **X** N, NE, E, SE, S, SW, W, NW

I certify that I have examined the above information and that to the best of my knowledge it is true and complete. (Signature subject signer to provisions of the General Statutes regarding false and misleading statements).

SIGNED: **UNITED AIRCRAFT CORPORATION**

NAME: **E. L. Davis**

TITLE: **Asst. Secretary**

DATE: **6/19/74**

\* Revision to form submitted 9/29/72

**ATTACHMENT 2**  
**STACK TEST REPORT**

**SOURCE TEST REPORT  
FOR  
OXIDES OF NITROGEN AND CARBON MONOXIDE EMISSIONS  
JP-8 FIRED TURBINE GG4-9A**

**UNITED TECHNOLOGIES/PRATT & WHITNEY  
JUPITER, FLORIDA**

**FDEP PERMIT NUMBER 0990021-008-AC**

**JULY 31, 2008**

**PREPARED FOR:**

**UNITED TECHNOLOGIES/PRATT & WHITNEY  
17900 BEELINE HIGHWAY (SR 710)  
JUPITER, FLORIDA 33478**

**PREPARED BY:**

**AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67TH PLACE, SUITE 4  
GAINESVILLE, FLORIDA 32653  
(352) 335-1889**

**558-08-02**

## TABLE OF CONTENTS

<b><u>SECTION</u></b>	<b><u>PAGE</u></b>
1.0 INTRODUCTION .....	1
2.0 SUMMARY AND DISCUSSION OF RESULTS .....	2
3.0 PROCESS DESCRIPTION AND OPERATION .....	4
4.0 SAMPLING POINT LOCATION .....	5
5.0 FIELD AND ANALYTICAL PROCEDURES .....	9
5.1 DETERMINATION OF OXYGEN, CARBON DIOXIDE, OXIDES OF NITROGEN AND CARBON MONOXIDE EMISSIONS FROM STATIONARY SOURCES--EPA METHODS 3A, 7E & 10 .....	9

### APPENDICES

APPENDIX A--FDEP PERMIT NUMBER 0990021-008-AC

APPENDIX B--COMPLETE EMISSION DATA

APPENDIX C--DATA LOGGER COPIES

APPENDIX D--QUALITY ASSURANCE AND CAL GAS CERTIFICATIONS

APPENDIX E--PLANT OPERATING DATA

APPENDIX F--PROJECT PARTICIPANTS

**LIST OF TABLES**

<b><u>TABLE</u></b>	<b><u>PAGE</u></b>
1 EMISSION SUMMARY.....	3

**LIST OF FIGURES**

<b><u>FIGURE</u></b>	<b><u>PAGE</u></b>
1 STATIONARY SAMPLE PROBE.....	6
2 STATIONARY SAMPLE PROBE.....	7
3 GG4-9A RAM ENGINE .....	8
4 EPA METHODS 3A, 7E AND 10 CEM SAMPLING SCHEMATIC.....	10



## **1.0 INTRODUCTION**

On July 31, 2008, Air Consulting and Engineering , Inc. (ACE) performed emission testing for Carbon Dioxide (CO<sub>2</sub>) and Oxygen (O<sub>2</sub>) content, Carbon Monoxide (CO) and Oxides of Nitrogen (NO<sub>x</sub>) on the JP-8 fired Turbine GG4-9A exhaust at United Technologies/Pratt & Whitney facility in Jupiter, Florida.

Testing was undertaken to establish CO and NO<sub>x</sub> emission factors as required by the facility's air construction permit, Palm Beach County Health Department (PBCHR) Permit Number 0990021-008-AC (see Appendix A). The engine tested is one of two identical units that drive an air compressor over several psia output ranges.

United States Environmental Protection Agency (EPA) Reference Methods 10 for CO, EPA Method 7E for Oxides of Nitrogen (NO<sub>x</sub>) and 3A for Oxygen (O<sub>2</sub>) and Carbon Dioxide (CO<sub>2</sub>) were utilized.

Mr. Brian Storey of Golder Associates, as their permit consultant, coordinated the testing effort. Mr. Dean Gee and Mr. Matt Enoch of Pratt & Whitney managed the project and Mr. Robert Press of Pratt & Whitney coordinated testing and provided production data.

Mr. Tom Tittle of the PBCHD observed most of the testing.

## **2.0 SUMMARY AND DISCUSSION OF RESULTS**

The results of the turbine emissions tests are summarized in Table 1. The test was conducted while the unit was fired with JP-8 jet fuel. The turbine emissions were measured at varying load levels that constitute normal operating ranges. These load ranges are expressed in terms of the compressor pressure output, which the engine powers. The emission rates quantified can be used to estimate annual emissions. NO<sub>x</sub> and CO concentrations were calculated in pounds per million (lb/MMBTU) of heat input. The JP-8 fuel sample was analyzed and a custom fuel factor was derived using the methodology specified in 40 CFR Part 60 Appendix A Method 19. These data is provided in Appendix E.

Emission summaries and data logger records are presented in Appendices B and C.

**Table 1**

NOx and CO Emission Summary  
 Emission Factor Verification Testing  
 JP-8 Fired Turbine GG-4  
 Pratt & Whitney Engine Test Facility  
 West Palm Beach, Florida  
 July 31, 2008

Time	Test Conditions psia	NOx ppm	CO ppm	O2%	CO2%	NOx lb/MMBTU	CO lb/MMBTU	Fuel Usage			Emissions (lb/HR)	
								GPM	lb/HR	MMBTUH	NOx	CO
1112-1142	Idle	6.2	1221.3	18.67	1.89	0.062	7.463	5.0	2010	40.02	2.5	298.5
1205-1235	16	95.4	93.8	16.99	3.25	0.546	0.327	25.4	10211	203.3	111.0	66.5
1524-1529	18*	101.6	85.0	16.96	3.24	0.576	0.293	25.5	10251	204.1	117.6	59.8
1444-1449	20*	102.2	84.3	16.96	3.26	0.580	0.291	25.9	10412	207.3	120.2	60.3
1248-1310	23	106.2	76.3	16.92	3.31	0.596	0.261	26.6	10693	212.9	126.9	55.6
1505-1510	26*	113.5	64.2	16.84	3.35	0.625	0.215	27.7	11135	221.7	138.6	47.7
1335-1405	31	117.9	56.9	16.82	3.36	0.646	0.190	29.0	11658	232.1	149.9	44.1

**Notes:**

\*Abbreviated load point (for information purposes only)  
 Fd = Fuel Factor for this JP8 fuel = 8955 SCF/MMBTU @ 0% excess air.  
 JP8 HHV = 19910 BTU/lb  
 JP8 Specific Gravity = 0.803 = 6.70 lb/gallon

### **3.0 PROCESS DESCRIPTION AND OPERATION**

Two GG4-9A JP-8 fueled turbines were relocated from the Pratt & Whitney facility in Hartford, Connecticut to Jupiter, Florida. The units are located adjacent to test stands A-8 and A-9, which are part of the eight sea level test stands used in the development testing of commercial and military jet engines. The engines are used to drive an air compressor that provides RAM air to the test engines in order to simulate actual flight conditions. The engines are rated at 19.5 MW but per request of the applicant are limited to a maximum operating load of 12.3 MW with an estimated maximum heat input of 183.9 MMBTU/hr.

Plant production data and fuel analyses are presented in Appendix E.

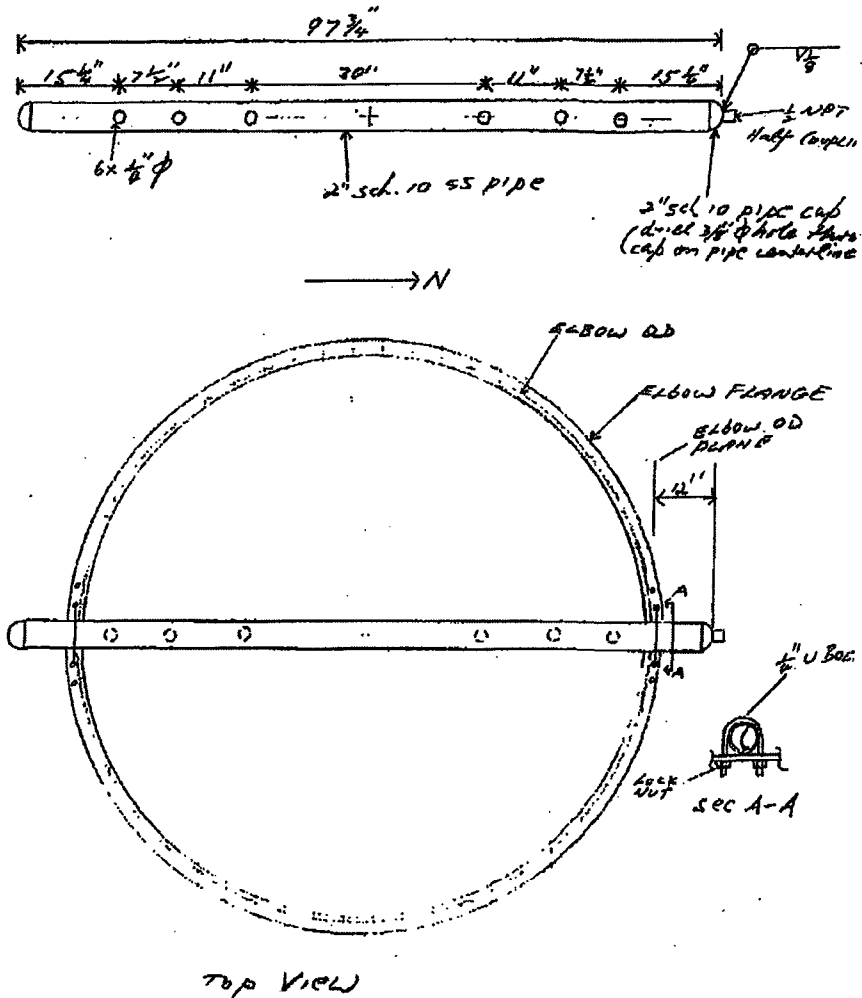
#### **4.0 SAMPLING POINT LOCATION**

The sampling point locations and outlet duct schematic are provided in Figures 1, 2 and 3.

Due to noise and safety concerns and after much discussion with the many stake holders in this project, it was agreed to place a multipoint sampling probe at the engine exhaust a top an upturn vertical run of duct prior to the introduction of quenched air to the exhaust stack. Test method calibration gases were introduced at the probe exit.

GG4 EMISSION TEST PROBE

W. Wilson 5/1/02



SKWNWGG021308 Rev. A  
\*\* TOTAL PAGE 01 \*\*

NOTE: NOT TO SCALE

SOURCE: AIR CONSULTING & ENGINEERING, INC. (588 PRATT & WHITNEY)

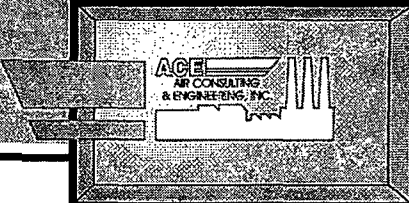
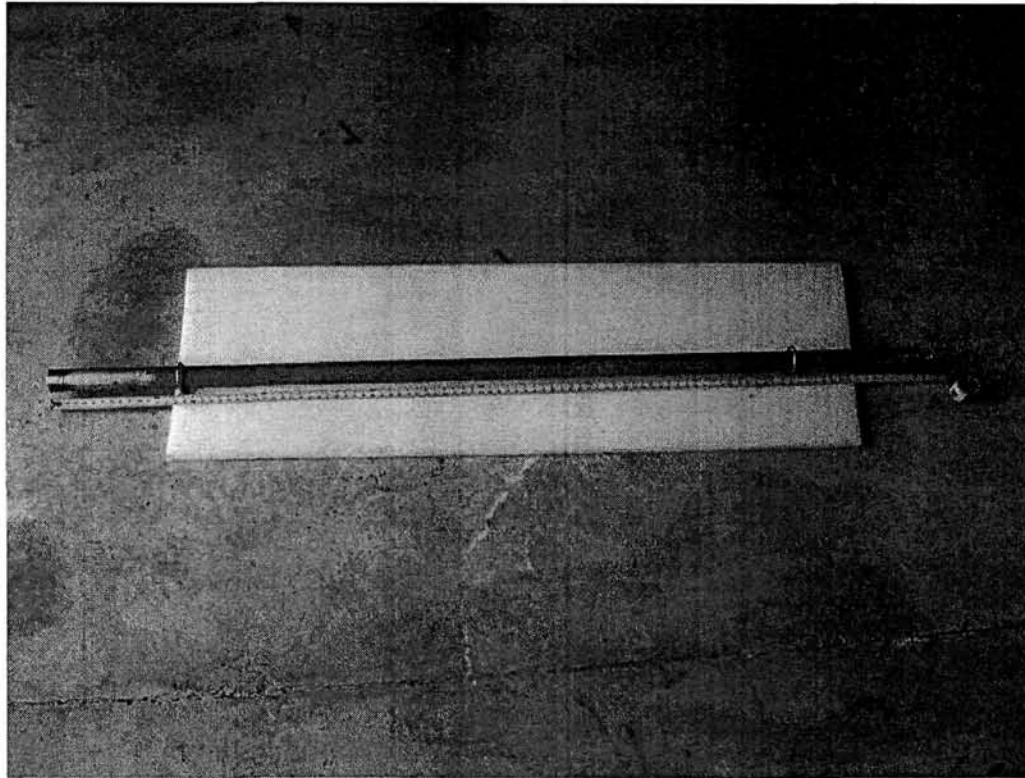


FIGURE 1.  
STATIONARY SAMPLE PROBE



SOURCE: AIR CONSULTING & ENGINEERING, INC. (588Pratt&Whitney GG4-9A)

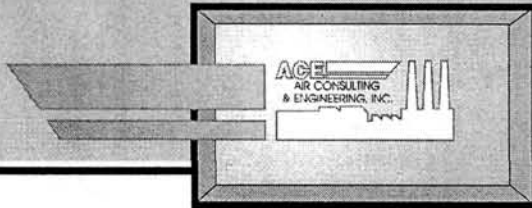
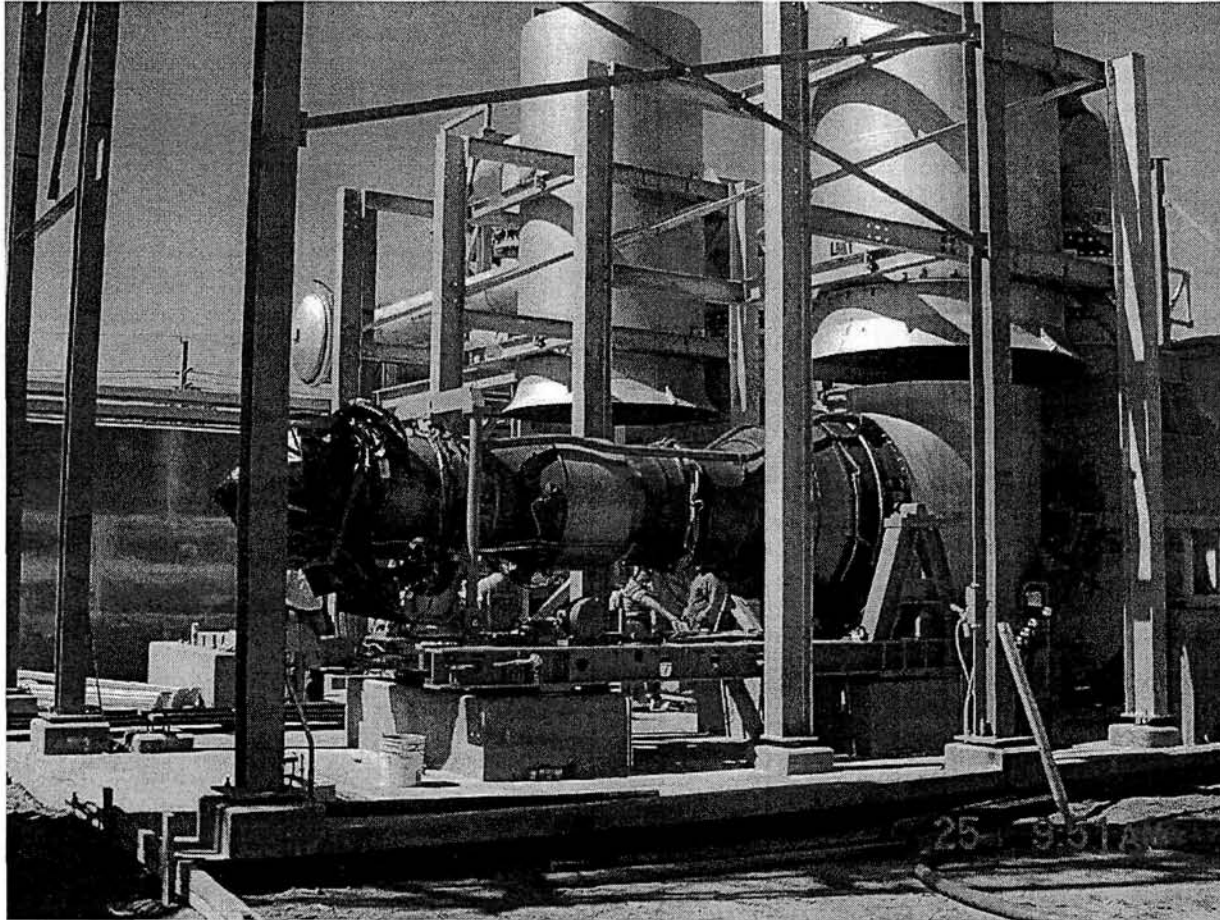


FIGURE 2.  
STATIONARY SAMPLING PROBE



SOURCE: AIR CONSULTING & ENGINEERING, INC. (588Pratt&Whitney GG4-9A)

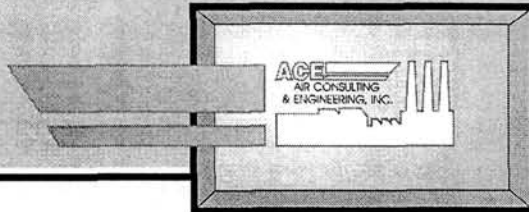


FIGURE 3.  
GG4-9A RAM ENGINE  
PRATT & WHITNEY  
Jupiter, FLORIDA

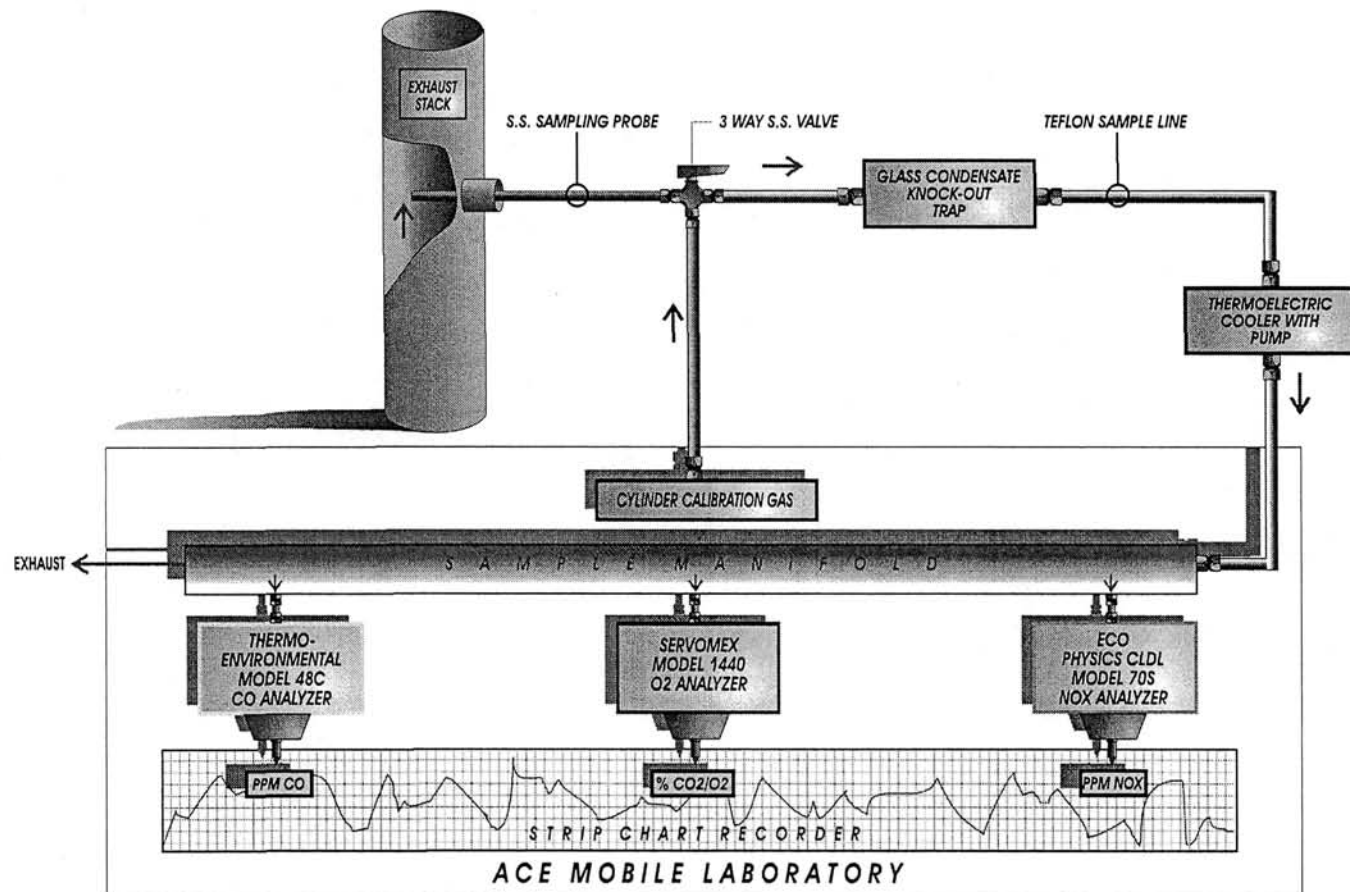


## **5.0 FIELD AND ANALYTICAL PROCEDURES**

### *5.1 Determination of Nitrogen Oxides and Carbon Monoxide Emissions--EPA Method 7E and 10*

US EPA Methods 3A, 7E and 10 were utilized for the test series. Exhaust gases from the multi-port sampling probe were pumped through a heat traced sample line that was operated at 250°F. Upon entering the mobile emission lab the gases were delivered to a thermo electric cooler/pump assembly for moisture and particulate removal and then to a sample manifold. The manifold then delivered gases to the NO<sub>x</sub>, CO and O<sub>2</sub>/CO<sub>2</sub> analyzers shown in Figure 4.

The NO<sub>x</sub> and CO analyzers were calibrated over a wide range in order to cover the varying emission rates from idle to top end engine loads. Suitable cal gases were injected into the sample system at the probe exhaust before and after each test run. The run data was then biased corrected based on the average cal gas responses. Emissions at each load point were extremely stable. Run times for the psia operating points of primary interest were 30 minutes in duration. Three addition intermediate points were also evaluated at five minutes each.



SOURCE: AIR CONSULTING & ENGINEERING, INC. (LAKECEM) 5/26/00

ACE  
AIR CONSULTING  
& ENGINEERING, INC.

FIGURE 4.  
EPA METHODS 3A, 7E AND 10 C.E.M. SAMPLING SCHEMATIC  
(DETERMINATION OF CARBON MONOXIDE,  
NITROGEN OXIDES, AND OXYGEN  
EMISSIONS FROM STATIONARY SOURCES)

**APPENDIX A**

**FDEP PERMIT NUMBER**

**0990021-008-AC**

**(Not included)**

## **APPENDIX B**

# **COMPLETE EMISSION DATA**

**BIAS CORRECTION AND EMISSION RESULTS  
RAM FACILITY GG4-9A  
PRATT & WHITNEY ENGINE TEST FACILITY  
WEST PALM BEACH  
JULY 31, 2008**

Wet Bulb / Dry Bulb % Moisture NA		Parameter: Units:	O2 %DRY	CO2 %DRY	NOX PPMDRY	CO PPMDRY
Fuel Flow		Upscale Bias Gas Value	10.3	10.05	91.02	898.6
KSCFH	LBS/HR	Pre Run Upscale Response	10.06	9.83	91.70	902.62
2010		Pre Run Zero Response	0.07	0.04	0.04	4.00
Heating Value	Heat Input	Post Run Upscale Response	10.06	9.81	90.03	898.67
BTU/lb HHV	MMbtu/hr	Post Run Zero Response	0.09	0.08	0.02	3.89
19910	40.0	Run Average	18.17	1.90	6.22	1222.70
Fo	F Factor	Average Upscale Bias	10.06	9.82	90.87	900.64
1.17	scf/MMBTU	Average Zero Bias	0.08	0.06	0.03	3.94
8955		Bias Corrected Run Average	18.67	1.89	6.20	1221.34
Stack Flow	Heat Input	Corrected to 15% O2	NA	NA	16.44	3238.07
DSCFM	MMbtu/hr	lbsVMMBTU	NA	NA	0.062	7.463
NA	Based on Flow	lbs/hr	NA	NA	2.49	298.68
NA	NA	Corrected to PPM Wet	NA	NA	NA	NA
		Corrected to PPM Dry	NA	NA	NA	NA

Wet Bulb / Dry Bulb % Moisture NA		Parameter: Units:	O2 %DRY	CO2 %DRY	NOX PPMDRY	CO PPMDRY
Fuel Flow		Upscale Bias Gas Value	10.3	10.05	91.02	89.97
KSCFH	LBS/HR	Pre Run Upscale Response	10.06	9.81	90.03	98.60
10211		Pre Run Zero Response	0.09	0.08	0.02	3.89
Heating Value	Heat Input	Post Run Upscale Response	10.03	9.79	89.12	96.13
BTU/lb HHV	MMbtu/hr	Post Run Zero Response	0.07	0.04	-0.02	3.12
19910	203.3	Run Average	16.52	3.21	93.92	101.40
Fo	F Factor	Average Upscale Bias	10.04	9.80	89.58	97.36
1.20	scf/MMBTU	Average Zero Bias	0.08	0.06	0.00	3.50
8955		Bias Corrected Run Average	16.99	3.25	95.43	93.84
Stack Flow	Heat Input	Corrected to 15% O2	NA	NA	144.09	141.68
DSCFM	MMbtu/hr	lbsVMMBTU	NA	NA	0.546	0.327
NA	Based on Flow	lbs/hr	NA	NA	110.92	66.39
NA	NA	Corrected to PPM Wet	NA	NA	NA	NA
		Corrected to PPM Dry	NA	NA	NA	NA

Wet Bulb / Dry Bulb % Moisture NA		Parameter: Units:	O2 %DRY	CO2 %DRY	NOX PPMDRY	CO PPMDRY
Fuel Flow		Upscale Bias Gas Value	10.3	10.05	91.02	89.97
KSCFH	LBS/HR	Pre Run Upscale Response	10.03	9.79	89.12	96.13
10693		Pre Run Zero Response	0.07	0.04	-0.02	3.12
Heating Value	Heat Input	Post Run Upscale Response	10.05	9.81	89.12	94.65
BTU/lb HHV	MMbtu/hr	Post Run Zero Response	0.08	0.07	0.03	1.44
19910	212.9	Run Average	16.45	3.26	103.96	81.25
Fo	F Factor	Average Upscale Bias	10.04	9.80	89.12	95.39
1.20	scf/MMBTU	Average Zero Bias	0.08	0.05	0.01	2.28
8955		Bias Corrected Run Average	16.92	3.31	106.18	76.31
Stack Flow	Heat Input	Corrected to 15% O2	NA	NA	157.48	113.17
DSCFM	MMbtu/hr	lbsVMMBTU	NA	NA	0.596	0.261
NA	Based on Flow	lbs/hr	NA	NA	126.95	55.53
NA	NA	Corrected to PPM Wet	NA	NA	NA	NA
		Corrected to PPM Dry	NA	NA	NA	NA

**BIAS CORRECTION AND EMISSION RESULTS  
RAM FACILITY GG4-9A  
PRATT & WHITNEY ENGINE TEST FACILITY  
WEST PALM BEACH  
JULY 31, 2008**

Wet Bulb / Dry Bulb % Moisture		Parameter: Units:	O2 %DRY	CO2 %DRY	NOX PPMDRY	CO PPMDRY
NA						
Fuel Flow		Upscale Bias Gas Value	10.3	10.05	91.02	89.97
KSCFH	LBS/HR	Pre Run Upscale Response	10.05	9.81	89.12	94.65
	11658	Pre Run Zero Response	0.08	0.07	0.03	1.44
Heating Value	Heat Input	Post Run Upscale Response	10.05	9.79	88.15	95.25
BTU/lb HHV	MMbtu/hr	Post Run Zero Response	0.08	0.06	0.03	1.59
19910	232.1	Run Average	16.36	3.32	114.84	60.57
Fo	F Factor	Average Upscale Bias	10.05	9.80	88.64	94.95
	scf/MMBTU					
1.22	8955	Average Zero Bias	0.08	0.06	0.03	1.51
Stack Flow	Heat Input	Bias Corrected Run Average	16.82	3.36	117.93	56.87
DSCFM	MMbtu/hr	Corrected to 15% O2	NA	NA	170.59	82.26
NA	Based on Flow	lbsVMMBTU	NA	NA	0.646	0.190
	NA	lbs/hr	NA	NA	149.93	44.01
		Corrected to PPM Wet	NA	NA	NA	NA
		Corrected to PPM Dry	NA	NA	NA	NA

Wet Bulb / Dry Bulb % Moisture		Parameter: Units:	O2 %DRY	CO2 %DRY	NOX PPMDRY	CO PPMDRY
NA						
Fuel Flow		Upscale Bias Gas Value	10.3	10.05	91.02	89.97
KSCFH	LBS/HR	Pre Run Upscale Response	10.05	9.79	88.15	95.25
	10412	Pre Run Zero Response	0.08	0.06	0.03	1.59
Heating Value	Heat Input	Post Run Upscale Response	10.03	9.74	88.18	93.85
BTU/lb HHV	MMbtu/hr	Post Run Zero Response	0.08	0.07	-0.01	0.40
19910	207.3	Run Average	16.48	3.21	99.01	88.60
Fo	F Factor	Average Upscale Bias	10.04	9.77	88.17	94.55
	scf/MMBTU					
1.21	8955	Average Zero Bias	0.08	0.06	0.01	0.99
Stack Flow	Heat Input	Bias Corrected Run Average	16.96	3.26	102.21	84.26
DSCFM	MMbtu/hr	Corrected to 15% O2	NA	NA	153.08	126.18
NA	Based on Flow	lbsVMMBTU	NA	NA	0.580	0.291
	NA	lbs/hr	NA	NA	120.16	60.29
		Corrected to PPM Wet	NA	NA	NA	NA
		Corrected to PPM Dry	NA	NA	NA	NA

Wet Bulb / Dry Bulb % Moisture		Parameter: Units:	O2 %DRY	CO2 %DRY	NOX PPMDRY	CO PPMDRY
NA						
Fuel Flow		Upscale Bias Gas Value	10.3	10.05	91.02	89.97
KSCFH	LBS/HR	Pre Run Upscale Response	10.03	9.74	88.18	93.85
	11135	Pre Run Zero Response	0.08	0.07	-0.01	0.40
Heating Value	Heat Input	Post Run Upscale Response	10.04	9.80	88.14	93.54
BTU/lb HHV	MMbtu/hr	Post Run Zero Response	0.08	0.08	0.04	0.23
19910	221.7	Run Average	16.35	3.30	109.95	66.95
Fo	F Factor	Average Upscale Bias	10.04	9.77	88.16	93.69
	scf/MMBTU					
1.21	8955	Average Zero Bias	0.08	0.07	0.01	0.32
Stack Flow	Heat Input	Bias Corrected Run Average	16.84	3.35	113.52	64.20
DSCFM	MMbtu/hr	Corrected to 15% O2	NA	NA	164.95	93.29
NA	Based on Flow	lbsVMMBTU	NA	NA	0.625	0.215
	NA	lbs/hr	NA	NA	138.47	47.67
		Corrected to PPM Wet	NA	NA	NA	NA
		Corrected to PPM Dry	NA	NA	NA	NA

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**BIAS CORRECTION AND EMISSION RESULTS  
RAM FACILITY GG4-9A  
PRATT & WHITNEY ENGINE TEST FACILITY  
WEST PALM BEACH  
JULY 31, 2008**

**RUN 7      15:24-15:29**

**18 PSI**

Wet Bulb / Dry Bulb % Moisture      NA	Parameter: Units:	O2 %DRY	CO2 %DRY	NOX PPMDRY	CO PPMDRY
Fuel Flow	Upscale Bias Gas Value	10.3	10.05	91.02	89.97
KSCFH      LBS/HR	Pre Run Upscale Response	10.04	9.80	88.14	93.54
10251	Pre Run Zero Response	0.08	0.08	0.04	0.23
Heating Value      Heat Input	Post Run Upscale Response	10.04	9.80	88.14	93.54
BTU/lb HHV      MMbtu/hr	Post Run Zero Response	0.08	0.08	0.04	0.23
19910      204.1	Run Average	16.48	3.21	98.38	88.37
Fo      F Factor	Average Upscale Bias	10.04	9.80	88.14	93.54
1.22      scf/MMBTU	Average Zero Bias	0.08	0.08	0.04	0.23
8955	Bias Corrected Run Average	16.96	3.24	101.60	84.98
Stack Flow      Heat Input	Corrected to 15% O2	NA	NA	152.12	127.23
DSCFM      MMbtu/hr	lbsVMMBTU	NA	NA	0.576	0.293
NA      Based on Flow	lbs/hr	NA	NA	117.56	59.85
NA      NA	Corrected to PPM Wet	NA	NA	NA	NA
	Corrected to PPM Dry	NA	NA	NA	NA

# **APPENDIX C**

## **DATA LOGGER COPIES**



AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

Summary of Emissions Test Run Averages

IDLE

RAM FACILITY GG4-9A			PRATT & WHITNEY ENGINE TEST FACILITY				WEST PALM BEACH, FLORIDA				
Date	Start Time	End Time	O2 %DRY	CO2 %DRY	NOX PPMDRY	CO PPMDRY	#NA #NA	#NA #NA	#NA #NA	#NA #NA	Comments
	<b>Instantaneous:</b>		<b>20.57</b>	<b>0.19</b>	<b>0.05</b>	<b>-0.25</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#NA</b>	<b>#NA</b>	
07/31/08	15:24:10	15:29:00	16.48	3.21	98.38	88.37	#N/A	#N/A	#DIV/0!	#DIV/0!	#REF!
07/31/08	9:27:40	9:28:00	20.88	0.09	0.04	1.38	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:20.9 O2
07/31/08	9:32:38	9:32:59	5.90	20.34	0.04	1.81	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:5.941/19.99 O2/CO2
07/31/08	9:33:48	9:34:08	10.08	9.85	0.04	1.38	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:10.03/10.05 O2/CO2
07/31/08	9:43:11	9:43:30	-0.01	0.05	897.65	1.36	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:898.6 CO
07/31/08	9:44:40	9:45:00	-0.01	0.05	451.54	1.82	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:453 NOX
07/31/08	9:46:05	9:46:25	-0.02	0.05	243.57	1.36	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:240.4 NOX
07/31/08	9:48:25	9:48:45	-0.04	0.05	92.14	1.33	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:91.02
07/31/08	10:12:12	10:12:33	-0.10	0.04	-0.02	456.32	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:450.4 CO
07/31/08	10:14:56	10:15:15	-0.12	0.04	-0.01	900.23	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:898.6 CO
07/31/08	10:19:30	10:19:50	-0.13	0.04	-0.02	1904.80	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:1912 CO
07/31/08	10:24:08	10:24:38	-0.14	0.04	0.03	4443.92	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:4464 CO
07/31/08	10:37:20	10:37:39	10.11	9.83	0.03	2.95	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:10.03/10.05 O2/CO2
07/31/08	10:41:17	10:41:47	0.06	0.07	0.05	894.08	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:898.6 CO
07/31/08	10:47:32	10:47:51	0.09	0.04	880.75	3.84	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:898.6 CO
07/31/08	10:57:31	11:03:01	18.41	1.70	8.31	990.49	#N/A	#N/A	#DIV/0!	#DIV/0!	START UP
07/31/08	11:04:28	11:04:59	0.09	0.04	91.70	8.26	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:91.02
07/31/08	11:07:07	11:07:26	0.07	0.04	0.04	902.62	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:898.6 CO
07/31/08	11:09:53	11:10:23	10.06	9.83	0.02	4.00	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:10.03/10.05 O2/CO2
07/31/08	11:12:14	11:42:03	18.17	1.90	6.22	1222.70	#N/A	#N/A	#DIV/0!	#DIV/0!	RUN 1 IDLE
07/31/08	11:44:04	11:44:34	0.11	0.06	0.92	898.67	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:898.6 CO
07/31/08	11:46:37	11:47:16	10.06	9.81	0.02	8.21	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:10.03/10.05 O2/CO2
07/31/08	11:48:59	11:49:39	0.09	0.08	90.03	3.89	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:91.02
07/31/08	12:00:44	12:01:14	0.08	0.06	0.64	98.60	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:89.97 CO
07/31/08	12:05:10	12:35:00	16.52	3.21	93.92	101.40	#N/A	#N/A	#DIV/0!	#DIV/0!	RUN 2 - 16 PSI
07/31/08	12:38:34	12:38:54	0.08	0.04	0.89	96.13	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:89.97 CO
07/31/08	12:40:59	12:41:19	0.07	0.04	89.12	3.12	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:91.02
07/31/08	12:43:02	12:43:22	10.03	9.79	-0.02	1.69	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:10.03/10.05 O2/CO2
07/31/08	12:48:11	13:10:01	16.45	3.26	103.96	81.25	#N/A	#N/A	#DIV/0!	#DIV/0!	RUN 3 - 23 PSI
07/31/08	13:20:03	13:20:33	10.05	9.81	0.99	1.48	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:10.03/10.05 O2/CO2

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

Summary of Emissions Test Run Averages

**IDLE**

RAM FACILITY GG4-9A			PRATT & WHITNEY ENGINE TEST FACILITY				WEST PALM BEACH, FLORIDA				
Date	Start Time	End Time	O2 %DRY	CO2 %DRY	NOX PPM DRY	CO PPM DRY	#NA	#NA	#NA	#NA	Comments
							#NA	#NA	#NA	#NA	
07/31/08	13:22:47	13:23:36	0.08	0.07	0.03	94.65	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:89.97 CO
07/31/08	13:25:41	13:26:01	0.07	0.05	89.12	1.44	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:91.02
<b>07/31/08</b>	<b>13:35:10</b>	<b>14:05:00</b>	<b>16.36</b>	<b>3.32</b>	<b>114.84</b>	<b>60.57</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 4 - 31 PSI</b>
07/31/08	14:06:55	14:07:15	10.05	9.79	1.85	1.59	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:10.03/10.05 O2/CO2
07/31/08	14:10:21	14:10:41	0.08	0.06	0.03	95.25	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:89.97 CO
07/31/08	14:12:44	14:13:04	0.07	0.05	88.15	2.17	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:91.02 NOX
07/31/08	14:15:50	14:16:10	14.34	6.38	0.05	1.59	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:14.60/6.516
<b>07/31/08</b>	<b>14:44:10</b>	<b>14:49:00</b>	<b>16.48</b>	<b>3.21</b>	<b>99.01</b>	<b>88.60</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 5 - 20 PSI</b>
07/31/08	14:51:06	14:51:26	10.03	9.74	1.46	0.40	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:10.3/10.05 O2/CO2
07/31/08	14:56:20	14:56:40	0.08	0.07	-0.01	93.85	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:89.97 CO
07/31/08	14:58:13	14:58:44	0.07	0.05	88.18	0.39	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:91.02 NOX
<b>07/31/08</b>	<b>15:05:10</b>	<b>15:10:00</b>	<b>16.35</b>	<b>3.30</b>	<b>109.95</b>	<b>66.95</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 6 -</b>
07/31/08	15:16:30	15:16:50	10.04	9.80	0.60	0.23	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:10.3/10.05 O2/CO2
07/31/08	15:18:46	15:19:06	0.08	0.08	0.04	93.54	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:89.97 CO
07/31/08	15:20:48	15:21:08	0.08	0.05	88.14	0.31	#N/A	#N/A	#DIV/0!	#DIV/0!	Cal:91.02 NOX
<b>07/31/08</b>	<b>15:24:10</b>	<b>15:29:00</b>	<b>16.48</b>	<b>3.21</b>	<b>98.38</b>	<b>88.37</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 7 - 18 PSI</b>

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

Current: 9:26:02 Countdown NA Run Interval: 10 seconds Cal Interval: 10 seconds

IDLE

**Instrumental Reference Method On-Line Data**

RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
<b>INSTANTANEOUS:</b>	<b>20.57</b>	<b>0.19</b>	<b>0.05</b>	<b>-0.25</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#NA</b>	<b>#NA</b>		
<b>Interval Average:</b>	<b>20.57</b>	<b>0.19</b>	<b>0.05</b>	<b>-0.25</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#NA</b>	<b>#NA</b>	RUN 7 - 18 PSI	
<b>Average So Far</b>	<b>16.48</b>	<b>3.21</b>	<b>98.38</b>	<b>88.37</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>		
31-Jul-08 9:27:40	20.88	0.09	0.04	1.34	#N/A	#N/A	#NA	#NA	Cal:20.9 O2	
31-Jul-08 9:27:50	20.88	0.09	0.04	1.33	#N/A	#N/A	#NA	#NA	Cal:20.9 O2	
31-Jul-08 9:28:00	20.88	0.09	0.05	1.48	#N/A	#N/A	#NA	#NA	Cal:20.9 O2	
<b>Average: 9:28:00</b>	<b>20.88</b>	<b>0.09</b>	<b>0.04</b>	<b>1.38</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:20.9 O2</b>	
Gas Value: 9:28:00										
Diff%ofSpan 9:28:00	83.53%	0.35%	0.00%	0.03%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 9:32:38	5.90	20.33	0.04	2.05	#N/A	#N/A	#NA	#NA	Cal:5.941/19.99 O2/CO2	
31-Jul-08 9:32:48	5.90	20.34	0.04	1.87	#N/A	#N/A	#NA	#NA	Cal:5.941/19.99 O2/CO2	
31-Jul-08 9:32:59	5.90	20.34	0.04	1.50	#N/A	#N/A	#NA	#NA	Cal:5.941/19.99 O2/CO2	
<b>Average: 9:33:03</b>	<b>5.90</b>	<b>20.34</b>	<b>0.04</b>	<b>1.81</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:5.941/19.99 O2/CO2</b>	
Gas Value: 9:33:03	5.941	19.99	0	0	0	0	#N/A	#N/A	5.941/19.99 O2/CO2	
Diff%ofSpan 9:33:03	-0.16%	1.39%	0.00%	0.04%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 9:33:48	10.09	9.85	0.05	1.34	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 9:33:58	10.09	9.85	0.03	1.38	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 9:34:08	10.08	9.85	0.05	1.43	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
<b>Average: 9:34:12</b>	<b>10.08</b>	<b>9.85</b>	<b>0.04</b>	<b>1.38</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:10.03/10.05 O2/CO2</b>	
Gas Value: 9:34:12	10.03	10.05	0	0	0	0	#N/A	#N/A	10.03/10.05 O2/CO2	
Diff%ofSpan 9:34:12	0.22%	-0.78%	0.00%	0.03%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 9:43:11	-0.01	0.05	897.65	1.23	#N/A	#N/A	#NA	#NA	Cal:898.6 CO	
31-Jul-08 9:43:20	-0.01	0.05	897.76	1.51	#N/A	#N/A	#NA	#NA	Cal:898.6 CO	
31-Jul-08 9:43:30	-0.01	0.05	897.54	1.35	#N/A	#N/A	#NA	#NA	Cal:898.6 CO	
<b>Average: 9:43:34</b>	<b>-0.01</b>	<b>0.05</b>	<b>897.65</b>	<b>1.36</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:898.6 CO</b>	
Gas Value: 9:43:34	0	0	0	898.6	0	0	#N/A	#N/A	898.6 CO	
Diff%ofSpan 9:43:34	-0.03%	0.19%	89.77%	-17.94%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 9:44:40	0.00	0.05	451.54	1.78	#N/A	#N/A	#NA	#NA	Cal:453 NOX	
31-Jul-08 9:44:50	-0.01	0.05	451.53	2.02	#N/A	#N/A	#NA	#NA	Cal:453 NOX	
31-Jul-08 9:45:00	-0.01	0.05	451.53	1.67	#N/A	#N/A	#NA	#NA	Cal:453 NOX	
<b>Average: 9:45:04</b>	<b>-0.01</b>	<b>0.05</b>	<b>451.54</b>	<b>1.82</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:453 NOX</b>	
Gas Value: 9:45:04	0	0	450.3	0	0	0	#N/A	#N/A	453 NOX	
Diff%ofSpan 9:45:04	-0.03%	0.19%	0.12%	0.04%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 9:46:05	-0.02	0.05	243.56	1.29	#N/A	#N/A	#NA	#NA	Cal:240.4 NOX	
31-Jul-08 9:46:15	-0.02	0.05	243.57	1.38	#N/A	#N/A	#NA	#NA	Cal:240.4 NOX	
31-Jul-08 9:46:25	-0.02	0.05	243.58	1.43	#N/A	#N/A	#NA	#NA	Cal:240.4 NOX	
<b>Average: 9:46:26</b>	<b>-0.02</b>	<b>0.05</b>	<b>243.57</b>	<b>1.36</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:240.4 NOX</b>	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**

RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
Gas Value:	9:46:26	0	0	240.4	0	0	0	#N/A	#N/A	240.4 NOX
Diff%ofSpan	9:46:26	-0.08%	0.19%	0.32%	0.03%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	9:48:25	-0.03	0.05	92.13	1.23	#N/A	#N/A	#NA	#NA	Cal:91.02
31-Jul-08	9:48:35	-0.04	0.05	92.15	1.43	#N/A	#N/A	#NA	#NA	Cal:91.02
31-Jul-08	9:48:45	-0.04	0.05	92.14	1.33	#N/A	#N/A	#NA	#NA	Cal:91.02
<b>Average:</b>	<b>9:48:47</b>	<b>-0.04</b>	<b>0.05</b>	<b>92.14</b>	<b>1.33</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:91.02</b>
Gas Value:	9:48:47	0	0	91.02	0	0	0	#N/A	#N/A	91.02
Diff%ofSpan	9:48:47	-0.14%	0.19%	0.11%	0.03%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	10:12:12	-0.10	0.04	-0.01	456.41	#N/A	#N/A	#NA	#NA	Cal:450.4 CO
31-Jul-08	10:12:22	-0.10	0.04	-0.02	456.38	#N/A	#N/A	#NA	#NA	Cal:450.4 CO
31-Jul-08	10:12:33	-0.10	0.04	-0.04	456.18	#N/A	#N/A	#NA	#NA	Cal:450.4 CO
<b>Average:</b>	<b>10:12:34</b>	<b>-0.10</b>	<b>0.04</b>	<b>-0.02</b>	<b>456.32</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:450.4 CO</b>
Gas Value:	10:12:34	0	0	0	450.4	0	0	#N/A	#N/A	450.4 CO
Diff%ofSpan	10:12:34	-0.41%	0.15%	0.00%	0.12%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	10:14:56	-0.12	0.04	-0.02	896.66	#N/A	#N/A	#NA	#NA	Cal:898.6 CO
31-Jul-08	10:15:05	-0.12	0.04	-0.02	905.37	#N/A	#N/A	#NA	#NA	Cal:898.6 CO
31-Jul-08	10:15:15	-0.12	0.04	0.00	898.68	#N/A	#N/A	#NA	#NA	Cal:898.6 CO
<b>Average:</b>	<b>10:15:22</b>	<b>-0.12</b>	<b>0.04</b>	<b>-0.01</b>	<b>900.23</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:898.6 CO</b>
Gas Value:	10:15:22	0	0	0	898.6	0	0	#N/A	#N/A	898.6 CO
Diff%ofSpan	10:15:22	-0.46%	0.15%	0.00%	0.03%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	10:19:30	-0.13	0.04	-0.01	1921.53	#N/A	#N/A	#NA	#NA	Cal:1912 CO
31-Jul-08	10:19:40	-0.13	0.04	-0.02	1897.99	#N/A	#N/A	#NA	#NA	Cal:1912 CO
31-Jul-08	10:19:50	-0.13	0.04	-0.02	1894.88	#N/A	#N/A	#NA	#NA	Cal:1912 CO
<b>Average:</b>	<b>10:20:00</b>	<b>-0.13</b>	<b>0.04</b>	<b>-0.02</b>	<b>1,904.80</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:1912 CO</b>
Gas Value:	10:20:00	0	0	0	450.3	0	0	#N/A	#N/A	453 NOX
Diff%ofSpan	10:20:00	-0.52%	0.14%	0.00%	38.10%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	10:24:08	-0.14	0.04	0.02	4446.99	#N/A	#N/A	#NA	#NA	Cal:4464 CO
31-Jul-08	10:24:18	-0.14	0.03	0.04	4438.82	#N/A	#N/A	#NA	#NA	Cal:4464 CO
31-Jul-08	10:24:28	-0.14	0.04	0.02	4444.24	#N/A	#N/A	#NA	#NA	Cal:4464 CO
31-Jul-08	10:24:38	-0.14	0.04	0.03	4445.62	#N/A	#N/A	#NA	#NA	Cal:4464 CO
<b>Average:</b>	<b>10:24:39</b>	<b>-0.14</b>	<b>0.04</b>	<b>0.03</b>	<b>4,443.92</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:4464 CO</b>
Gas Value:	10:24:39	0	0	450.3	0	0	0	#N/A	#N/A	453 NOX
Diff%ofSpan	10:24:39	-0.56%	0.14%	-45.03%	88.88%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	10:37:20	10.11	9.83	0.01	2.71	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2
31-Jul-08	10:37:29	10.11	9.83	0.05	3.27	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2
31-Jul-08	10:37:39	10.11	9.83	0.03	2.87	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2
<b>Average:</b>	<b>10:37:48</b>	<b>10.11</b>	<b>9.83</b>	<b>0.03</b>	<b>2.95</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:10.03/10.05 O2/CO2</b>
Gas Value:	10:37:48	10.03	10.05	0	0	0	0	#N/A	#N/A	10.03/10.05 O2/CO2

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
Diff%ofSpan	10:37:48	0.33%	-0.88%	0.00%	0.06%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	10:41:17	0.06	0.07	0.04	893.81	#N/A	#N/A	#NA	#NA	Cat:898.6 CO
31-Jul-08	10:41:27	0.07	0.07	0.04	889.80	#N/A	#N/A	#NA	#NA	Cat:898.6 CO
31-Jul-08	10:41:37	0.06	0.07	0.06	894.34	#N/A	#N/A	#NA	#NA	Cat:898.6 CO
31-Jul-08	10:41:47	0.06	0.07	0.06	898.38	#N/A	#N/A	#NA	#NA	Cat:898.6 CO
<b>Average:</b>	<b>10:41:57</b>	<b>0.06</b>	<b>0.07</b>	<b>0.05</b>	<b>894.08</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cat:898.6 CO</b>
Gas Value:	10:41:57	0	0	0	898.6	0	0	#N/A	#N/A	898.6 CO
Diff%ofSpan	10:41:57	0.25%	0.27%	0.01%	-0.09%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	10:47:32	0.09	0.04	880.75	3.60	#N/A	#N/A	#NA	#NA	Cat:898.6 CO
31-Jul-08	10:47:41	0.09	0.04	880.75	3.83	#N/A	#N/A	#NA	#NA	Cat:898.6 CO
31-Jul-08	10:47:51	0.09	0.04	880.76	4.09	#N/A	#N/A	#NA	#NA	Cat:898.6 CO
<b>Average:</b>	<b>10:47:51</b>	<b>0.09</b>	<b>0.04</b>	<b>880.75</b>	<b>3.84</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cat:898.6 CO</b>
Gas Value:	10:47:51	0	0	0	898.6	0	0	#N/A	#N/A	898.6 CO
Diff%ofSpan	10:47:51	0.35%	0.18%	88.08%	-17.90%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	10:57:31	20.59	0.09	3.07	4.88	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:57:40	20.60	0.09	2.87	4.43	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:57:50	20.13	0.45	3.08	9.56	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:58:00	18.94	1.32	4.59	67.73	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:58:10	18.39	1.72	5.86	236.79	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:58:26	18.43	1.68	5.87	451.87	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:58:30	18.35	1.75	6.63	734.57	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:58:40	18.27	1.82	6.85	880.10	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:58:50	18.21	1.86	7.92	1029.46	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:59:00	18.19	1.88	7.94	1117.28	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:59:10	18.18	1.88	7.92	1173.73	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:59:20	18.18	1.89	7.92	1198.26	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:59:35	18.18	1.89	7.94	1202.84	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:59:40	18.18	1.89	7.98	1207.92	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	10:59:50	18.17	1.89	7.94	1215.11	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:00:00	18.18	1.89	7.93	1220.33	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:00:10	18.17	1.89	7.96	1218.44	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:00:21	18.18	1.89	8.19	1215.75	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:00:30	18.18	1.88	7.95	1213.57	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:00:40	18.17	1.89	8.03	1215.41	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:00:50	18.17	1.89	7.96	1220.09	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:01:01	18.18	1.88	7.96	1217.32	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:01:10	18.18	1.89	7.93	1204.32	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:01:20	18.17	1.89	7.95	1213.00	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:01:30	18.17	1.89	7.92	1221.91	#N/A	#N/A	#NA	#NA	START UP
31-Jul-08	11:01:40	18.17	1.89	7.91	1227.37	#N/A	#N/A	#NA	#NA	START UP

IDLE

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 11:01:50	18.17	1.89	7.88	1225.00	#N/A	#N/A	#NA	#NA	START UP	
31-Jul-08 11:02:00	18.17	1.89	7.90	1215.00	#N/A	#N/A	#NA	#NA	START UP	
31-Jul-08 11:02:10	18.17	1.89	7.88	1215.35	#N/A	#N/A	#NA	#NA	START UP	
31-Jul-08 11:02:21	18.16	1.89	7.91	1220.81	#N/A	#N/A	#NA	#NA	START UP	
31-Jul-08 11:02:30	18.17	1.89	7.90	1219.83	#N/A	#N/A	#NA	#NA	START UP	
31-Jul-08 11:02:40	18.17	1.90	7.89	1215.59	#N/A	#N/A	#NA	#NA	START UP	
31-Jul-08 11:02:50	18.16	1.90	7.91	1217.62	#N/A	#N/A	#NA	#NA	START UP	
31-Jul-08 11:03:01	17.78	1.86	45.30	1225.61	#N/A	#N/A	#NA	#NA	START UP	
<b>Average:</b> 11:03:07	<b>18.41</b>	<b>1.70</b>	<b>8.31</b>	<b>990.49</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>START UP</b>	
Maximum 11:03:07	20.60	1.90	45.30	1227.37	#N/A	#N/A	0.00	0.00	START UP	
Minimum 11:03:07	17.78	0.09	2.87	4.43	#N/A	#N/A	0.00	0.00	START UP	
Std Dev 11:03:07	0.66	0.49	6.71	423.36	#N/A	#N/A	#DIV/0!	#DIV/0!	START UP	
31-Jul-08 11:04:28	0.10	0.04	92.16	18.53	#N/A	#N/A	#NA	#NA	Cal:91.02	
31-Jul-08 11:04:38	0.10	0.04	91.73	7.19	#N/A	#N/A	#NA	#NA	Cal:91.02	
31-Jul-08 11:04:48	0.09	0.04	91.82	3.60	#N/A	#N/A	#NA	#NA	Cal:91.02	
31-Jul-08 11:04:59	0.09	0.04	91.09	3.74	#N/A	#N/A	#NA	#NA	Cal:91.02	
<b>Average:</b> 11:05:00	<b>0.09</b>	<b>0.04</b>	<b>91.70</b>	<b>8.26</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:91.02</b>	
Gas Value: 11:05:00	0	0	91.02	0	0	0	#N/A	#N/A		91.02
Diff%ofSpan 11:05:00	0.38%	0.17%	0.07%	0.17%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 11:07:07	0.07	0.04	0.03	904.39	#N/A	#N/A	#NA	#NA	Cal:898.6 CO	
31-Jul-08 11:07:16	0.07	0.04	0.05	903.61	#N/A	#N/A	#NA	#NA	Cal:898.6 CO	
31-Jul-08 11:07:26	0.07	0.04	0.03	899.86	#N/A	#N/A	#NA	#NA	Cal:898.6 CO	
<b>Average:</b> 11:07:28	<b>0.07</b>	<b>0.04</b>	<b>0.04</b>	<b>902.62</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:898.6 CO</b>	
Gas Value: 11:07:28	0	0	0	898.6	0	0	#N/A	#N/A	898.6 CO	
Diff%ofSpan 11:07:28	0.28%	0.16%	0.00%	0.08%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 11:09:53	10.05	9.82	0.05	4.19	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 11:10:03	10.06	9.83	0.03	4.14	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 11:10:14	10.05	9.83	0.01	3.65	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 11:10:23	10.06	9.83	-0.01	4.02	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
<b>Average:</b> 11:10:24	<b>10.06</b>	<b>9.83</b>	<b>0.02</b>	<b>4.00</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:10.03/10.05 O2/CO2</b>	
Gas Value: 11:10:24	10.03	10.05	0	0	0	0	#N/A	#N/A	10.03/10.05 O2/CO2	
Diff%ofSpan 11:10:24	0.10%	-0.89%	0.00%	0.08%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 11:12:14	18.16	1.92	5.81	1223.08	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:12:23	18.16	1.92	5.83	1212.79	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:12:33	18.16	1.92	5.78	1216.98	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:12:43	18.17	1.91	5.81	1212.98	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:12:54	18.16	1.91	5.81	1212.44	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:13:03	18.16	1.91	5.81	1227.17	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:13:13	18.16	1.91	5.79	1222.94	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

Instrumental Reference Method On-Line Data  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 11:13:24	18.17	1.91	5.80	1209.08	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:13:33	18.17	1.90	5.99	1222.46	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:13:43	18.17	1.90	6.46	1231.06	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:13:53	18.17	1.90	6.77	1223.53	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:14:03	18.18	1.90	6.81	1218.01	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:14:14	18.17	1.90	6.78	1226.46	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:14:23	18.17	1.90	6.84	1222.46	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:14:33	18.17	1.90	6.81	1214.08	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:14:43	18.17	1.90	6.82	1230.87	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:14:53	18.17	1.90	6.79	1215.33	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:15:03	18.17	1.90	6.81	1216.78	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:15:13	18.17	1.90	6.81	1213.10	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:15:23	18.17	1.90	6.85	1225.59	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:15:33	18.17	1.90	6.82	1222.88	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:15:43	18.17	1.90	6.84	1226.68	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:15:53	18.17	1.90	6.79	1222.98	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:16:03	18.17	1.91	6.79	1235.64	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:16:14	18.17	1.90	6.77	1219.16	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:16:23	18.17	1.90	6.80	1237.23	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:16:33	18.17	1.90	6.80	1223.93	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:16:43	18.17	1.90	6.83	1222.39	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:16:53	18.17	1.90	6.79	1226.23	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:17:04	18.18	1.90	6.77	1219.34	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:17:13	18.17	1.90	6.78	1237.78	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:17:23	18.18	1.90	6.78	1227.22	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:17:33	18.18	1.90	6.78	1227.27	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:17:43	18.17	1.90	6.80	1221.95	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:17:53	18.17	1.90	6.80	1236.63	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:18:03	18.17	1.90	6.81	1207.27	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:18:14	18.17	1.90	6.83	1210.03	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:18:23	18.18	1.90	6.80	1221.85	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:18:33	18.18	1.90	6.79	1217.37	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:18:43	18.18	1.90	6.80	1236.92	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:18:53	18.18	1.90	6.81	1222.39	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:19:03	18.18	1.90	6.79	1231.11	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:19:13	18.18	1.90	6.79	1219.73	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:19:23	18.18	1.90	6.79	1199.98	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:19:33	18.17	1.90	6.79	1213.23	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:19:44	18.17	1.90	6.78	1231.88	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:19:53	18.17	1.90	6.82	1222.35	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 11:20:03	18.17	1.90	6.79	1231.99	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:20:14	18.17	1.90	6.80	1222.91	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:20:23	18.18	1.90	6.80	1227.15	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:20:33	18.18	1.90	6.79	1227.17	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:20:43	18.18	1.90	6.79	1226.98	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:20:53	18.18	1.90	6.82	1227.07	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:21:04	18.18	1.90	6.80	1217.33	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:21:13	18.18	1.90	6.81	1218.30	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:21:23	18.18	1.90	6.79	1227.27	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:21:33	18.18	1.90	6.81	1232.04	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:21:43	18.18	1.90	6.80	1217.57	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:21:53	18.18	1.90	6.60	1232.69	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:22:03	18.18	1.90	6.41	1237.56	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:22:13	18.18	1.90	6.41	1217.91	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:22:23	18.18	1.90	6.77	1220.86	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:22:33	18.18	1.90	6.69	1207.03	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:22:43	18.18	1.90	6.48	1203.72	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:22:53	18.18	1.90	6.77	1212.44	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:23:04	18.18	1.90	6.78	1217.01	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:23:13	18.18	1.89	6.34	1212.55	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:23:23	18.18	1.90	6.82	1227.17	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:23:33	18.18	1.90	6.40	1217.30	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:23:43	18.18	1.90	6.78	1217.42	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:23:53	18.18	1.90	6.80	1227.22	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:24:03	18.18	1.90	6.58	1227.38	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:24:13	18.18	1.90	6.81	1215.30	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:24:23	18.18	1.90	6.81	1201.90	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:24:34	18.18	1.90	6.80	1234.12	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:24:43	18.18	1.89	6.79	1219.01	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:25:02	18.18	1.90	6.60	1227.61	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:25:04	18.18	1.90	6.80	1234.61	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:25:13	18.18	1.90	6.79	1246.65	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:25:23	18.18	1.90	6.41	1236.87	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:25:33	18.18	1.90	6.78	1214.16	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:25:43	18.18	1.90	6.82	1227.91	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:25:54	18.18	1.90	6.80	1236.22	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:26:03	18.18	1.90	6.80	1231.87	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:26:13	18.18	1.90	6.29	1222.00	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:26:23	18.17	1.90	6.69	1224.37	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:26:34	18.17	1.90	6.25	1205.28	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	



AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

Instrumental Reference Method On-Line Data

RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 11:26:43	18.17	1.90	5.82	1232.03	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:26:53	18.17	1.90	5.79	1213.18	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:27:04	18.17	1.90	5.79	1217.05	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:27:13	18.18	1.90	6.36	1209.54	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:27:23	18.18	1.89	6.03	1223.28	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:27:33	18.18	1.89	5.81	1232.78	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:27:43	18.18	1.89	5.78	1239.29	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:27:54	18.18	1.89	5.82	1216.47	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:28:03	18.18	1.89	5.83	1207.57	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:28:13	18.18	1.90	5.78	1232.09	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:28:23	18.18	1.90	5.80	1229.97	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:28:33	18.17	1.90	5.78	1212.54	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:28:43	18.17	1.90	5.80	1213.57	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:28:53	18.17	1.90	5.79	1222.19	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:29:03	18.17	1.90	5.79	1217.37	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:29:13	18.17	1.90	5.78	1230.02	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:29:23	18.16	1.91	5.79	1214.46	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:29:33	18.17	1.90	5.81	1231.21	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:29:43	18.17	1.90	5.80	1223.23	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:29:54	18.17	1.90	5.79	1228.16	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:30:03	18.17	1.90	5.77	1232.03	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:30:13	18.17	1.90	5.79	1227.71	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:30:23	18.17	1.90	5.82	1232.58	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:30:33	18.17	1.90	5.78	1236.87	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:30:43	18.17	1.90	5.80	1233.87	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:30:53	18.17	1.90	5.82	1207.52	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:31:03	18.17	1.90	5.79	1222.19	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:31:13	18.17	1.90	5.79	1221.26	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:31:23	18.17	1.90	5.79	1215.84	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:31:33	18.17	1.90	5.82	1243.87	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:31:43	18.17	1.90	5.78	1219.74	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:31:54	18.17	1.90	5.84	1239.98	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:32:03	18.18	1.89	5.77	1222.13	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:32:13	18.17	1.90	5.79	1222.64	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:32:23	18.17	1.90	5.84	1222.89	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:32:33	18.17	1.90	5.81	1245.49	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:32:44	18.17	1.90	5.83	1228.29	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:32:53	18.17	1.89	5.82	1231.92	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:33:03	18.17	1.89	5.83	1217.32	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:33:13	18.17	1.90	5.78	1212.49	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 11:33:24	18.17	1.90	5.83	1218.71	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:33:33	18.17	1.90	5.82	1205.38	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:33:43	18.17	1.90	5.84	1225.60	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:33:54	18.17	1.90	5.83	1212.62	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:34:03	18.17	1.90	5.81	1213.10	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:34:13	18.16	1.90	5.81	1236.73	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:34:23	18.17	1.90	5.80	1228.35	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:34:33	18.17	1.89	5.79	1232.04	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:34:44	18.17	1.89	5.82	1229.28	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:34:53	18.18	1.89	5.83	1217.32	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:35:03	18.18	1.89	5.83	1222.14	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:35:13	18.17	1.89	5.84	1222.14	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:35:24	18.17	1.90	5.80	1204.51	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:35:33	18.16	1.90	5.80	1215.18	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:35:43	18.16	1.90	5.83	1235.84	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:35:54	18.16	1.90	5.80	1227.13	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:36:03	18.16	1.90	5.82	1227.22	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:36:13	18.16	1.90	5.80	1208.46	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:36:23	18.16	1.90	5.80	1217.07	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:36:36	18.16	1.90	5.81	1212.93	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:36:44	18.16	1.90	5.82	1227.34	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:36:53	18.16	1.90	5.83	1232.20	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:37:03	18.16	1.90	5.80	1223.67	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:37:13	18.17	1.90	5.80	1235.40	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:37:23	18.17	1.90	5.80	1222.19	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:37:33	18.16	1.90	5.78	1236.92	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:37:43	18.16	1.90	5.82	1207.52	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:37:53	18.16	1.90	5.84	1222.19	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:38:03	18.16	1.90	5.82	1241.95	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:38:13	18.17	1.89	5.82	1207.57	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:38:23	18.17	1.89	5.82	1222.19	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:38:33	18.17	1.89	5.81	1232.04	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:38:44	18.17	1.89	5.82	1223.05	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:38:53	18.16	1.90	5.80	1232.42	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:39:03	18.16	1.90	5.82	1237.56	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:39:13	18.16	1.90	5.82	1208.16	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:39:23	18.16	1.90	5.81	1217.37	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:39:33	18.15	1.90	5.81	1202.64	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:39:43	18.16	1.90	5.79	1212.44	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:39:53	18.16	1.89	5.77	1227.07	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

Instrumental Reference Method On-Line Data  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 11:40:03	18.16	1.90	5.81	1226.98	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:40:14	18.16	1.90	5.83	1206.67	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:40:23	18.15	1.90	5.83	1201.12	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:40:33	18.15	1.90	5.84	1227.66	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:40:44	18.16	1.90	5.82	1229.28	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:40:53	18.16	1.89	5.78	1217.53	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:41:03	18.16	1.90	5.82	1213.67	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:41:13	18.15	1.90	5.81	1221.55	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:41:23	18.15	1.90	5.80	1218.90	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:41:33	18.15	1.90	5.80	1227.61	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:41:43	18.15	1.90	5.80	1226.63	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:41:53	18.15	1.90	5.80	1220.62	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
31-Jul-08 11:42:03	18.16	1.89	5.82	1211.06	#N/A	#N/A	#NA	#NA	RUN 1 IDLE	
<b>Average:</b>	<b>11:42:04</b>	<b>18.17</b>	<b>1.90</b>	<b>6.22</b>	<b>1,222.70</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 1 IDLE</b>
Maximum	11:42:04	18.18	1.92	6.85	1246.65	#N/A	#N/A	0.00	0.00	RUN 1 IDLE
Minimum	11:42:04	18.15	1.89	5.77	1199.98	#N/A	#N/A	0.00	0.00	RUN 1 IDLE
Std Dev	11:42:04	0.01	0.00	0.47	9.61	#N/A	#N/A	#DIV/0!	#DIV/0!	RUN 1 IDLE
31-Jul-08 11:44:04	0.11	0.06	1.07	903.66	#N/A	#N/A	#NA	#NA	Cal:898.6 CO	
31-Jul-08 11:44:14	0.11	0.06	0.88	899.57	#N/A	#N/A	#NA	#NA	Cal:898.6 CO	
31-Jul-08 11:44:24	0.10	0.06	0.88	898.19	#N/A	#N/A	#NA	#NA	Cal:898.6 CO	
31-Jul-08 11:44:34	0.10	0.06	0.88	893.26	#N/A	#N/A	#NA	#NA	Cal:898.6 CO	
<b>Average:</b>	<b>11:44:40</b>	<b>0.11</b>	<b>0.06</b>	<b>0.92</b>	<b>898.67</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:898.6 CO</b>
Gas Value:	11:44:40	0	0	0	898.6	0	0	#N/A	#N/A	898.6 CO
Diff%ofSpan	11:44:40	0.42%	0.24%	0.09%	0.00%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08 11:46:37	10.06	9.81	0.05	21.03	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 11:46:46	10.06	9.81	0.03	9.11	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 11:46:56	10.06	9.81	0.03	3.60	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 11:47:06	10.06	9.82	0.03	3.64	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 11:47:16	10.06	9.82	-0.02	3.64	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
<b>Average:</b>	<b>11:47:17</b>	<b>10.06</b>	<b>9.81</b>	<b>0.02</b>	<b>8.21</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:10.03/10.05 O2/CO2</b>
Gas Value:	11:47:17	10.03	10.05	0	0	0	0	#N/A	#N/A	10.03/10.05 O2/CO2
Diff%ofSpan	11:47:17	0.12%	-0.94%	0.00%	0.16%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08 11:48:59	0.09	0.09	90.09	4.13	#N/A	#N/A	#NA	#NA	Cal:91.02	
31-Jul-08 11:49:09	0.09	0.08	90.10	4.19	#N/A	#N/A	#NA	#NA	Cal:91.02	
31-Jul-08 11:49:19	0.09	0.08	90.10	3.74	#N/A	#N/A	#NA	#NA	Cal:91.02	
31-Jul-08 11:49:29	0.08	0.07	89.79	3.79	#N/A	#N/A	#NA	#NA	Cal:91.02	
31-Jul-08 11:49:39	0.08	0.07	90.09	3.60	#N/A	#N/A	#NA	#NA	Cal:91.02	
<b>Average:</b>	<b>11:49:46</b>	<b>0.09</b>	<b>0.08</b>	<b>90.03</b>	<b>3.89</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:91.02</b>
Gas Value:	11:49:46	0	0	91.02	0	0	0	#N/A	#N/A	91.02

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
Diff%ofSpan	11:49:46	0.35%	0.31%	-0.10%	0.08%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	12:00:44	0.08	0.06	0.85	98.43	#N/A	#N/A	#NA	#NA	Cal:89.97
31-Jul-08	12:00:54	0.08	0.06	0.87	101.44	#N/A	#N/A	#NA	#NA	Cal:89.97 CO
31-Jul-08	12:01:04	0.07	0.06	0.81	97.28	#N/A	#N/A	#NA	#NA	Cal:89.97 CO
31-Jul-08	12:01:14	0.08	0.05	0.04	97.23	#N/A	#N/A	#NA	#NA	Cal:89.97 CO
<b>Average:</b>	<b>12:01:18</b>	<b>0.08</b>	<b>0.06</b>	<b>0.64</b>	<b>98.60</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:89.97 CO</b>
Gas Value:	12:01:18									
Diff%ofSpan	12:01:18	0.31%	0.22%	0.06%	1.97%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	12:05:10	16.50	3.21	92.13	101.77	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:05:20	16.50	3.21	92.14	101.76	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:05:30	16.50	3.21	92.14	101.81	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:05:40	16.50	3.22	92.35	102.21	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:05:50	16.50	3.22	93.10	102.31	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:06:00	16.50	3.22	93.12	102.40	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:06:10	16.50	3.22	93.73	102.01	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:06:24	16.50	3.21	92.58	101.76	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:06:30	16.52	3.21	92.16	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:06:40	16.51	3.21	92.64	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:06:50	16.51	3.21	92.14	101.66	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:07:00	16.52	3.21	92.13	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:07:10	16.51	3.21	92.13	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:07:20	16.52	3.20	91.40	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:07:30	16.52	3.21	91.71	101.81	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:07:40	16.51	3.21	92.54	106.20	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:07:50	16.50	3.21	93.12	102.26	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:08:00	16.50	3.22	93.11	101.81	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:08:10	16.51	3.21	93.12	102.16	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:08:20	16.52	3.20	92.74	102.31	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:08:30	16.53	3.20	92.15	102.35	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:08:40	16.53	3.20	92.14	101.91	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:08:50	16.52	3.20	92.71	106.10	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:09:00	16.52	3.21	93.13	106.54	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:09:11	16.52	3.21	93.12	106.60	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:09:20	16.52	3.21	93.12	101.77	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:09:30	16.52	3.20	92.62	101.52	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:09:40	16.52	3.21	93.13	101.32	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:09:50	16.52	3.21	93.11	101.57	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:10:00	16.52	3.21	93.11	101.66	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:10:10	16.52	3.21	92.84	101.81	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI
31-Jul-08	12:10:20	16.53	3.20	92.12	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 12:10:30	16.53	3.20	92.12	101.81	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:10:40	16.53	3.20	92.43	102.40	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:10:50	16.52	3.20	93.10	106.74	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:11:22	16.52	3.21	93.10	107.03	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:11:23	16.52	3.21	93.05	107.63	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:11:24	16.50	3.22	95.11	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:11:30	16.51	3.22	95.52	101.96	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:11:40	16.51	3.22	96.11	101.81	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:11:50	16.51	3.22	95.91	101.86	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:12:00	16.51	3.22	95.51	101.80	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:12:10	16.51	3.22	96.02	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:12:20	16.51	3.22	95.66	97.77	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:12:30	16.51	3.22	96.25	96.84	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:12:40	16.51	3.21	96.25	96.89	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:12:50	16.52	3.21	96.26	96.99	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:13:00	16.53	3.20	96.11	96.94	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:13:16	16.53	3.20	95.11	96.93	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:13:20	16.52	3.21	96.23	100.89	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:13:30	16.53	3.20	94.84	102.55	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:13:40	16.54	3.20	94.13	102.11	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:13:50	16.54	3.19	93.44	101.81	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:14:00	16.54	3.19	93.42	101.81	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:14:10	16.53	3.20	94.13	101.66	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:14:20	16.52	3.21	94.74	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:14:30	16.52	3.21	94.63	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:14:40	16.52	3.21	93.73	101.81	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:14:50	16.53	3.20	93.11	101.86	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:15:00	16.53	3.21	93.83	101.81	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:15:10	16.53	3.21	94.14	101.96	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:15:20	16.53	3.21	93.21	101.76	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:15:30	16.52	3.21	93.13	102.45	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:15:40	16.52	3.21	93.42	102.40	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:15:50	16.52	3.21	93.52	102.55	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:16:01	16.52	3.21	93.13	101.85	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:16:10	16.52	3.21	93.11	101.77	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:16:23	16.53	3.21	93.12	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:16:37	16.54	3.20	93.11	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:16:40	16.53	3.21	93.80	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:16:50	16.52	3.21	94.13	101.66	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:17:00	16.53	3.21	93.71	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 12:17:10	16.53	3.21	94.13	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:17:22	16.53	3.21	93.11	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:17:30	16.53	3.21	93.91	101.71	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:17:40	16.52	3.21	94.47	101.88	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:17:50	16.52	3.21	95.14	101.91	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:18:02	16.53	3.21	95.15	101.77	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:18:10	16.53	3.21	95.14	102.02	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:18:20	16.53	3.20	94.13	101.62	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:19:12	16.52	3.20	94.13	101.47	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:19:13	16.53	3.20	94.13	100.24	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:19:14	16.51	3.21	94.13	101.22	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:19:15	16.51	3.21	94.13	100.73	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:19:16	16.51	3.21	94.23	100.73	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:19:20	16.51	3.21	94.13	101.22	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:19:30	16.51	3.21	94.13	101.22	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:19:40	16.51	3.21	94.13	101.22	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:19:50	16.51	3.21	94.16	101.12	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:20:01	16.51	3.21	93.30	101.18	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:20:10	16.52	3.21	93.11	101.22	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:20:20	16.52	3.20	93.11	101.27	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:20:30	16.52	3.20	93.11	101.22	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:20:40	16.52	3.20	93.12	101.32	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:20:50	16.52	3.20	93.29	100.98	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:21:00	16.52	3.20	93.54	101.76	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:21:10	16.52	3.20	93.13	101.96	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:21:20	16.53	3.20	93.52	101.76	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:21:30	16.52	3.20	93.64	101.37	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:21:40	16.52	3.20	93.92	101.22	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:21:50	16.52	3.20	94.14	101.22	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:22:01	16.52	3.21	94.43	101.22	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:22:10	16.52	3.21	94.13	101.28	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:22:20	16.52	3.20	94.13	101.32	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:22:30	16.52	3.20	94.13	101.27	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:22:40	16.53	3.20	93.34	101.52	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:22:51	16.54	3.19	92.92	101.76	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:23:00	16.54	3.19	92.16	101.77	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:23:10	16.54	3.19	92.74	101.52	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:23:20	16.53	3.19	93.00	101.07	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:23:30	16.53	3.20	92.84	100.98	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:23:40	16.53	3.20	93.11	105.46	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 12:23:50	16.52	3.20	93.11	101.47	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:24:00	16.52	3.20	93.11	100.88	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:24:10	16.52	3.20	93.64	101.02	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:24:20	16.51	3.21	94.84	101.07	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:24:30	16.51	3.21	95.14	100.78	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:24:40	16.51	3.21	95.12	100.83	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:24:51	16.52	3.21	95.11	100.73	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:25:00	16.51	3.22	96.23	101.06	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:25:10	16.51	3.21	95.38	101.32	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:25:20	16.51	3.21	95.15	97.28	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:25:30	16.51	3.21	95.16	96.79	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:25:40	16.51	3.21	95.13	96.30	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:25:50	16.51	3.21	94.35	96.00	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:26:00	16.52	3.21	94.13	100.53	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:26:10	16.51	3.21	94.95	101.12	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:26:20	16.51	3.21	95.14	101.22	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:26:30	16.51	3.21	95.14	101.22	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:26:40	16.51	3.21	95.14	101.17	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:26:51	16.51	3.21	95.15	101.18	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:27:00	16.51	3.21	95.16	101.11	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:27:10	16.51	3.21	95.12	101.12	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:27:20	16.51	3.21	95.12	101.02	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:27:30	16.51	3.21	94.92	101.27	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:27:40	16.51	3.21	94.15	101.62	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:27:50	16.51	3.21	94.13	101.86	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:28:00	16.51	3.21	94.14	101.81	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:28:10	16.51	3.21	94.13	101.27	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:28:20	16.51	3.21	93.63	101.17	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:28:30	16.52	3.21	93.10	101.12	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:28:40	16.51	3.21	93.53	101.02	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:28:51	16.51	3.21	93.31	101.09	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:29:00	16.51	3.21	93.68	101.11	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:29:10	16.51	3.21	94.14	101.17	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:29:20	16.52	3.20	93.53	101.07	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:29:30	16.53	3.20	93.31	100.83	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:29:40	16.52	3.21	94.13	100.83	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:29:50	16.52	3.21	94.92	100.73	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:30:00	16.52	3.20	94.53	100.93	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:30:10	16.53	3.20	94.14	101.47	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:30:20	16.54	3.20	94.14	101.52	#NA	#NA	#NA	#NA	RUN 2 - 16 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 12:30:30	16.53	3.20	94.62	101.47	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:30:40	16.52	3.20	95.13	100.93	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:30:50	16.52	3.20	95.13	100.73	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:31:00	16.53	3.20	94.54	100.78	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:31:10	16.53	3.20	94.14	100.73	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:31:20	16.53	3.20	94.13	100.78	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:31:30	16.52	3.21	94.44	100.78	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:31:41	16.51	3.21	95.13	100.77	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:31:50	16.51	3.22	96.11	100.73	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:32:00	16.51	3.21	95.47	100.88	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:32:10	16.52	3.21	94.95	100.88	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:32:20	16.52	3.20	94.14	101.07	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:32:30	16.53	3.20	94.15	100.88	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:32:40	16.54	3.19	93.11	101.57	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:32:50	16.53	3.19	93.31	101.37	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:33:00	16.53	3.20	94.13	101.02	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:33:10	16.53	3.20	94.14	100.73	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:33:20	16.52	3.20	94.14	100.83	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:33:30	16.53	3.20	94.15	100.83	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:33:41	16.53	3.20	94.14	100.86	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:33:50	16.53	3.20	94.14	100.78	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:34:00	16.52	3.20	94.13	100.88	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:34:10	16.52	3.20	94.15	100.78	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:34:20	16.52	3.20	94.84	101.02	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:34:30	16.52	3.20	94.24	100.93	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:34:40	16.52	3.20	94.14	100.88	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:34:50	16.51	3.20	94.13	100.98	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
31-Jul-08 12:35:00	16.53	3.20	93.71	101.52	#N/A	#N/A	#NA	#NA	RUN 2 - 16 PSI	
<b>Average:</b>	<b>12:35:01</b>	<b>16.52</b>	<b>3.21</b>	<b>93.92</b>	<b>101.40</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 2 - 16 PSI</b>
Maximum	12:35:01	16.54	3.22	96.26	107.63	#N/A	#N/A	0.00	0.00	RUN 2 - 16 PSI
Minimum	12:35:01	16.50	3.19	91.40	96.00	#N/A	#N/A	0.00	0.00	RUN 2 - 16 PSI
Std Dev	12:35:01	0.01	0.01	1.06	1.60	#N/A	#N/A	#DIV/0!	#DIV/0!	RUN 2 - 16 PSI
31-Jul-08 12:38:34	0.08	0.04	0.88	96.13	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08 12:38:44	0.08	0.04	0.91	96.05	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08 12:38:54	0.08	0.04	0.88	96.20	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
<b>Average:</b>	<b>12:38:55</b>	<b>0.08</b>	<b>0.04</b>	<b>0.89</b>	<b>96.13</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:89.97 CO</b>
Gas Value:	12:38:55	0	0	0	89.97	0	0	#N/A	#N/A	89.97 CO
Diff%ofSpan	12:38:55	0.33%	0.17%	0.09%	0.12%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08 12:40:59	0.07	0.04	89.13	3.15	#N/A	#N/A	#NA	#NA	Cal:91.02	
31-Jul-08 12:41:09	0.07	0.04	89.12	3.15	#N/A	#N/A	#NA	#NA	Cal:91.02	



AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 12:41:19	0.07	0.04	89.11	3.05	#N/A	#N/A	#NA	#NA	Cal:91.02	
<b>Average:</b>	<b>0.07</b>	<b>0.04</b>	<b>89.12</b>	<b>3.12</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:91.02</b>	
Gas Value:	0	0	91.02	0	0	0	#N/A	#N/A		91.02
Diff%ofSpan	0.29%	0.15%	-0.19%	0.06%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 12:43:02	10.03	9.78	0.00	1.97	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 12:43:12	10.03	9.79	-0.04	1.87	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
31-Jul-08 12:43:22	10.03	9.79	-0.01	1.23	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2	
<b>Average:</b>	<b>10.03</b>	<b>9.79</b>	<b>-0.02</b>	<b>1.69</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:10.03/10.05 O2/CO2</b>	
Gas Value:	10.03	10.05	0	0	0	0	#N/A	#N/A	10.03/10.05 O2/CO2	
Diff%ofSpan	0.00%	-1.05%	0.00%	0.03%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 12:48:11	16.46	3.25	101.11	84.34	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:48:21	16.45	3.25	101.10	84.23	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:48:31	16.46	3.25	101.09	84.33	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:48:41	16.45	3.25	101.97	84.23	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:48:51	16.45	3.25	102.09	84.23	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:49:02	16.45	3.25	102.45	84.23	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:49:24	16.45	3.25	102.85	84.35	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:49:25	16.45	3.25	103.04	84.23	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:49:34	16.46	3.25	103.14	84.23	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:49:41	16.46	3.25	103.11	84.79	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:49:51	16.46	3.25	103.06	85.03	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:50:01	16.46	3.25	103.10	84.93	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:50:11	16.46	3.25	103.08	84.47	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:50:21	16.45	3.26	103.64	84.35	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:50:31	16.45	3.25	103.93	84.23	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:50:42	16.45	3.26	103.98	84.31	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:50:53	16.44	3.26	104.52	84.39	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:51:02	16.45	3.25	104.16	79.30	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:51:11	16.45	3.25	103.96	80.18	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:51:21	16.46	3.25	103.08	84.13	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:51:31	16.45	3.26	103.10	79.72	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:51:41	16.45	3.26	103.40	84.58	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:51:51	16.45	3.26	104.20	84.72	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:52:01	16.45	3.26	103.14	84.51	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:52:11	16.45	3.26	103.08	84.88	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:52:21	16.45	3.26	103.10	85.11	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:52:34	16.45	3.26	103.36	84.83	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:52:41	16.45	3.26	104.16	79.65	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:52:51	16.45	3.26	103.98	79.50	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:53:02	16.45	3.25	103.10	79.57	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 12:53:11	16.45	3.26	103.84	80.23	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:53:21	16.45	3.26	103.76	83.93	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:53:31	16.45	3.26	104.20	79.50	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:53:41	16.45	3.26	104.18	80.04	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:53:52	16.45	3.26	104.19	83.69	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:54:01	16.46	3.25	103.44	79.69	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:54:11	16.45	3.25	103.08	79.65	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:54:21	16.45	3.26	103.45	80.09	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:54:31	16.45	3.26	103.08	84.28	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:54:41	16.45	3.26	103.10	81.17	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:54:54	16.45	3.26	103.07	84.72	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:55:01	16.45	3.25	103.10	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:55:11	16.46	3.25	103.07	79.70	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:55:21	16.46	3.25	103.08	79.60	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:55:31	16.46	3.25	103.09	79.70	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:55:41	16.46	3.25	103.07	80.78	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:55:58	16.46	3.25	103.08	83.19	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:56:01	16.45	3.26	103.11	79.47	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:56:11	16.45	3.26	104.19	79.60	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:56:21	16.45	3.26	103.76	79.65	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:56:31	16.45	3.26	104.10	79.55	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:56:41	16.45	3.26	103.11	79.60	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:56:51	16.46	3.25	103.11	79.80	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:57:01	16.46	3.25	103.09	80.36	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:57:11	16.46	3.25	103.12	82.75	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:57:21	16.46	3.25	103.09	85.31	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:57:31	16.45	3.26	103.97	84.87	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:57:41	16.45	3.26	104.21	84.62	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:57:52	16.45	3.26	103.81	84.63	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:58:01	16.45	3.26	103.55	83.46	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:58:11	16.45	3.26	103.11	79.70	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:58:21	16.45	3.26	103.10	79.75	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:58:31	16.45	3.26	103.64	79.75	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:58:41	16.45	3.26	104.19	79.60	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:58:51	16.45	3.26	103.07	79.70	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:59:01	16.45	3.26	103.10	79.70	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:59:11	16.45	3.25	103.09	79.70	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:59:21	16.45	3.25	102.40	80.73	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:59:32	16.46	3.25	102.06	85.05	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 12:59:41	16.45	3.25	103.46	81.98	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**

RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 12:59:51	16.45	3.26	104.18	83.98	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:00:01	16.45	3.26	104.19	80.63	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:00:11	16.44	3.26	104.20	83.64	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:00:21	16.45	3.26	103.54	79.70	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:00:31	16.45	3.26	103.97	79.65	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:00:41	16.45	3.26	104.20	79.75	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:00:51	16.45	3.26	104.16	79.65	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:01:01	16.45	3.25	104.18	79.70	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:01:11	16.45	3.25	104.76	79.70	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:01:21	16.45	3.26	104.95	79.60	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:01:31	16.45	3.26	105.15	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:01:41	16.45	3.26	105.18	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:01:51	16.45	3.26	104.42	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:02:01	16.45	3.26	104.22	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:02:11	16.45	3.26	103.67	80.48	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:02:21	16.44	3.26	103.37	80.63	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:02:31	16.44	3.26	104.23	80.38	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:02:42	16.44	3.27	105.00	80.08	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:02:51	16.42	3.27	105.63	79.98	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:03:01	16.42	3.27	106.58	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:03:11	16.42	3.27	106.27	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:03:21	16.43	3.27	106.18	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:03:31	16.43	3.27	106.18	80.04	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:03:41	16.44	3.27	105.78	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:03:51	16.45	3.26	104.34	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:04:01	16.45	3.26	103.77	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:04:11	16.44	3.26	103.12	79.84	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:04:21	16.44	3.26	103.91	80.38	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:04:31	16.43	3.27	104.91	80.83	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:04:42	16.44	3.26	104.66	80.49	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:04:51	16.44	3.26	104.23	80.26	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:05:01	16.44	3.26	103.78	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:05:11	16.44	3.26	103.15	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:05:21	16.44	3.26	102.28	80.04	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:05:31	16.43	3.27	102.96	80.04	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:05:41	16.43	3.27	103.79	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:05:51	16.43	3.27	104.24	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:06:01	16.44	3.26	104.24	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:06:11	16.44	3.27	104.54	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:06:21	16.43	3.27	105.21	79.84	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**

RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 13:06:31	16.43	3.27	105.18	79.79	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:06:42	16.43	3.27	105.66	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:06:51	16.43	3.27	105.17	79.93	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:07:01	16.43	3.27	104.54	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:07:11	16.43	3.27	104.26	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:07:21	16.43	3.27	104.23	80.33	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:07:31	16.43	3.27	104.22	80.63	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:07:41	16.43	3.27	104.70	80.48	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:07:51	16.43	3.27	105.18	80.04	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:08:01	16.44	3.27	105.36	79.79	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:08:11	16.44	3.27	106.17	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:08:21	16.43	3.27	106.20	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:08:31	16.43	3.27	106.21	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:08:41	16.44	3.27	106.20	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:08:51	16.44	3.26	106.18	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:09:01	16.44	3.26	106.17	80.04	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:09:11	16.44	3.26	106.19	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:09:21	16.43	3.27	106.18	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:09:32	16.43	3.27	106.36	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:09:41	16.43	3.27	106.83	79.98	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:09:51	16.44	3.26	105.29	80.43	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:10:01	16.48	3.23	100.85	80.68	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	AVERAGE RUN
31-Jul-08 13:10:11	16.50	3.21	97.70	81.71	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	RAM DROPE II
31-Jul-08 13:10:21	16.51	3.21	97.19	85.11	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:10:31	16.51	3.21	97.19	85.75	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:10:41	16.51	3.20	97.18	89.69	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:10:51	16.51	3.20	97.20	90.68	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:11:07	16.50	3.21	97.18	94.73	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:11:11	16.50	3.21	97.47	94.69	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:11:21	16.50	3.21	97.79	94.67	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:11:32	16.50	3.21	97.56	94.95	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:11:41	16.50	3.21	96.33	95.25	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:11:51	16.51	3.21	96.23	95.36	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:12:01	16.51	3.20	94.94	95.06	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:12:11	16.51	3.20	94.23	94.67	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:12:21	16.51	3.20	95.12	94.76	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:12:31	16.51	3.20	95.12	94.62	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:12:41	16.52	3.20	94.54	94.57	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:12:51	16.53	3.19	94.12	95.50	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	
31-Jul-08 13:13:01	16.52	3.20	94.72	99.59	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08	13:13:11	16.51	3.21	96.24	99.59	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:13:21	16.50	3.21	96.22	98.56	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:13:32	16.50	3.21	96.24	94.54	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:13:41	16.50	3.21	96.98	94.76	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:13:51	16.50	3.21	96.21	94.67	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:14:01	16.50	3.22	96.80	94.91	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:14:11	16.46	3.25	100.34	95.36	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:14:21	16.44	3.26	102.91	94.42	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:14:31	16.43	3.27	103.58	90.13	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:14:41	16.43	3.27	104.25	88.85	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:14:51	16.43	3.27	104.23	84.03	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:15:01	16.43	3.27	104.99	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:15:11	16.43	3.27	105.21	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:15:21	16.44	3.27	104.40	79.94	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:15:32	16.44	3.26	104.57	79.95	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:15:41	16.43	3.27	105.70	79.87	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:15:51	16.43	3.27	105.88	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:16:01	16.42	3.27	106.16	79.84	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:16:11	16.43	3.27	106.19	79.89	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:16:22	16.44	3.26	105.91	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:16:31	16.44	3.26	105.19	80.31	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:16:41	16.44	3.26	105.19	80.58	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:16:51	16.43	3.27	105.21	80.48	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:17:01	16.43	3.27	105.17	80.48	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:17:11	16.44	3.27	104.78	80.04	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:17:21	16.44	3.26	103.34	80.09	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:17:31	16.47	3.24	99.77	79.99	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:17:41	16.50	3.21	96.21	80.92	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:17:51	16.50	3.21	95.46	84.86	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:18:01	16.37	3.29	95.07	85.85	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
31-Jul-08	13:18:11	12.92	6.93	43.00	88.76	#N/A	#N/A	#NA	#NA	RUN 3 - 23 PSI
<b>Average:</b>	<b>13:18:22</b>	<b>16.45</b>	<b>3.26</b>	<b>103.96</b>	<b>81.25</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 3 - 23 PSI</b>
Maximum	13:18:22	16.48	3.27	106.83	85.31	#N/A	#N/A	0.00	0.00	RUN 3 - 23 PSI
Minimum	13:18:22	16.42	3.23	100.85	79.30	#N/A	#N/A	0.00	0.00	RUN 3 - 23 PSI
Std Dev	13:18:22	0.01	0.01	1.20	2.04	#N/A	#N/A	#DIV/0!	#DIV/0!	RUN 3 - 23 PSI
31-Jul-08	13:20:03	10.05	9.81	1.31	1.40	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2
31-Jul-08	13:20:13	10.05	9.81	0.88	1.48	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2
31-Jul-08	13:20:23	10.05	9.81	0.88	1.50	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2
31-Jul-08	13:20:33	10.05	9.81	0.88	1.53	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2
<b>Average:</b>	<b>13:20:35</b>	<b>10.05</b>	<b>9.81</b>	<b>0.99</b>	<b>1.48</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:10.03/10.05 O2/CO2</b>

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

	Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
	Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
<b>Gas Value:</b>	13:20:35	10.03	10.05	0	0	0	0	#N/A	#N/A	10.03/10.05 O2/CO2	
<b>Diff%ofSpan</b>	13:20:35	0.09%	-0.96%	0.10%	0.03%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08	13:22:47	0.09	0.07	0.05	94.65	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08	13:22:56	0.09	0.07	0.04	94.65	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08	13:23:10	0.09	0.07	0.02	94.65	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08	13:23:16	0.08	0.07	0.03	94.65	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08	13:23:26	0.08	0.07	0.02	94.62	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08	13:23:36	0.08	0.06	0.04	94.67	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
<b>Average:</b>	<b>13:23:41</b>	<b>0.08</b>	<b>0.07</b>	<b>0.03</b>	<b>94.65</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:89.97 CO</b>	
<b>Gas Value:</b>	13:23:41	0	0	0	89.97	0	0	#N/A	#N/A	89.97 CO	
<b>Diff%ofSpan</b>	13:23:41	0.34%	0.27%	0.00%	0.09%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08	13:25:41	0.08	0.05	89.12	1.45	#N/A	#N/A	#NA	#NA	Cal:91.02	
31-Jul-08	13:25:51	0.07	0.05	89.11	1.40	#N/A	#N/A	#NA	#NA	Cal:91.02	
31-Jul-08	13:26:01	0.07	0.05	89.12	1.48	#N/A	#N/A	#NA	#NA	Cal:91.02	
<b>Average:</b>	<b>13:26:07</b>	<b>0.07</b>	<b>0.05</b>	<b>89.12</b>	<b>1.44</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:91.02</b>	
<b>Gas Value:</b>	13:26:07	0	0	91.02	0	0	0	#N/A	#N/A	91.02	
<b>Diff%ofSpan</b>	13:26:07	0.29%	0.21%	-0.19%	0.03%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08	13:35:10	16.36	3.32	115.62	60.23	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:35:20	16.36	3.32	116.29	60.29	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:35:30	16.36	3.31	116.29	60.29	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:35:40	16.36	3.31	116.97	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:35:50	16.37	3.31	117.25	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:36:00	16.37	3.31	116.78	60.63	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:36:10	16.37	3.31	116.29	61.07	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:36:21	16.37	3.31	116.46	61.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:36:30	16.36	3.31	117.26	60.66	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:36:40	16.36	3.32	116.69	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:36:50	16.36	3.32	116.29	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:37:00	16.36	3.32	116.29	60.40	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:37:10	16.36	3.32	117.24	60.39	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:37:37	16.35	3.32	117.25	60.27	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:37:39	16.36	3.32	117.27	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:37:40	16.37	3.31	115.21	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:37:50	16.37	3.31	115.25	60.39	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:38:00	16.36	3.32	116.57	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:38:10	16.35	3.33	117.27	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:38:20	16.35	3.32	117.46	60.43	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:38:30	16.36	3.32	116.87	60.58	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:38:40	16.36	3.32	116.88	60.93	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08	13:38:50	16.36	3.32	117.25	61.07	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 13:39:00	16.35	3.32	117.26	60.61	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:39:11	16.36	3.32	117.26	60.38	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:39:20	16.36	3.32	117.27	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:39:30	16.35	3.33	117.26	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:39:40	16.35	3.33	117.26	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:39:54	16.36	3.32	117.27	60.40	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:40:00	16.36	3.32	116.62	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:40:10	16.36	3.32	116.30	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:40:20	16.36	3.32	116.28	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:40:30	16.36	3.32	116.00	60.29	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:40:40	16.36	3.32	115.26	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:40:50	16.36	3.32	115.25	60.29	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:41:00	16.36	3.32	115.48	60.68	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:41:22	16.36	3.32	116.31	61.05	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:41:23	16.35	3.33	116.19	60.83	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:41:30	16.37	3.32	115.23	60.38	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:41:46	16.36	3.32	115.50	60.17	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:41:50	16.35	3.32	116.25	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:42:00	16.35	3.33	116.44	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:42:10	16.35	3.32	116.25	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:42:20	16.35	3.33	116.25	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:42:39	16.35	3.33	116.23	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:42:40	16.34	3.33	116.25	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:42:50	16.36	3.32	116.23	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:43:00	16.36	3.32	116.25	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:43:11	16.36	3.32	116.15	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:43:20	16.36	3.32	115.78	60.26	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:43:30	16.36	3.32	115.22	60.88	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:43:40	16.36	3.32	115.25	60.83	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:43:50	16.34	3.33	115.24	60.48	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:44:00	16.34	3.33	116.05	60.19	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:44:10	16.35	3.33	116.25	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:44:20	16.35	3.33	116.26	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:44:30	16.35	3.33	115.75	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:44:40	16.36	3.32	114.72	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:44:50	16.36	3.32	114.23	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:45:00	16.35	3.33	114.22	60.00	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:45:17	16.35	3.32	114.96	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:45:20	16.36	3.32	115.27	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:45:30	16.35	3.33	115.21	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 13:45:40	16.35	3.33	116.25	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:45:50	16.36	3.32	116.25	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:46:01	16.36	3.31	115.33	60.68	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:46:10	16.37	3.31	115.09	60.83	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:46:20	16.36	3.32	115.23	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:46:40	16.34	3.33	115.22	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:46:42	16.33	3.33	115.17	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:46:50	16.35	3.32	115.19	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:47:03	16.36	3.32	115.27	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:47:10	16.36	3.32	114.89	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:47:20	16.36	3.32	114.24	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:47:30	16.35	3.32	113.47	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:47:40	16.36	3.32	112.83	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:47:50	16.36	3.32	112.04	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:48:00	16.36	3.31	111.15	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:48:10	16.36	3.31	111.74	60.19	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:48:20	16.36	3.31	112.29	60.74	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:48:30	16.36	3.32	112.31	60.79	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:48:40	16.36	3.32	112.27	60.64	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:48:50	16.37	3.31	112.31	60.26	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:49:00	16.37	3.31	112.29	60.05	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:49:10	16.37	3.31	112.29	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:49:24	16.38	3.30	112.28	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:49:30	16.38	3.31	112.31	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:49:40	16.38	3.31	112.31	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:50:29	16.38	3.31	112.31	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:50:31	16.37	3.30	112.31	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:50:36	16.38	3.31	112.31	65.02	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:50:37	16.37	3.31	112.31	65.02	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:50:38	16.35	3.32	112.31	65.02	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:50:40	16.36	3.32	112.31	64.78	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:51:05	16.35	3.32	113.27	65.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:51:06	16.35	3.32	113.30	65.02	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:51:11	16.35	3.32	112.31	61.08	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:51:32	16.36	3.32	112.31	60.45	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:51:33	16.36	3.32	112.31	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:51:40	16.36	3.32	112.58	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:51:50	16.36	3.31	113.25	60.28	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:52:01	16.37	3.31	113.56	60.17	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:52:10	16.37	3.31	113.92	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	



AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 13:52:21	16.38	3.30	113.20	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:52:30	16.40	3.29	112.53	60.16	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:52:40	16.39	3.29	112.30	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:52:51	16.37	3.31	113.16	61.93	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:53:00	16.37	3.31	113.25	65.02	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:53:10	16.37	3.30	112.58	63.84	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:53:20	16.38	3.30	112.30	62.26	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:53:30	16.38	3.31	113.25	63.64	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:53:40	16.36	3.32	114.25	60.64	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:53:50	16.36	3.31	114.24	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:54:00	16.36	3.31	114.23	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:54:10	16.36	3.32	114.75	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:54:20	16.36	3.32	115.22	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:54:30	16.36	3.32	115.21	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:54:40	16.36	3.32	115.23	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:54:51	16.36	3.32	115.23	60.19	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:55:00	16.37	3.31	115.20	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:55:10	16.38	3.31	115.24	60.19	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:55:20	16.37	3.31	115.19	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:55:30	16.37	3.31	115.75	60.19	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:55:40	16.37	3.31	115.28	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:55:50	16.36	3.32	115.24	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:56:00	16.37	3.31	115.33	60.24	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:56:10	16.38	3.31	116.06	60.69	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:56:20	16.37	3.31	116.28	60.83	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:56:30	16.37	3.31	116.15	60.79	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:56:40	16.37	3.31	114.93	60.39	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:56:51	16.38	3.30	114.28	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:57:00	16.37	3.31	115.13	60.15	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:57:10	16.38	3.30	115.55	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:57:20	16.37	3.31	115.97	60.24	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:57:30	16.38	3.30	115.24	60.19	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:57:40	16.38	3.30	115.23	60.19	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:57:50	16.38	3.31	115.21	60.19	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:58:00	16.37	3.31	115.23	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:58:10	16.38	3.31	114.85	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:58:20	16.37	3.31	114.22	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:58:30	16.36	3.32	114.34	60.15	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:58:40	16.36	3.31	114.43	60.49	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:58:51	16.37	3.31	114.87	60.95	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 13:59:01	16.37	3.31	114.25	60.83	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:59:10	16.36	3.31	115.01	60.31	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:59:20	16.36	3.32	114.85	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:59:30	16.37	3.31	114.26	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:59:40	16.37	3.31	114.26	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 13:59:50	16.36	3.32	113.53	60.19	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:00:00	16.37	3.31	113.68	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:00:10	16.36	3.32	114.96	60.29	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:00:20	16.36	3.32	115.25	60.10	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:00:30	16.37	3.31	115.21	60.70	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:00:40	16.37	3.31	114.55	60.74	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:00:50	16.37	3.31	114.26	60.59	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:01:00	16.38	3.30	113.95	60.29	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:01:10	16.38	3.30	114.05	60.19	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:01:20	16.38	3.30	113.66	60.14	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:01:30	16.37	3.31	114.26	60.22	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:01:41	16.36	3.32	115.14	60.44	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:01:50	16.36	3.31	115.25	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:02:00	16.36	3.31	115.15	60.44	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:02:10	16.36	3.32	114.26	60.44	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:02:20	16.35	3.32	114.65	60.39	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:02:30	16.36	3.31	114.98	60.39	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:02:40	16.37	3.31	114.30	60.39	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:02:50	16.36	3.32	114.28	60.54	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:03:00	16.35	3.32	114.49	60.93	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:03:10	16.35	3.32	115.26	61.08	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:03:20	16.36	3.32	115.31	60.93	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:03:30	16.36	3.32	114.82	60.54	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:03:41	16.36	3.32	114.32	60.38	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:03:50	16.36	3.32	113.28	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:04:00	16.37	3.30	113.30	60.40	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:04:10	16.38	3.30	113.30	60.45	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:04:20	16.37	3.31	113.28	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:04:30	16.37	3.31	113.31	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:04:40	16.37	3.31	114.19	60.34	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:04:50	16.38	3.31	114.32	60.44	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
31-Jul-08 14:05:00	16.37	3.31	114.74	60.44	#N/A	#N/A	#NA	#NA	RUN 4 - 31 PSI	
<b>Average:</b>	<b>14:05:02</b>	<b>16.36</b>	<b>3.32</b>	<b>114.84</b>	<b>60.57</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 4 - 31 PSI</b>
Maximum	14:05:02	16.40	3.33	117.46	65.14	#N/A	#N/A	0.00	0.00	RUN 4 - 31 PSI
Minimum	14:05:02	16.33	3.29	111.15	60.00	#N/A	#N/A	0.00	0.00	RUN 4 - 31 PSI

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

Instrumental Reference Method On-Line Data  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
Std Dev	14:05:02	0.01	0.01	1.50	1.01	#N/A	#N/A	#DIV/0!	#DIV/0!	RUN 4 - 31 PSI
31-Jul-08	14:06:55	10.05	9.79	1.86	1.51	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2
31-Jul-08	14:07:05	10.05	9.79	1.84	1.58	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2
31-Jul-08	14:07:15	10.05	9.79	1.85	1.67	#N/A	#N/A	#NA	#NA	Cal:10.03/10.05 O2/CO2
<b>Average:</b>	<b>14:07:18</b>	<b>10.05</b>	<b>9.79</b>	<b>1.85</b>	<b>1.59</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:10.03/10.05 O2/CO2</b>
Gas Value:	14:07:18	10.03	10.05	0	0	0	0	#N/A	#N/A	10.03/10.05 O2/CO2
Diff%ofSpan	14:07:18	0.09%	-1.04%	0.18%	0.03%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	14:10:21	0.08	0.06	0.04	95.31	#N/A	#N/A	#NA	#NA	Cal:89.97 CO
31-Jul-08	14:10:31	0.08	0.06	0.03	95.41	#N/A	#N/A	#NA	#NA	Cal:89.97 CO
31-Jul-08	14:10:41	0.08	0.06	0.02	95.02	#N/A	#N/A	#NA	#NA	Cal:89.97 CO
<b>Average:</b>	<b>14:10:44</b>	<b>0.08</b>	<b>0.06</b>	<b>0.03</b>	<b>95.25</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:89.97 CO</b>
Gas Value:	14:10:44	0	0	0	89.97	0	0	#N/A	#N/A	89.97 CO
Diff%ofSpan	14:10:44	0.32%	0.24%	0.00%	0.11%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	14:12:44	0.07	0.05	88.16	2.16	#N/A	#N/A	#NA	#NA	Cal:91.02 NOX
31-Jul-08	14:12:54	0.08	0.05	88.16	2.27	#N/A	#N/A	#NA	#NA	Cal:91.02 NOX
31-Jul-08	14:13:04	0.07	0.05	88.14	2.07	#N/A	#N/A	#NA	#NA	Cal:91.02 NOX
<b>Average:</b>	<b>14:13:07</b>	<b>0.07</b>	<b>0.05</b>	<b>88.15</b>	<b>2.17</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:91.02 NOX</b>
Gas Value:	14:13:07	0	0	91.02	0	0	0	#N/A	#N/A	91.02 NOX
Diff%ofSpan	14:13:07	0.30%	0.20%	-0.29%	0.04%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	14:15:50	14.34	6.38	0.05	1.78	#N/A	#N/A	#NA	#NA	Cal:14.60/6.516
31-Jul-08	14:16:00	14.34	6.38	0.04	1.56	#N/A	#N/A	#NA	#NA	Cal:14.60/6.516
31-Jul-08	14:16:10	14.34	6.38	0.05	1.43	#N/A	#N/A	#NA	#NA	Cal:14.60/6.516
<b>Average:</b>	<b>14:16:14</b>	<b>14.34</b>	<b>6.38</b>	<b>0.05</b>	<b>1.59</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:14.60/6.516</b>
Gas Value:	14:16:14	14.6	6.516	0	0	0	0	#N/A	#N/A	14.60/6.516
Diff%ofSpan	14:16:14	-1.05%	-0.56%	0.00%	0.03%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08	14:44:10	16.47	3.22	100.65	84.72	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:44:20	16.47	3.21	100.16	84.47	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:44:30	16.48	3.21	100.14	84.62	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:44:40	16.48	3.21	99.42	84.52	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:44:50	16.48	3.21	99.10	87.33	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:45:00	16.48	3.20	99.10	90.04	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:45:10	16.48	3.21	99.11	90.24	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:45:20	16.48	3.21	99.10	89.99	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:45:30	16.48	3.21	99.10	89.55	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:45:40	16.48	3.21	98.44	89.35	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:45:50	16.49	3.20	98.13	89.50	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:46:00	16.50	3.20	98.33	89.40	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:46:10	16.49	3.20	99.10	89.65	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI
31-Jul-08	14:46:20	16.49	3.20	98.12	89.30	#N/A	#N/A	#NA	#NA	RUN 5 - 20 PSI

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 14:46:30	16.48	3.20	98.14	89.40	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:46:41	16.48	3.21	98.13	89.42	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:46:50	16.48	3.21	98.13	89.59	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:47:00	16.48	3.21	99.10	89.45	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:47:10	16.48	3.21	98.81	89.45	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:47:20	16.48	3.21	98.14	89.40	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:47:30	16.48	3.21	98.14	89.70	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:47:40	16.48	3.21	98.12	90.19	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:47:50	16.47	3.21	98.12	90.09	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:48:00	16.48	3.21	98.51	89.84	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:48:10	16.48	3.21	99.11	89.89	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:48:20	16.49	3.21	99.09	89.40	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:48:30	16.48	3.21	99.64	89.50	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:48:41	16.47	3.22	100.40	89.47	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:48:50	16.46	3.22	100.56	86.42	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
31-Jul-08 14:49:00	16.47	3.22	100.15	84.23	#N/A	#N/A	#N/A	#N/A	RUN 5 - 20 PSI	
<b>Average:</b> 14:49:01	<b>16.48</b>	<b>3.21</b>	<b>99.01</b>	<b>88.60</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 5 - 20 PSI</b>	
Maximum 14:49:01	16.50	3.22	100.65	90.24	#N/A	#N/A	0.00	0.00	RUN 5 - 20 PSI	
Minimum 14:49:01	16.46	3.20	98.12	84.23	#N/A	#N/A	0.00	0.00	RUN 5 - 20 PSI	
Std Dev 14:49:01	0.01	0.01	0.82	2.01	#N/A	#N/A	#DIV/0!	#DIV/0!	RUN 5 - 20 PSI	
31-Jul-08 14:51:06	10.04	9.78	1.82	0.60	#N/A	#N/A	#NA	#NA	Cal:10.3/10.05 O2/CO2	
31-Jul-08 14:51:16	10.02	9.74	1.81	0.30	#N/A	#N/A	#NA	#NA	Cal:10.3/10.05 O2/CO2	
31-Jul-08 14:51:26	10.02	9.71	0.76	0.30	#N/A	#N/A	#NA	#NA	Cal:10.3/10.05 O2/CO2	
<b>Average:</b> 14:51:28	<b>10.03</b>	<b>9.74</b>	<b>1.46</b>	<b>0.40</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:10.3/10.05 O2/CO2</b>	
Gas Value: 14:51:28	10.3	10.05	0	0	0	0	#N/A	#N/A	10.3/10.05 O2/CO2	
Diff%ofSpan 14:51:28	-1.09%	-1.22%	0.15%	0.01%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 14:56:20	0.08	0.07	0.01	93.53	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08 14:56:30	0.08	0.07	-0.02	93.83	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08 14:56:40	0.08	0.06	-0.01	94.18	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
<b>Average:</b> 14:56:41	<b>0.08</b>	<b>0.07</b>	<b>-0.01</b>	<b>93.85</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:89.97 CO</b>	
Gas Value: 14:56:41	0	0	0	89.97	0	0	#N/A	#N/A	89.97 CO	
Diff%ofSpan 14:56:41	0.33%	0.27%	0.00%	0.08%	#N/A	#N/A	#DIV/0!	#DIV/0!		
31-Jul-08 14:58:13	0.07	0.05	88.08	0.38	#N/A	#N/A	#NA	#NA	Cal:91.02 NOX	
31-Jul-08 14:58:23	0.08	0.05	88.41	0.33	#N/A	#N/A	#NA	#NA	Cal:91.02 NOX	
31-Jul-08 14:58:34	0.07	0.05	88.18	0.34	#N/A	#N/A	#NA	#NA	Cal:91.02 NOX	
31-Jul-08 14:58:44	0.07	0.05	88.07	0.49	#N/A	#N/A	#NA	#NA	Cal:91.02 NOX	
<b>Average:</b> 14:58:45	<b>0.07</b>	<b>0.05</b>	<b>88.18</b>	<b>0.39</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:91.02 NOX</b>	
Gas Value: 14:58:45	0	0	91.02	0	0	0	#N/A	#N/A	91.02 NOX	
Diff%ofSpan 14:58:45	0.30%	0.20%	-0.28%	0.01%	#N/A	#N/A	#DIV/0!	#DIV/0!		

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**  
**RAM FACILITY GG4-9A**

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 15:05:10	16.34	3.31	111.19	66.03	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:05:20	16.35	3.31	111.65	64.33	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:05:30	16.35	3.31	111.77	64.18	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:05:40	16.35	3.30	110.91	64.33	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:05:50	16.35	3.31	109.38	64.23	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:06:00	16.35	3.30	108.20	64.28	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:06:10	16.35	3.30	108.90	67.23	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:06:21	16.36	3.29	108.74	69.47	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:06:30	16.37	3.29	108.97	70.03	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:06:40	16.36	3.29	109.18	69.99	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:06:50	16.36	3.29	109.20	69.35	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:07:00	16.36	3.30	109.18	69.25	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:07:10	16.36	3.30	109.18	69.30	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:07:20	16.36	3.30	109.17	69.25	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:07:30	16.36	3.30	109.19	69.21	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:07:40	16.35	3.30	110.00	69.21	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:07:50	16.36	3.30	109.80	69.21	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:08:00	16.37	3.29	109.18	69.15	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:08:10	16.37	3.29	109.85	69.15	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:08:20	16.36	3.30	110.19	69.21	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:08:30	16.35	3.31	110.19	69.21	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:08:40	16.35	3.31	110.29	66.20	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:08:50	16.34	3.31	111.18	64.28	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:09:00	16.35	3.31	111.22	64.28	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:09:11	16.35	3.31	111.20	64.38	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:09:20	16.35	3.31	111.21	65.08	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:09:30	16.34	3.31	111.08	64.99	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:09:40	16.35	3.31	109.98	64.94	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:09:50	16.35	3.31	109.17	64.38	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
31-Jul-08 15:10:00	16.35	3.31	109.19	64.38	#N/A	#N/A	#NA	#NA	RUN 6 - 26 PSI	
<b>Average:</b> 15:10:01	<b>16.35</b>	<b>3.30</b>	<b>109.95</b>	<b>66.95</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 6 - 26 PSI</b>	
Maximum 15:10:01	16.37	3.31	111.77	70.03	#N/A	#N/A	0.00	0.00	RUN 6 - 26 PSI	
Minimum 15:10:01	16.34	3.29	108.20	64.18	#N/A	#N/A	0.00	0.00	RUN 6 - 26 PSI	
Std Dev 15:10:01	0.01	0.01	1.00	2.39	#N/A	#N/A	#DIV/0!	#DIV/0!	RUN 6 - 26 PSI	
31-Jul-08 15:16:30	10.04	9.80	0.87	0.52	#N/A	#N/A	#NA	#NA	Cal:10.3/10.05 O2/CO2	
31-Jul-08 15:16:40	10.04	9.80	0.87	0.08	#N/A	#N/A	#NA	#NA	Cal:10.3/10.05 O2/CO2	
31-Jul-08 15:16:50	10.04	9.80	0.05	0.10	#N/A	#N/A	#NA	#NA	Cal:10.3/10.05 O2/CO2	
<b>Average:</b> 15:16:53	<b>10.04</b>	<b>9.80</b>	<b>0.60</b>	<b>0.23</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:10.3/10.05 O2/CO2</b>	
Gas Value: 15:16:53	10.3	10.05	0	0	0	0	#N/A	#N/A	10.3/10.05 O2/CO2	
Diff%ofSpan 15:16:53	-1.03%	-0.99%	0.06%	0.00%	#N/A	#N/A	#DIV/0!	#DIV/0!		

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**

RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 15:18:46	0.09	0.08	0.04	93.83	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08 15:18:56	0.08	0.08	0.04	93.59	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
31-Jul-08 15:19:06	0.08	0.07	0.03	93.19	#N/A	#N/A	#NA	#NA	Cal:89.97 CO	
<b>Average:</b>	<b>15:19:07</b>	<b>0.08</b>	<b>0.08</b>	<b>0.04</b>	<b>93.54</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:89.97 CO</b>
Gas Value:	15:19:07	0	0	0	89.97	0	0	#N/A	#N/A	89.97 CO
Diff%ofSpan	15:19:07	0.34%	0.30%	0.00%	0.07%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08 15:20:48	0.08	0.05	88.15	0.14	#N/A	#N/A	#NA	#NA	Cal:91.02 NOX	
31-Jul-08 15:20:58	0.08	0.05	88.12	0.15	#N/A	#N/A	#NA	#NA	Cal:91.02 NOX	
31-Jul-08 15:21:08	0.07	0.05	88.14	0.64	#N/A	#N/A	#NA	#NA	Cal:91.02 NOX	
<b>Average:</b>	<b>15:21:09</b>	<b>0.08</b>	<b>0.05</b>	<b>88.14</b>	<b>0.31</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>Cal:91.02 NOX</b>
Gas Value:	15:21:09	0	0	91.02	0	0	0	#N/A	#N/A	91.02 NOX
Diff%ofSpan	15:21:09	0.30%	0.22%	-0.29%	0.01%	#N/A	#N/A	#DIV/0!	#DIV/0!	
31-Jul-08 15:24:10	16.48	3.20	97.30	88.23	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:24:20	16.47	3.20	98.16	88.26	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:24:30	16.47	3.20	98.17	88.16	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:24:40	16.47	3.21	98.16	88.16	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:24:51	16.47	3.21	98.97	88.14	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:25:00	16.48	3.20	98.49	88.25	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:25:10	16.48	3.21	98.28	88.36	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:25:20	16.48	3.21	98.64	88.26	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:25:30	16.48	3.20	97.78	88.21	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:25:40	16.48	3.20	97.20	88.31	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:25:50	16.49	3.20	96.50	88.36	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:26:00	16.49	3.20	96.53	88.95	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:26:10	16.48	3.20	97.21	88.90	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:26:20	16.48	3.21	97.20	88.56	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:26:30	16.48	3.21	97.18	88.16	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:26:40	16.48	3.21	97.11	88.31	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:26:51	16.48	3.21	98.70	88.32	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:27:00	16.47	3.21	99.94	88.25	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:27:10	16.47	3.22	100.17	88.21	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:27:20	16.48	3.21	100.15	88.26	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:27:30	16.48	3.21	99.85	88.16	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:27:40	16.48	3.21	99.15	88.26	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:27:50	16.49	3.21	99.14	88.16	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:28:00	16.49	3.21	99.16	88.46	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:28:10	16.49	3.21	98.85	88.21	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:28:20	16.48	3.21	99.14	88.12	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:28:30	16.48	3.21	99.13	88.66	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:28:40	16.49	3.21	99.15	88.90	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	

AIR CONSULTING AND ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**Instrumental Reference Method On-Line Data**

RAM FACILITY GG4-9A

PRATT & WHITNEY ENGINE TEST FACILITY

WEST PALM BEACH

Parameter	O2	CO2	NOX	CO	#NA	#NA	#NA	#NA	Comments	Comment2
Units	%DRY	%DRY	PPMDRY	PPMDRY	#NA	#NA	#NA	#NA		
31-Jul-08 15:28:51	16.49	3.20	98.56	88.85	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
31-Jul-08 15:29:00	16.50	3.20	97.52	88.52	#N/A	#N/A	#NA	#NA	RUN 7 - 18 PSI	
<b>Average:</b>	<b>15:29:00</b>	<b>16.48</b>	<b>3.21</b>	<b>98.38</b>	<b>88.37</b>	<b>#N/A</b>	<b>#N/A</b>	<b>#DIV/0!</b>	<b>#DIV/0!</b>	<b>RUN 7 - 18 PSI</b>
Maximum	15:29:00	16.50	3.22	100.17	88.95	#N/A	#N/A	0.00	0.00	RUN 7 - 18 PSI
Minimum	15:29:00	16.47	3.20	96.50	88.12	#N/A	#N/A	0.00	0.00	RUN 7 - 18 PSI
Std Dev	15:29:00	0.01	0.01	1.05	0.25	#N/A	#N/A	#DIV/0!	#DIV/0!	RUN 7 - 18 PSI

# **APPENDIX D**

## **QUALITY ASSURANCE CAL GAS CERTIFICATIONS**



**AIR CONSULTING ENGINEERING, INC.**  
 2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

**ANALYZER LINEARITY AND CALIBRATION ERROR**  
**RAM FACILITY GG4-9A**  
**PRATT & WHITNEY**  
**WEST PALM BEACH, FLORIDA**  
**JULY 31, 2008**

**ANALYZER ECOPHYSICS CLD 70S**

SPECIES: NOx

RANGE: 1000 ppm

GAS VALUE	RESPONSE	DIFFERENCE	% RANGE
898.6	897.65	-0.95	-0.095
453	451.54	-1.46	-0.146
240.4	243.57	3.17	0.317
91.02	92.17	1.15	0.115
0.00	-0.01	-0.01	-0.001

**ANALYZER SERVOMEX 1440**

SPECIES: O2

RANGE: 25 %

GAS VALUE	RESPONSE	DIFFERENCE	% RANGE
20.9	20.88	-0.02	-0.08
10.03	10.08	0.05	0.2
5.94	5.90	-0.04	-0.16
0.00	-0.01	-0.01	-0.04

**ANALYZER ECOPHYSICS CLD 70S**

SPECIES: CO

RANGE: 4500 ppm

GAS VALUE	RESPONSE	DIFFERENCE	% RANGE
4464	4443.92	-20.08	-0.446222
1912	1904.80	-7.20	-0.16
898.6	900.23	1.63	0.036222
450.40	456.32	5.92	0.131556
0.00	1.33	1.33	0.029556
89.97	98.60	8.63	0.191778

**ANALYZER SERVOMEX 1440**

SPECIES: CO2

RANGE: 20 %

GAS VALUE	RESPONSE	DIFFERENCE	% RANGE
19.99	20.34	0.35	1.75
10.05	9.85	-0.20	-1
0.00	0.04	0.04	0.2

AIRCONSULTING ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

RAM FACILITY GG4-9A  
PRATT & WHITNEY  
WEST PALM BEACH, FLORIDA  
JULY 31, 2008

Analyzer Calibration Error = Eq. 7E-1 (non dilution systems)  
System Bias = Eq. 7E-2 (non dilution systems)  
System Calibration Error = Eq. 7E-3 (dilution systems)(error&bias)  
Drift Assessment = Eq. 7E-4  
Span = High Calibration Gas setup for non dilution sys

Analyzer 3 Point Calibration Error								
Parameter	Method	Analyzer Mfg/Model	Units	Span	Additional Bias Gas	High	Mid	Low
O2	3A	Servomex 1400	% Dry	20.90	Cal Gas Value:	20.90	10.3	0
					Analyzer Response:	20.88	10.08	-0.01
					Cal Error % Span:	-0.09	-1.03	-0.04
CO2	3A	Servomex 1400	% Dry	19.99	Cal Gas Value:	19.99	10.05	0
					Analyzer Response:	20.34	9.85	0.05
					Cal Error % Span:	1.74	-0.98	0.24
NOX	7E	TE 42H	PPM Dry	453.00	Cal Gas Value:	91.02	453.00	240.4
					Analyzer Response:	92.14	451.54	243.57
					Cal Error % Span:	0.25	-0.32	0.70
CO	10	TE 48C	PPM Dry	1912.00	Cal Gas Value:	89.97	1912.00	898.6
					Analyzer Response:	88.88	1904.80	900.23
					Cal Error % Span:	0.45	-0.38	0.09

Run 1	Parameter: Units:	O2 % Dry	CO2 % Dry	NOX PPM Dry	CO PPM Dry
	Upscale Bias Gas Value	10.085	9.85	92.14	900.23
	Pre Run Upscale Response	10.06	9.83	92.14	902.62
	Pre Run Zero Response	0.07	0.04	0.04	4.00
	Post Run Upscale Response	10.06	9.81	90.03	898.67
	Post Run Zero Response	0.09	0.08	0.02	3.89
	Upscale Drift Over Run % span	0.02	-0.06	-0.47	-0.21
	Zero Drift Over Run % span	0.08	0.19	0.00	-0.01
	Pre Run Upscale Bias % span	-0.14	-0.14	0.00	0.12
	Pre Run Zero Bias % span	0.37	-0.04	0.01	0.14
	Post Run Upscale Bias % span	-0.12	-0.20	-0.47	-0.08
	Post Run Zero Bias % span	0.45	0.15	0.01	0.13

Run 2	Parameter: Units:	O2 % Dry	CO2 % Dry	NOX PPM Dry	CO PPM Dry
	Upscale Bias Gas Value	10.085	9.85	92.14	98.60
	Pre Run Upscale Response	10.06	9.81	90.03	98.60
	Pre Run Zero Response	0.09	0.08	0.02	3.89
	Post Run Upscale Response	10.03	9.79	89.12	96.13
	Post Run Zero Response	0.07	0.04	0.02	3.12
	Upscale Drift Over Run % span	-0.13	-0.14	-0.20	-0.13
	Zero Drift Over Run % span	-0.07	-0.20	-0.01	-0.04
	Pre Run Upscale Bias % span	-0.12	-0.20	-0.47	0.00
	Pre Run Zero Bias % span	0.45	0.15	0.01	0.13
	Post Run Upscale Bias % span	-0.26	-0.33	-0.67	-0.13
	Post Run Zero Bias % span	0.39	-0.05	0.00	0.09

Run 3	Parameter: Units:	O2 % Dry	CO2 % Dry	NOX PPM Dry	CO PPM Dry
	Upscale Bias Gas Value	10.085	9.85	92.14	98.60
	Pre Run Upscale Response	10.03	9.79	89.12	96.13
	Pre Run Zero Response	0.07	0.04	0.02	3.12
	Post Run Upscale Response	10.05	9.81	89.12	94.65
	Post Run Zero Response	0.08	0.07	0.03	1.44
	Upscale Drift Over Run % span	0.10	0.12	0.00	-0.08
	Zero Drift Over Run % span	0.06	0.15	0.01	-0.09
	Pre Run Upscale Bias % span	-0.26	-0.33	-0.67	-0.13
	Pre Run Zero Bias % span	0.39	-0.05	0.00	0.09
	Post Run Upscale Bias % span	-0.16	-0.22	-0.67	-0.21
	Post Run Zero Bias % span	0.44	0.10	0.01	0.01

AIRCONSULTING ENGINEERING, INC.  
2106 NW 67th Place, Suite 4, Gainesville, Florida 32653

RAM FACILITY GG4-9A  
PRATT & WHITNEY  
WEST PALM BEACH, FLORIDA  
JULY 31, 2008

Analyzer Calibration Error = Eq. 7E-1 (non dilution systems)  
System Bias = Eq. 7E-2 (non dilution systems)  
System Calibration Error = Eq. 7E-3 (dilution systems)(error&bias)

Run 4	Parameter: Units:	O2 % Dry	CO2 % Dry	NOX PPM Dry	CO PPM Dry
	Upscale Bias Gas Value	10.085	9.85	92.14	98.60
	Pre Run Upscale Response	10.05	9.81	89.12	94.65
	Pre Run Zero Response	0.08	0.07	0.03	1.44
	Post Run Upscale Response	10.05	9.79	88.15	95.25
	Post Run Zero Response	0.08	0.06	0.03	1.59
	Upscale Drift Over Run % span	0.00	-0.11	-0.21	0.03
	Zero Drift Over Run % span	-0.02	-0.04	0.00	0.01
	Pre Run Upscale Bias % span	-0.16	-0.22	-0.67	-0.21
	Pre Run Zero Bias % span	0.44	0.10	0.01	0.01
	Post Run Upscale Bias % span	-0.16	-0.32	-0.88	-0.18
	Post Run Zero Bias % span	0.42	0.06	0.01	0.01

Run 5	Parameter: Units:	O2 % Dry	CO2 % Dry	NOX PPM Dry	CO PPM Dry
	Upscale Bias Gas Value	10.085	9.85	92.14	98.60
	Pre Run Upscale Response	10.05	9.79	88.15	95.25
	Pre Run Zero Response	0.08	0.06	0.03	1.59
	Post Run Upscale Response	10.03	9.74	88.18	93.85
	Post Run Zero Response	0.08	0.07	-0.01	0.40
	Upscale Drift Over Run % span	-0.11	-0.23	0.01	-0.07
	Zero Drift Over Run % span	0.02	0.03	-0.01	-0.06
	Pre Run Upscale Bias % span	-0.16	-0.32	-0.88	-0.18
	Pre Run Zero Bias % span	0.42	0.06	0.01	0.01
	Post Run Upscale Bias % span	-0.27	-0.55	-0.87	-0.25
	Post Run Zero Bias % span	0.43	0.09	0.00	-0.05

Run 6	Parameter: Units:	O2 % Dry	CO2 % Dry	NOX PPM Dry	CO PPM Dry
	Upscale Bias Gas Value	10.085	9.85	92.14	98.60
	Pre Run Upscale Response	10.03	9.74	88.18	93.85
	Pre Run Zero Response	0.08	0.07	-0.01	0.40
	Post Run Upscale Response	10.04	9.80	88.14	93.54
	Post Run Zero Response	0.08	0.08	0.04	0.23
	Upscale Drift Over Run % span	0.07	0.29	-0.01	-0.02
	Zero Drift Over Run % span	0.01	0.05	0.01	-0.01
	Pre Run Upscale Bias % span	-0.27	-0.55	-0.87	-0.25
	Pre Run Zero Bias % span	0.43	0.09	0.00	-0.05
	Post Run Upscale Bias % span	-0.20	-0.26	-0.88	-0.26
	Post Run Zero Bias % span	0.44	0.14	0.01	-0.06

Run 7	Parameter: Units:	O2 % Dry	CO2 % Dry	NOX PPM Dry	CO PPM Dry
	Upscale Bias Gas Value	10.085	9.85	92.14	98.60
	Pre Run Upscale Response	10.04	9.80	88.14	93.64
	Pre Run Zero Response	0.08	0.08	0.04	0.23
	Post Run Upscale Response	10.04	9.80	88.14	93.54
	Post Run Zero Response	0.08	0.08	-0.04	0.23
	Upscale Drift Over Run % span	0.00	0.00	0.00	0.00
	Zero Drift Over Run % span	0.00	0.00	0.00	0.00
	Pre Run Upscale Bias % span	-0.20	-0.26	-0.88	-0.26
	Pre Run Zero Bias % span	0.44	0.14	0.01	-0.06
	Post Run Upscale Bias % span	-0.20	-0.26	-0.88	-0.26
	Post Run Zero Bias % span	0.44	0.14	0.01	-0.06

## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA Protocol

Airgas Specialty Gases  
 1075 Cinclare Drive  
 Port Allen, LA 70767  
 225.388.0900  
 FAX: 225.388.0959  
 www.airgas.com

Part Number: E03NI74E15A72V4  
 Cylinder Number: CC81977  
 Laboratory: ASG - Port Allen - LA  
 Analysis Date: May 15, 2007

Reference Number: 83-124095859-1  
 Cylinder Volume: 158 Cu.Ft.  
 Cylinder Pressure: 2015 PSIG  
 Valve Outlet: 590

Expiration Date: May 15, 2010

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
 Do Not Use This Cylinder below 150 psig, i.e. 1 Mega Pascal

ANALYTICAL RESULTS				
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
OXYGEN	8.000 %	8.054 %	Gr	1.1% NIST Traceable
CARBON DIOXIDE	20.00 %	19.98 %	Gr	1.1% NIST Traceable
NITROGEN	Balance			

CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM	98051112	SG9188316BAL	8.507% OXYGEN/NITROGEN	Jan 01, 2010
NTRM	040604	XC034313B	19.84% CARBON DIOXIDE/NITROGEN	May 15, 2008

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
SO2GM	NonDispersive Infrared	Apr 25, 2007
SO2GM	Paramagnetic	Apr 25, 2007

Triad Data Available Upon Request

Notes:



QA Approval

## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA Protocol

Airgas Specialty Gases  
 8421 Monclova Road  
 Maumee, OH 43537-8760  
 (419) 883-7228  
 FAX: (419) 883-2863  
 www.airgas.com

Part Number: E03NI80E15A0138	Reference Number: 113-124145727-1
Cylinder Number: CC23925	Cylinder Volume: 151 Cu.Ft.
Laboratory: ASG - Maumee - OH	Cylinder Pressure: 2250 PSIG
Analysis Date: Jul 24, 2008	Valve Outlet: 590

**Expiration Date: Jul 24, 2011**

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
**Do Not Use This Cylinder below 150 psig, i.e., 1 Mega Pascal**

ANALYTICAL RESULTS				
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
ETHYLENE OXIDE		0.00	MS	0.00%
OXYGEN		6.20	MS	0.00%
NITROGEN		93.80	MS	0.00%

CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No.	Concentration	Expiration Date
NTRM	061202	CC185617	20.90% OXYGEN/NITROGEN	Jan 01, 2010
NTRM	981287	CC59188	6.2% CARBON DIOXIDE/NITROGEN	Oct 02, 2008

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
030-Horiba VIA-510	NDIR	Jul 01, 2008
050-Rosemount 755R O2 Analyzer	Paramagnetic	Jul 02, 2008

Triad Data Available Upon Request

Notes:

*[Handwritten Signature]*

QA Approval:

## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA Protocol

Airgas Specialty Gases  
 1075 Cindere Drive  
 Port Allen, LA 70767  
 225.388.0900  
 FAX: 225.388.0959  
 www.airgas.com

Part Number: E02NI99E15A3576	Reference Number: 83-124117277-1
Cylinder Number: SG9151116BAL	Cylinder Volume: 144 Cu.Ft.
Laboratory: ASG - Port Allen - LA	Cylinder Pressure: 2015 PSIG
Analysis Date: Dec 11, 2007	Valve Outlet: 660

**Expiration Date: Dec 11, 2009**

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
 Do Not Use This Cylinder below 160 psig, i.e. 1 Mega Pascal

ANALYTICAL RESULTS				
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
NITRIC OXIDE	90.00 PPM	91.02 PPM	G1	1% NIST Traceable
NITROGEN	Balance			

Total oxides of nitrogen 91.02 PPM For Reference Only

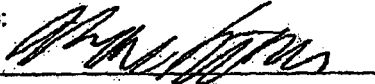
CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No.	Concentration	Expiration Date
NTRM	06060415	CC207822	93.2PPM NITRIC OXIDE/NITROGEN	Jan 01, 2010

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multi-point Calibration
FTIRLNO	FTIR	Dec 03, 2007

Triad Data Available Upon Request

Notes:



QA Approval

## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA Protocol

Part Number: E02NI99E15A0936      Reference Number: 83-124140679-1  
Cylinder Number: CC11116      Cylinder Volume: 144 Cu.Ft.  
Laboratory: ASG - Port Allen - LA      Cylinder Pressure: 1500 PSIG  
Analysis Date: Jun 11, 2008      Valve Outlet: 660

Expiration Date: Jun 11, 2010

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
Do Not Use This Cylinder below 150 psig, i.e. 1 Mega Pascal

ANALYTICAL RESULTS				
Component	Requested Concentration	Actual Concentration	Protocol Method	Total Relative Uncertainty
NITRIC OXIDE	240.0 PPM	240.1 PPM	G1	1% NIST Traceable
NITROGEN	Balance			

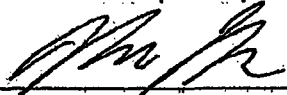
Total oxides of nitrogen      240.4 PPM      For Reference Only

CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No.	Concentration	Expiration Date
NTRM	06060241	CC207849	257.0PPM NITRIC OXIDE/NITROGEN	Jan 01, 2010

ANALYTICAL EQUIPMENT		
Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
FTIRMNO	FTIR	Jun 02, 2008

Triad Data Available Upon Request

Notes:



QA Approval

# Airgas

## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA Protocol

Airgas Specialty Gases  
1076 Cinders Drive  
Port Allen, LA 70767  
225.388.0900  
FAX: 225.388.0959  
www.airgas.com

Part Number: E02NI99E15A0167  
Cylinder Number: CC93427  
Laboratory: ASG - Port Allen - LA  
Analysis Date: Aug 02, 2007

Reference Number: 83-124102042-1  
Cylinder Volume: 144 Cu.Ft.  
Cylinder Pressure: 2015 PSIG  
Valve Outlet: 660

Expiration Date: Aug 02, 2009

Certification performed in accordance with "EPA Testability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
Do Not Use This Cylinder below 150 psig. L.e.: 1 Mega Pascal

#### ANALYTICAL RESULTS

Component	Requested Concentration	Actual Concentration	Protocol Method	95% Relative Uncertainty
NITROXIDE NITROGEN	453.000 PPM	453.000 PPM	1051 Relative	0.5%

Total oxides of nitrogen

453.000 PPM

For Reference Only

#### CALIBRATION STANDARDS

Type	Lot ID	Cylinder No	Concentration	Expiration Date
NTRM	06060223	BC207520	257 PPM NITRIC OXIDE/NITROGEN	Jan 01, 2010

#### ANALYTICAL EQUIPMENT

Instrument/Make/Model	Analytical Principle	Last Multipoint Calibration
PERMNO	ETP	JUL 11, 2007

Triad Data Available Upon Request

Notes:

  
QA Approval



## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA Protocol

Part Number: E02NI99E15A0907  
 Cylinder Number: SG9165354  
 Laboratory: ASG - Port Allen - LA  
 Analysis Date: Mar 06, 2007

Reference Number: 83-124088611-1  
 Cylinder Volume: 144 Cu.Fl.  
 Cylinder Pressure: 2015 PSIG  
 Valve Outlet: 660

Expiration Date: Mar 06, 2009

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
 Do Not Use This Cylinder below 160 psig Le. 1 Mega Pascal

ANALYTICAL RESULTS				
Component	Requested Concentration	Actual Concentration	Trace Method	Gas Ratio Uncertainty
NITRIC OXIDE	1000 PPM	1000 PPM	GC	±0.5%
NITROGEN DIOXIDE	1000 PPM	1000 PPM	GC	±0.5%

Total oxides of nitrogen: 897.1 PPM For Reference Only

CALIBRATION STANDARDS			
Type	Q.P.	Cylinder No.	Concentration

NITRIC OXIDE	1000 PPM	X000115	897.2 PPM NITRIC OXIDE/NITROGEN
			Exp. 01/2008

ANALYTICAL EQUIPMENT		
Instrument Make/Model	Analytical Principle	Last Multi-Point Calibration

PERKIN ELMER	FIR	12/2006
--------------	-----	---------

Triad Data Available Upon Request

Notes:

*[Handwritten Signature]*

QA Approval

## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA Protocol

Part Number: E02NI99E15A0406  
Cylinder Number: CC18505  
Laboratory: ASG - Port Allen - LA  
Analysis Date: Apr 04, 2007

Reference Number: 83-124090518-6  
Cylinder Volume: 144 Cu.Ft.  
Cylinder Pressure: 2015 PSIG  
Valve Outlet: 350

Expiration Date: Apr 04, 2010

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
Do Not Use This Cylinder below 150 psig i.e. 1 Mega Pascal

ANALYTICAL RESULTS			
Component	Requested Concentration	Actual Concentration	Relative Error (%)


CALIBRATION STANDARDS			
Standard	Cylinder No.	Concentration	Expiration Date

Cylinder		GAS	
Manufacturer/Make/Model	Material	Analytical Purity	Last Minimum Calibration

Triad Data Available Upon Request

Notes:

  
QA Approval



# CERTIFICATE OF ANALYSIS

## Grade of Product: EPA Protocol

Airgas Specialty Gases  
 1076 Cincars Drive  
 Port Allen, LA 70767  
 225.388.0900  
 225.388.0999  
 www.airgas.com

Part Number: E02NI99E15A0499  
 Cylinder Number: CC59429  
 Laboratory: ASG - Port Allen - LA  
 Analysis Date: Apr 03, 2007

Reference Number: 83-124090518-9  
 Cylinder Volume: 144 Cu.Ft.  
 Cylinder Pressure: 2015 PSIG  
 Valve Outlet: 350

Expiration Date: Apr 03, 2010

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
 Do Not Use This Cylinder below 150 psig, i.e. 1 Mega Pascal

ANALYTICAL RESULTS				
Component	Succession	Unit	Concentration	Expiration Date
CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No.	Concentration	Expiration Date
NIRMA	0005	CC033085	2400PPM CARBON MONOXIDE IN NITROGEN	Jul 03, 2008
ANALYTICAL EQUIPMENT				
Instrument Make/Model	Analytical Principle		Last Multi-point Calibration	
FUTURE USE				

Triad Data Available Upon Request

Notes:

*Kim Passola*

QA Approval



# CERTIFICATE OF ANALYSIS

## Grade of Product: EPA Protocol

Airgas Specialty Gases  
 1075 Cincinara Drive  
 Port Allen, LA 70767  
 225.388.0900  
 1-800-225-3880  
 www.airgas.com

Part Number: E02NI99E15A0502  
 Cylinder Number: XC000667B  
 Laboratory: ASG - Port Allen - LA  
 Analysis Date: Apr 05, 2007

Reference Number: 83-124090518-10  
 Cylinder Volume: 144 Cu.Ft.  
 Cylinder Pressure: 2015 PSIG  
 Valve Outlet: 350


Expiration Date: Apr 05, 2010

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which effect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
 Do Not Use This Cylinder below 150 psig i.e. 1 Mega Pascal

ANALYTICAL RESULTS				
Component	Reference Concentration	Found Concentration	Analytical Method	Relative Uncertainty
CALIBRATION STANDARDS				
Type	Lot ID	Cylinder No.	Concentration	Expiration Date
Nitrogen	98860	XC000667B	100% PPM Carbon Monoxide in Nitrogen	04/05/2010
ANALYTICAL EQUIPMENT				
Instrument/Make/Model		Analytical Principle		Has Multi-Point Calibration
Title: _____ Date: _____				

Triad Data Available Upon Request

Notes:

  
 \_\_\_\_\_  
 QA Approval

## CERTIFICATE OF ANALYSIS

### Grade of Product: EPA Protocol

Part Number: E02NI99E15A0002  
Cylinder Number: GC87625  
Laboratory: ASG - Port Allen - LA  
Analysis Date: Apr 04, 2007

Reference Number: 83-124090518-1  
Cylinder Volume: 144 Cu.Ft.  
Cylinder Pressure: 2015 PSIG  
Valve Outlet: 350

Expiration Date: Apr 04, 2010

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
Do Not Use This Cylinder below 150 psig i.e. 1 Mega Pascal

ANALYTICAL RESULTS				
Sample No.	Concentration	Unit	Assay Method	Expiration Date

CALIBRATION STANDARDS				
Type	Cylinder No.	Concentration	Assay Method	Expiration Date

ANALYTICAL EQUIPMENT				
Instrument Make/Model	Analytical Procedure	Assay Method	Assay Method	Expiration Date

Triad Data Available Upon Request

Notes:

Kim Pascale  
QA Approval

**CERTIFICATE OF ANALYSIS**  
**Grade of Product: EPA Protocol**

Part Number: E02NI99E15A0473  
 Cylinder Number: CC56638  
 Laboratory: ASG - Riverton - NJ  
 Analysis Date: Mar 26, 2007

Reference Number: 82-124090595-1  
 Cylinder Volume: 144 Cu.Ft.  
 Cylinder Pressure: 2015 PSIG  
 Valve Outlet: 350

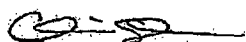
**Expiration Date: Mar 26, 2010**

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences. This cylinder has a total analytical uncertainty as stated below with a confidence level of 95%. There are no significant impurities which affect the use of this calibration mixture. All concentrations are on a volume/volume basis unless otherwise noted.  
**Do Not Use This Cylinder below 150 psig i.e. 1 Mega Pascal**

ANALYTICAL RESULTS			
Component	Reference Concentration	Assay Concentration	Relative Uncertainty
CALIBRATION STANDARDS			
ID#	Lot ID#	Cylinder No.	Expiration Date
ANALYTICAL REQUIREMENTS			
Instrument Make/Model	Analytical Procedure	Standard	Calibration

Triad Data Available Upon Request

Notes:

  
 \_\_\_\_\_  
**QA Approval**

## **APPENDIX E**

# **PLANT OPERATING DATA AND FUEL ANALYSIS**

RAM Emissions Test  
July 31 2008

ACE Bank - Fuel Sample Results																							
Start/Stop	Sal. Pressure (psia)	PRAG OUT (psia)	PRAG SUP (psia)	CV2 % Open	CV2 Est Flow (tph)	CV2 % Open	Est Flow (tph)	ZWA1 (psia)	HP	Fuel (GPM)	Total Fuel (GAL)	Cal Fuel (PPH)	Cal Total Fuel (Btu)	CO2 (%)	CO2 (%)	NOX (PPM)	CO (PPM)	NOX (PPH)	CO (PPM)	NOX (RAC)	CO (RAC)	Comments	
10:57																						GG Start	
11:12	GG IDLE	14.9	14.8	99.9	13.5	88.3	31.4		4854	7.03	240.7	2009.8	501.7									NS @ 1000, CV2/CV9 Manual	
11:42	GG IDLE								4918			2009.8	1912.8									Stop Idle	
11:52	16	21.8	15.9	40	57.5	75.5	104		2289	25.5	275.8	10249.2	1848.2									Set 18 PSI	
12:05	16	21.8	18.8	48	54.8	72.1	100.2		2289	25.5	275.8	10249.2	1848.2									Start 18 PSI	
12:35	18	21	18.1	48	58.5	71.5	103		22815	25.4	134.1	10208.0	8938.9									Stop 18	
15:20	18	24.7	17.9	30.1	45.9	81.6	100.1		22838	25.9	578.2	11173.84	38737.28									Set 18 PSI	
15:24	18									25.8	888.3	10249.2	39424.59									Start 18	
15:29	18									25.8	8013.8	10289.38	40284.05									Stop 18	
14:40	20	28	20.1	18	24.8	55.2	121.4		23378	25.9	4813.1	10489.97	32242.11									Set 20 psi	
14:44	20									26	4848.1	10450.18	33148.45									Start	
14:49	20									26	4848.1	10450.18	33148.45									End	
12:38	23	31.3	22.6	A	11.3	49.8	134.2		24068	28.5	1418.9	10731.5	8905.0									Set 23 psi	
12:48	23	31.3	23	8.1	11.3	48.9	132.7		24019	28.6	1877.8	10681.5	11293.9									Start 23	
13:13	23								22944	25.4	236.8	10208.0	15653.8									Stop 23	
18:00	28								22376	25.9	5238.9	16489.87	35804.47									Set 28 psi	
19:05	28								25058	27.7	5382.8	11333.44	36957.89									Start 28	
19:10	28								25078	27.8	5507.3	11173.84	36892.43									Stop 28	
13:30	31	39.3	31	0.1	0.1	41.9	136.8		28118	28.9	2827.9	11615.8	18942.8									Set 31 psi	
13:35	31	39.3	30.8	0.1	0	41.9	138.2		28398	28.4	2834	11658.0	18954.3									Start 31	
14:05	31	39.3	30.8	0.1	0.2	41.8	135.3		28158	28	3804.8	11858.0	25488.3									Stop 31	
Total Fuel		Total Time		Total Fuel Rate		Total Fuel Rate		Total Fuel Rate		Total Fuel Rate		Total Fuel Rate		Total Fuel Rate		Total Fuel Rate		Total Fuel Rate		Total Fuel Rate		Total Fuel Rate	
10:57	185.8	0:30	5.33	1110.7	0:30	2221.39																	
18 PSI	782.4	0:30	25.42	5107.9	0:30	10215.7																	
23 PSI	850.2	0:25	21.87	4415.88	0:25	8831.73																P1 Stop Early - Facility Tip	
31 PSI	870.6	0:30	28.02	5852	0:30	11884																	
20 PSI	135	0:05	27.00	504.341	0:05	10086.1																	
28 PSI	124.7	0:05	24.94	836.3	0:05	16726.1																	
18 PSI	128.2	0:05	28.88	859.5	0:05	17190.5																	
Total GG Run Time		Total GM		Power RH		Fuel (GAL)																	
10:57	323.8	243.5	0																				
18:00	328.8	247.2	829.8																				
Total Run Time		4.8 Hours																					
Total Run @ Power		3.7 Hours																					
Total Fuel		0.0 GAL																					
Avg Fuel Burn (GPM)		8288.8		GPM																			
Avg Fuel Burn (PPH)		41288.9		PPH																			



Operating condition	NOX # / RH (1 engine)	Calc for 2 engines running - NOX # / RH	Weighted points (how we typically operate the facility - i.e. % time at point)	Allowable RH / yr within 40 ton/yr limit using weighted points	Weighted Nox Tons/yr
Idle	2.49	4.98	0.10	355	0.088395
16 psia	110.96	221.92	0.40	355	15.75632
23 psia	126.93	253.86	0.30	355	13.51805
31 psia	149.91	299.82	0.20	355	10.64361
<b>Total NOX Tons/yr =</b>					<b>40.0</b>
<b>Limit: NOX Tons/yr</b>					<b>40.0</b>

**RAM RH's (input) = 355**

Operating condition	Nox - #/Hour	Calc for 2 engines running - CO / #/hr	Permit Hours - Hrs / Engine / Year	Total Nox Tons/year
Idle	298.08	596.16	398	118.63584
15 psig	66.42	132.84	398	26.43516
23 psig	55.52	111.04	398	22.09696
31 psig	44	88	398	17.512

RAM Emissions Test  
July 31 2008

ACE Basis - Fuel Sample Results							
HHV	12204						
HV	19910						
SG	0.803	lbm/lbm					
Fuel Conv.	401.83	pph/gpm					
Start/Stop	Set Pressure (psia)	Fuel (GPM)	Total Fuel (GAL)	Cal Fuel (PPH)	Cal Total Fuel (LBM)	Comments	
10:57						GG Start	
11:12	GG IDLE	25.4	74.9	2009.6	501.7	Start Idle	N3 @ 1000, Cv2/Cv9 Manual
11:42	GG IDLE	25.4	240.7	2009.6	501.7	Stop Idle	N3 @ 1000, Cv2/Cv9 Manual
11:52	16	25.4	275.9	10249.2	1648.2	Set 16 PSI	
12:05	18	25.4	571.8	10209.0	3829.0	Start 18	
12:35	16	25.4	334.1	10209.0	8936.9	Stop 18	
12:36	23	26.7	418.9	10731.5	9505.0	Set 23 psi	
12:48	23	26.6	1877.6	10691.3	11287.9	Start 23	
13:13	23	25.4	2336.8	10209.0	15653.8	Stop 23	RAM pressure trip due to blue limit on VRGG_INLET_A. Pt ended 8 minutes early.
13:30	31	28.8	2827.8	11615.8	39942.9	Set 31 psi	
13:35	31	29	2934	11656.0	39654.3	Start 31	
14:05	31	29	3804.6	11656.0	25486.8	Stop 31	
	Total Fuel (GAL)	Total Time	Est Fuel Rate	Total Fuel (LBM)	Total Time	Est Fuel Rate (PPH)	
Idle	165.8	0:30	5.53	1110.7	0:30	2221.33	
16 PSI	762.5	0:30	25.42	5107.9	0:30	10215.71	
23 PSI	669.2	0:25	21.07	4415.86	0:25	8831.73	
31 PSI	870.6	0:30	29.02	5832	0:30	11683.99	Pt Stop Early - Facility Trip
Total GG Run Time							
Log Sheet Time	Total RH	Pwr RH	Fuel (GAL)				
10:57	323.8	243.5	0				
16:00	328.8	247.2	8269.6				
Total Run Time 4.8 Hours							
Total Run @ Power	3.7 Hours						
Total Fuel	8269.6 GAL						
Avg Fuel Burn (GPM)	21.85 GPM						
Avg Fuel Burn (PPH)	8780.27 PPH						

**AIR CONSULTING AND ENGINEERING, INC.**

**FUEL FACTOR CALCULATION**

**COMPANY NAME:** Pratt-Whitney  
**SOURCE:** RAM FACILITY GG4-9A  
**FUEL FIRED:** JP-8 Fuel Sample E346/08-1

**Run** 1  
**Date** 5/28/08  
**Time**

From Fuel Analysis on as received basis:

<b>Carbon (%)</b>	87.49
<b>Hydrogen (%)</b>	12.20
<b>Nitrogen (%)</b>	0.06
<b>Sulfur (%)</b>	0.11
<b>Oxygen (%)</b>	0.10
<b>HHV (BTU/lb)</b>	19910
<b>F-Factor (scf/MMBTU)</b>	8955

**Sample Calculation - Run 1**

$$F_d = \frac{K[(K_h \%H) + (K_c \%C) + (K_s \%S) + (K_n \%N) - (K_o \%O)]}{GCV}$$
$$= \frac{10E6[3.64(12.2) + 1.53(87.49) + 0.57(0.113) + 0.14(0.06) - 0.46(0.1)]}{19910}$$
$$= 8955$$

Where:

%H	Concentration of hydrogen from the ultimate fuel analysis
%C	Concentration of carbon from the ultimate fuel analysis
%S	Concentration of sulfur from the ultimate fuel analysis
%N	Concentration of nitrogen from the ultimate fuel analysis
%O	Concentration of oxygen from the ultimate fuel analysis
K <sub>h</sub>	conversion factor (3.64 scf/lb-%)
K <sub>c</sub>	conversion factor (1.53 scf/lb-%)
K <sub>(s)</sub>	conversion factor (0.57 scf/lb-%)
K <sub>n</sub>	conversion factor (0.14 scf/lb-%)
K <sub>o</sub>	conversion factor (0.46 scf/lb-%)
K	conversion factor (10E6 BTU/MMBTU)
GCV	gross calorific heating value (BTU/lb HHV)



**Hazen Research, Inc.**  
4601 Indiana Street  
Golden, CO 80403 USA  
Tel: (303) 279-4501  
Fax: (303) 278-1528

Date: June 13, 2008  
PROJ. # 009-555  
CTRL # E346/08  
REC'D 05/28/08

Golder Associates, Inc.  
Brian Storey  
6241 NW 23rd Street, Suite 500  
Gainesville, Florida 32653

---

Sample No: E346/08-1  
Sample Identification: JP-8 Fuel Sample

---

**ULTIMATE**

Water, %	0.02
Ash, %	0.015
Sulfur, %	0.113
Carbon, %	87.49
Hydrogen, %	12.2
Nitrogen, %	0.06
Oxygen, %*	0.10


**PROXIMATE**

Water, %	0.02
Ash, %	0.015
Volatile Matter, %	99.98
Fixed Carbon, %*	<0.01

**CALORIFIC VALUE**

BTU/lb	19910
--------	-------

By:

  
Gerard H. Cunningham  
Fuel Laboratory Manager

\* by difference

**APPENDIX F**

**PROJECT PARTICIPANTS**

*Air Consulting and Engineering, Inc.*

Stephen L. Neck, P.E.  
Field Testing

Rick Hyre  
Field Testing

Dagmar Fick  
Report Preparation

Gloria Gagich  
Document Production

**Pratt & Whitney**

Dean Gee  
Test Coordinator

**ATTACHMENT 3**  
**REVISED AIR CONSTRUCTION APPLICATION PAGES**

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1]  
Two GG4-9A Turbine Engines

Page [1] of [7]  
Carbon Monoxide - CO

**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: <b>CO</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>597.3 lb/hour                      388.1 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>Refer to PSD Report.</b>  Reference:		7. Emissions Method Code: <b>1</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: <b>Emission factors based on July 31, 2008 stack testing results. Refer to PSD Report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:			



**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1]  
Two GG4-9A Turbine Engines

Page [1] of [7]  
Carbon Monoxide - 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**

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>See PSD Report</b>	4. Equivalent Allowable Emissions: lb/hour <b>388.1 tons/year</b>
5. Method of Compliance: <b>Recordkeeping</b>	
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):	

**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**

**POLLUTANT DETAIL INFORMATION**

Section [1]  
Two GG4-9A Turbine Engines

Page [2] of [7]  
Nitrogen Oxides - 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**

1. Pollutant Emitted: <b>NOx</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>299.9 lb/hour                      343.7 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>Refer to PSD Report.</b>  Reference:		7. Emissions Method Code: <b>1</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: <b>Emission factors based on July 31, 2008 stack testing results. Refer to PSD Report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

Section [1]  
Two GG4-9A Turbine Engines

**POLLUTANT DETAIL INFORMATION**

Page [2] of [7]  
Nitrogen Oxides - 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** Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>See PSD Report</b>	4. Equivalent Allowable Emissions: lb/hour <b>343.7 tons/year</b>
5. Method of Compliance: <b>Recordkeeping</b>	
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):	

**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**

**POLLUTANT DETAIL INFORMATION**

Section [1]

Page [3] of [7]

Two GG4-9A Turbine Engines

Particulate Matter - PM

**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: <b>PM</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 3.34 lb/hour                      4.02 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: $7.2 \times 10^{-3}$ lb/MMBtu Reference: AP-42, Chapter 3.1, Table 3.1-2a		7. Emissions Method Code: <b>3</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: <b>Refer to PSD Report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:			

**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: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>See PSD Report</b>	4. Equivalent Allowable Emissions: lb/hour <b>4.02 tons/year</b>
5. Method of Compliance: <b>Recordkeeping</b>	
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):	

**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**

**POLLUTANT DETAIL INFORMATION**

Section [1]

Page [4] of [7]

Two GG4-9A Turbine Engines

Particulate Matter <10 microns - 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: <b>PM10</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 2.00 lb/hour                      2.40 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: $4.3 \times 10^{-3}$ lb/MMBtu Reference: AP-42, Chapter 3.1, Table 3.1-2a		7. Emissions Method Code: <b>3</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: <b>Refer to PSD Report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:			

**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: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>See PSD Report</b>	4. Equivalent Allowable Emissions: <b>lb/hour                      2.40 tons/year</b>
5. Method of Compliance: <b>Recordkeeping</b>	
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: <b>lb/hour                      tons/year</b>
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: <b>lb/hour                      tons/year</b>
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**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: <b>SO2</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>53.0 lb/hour                      63.7 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>0.114 lb/MMBtu</b>  Reference: <b>AP-42, Chapter 3.1, Table 3.1-2a</b>		7. Emissions Method Code: <b>3</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: <b>Emission factor based on a sulfur content of 0.113 percent for JP-8 fuel. Refer to PSD Report.</b>  <b>SO<sub>2</sub> (lb/MMBtu) = 1.01 x (0.113) = 0.114 lb/MMBtu</b>			
11. Potential, Fugitive, and Actual Emissions Comment:			



**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1]

Page [5] of [7]

Two GG4-9A Turbine Engines

Sulfur Dioxide - 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: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>See PSD Report</b>	4. Equivalent Allowable Emissions: lb/hour <b>63.7 tons/year</b>
5. Method of Compliance: <b>Recordkeeping</b>	
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):	

**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**

**POLLUTANT DETAIL INFORMATION**

Section [1]

Page [6] of [7]

Two GG4-9A Turbine Engines

Total Hazardous Air Pollutants - HAPS

**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: <b>HAPS</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>0.598 lb/hour                      0.719 tons/year</b>		4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor:  Reference: <b>Refer to PSD Report.</b>		7. Emissions Method Code: <b>3</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: <b>Refer to PSD Report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1]

Page [6] of [7]

Two GG4-9A Turbine Engines

Total Hazardous Air Pollutants - HAPS

**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: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>See PSD Report</b>	4. Equivalent Allowable Emissions: lb/hour <b>0.719 tons/year</b>
5. Method of Compliance: <b>Recordkeeping</b>	
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):	

**Allowable Emissions** Allowable Emissions \_\_\_\_ of \_\_\_\_

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

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
POTENTIAL, 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: <b>VOC</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>0.190 lb/hour                      0.229 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>4.1 x 10<sup>-4</sup> lb/MMBtu</b> Reference: <b>AP-42, Chapter 3.1, Table 3.1-2a</b>		7. Emissions Method Code: <b>3</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: <b>Refer to PSD Report.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:			

**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: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>See PSD Report</b>	4. Equivalent Allowable Emissions: lb/hour <b>0.229 tons/year</b>
5. Method of Compliance: <b>Recordkeeping</b>	
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):	

**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):	