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TEST REPORT ALTERNATIVE FUELS PROPULSION DURABILITY EVALUATION

CONTRACT DTRT57-11-C-10053

FINAL REPORT

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REVISION HISTORY

Rev	Ву	Approved	Date	Revision Summary
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1.0 INTRODUCTION

This document, prepared by Honeywell Aerospace, Phoenix, AZ (Honeywell), contains the final test report (public version) for the U.S. Department of Transportation/Federal Aviation Administration (USDOT/FAA) Alternative Fuels Propulsion Engine Durability Evaluation and is submitted in accordance with contract data requirements list (CDRL) of USDOT contract DTRT57-11-C-10053.

This program addresses the aviation industry's need to evaluate the impact of alternative aviation fuel [synthetic paraffinic kerosene (SPK)] blends on engine durability. The particular SPK being evaluated during this effort was made from Hydroprocessed Esters and Fatty Acids (HEFA) made from animal fats, however, other potential alternative SPK fuels include HEFA fuels made from vegetable oils and fuel derived by Fischer-Tropsch (F-T) synthesis from unconventional sources (such as coal, natural gas, biomass, or combinations thereof).

The evaluations performed as part of this effort included assessing the impact of a 50/50 blend of HEFA SPK fuel mixed with conventional petroleum-derived Jet A fuel on the major combustion system components of a HTF7000 turbofan propulsion engine over the course of a 500-cycle endurance test. The design of the HTF7000 fuel system and hot section are similar to much larger propulsion engines in commercial and military aircraft. The similarity of the HTF7000 to larger main engines allowed for a complete endurance test that was directly representative to larger engines but only required the limited amount of fuel that was available for testing.

2.0 OBJECTIVES AND SUCCESS CRITERIA

The HTF7000 Engine, shown in Figure 1, is Honeywell's state-of-the-art turbofan propulsion system, producing 7,000 lbs of thrust at takeoff at an Overall Pressure Ratio (OPR) of 22. This propulsion system entered into service in 2004.

Today the HTF7000 powers the Bombardier Challenger 300 super-mid-sized BGA aircraft. Two new applications are currently in development: the HTF7250G for the Gulfstream G280 aircraft and the HTF7500E for the new Embraer Legacy 450 and 500 aircraft. Over 500 HTF7000 engines are in the world-wide fleet today. With the additional two applications above, the fleet is projected to grow to more than 3,500 engines, accumulating nearly two million flying hours per year by 2020.

The HTF7000 engine is a 4.2 bypass ratio, two-spool, co-rotating turbofan engine. It features a single-stage, high-efficiency fan rotor that is driven directly by an un-cooled, three-stage LP (low pressure) turbine. The engine compressor core consists of four axial compressor stages with two stages of variable and three stages of non-variable vanes; and a single stage centrifugal compressor. The axial and centrifugal compressors are driven by a two-stage, cooled HP (high pressure) turbine. The combustor is an annular through-flow, effusion-cooled low-emissions configuration similar to those used on larger engines. To reduce noise and improve propulsive efficiency, a forced mixer is used to merge the fan bypass and core flows together prior to their exiting the engine. The engine includes a full-authority digital control (FADEC) system, which features dual-channel electronic control units.

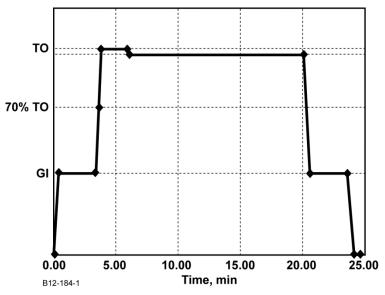


Figure 1. HTF7000 Engine Cutout.

The Service-Life Demonstration (SLD) endurance cycle shown in Figure 2 was used for the fuel evaluation and reflects that of an executive jet application. This SLD cycle has been used extensively in the past with Jet A fuel and is very similar to the endurance cycles used by Pratt & Whitney (P&W) to evaluate the Sasol FSJF and by General Electric (GE) to evaluate FAME-contaminated jet fuel. After start and a three-minute pause at ground idle (GI), the engine performs a typical two-minute takeoff (TO) sequence followed by 11.5-minutes at a simulated flight condition. Landing and deceleration is then simulated followed by a three-minute pause at ground idle and shut down. The total SLD cycle time is 24 minutes resulting in 200 hours accumulated for a 500-cycle test. The HEFA-SPK fuel evaluation was part of a planned 1,227 SLD cycle endurance test with the HEFA-SPK fuel blend being used until the fuel was completely consumed. The endurance test was then continued with conventional Jet A until the 1,227 SLD cycles were completed.

Each 1,227 SLD cycle endurance test accumulates approximately 500 hours of actual engine run time. The SLD cycle is designed to simulate flight conditions so that one SLD cycle provides the hot-section (combustor, turbine nozzles and blades, etc.) thermal cycling that would be experienced over the course of a typical business aviation flight. The thermal cycling that is experienced over the course of a 1,227 SLD cycle endurance test is equivalent to 2,000 engine hours; with 4,000 engine hours being the designed engine overhaul minimum. With respect to the fuel system components (HMU, EFDV, etc.), the more appropriate time for evaluation is the actual engine test hours due to the lack of thermal cycling experienced in the fuel system components.

The hot section components, the combustor and turbine sections, were borescope inspected on regular intervals to document any degradation. The engine fuel wetted components such as the fuel flow divider valve (EFDV), the hydro-mechanical unit (HMU), and the fuel nozzles received pretest and posttest inspections and functional checks. The EFDV and HMU were disassembled for visual inspection of internal components.





3.0 TEST EQUIPMENT

The test asset identified for this 500 SLD cycle endurance test with the HEFA-SPK blended fuel was Build 3 of AS907-3-1E Engine S/N 940B (designated 940B-3). The combustor and much of the hot-section related hardware in 940B-3 was used previously on a 1,228 SLD cycle test (Engine 930B-3) and even more hardware was carried over from the 1,242 SLD cycle test (Engine 940B Builds 1 and 2) run between 930B-3 and 940B-3. The combustor test history is shown in Table 1.

Model	Cycles	Actual Hours	Equivalent Hours	
930B-3	1,228	447:53	~2,000	
940B-1 & 2	1,242	544:29	~2,000	
Total	2,470	992:22	~4,000	

Table 1. Combustor Test Asset History.	
--	--

Several heat shields used in the combustor showed significant deterioration during the 930B-3 portion of the testing due to atomizer misalignment with the combustor and swirlers; the combustor dome was out of tolerance. The misalignment issues were remedied between 930B-3 and 940B-1 testing. As a result of the deterioration, 14 of the 16 swirlers were replaced with new hardware and only two of the most deteriorated swirlers were allowed to continue onto the 940B-1 build and subsequently 940B-3 specifically to observe the deterioration progression.

Most of the heat shields from 930B-3 were carried over to 940B-1 and have accumulated 4,000 equivalent hours prior to 940B-3. Four of the heat shields for 940B-3 were new and were part of a development evaluation. Table 2 provides details as to which swirlers and heat shields were carried over from the previous engine builds by showing the equivalent time accumulated on each individual piece of hardware.

The combustor liners for the 940B-3 engine have accumulated 4,000 equivalent engine hours prior to this HEFA-SPK fuel blend evaluation.



Location	Swirler Hours	Heat Shield Hours	
Location	(Equivalent)	(Equivalent)	
1	2000	4000	
2	2000	0	
3	2000	4000	
4	2000	0	
5	4000	4000	
6	2000	0	
7	2000	0	
8	2000	4000	
9	4000	4000	
10	2000	4000	
11	2000	4000	
12	2000	4000	
13	2000	4000	
14	2000	4000	
15	2000	4000	
16	2000	4000	

Pretest Inspections and Component Functional Tests

Fuel system components, including the fuel nozzles, EFDV, and HMU, were functionally tested prior to assembling the engine ensuring that the components were functioning correctly prior to testing. These functional checks also provided a baseline for the posttest functional checks that were performed at the conclusion of the HEFA-SPK portion of the endurance test. Pretest inspections of all engine hardware were completed with a photo of the combustor shown in Figure 3.



(a) Figure 3. Pretest Photo of Combustor.



Engine Assembly and Test Cell Installation

The assembly of Engine 940B-3 was completed on November 29, 2011 at the Honeywell-Phoenix facility. The assembled engine was then shipped to the San Tan remote test facility for staging, installation into Turbofan Test Cell 968 (Figure 4), and initial engine performance checks.

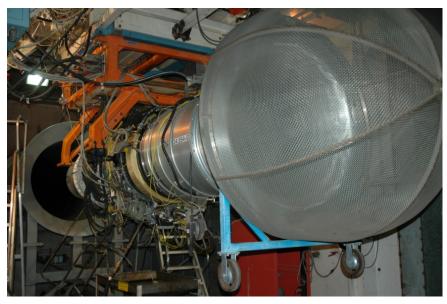


Figure 4. 940B-3 Installed in Test Cell 968 at San Tan Remote Test Facility.

Fuel Delivery and Quality Assurance

Over 60,000 gallons of neat HEFA-SPK fuel was supplied by the U.S. Air Force as part of this USDOT-FAA contract. The fuel was delivered to the San Tan test facility as neat unblended fuel. Upon arrival at the San Tan test facility, delivery tankers off-loaded approximately 6,400 gallons of HEFA-SPK fuel into 15,000 gallon fuel storage Tanks 1 or 2, shown in Figure 5. The tanks were then filled with Honeywell Jet A in order to achieve a 50/50 blend in each tank.



Figure 5. Fuel Tanks at the San Tan Test Facility.

Fuel samples were obtained of the neat HEFA-SPK, the Honeywell Jet A, and the 50/50 blends from each tank of blended fuel that was prepared. Every fuel sample collected was analyzed for specific gravity (SG), viscosity, and lower heating value (LHV) in order to calculate the exact blend ratio within each tank. The measured SG for each blending component and the 50/50 blend are shown in Figure 6 with the predicted SG value calculated from the averages of the blending components. Each blend had a blending error of less than 0.5 percent, which is well within the acceptable blending error tolerance of 3 percent.

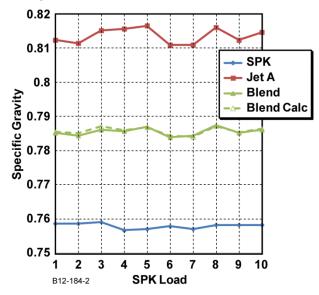


Figure 6. Specific Gravity of Blending Components and 50/50 Blend.

Additional chemical analyses were performed on select fuel samples. Three of the HEFA-SPK tanker samples, as well as the Jet A blending component and the subsequent 50/50 blend samples, were sent out for full ASTM D-7566 specification analysis. Results from the first HEFA-SPK tanker, the Jet A blend component, and the blend from the first mix are shown in Table 3.

		Neat HEFA SPK	Jet A	HEFA/Jet A Blend
1111/	NA 1/1	_	40.4	
LHV	MJ/kg	44.0	43.1	43.5
Specific Gravity		0.7587	0.8118	0.7852
Viscosity @ 77ºF	cSt	1.79	1.71	1.74
Viscosity @ 104°F	cSt	1.41	1.37	1.38
Aromatics	vol %	0.0	16.5	9.0
Freeze Point	°C	-54.5	-46.5	-50.0
Smoke Point	mm	45.5	25.5	31.0
Flash Point	°C	40.0	42.2	40.6
Water Content	ppm	26.56	23.71	24.98

Temporary Fuel Storage

Due to delays in engine assembly and the need for the USAF to quickly purge their fuel inventory, Honeywell coordinated with Glendale Aero Services in order to temporarily store up to 20,000 gallons of the HEFA-SPK fuel. Glendale Aero Services leased one of their two dedicated Jet A tanks (Tank 2, middle tank shown in Figure 7) located at the Glendale Municipal Airport fuel farm for this effort. The fuel farm was recently built and contained standard water filtration



and pumping equipment. Honeywell representatives visited the fuel farm prior to it receiving any fuel to ensure that the fuel farm was capable of meeting the program needs.



Figure 7. Fuel Tanks at Glendale Aero Services.

As fuel was required for testing, Desert Refined Products Transport (DRPT), a Honeywell-Phoenix fuel subcontractor, transported the HEFA-SPK in their Jet A dedicated tankers from the Glendale fuel facility to the San Tan Remote Test Facility. The San Tan tanks were then filled with the HEFA-SPK and Honeywell Jet A.

4.0 TEST RESULTS

The engine was installed in Test Cell 968 at the Honeywell-San Tan testing facility and was released for testing on December 7, 2011.

Back-to-Back Fuel Performance Comparison

Before initiating SLD cycles, a back-to-back engine performance comparison was completed with conventional petroleum-derived Jet A and the HEFA-SPK/Jet A blend. There was no noticeable performance difference between the two fuels other than the expected 1 percent decrease in fuel consumption with the HEFA-SPK fuel blend, due to its higher energy content. Typical performance parameters are shown in Table 4. The engine was healthy at the start of testing with margin for specific fuel consumption, inter-turbine temperatures, and engine speed.

Pretest Borescope Inspection

After the engine was installed and prior to initiating endurance test cycles, the hot section was visually inspected via borescope inspection. The pretest borescope inspection was used as a baseline for subsequent inspections slated for every 100 SLD cycles. The inspection included detailed visual checks of the combustion system hardware, including photographs of fuel atomizers, swirl cups, heat shields, combustor liners, turbine nozzles, and turbine blades.

Vs TI-8382 Criteria 940B-3	Jet A 12/5/11 Pretest	HEFA Blend 12/6/11 Pretest
TSFC Margin @ Take-off Thrust	+0.82%	+0.93%
ITT Margin @ Take-Off	+2°C	+4°C
N2 Margin @ Take-Off	+212 rpm	+204 rpm
ITT Margin @ MCT	0°C	+1°C
N2 Margin @ MCT	+178 rpm	+170 rpm
Thrust @ NTO N1	7754 lbs	7745 lbs
Ground Idle FN (340 lb Max)	325.0 lbs	330.4 lbs
Fuel LHV, Btu/lb	18499	18732
Specific Gravity	0.8104	0.7852

Table 4	Pretest Engine	Performance	Parameters
	There are a contracted and the second s		r arameters.

Endurance Cycle Initiation

Endurance testing commenced on December 8, 2011. The alternative fuel blend was used during the first 345 hours and 851 SLD cycles of the test with interim borescope inspections at approximately 100 SLD cycle intervals. The HEFA-SPK blend portion of the testing was completed on January 20, 2012 at which time the fuel atomizers, HMU, flow divider, and fuel filter were removed and sent for post-test inspections and functional checks. The components, with the exception of the atomizers which were reinstalled after functional testing, were replaced with other development assets for completion of the endurance test.

Endurance testing continued January 26, 2012 with standard Jet A fuel and the endurance test was finished with 1,229 SLD cycles completed on February 8, 2012. The engine was removed from the test cell on February 9, 2012 and returned to Phoenix for teardown and posttest analyses.

Periodic Borescope Inspections

Borescope inspections were completed after 109, 231, 322, 417, 478, 634, 771 and 851 SLD cycles. No unusual deterioration was observed during any of the inspections. At the end of the alternative fuel blend portion of the endurance test, the engine had completed 851 SLD cycles and a posttest borescope inspection was performed

After each borescope inspection, additional engine performance calibration checks were completed to ensure proper engine operation. The engine performance results showed no signs of engine deterioration.

Posttest Engine Performance Comparisons

After completion of the 851 SLD cycles, a posttest engine performance evaluation was performed with the HEFA-SPK blend. The SLD cycles were ceased with enough blended fuel remaining in the tanks in order to complete the posttest performance evaluation.

Upon completing the 1,229 SLD cycles with the conventional petroleum-derived Jet A, a posttest engine performance evaluation was performed with conventional petroleum-derived Jet A. There was no significant performance difference between the posttest performance checks with the two fuels other than the previously observed 1 percent decrease in fuel consumption with the HEFA-SPK fuel blend. Results from the posttest performance checks are shown in Table 5.

The margins for thrust specific fuel consumption (TSFC), interstage turbine temperature (ITT), and engine speed did decrease over the course of the test but that is expected for this type of endurance test. There were no significant deviations from what is normally observed for a 1,227 SLD cycle test so as to require additional or unplanned posttest inspections or activities.

Table 5. Posttest Eng	gine Perform	ance Paramete	rs.
Vs TI-8382 Criteria 940B-3	Jet A 12/5/11 Pretest	HEFA Blend 1/20/12 851 Cycles	Jet A 2/9/12 1,229 Cycles
TSFC Margin @ Take-off Thrust	+0.82%	+0.68%	+0.48%
ITT Margin @ Take-Off Comp N1	+2ºC	+6°C	+2°C
N2 Margin @ Take-Off Comp N1	+212 rpm	+173 rpm	+154 rpm
ITT Margin @ MCT Comp N1	0°C	+2°C	-1°C
N2 Margin @ MCT Comp N1	+178 rpm	+151 rpm	+129 rpm
Thrust @ NTO N1	7754 lbs	7707 lbs	7715 lbs
Ground Idle FN (340 lb Max)	325.0 lbs	319.3 lbs	325.0 lbs
Fuel LHV, Btu/lb	18499	18720	18535
Specific Gravity	0.8104	0.7861	0.8128

Posttest Functional Check Of Fuel Atomizers

After the alternative fuels portion of the endurance test was completed, the fuel atomizers were removed from the engine and transported to the Honeywell-Phoenix facility for visual inspection and posttest functional testing. The piloted airblast atomizers (start) were tested to Honeywell Document 24-PSC-3034073A, Table 9, and the pure airblast atomizers were tested to Honeywell Document 24-PSC-3034056C, Table 9, and the atomizers were determined to be acceptable for re-installation and continued use in order to finish the final 378 SLD cycles of the endurance test with standard conventional petroleum-derived Jet A fuel. Figure 8 shows the comparison between pretest and posttest atomizer flows at 509 psig relative to the average atomizer flows at 509 psig. There was little variation between the pretest and posttest atomizer flow deviations from average flows with exception of Atomizer 12 which appears to have decreased in flow relative to the average atomizer flows. Atomizer 12 still remained within the 3 percent tolerance band and was deemed acceptable for reassembly onto 940B-3 to finish the 1,227 SLD cycle test with Jet A. No visible anomalies were observed upon inspection on any of the atomizers, including Atomizer 12.

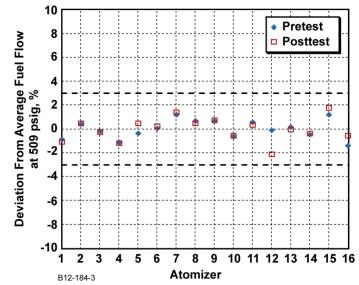


Figure 8. Pretest and Posttest Atomizer Flow Evaluation.

Photos that were taken of the atomizer sprays during the posttest functional check are shown in Figures 9 and 10. The sprays for the two atomizers are typical and do not appear to have been impacted by the HEFA-SPK fuel blend.



Figure 9. Posttest Spray of Atomizer No. 2 at (a) 87 lb/hr and (b) 194 lb/hr.



Figure 10. Posttest Spray of Pilot Atomizer No. 3 at (a) 87 lb/hr and (b) 194 lb/hr.

Photos were also taken of the atomizer tips before and after the endurance test. No material degradation or additional carbon build up appeared evident from the post-test inspections.

Component Posttest Evaluations

The Hydro-Mechanical Unit (HMU), the flow divider valve (EFDV), and the engine fuel filter were removed from the engine (they were replaced with germane hardware in order to finish the endurance test with conventional Jet A fuel) after the HEFA-SPK blend portion of the testing was completed. The EFDV was functionally tested at the Honeywell-Phoenix facility prior to shipment to Honeywell-South Bend for a detailed teardown inspection. The results of the pretest and posttest functional check of the EFDV are shown in Figure 11. The pretest and posttest results are nearly identical and indicate that there was no functional impact of the alternative fuel blend on the flow divider valve.

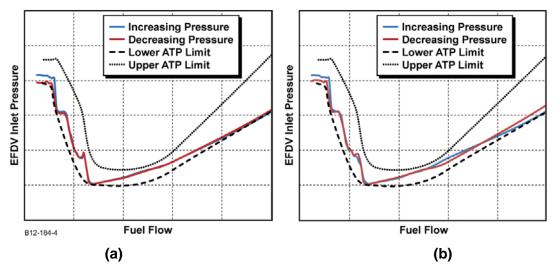


Figure 11. EFDV Functional Test Results (a) Pretest and (b) Posttest.

A limited teardown of the EFDV was also performed prior to shipping the hardware to South Bend in order to get an idea of elastomer conditions and to observe any wear on readily accessible surfaces. Figure 12a shows the EFDV inlet fitting including fluorocarbon and fluorosilicone o-rings that appear to be in pristine condition. Figure 12b shows the groove that houses an internal valve. The surface also appeared to be in pristine condition.



Figure 12. EFDV Inspection Photos (a) Inlet Fitting and (b) Valve Groove.

Unlike the EFDV, which was able to have parts removed without impacting its performance and inspection at South Bend, the HMU was only photographed at the Phoenix facility. Figure 13a shows an overall photo of the HMU and Figure 13b shows an outlet port. No unusual findings were observed at the Phoenix facility.



(a)

(b)

Figure 13. HMU Inspection Photos (a) Overall Unit and (b) Discharge Port.

Upon arrival at the Honeywell-South Bend facility, both the EFDV and HMU completed run-asreceived (RAR) tests and were disassembled. There were no significant findings related to the HEFA-SPK fuel blend exposure. The EFDV teardown was completed March 29, 2012 while the HMU teardown was completed April 20, 2012.

The HMU and EFDV posttest evaluations and teardowns were completed with no significant findings related to the HEFA-SPK fuel blend exposure.

Posttest Teardown Inspection of Fuel Filter

The fuel filter used during the 851 SLD cycles with the HEFA-SPK fuel blend was sent to the manufacturer for a detailed inspection. The evaluation completed by the supplier found no fluid compatibility issues with the design, construction, or medium of the filter. Typical particulate contaminants were found with no presence of bacteria.

Visual inspection of the "as received" condition of the serviced fuel filter element showed the filter element to be intact, with no visible abnormalities or damage.

Typical filter contamination was extracted from the filter element and was comprised, primarily, of significant amounts of fine and coarse particulate contamination. The amount of metallic contamination was estimated to be 30 percent.

Visual examination of the removed filtration medium pack, the component layers of the filtration medium pack, and the filter element core showed no signs of incompatibility with the exposure to the HEFA-SPK fuel blend.

Posttest Teardown and Inspections

Detailed photos were taken of the combustor during the posttest engine teardown. No unusual deterioration was observed during the inspections. Photos were taken of the outer and inner panels of the combustor from pretest and posttest.

Pretest and posttest photos were also taken of the heat shields. Only a mild change in color of the heat shield is noticeable, which is typical of a 1,227 SLD cycle endurance test. No major issues with the heat shields were identified from the use of the HEFA-SPK blend.

Pretest and posttest photos were taken of the first-stage high-pressure turbine blades. The blades were new at the beginning of the endurance test and a noticeable discoloration was observed and could be seen in the photos. This discoloration is due to sand and is typical for a 1,227 SLD cycle endurance test performed at the San Tan Remote Test Facility, where sand ingestion is a common occurrence. No major issues with the first-stage high-pressure turbine blades were identified from the use of the HEFA-SPK blend.

Pretest and posttest photos were taken of the second-stage high-pressure turbine blades. The second-stage blades were used in previous endurance tests and no major color difference is noticeable from pretest to posttest. No major issues with the second-stage high-pressure turbine blades were identified from the use of the HEFA-SPK blend.

5.0 TEST SUMMARY

This engine test program aimed to address the aviation industry's need to evaluate the impact of alternative aviation fuel blends on engine durability. HEFA-SPK (tallow feedstock) was blended 50/50 with conventional petroleum-derived Jet A fuel and used to fuel an HTF7000 turbofan propulsion engine for 851 SLD cycles (345 hours). The evaluations performed as part of this effort included assessing the impact of the HEFA-SPK fuel blend on major combustion and fuel system components. The HTF7000 940B-3 engine performed normally with the use of the HEFA-SPK and Jet A blend. There was no unusual deterioration noticed on any of the hardware during the posttest inspections, functional tests, or other evaluations. The HEFA-SPK blend did not appear to negatively impact the durability of the HTF7000 turbofan propulsion engine.



Appendix I

Periodic Engine Performance Check Results

(3 Pages)



AS90	7-3 S/N 940B	3 Margins			
vs TI-8382 Criteria	S/N 940B2 ⁽¹⁾		S/N	940B3 ⁽¹⁾	
vs II-0302 Chiena	Post Cyc Perf #2	SS Break-Ins	22PTCAL1	22PTCAL2	Post161A (4)
AS900PG V1.23	7/26/11	12/3/11	12/5/11	12/6/11	12/15/11
SLD Cycles Completed			0	0	161
Fuel Type	Jet A	Jet A	Jet A	Bio-Fuel	Jet A
Performance Margins @ Takeoff					
TSFC Margin @ Take-Off Thrust	+1.58%		+0.82%	+0.93%	-0.95%
Comp w/Fn Margin @ Take-Off N1	-4 Comp w/+15 lbs		-3 Comp w/+29 lbs	-3 Comp w/+21 lbs	-3 Comp w/+13 lbs
ITT Margin @ Take-off Comp N1	+11C		+2C	+4C	-9C
N2 Margin @ Take-Off Comp N1	+226 rpm		+212 rpm	+204 rpm	+127 rpm
Performance Margins @ MCT					
Comp w/Fn Margin @ MCT N1	-4 Comp w/+7 lbs		-3 Comp w/+21 lbs	-3 Comp w/+16 lbs	-3 Comp w/+3 lbs
ITT Margin @ MCT Comp N1	+8C		0C	+1C	-13C
N2 Margin @ MCT Comp N1	+194 rpm	Thrust	+178 rpm	+170 rpm	+109 rpm
		measurement			
Thrust @ NTO N1	7783 lbs	issues cause	7754 lbs	7745 lbs	7739 lbs
Ground Idle FN (vs 340 lb Max)	334.0 lbs	failure of sale	325 lbs	330.4 lbs	n/a ⁽²⁾
		page program			
Embraer DSC Sensor Checks	(2)		. (2)	((2)	<i>(</i> (2)
ECTT2 - Lab T1_avg (@ T-O Pow er)	n/a ⁽²⁾		n/a ⁽²⁾	n/a ⁽²⁾	n/a ⁽²⁾
ECVIB - ZVFWDASA (@ T-O Pow er)	n/a ⁽²⁾		n/a ⁽²⁾	n/a ⁽²⁾	n/a ⁽²⁾
ECWF / Lab WF_avg (@ 900 pph)	0.997		n/a ⁽²⁾	n/a ⁽²⁾	1.000
Other Perf Sensor Checks @ T/O					
ECEGT - Lab TT60_avg	n/a ⁽³⁾		n/a ⁽³⁾	n/a ⁽³⁾	n/a ⁽³⁾
Left vs Right EGT Split	n/a ⁽²⁾		n/a ⁽²⁾	n/a ⁽²⁾	n/a ⁽²⁾
N1 Pow erset Verification	n/a ⁽²⁾		n/a ⁽²⁾	n/a ⁽²⁾	n/a ⁽²⁾
Exhaust Nozzle	Reference 907-1	Reference 907-1	Reference 907-1	Reference 907-1	Reference 907-1
Extrapolated Points	None	None	None	None	None
Inlet Condens Correction	No	Unknow n	Yes (+0.3% Fn)	No	Yes (+0.4% Fn)
Average Tamb	88.8F	50.7F	48.8F	49.6F	54.6F
Test Cell	967	968	968	968	968
Notes:					
⁽¹⁾ MLE Fan Stator Installed					
⁽²⁾ Pow erset definition for 22 Point Cal	is not compatible with s	ale page program r	equirements or NTO P	ow er w as not set prop	perly
⁽³⁾ Station 5.5 rakes are installed					
(4) IP Bleed w as ON					
⁽⁵⁾ Engine Pow erset definitions is corre	ect. Sale Page program	needs updated from	m interim curves		
⁽⁶⁾ T1 anomalies during this data set: 1)	4F T1 split for top 2 po	wersets, and 2) 5F	T1/OAT/ECT2 change	betw een 2nd & 3rd d	ata points (in 5 minute

(7) This data set also had large T1 splits at various pow ersets. Also had 50 lbs thrust split at high pow er and 95 lbs thrust split at idle pow er (w ronç ⁽⁸⁾ Adjusted to correct Jet A fuel properties (Tfile had Bio-Fuel props as Jet A fuel sample was not tested yet)



AS90	07-3 S/N 940E	33 Margins a	nd Sensor	Checks	
	S/N 940B2 ⁽¹⁾		S/N 94	0B3 ⁽¹⁾	
vs TI-8382 Criteria	Post Cyc Perf #2	Post161B	Post417	Post478	Post635A
AS900PG V1.23	7/26/11	12/16/11	1/3/12	1/5/12	1/9/12
SLD Cycles Completed		161	417	478	635
Fuel Type	Jet A	Jet A	Jet A	Jet A	Jet A
Performance Margins @ Takeoff					
TSFC Margin @ Take-Off Thrust	+1.58%	+0.56%	+0.45%	+0.26%	+0.44%
Comp w /Fn Margin @ Take-Off N1	-4 Comp w/+15 lbs	-3 Comp w/+21 lbs	-3 Comp w/+7 lbs	-2 Comp w/+41 lbs	-2 Comp w/+29 lbs
ITT Margin @ Take-off Comp N1	+11C	+2C	+2C	+2C	+2C
N2 Margin @ Take-Off Comp N1	+226 rpm	+168 rpm	+160 rpm	+146 rpm	+150 rpm
Performance Margins @ MCT					
Comp w /Fn Margin @ MCT N1	-4 Comp w/+7 lbs	-3 Comp w/+14 lbs	-3 Comp w/+0 lbs	-2 Comp w/+30 lbs	-2 Comp w/+23 lbs
ITT Margin @ MCT Comp N1	+8C	-2C	-1C	-2C	-1C
N2 Margin @ MCT Comp N1	+194 rpm	+144 rpm	+134 rpm	+122 rpm	+125 rpm
Thrust @ NTO N1	7783 lbs	7745 lbs	7732 lbs	7723 lbs	7710 lbs
Ground Idle FN (vs 340 lb Max)	334.0 lbs	321.3 lbs	325.7 lbs	322.3 lbs	328.9 lbs
Embraer DSC Sensor Checks					
ECTT2 - Lab T1_avg (@ T-O Pow er)	n/a ⁽²⁾	n/a ⁽²⁾	+9,7F	n/a ⁽²⁾	+0.8F
ECVIB - ZVFWDASA (@ T-O Pow er)	n/a ⁽²⁾	n/a ⁽²⁾	-0.045 ips	n/a ⁽²⁾	-0.051 ips
ECWF / Lab WF_avg (@ 900 pph)	0.997	0.997	0.995	0.991	0.994
Other Perf Sensor Checks @ T/O					
ECEGT - Lab TT60 avg	n/a ⁽³⁾	n/a ⁽³⁾	n/a ⁽³⁾	n/a (3)	n/a ⁽³⁾
Left vs Right EGT Split	n/a ⁽²⁾	n/a (2)	-14.5F	n/a (2)	-22.5F
N1 Pow erset Verification	n/a ⁽²⁾	n/a ⁽²⁾	n/a ⁽⁵⁾	n/a ⁽²⁾	n/a ⁽⁵⁾
Exhaust Nozzle	Reference 907-1	Reference 907-1	Reference 907-1	Reference 907-1	Reference 907-1
Extrapolated Points	None	None	None	None	None
Inlet Condens Correction	No	No	No	No	No
Average Tamb	88.8F	65.4F	65.1F	72.6F	53.5F
Test Cell	967	968	968	968	968
Notes:					
⁽¹⁾ MLE Fan Stator Installed					
⁽²⁾ Pow erset definition for 22 Point Cal	is not compatible with sa	ale page program requir	ements or NTO Pow e	r w as not set properly	
⁽³⁾ Station 5.5 rakes are installed					
(4) IP Bleed w as ON					
⁽⁵⁾ Engine Pow erset definitions is corre	ct. Sale Page program r	needs updated from inte	erimcurves		
⁽⁶⁾ T1 anomalies during this data set: 1)		•		w een 2nd & 3rd data p	oints (in 5 minutes)
⁽⁷⁾ This data set also had large T1 splits			•	•	. ,
⁽⁸⁾ Adjusted to correct Jet A fuel prope					



	S/N 940B2 ⁽¹⁾		S/N 94	0B3 ⁽¹⁾	
vs TI-8382 Criteria	Post Cyc Perf #2	Post852 (6)	Pre853 ⁽⁷⁾	Post1229	Post Fan Wash
AS900PG V1.23	7/26/11	1/20/12	1/25/12	2/8/12	2/9/12
SLD Cycles Completed		852	852	1229	1229
Fuel Type	Jet A	Bio-Fuel	Jet A	Jet A	Jet A
Performance Margins @ Takeoff					
TSFC Margin @ Take-Off Thrust	+1.58%	+0.68%	+0.00% (8)	+0.50%	+0.48%
Comp w /Fn Margin @ Take-Off N1	-4 Comp w/+15 lbs	-2 Comp w/+25 lbs	-3 Comp w/+6 lbs	-2 Comp w/+28 lbs	-2 Comp w/+34 lb
ITT Margin @ Take-off Comp N1	+11C	+6C	+5C	+3C	+2C
N2 Margin @ Take-Off Comp N1	+226 rpm	+173 rpm	+171 rpm	+162 rpm	+154 rpm
Performance Margins @ MCT					
Comp w /Fn Margin @ MCT N1	-4 Comp w/+7 lbs	-2 Comp w/+17 lbs	-3 Comp w/+5 lbs	-2 Comp w/+23 lbs	-2 Comp w/+28 lb:
ITT Margin @ MCT Comp N1	+8C	+2C	+1C	-1C	-1C
N2 Margin @ MCT Comp N1	+194 rpm	+151 rpm	+145 rpm	+127 rpm	+129 rpm
Thrust @ NTO N1 Ground Idle FN (vs 340 lb Max)	7783 lbs 334.0 lbs	7707 lbs 319.3 lbs	7729 lbs 235.6 lbs	7708 lbs 336.0 lbs	7715 lbs 325.0 lbs
Embraer DSC Sensor Checks					
ECTT2 - Lab T1_avg (@ T-O Pow er)	n/a ⁽²⁾	+1.9F	n/a ⁽²⁾	+0.8F	n/a ⁽²⁾
ECVIB - ZVFWDASA (@ T-O Pow er)	n/a ⁽²⁾	-0.053 ips	n/a ⁽²⁾	-0.048 ips	n/a ⁽²⁾
ECWF / Lab WF_avg (@ 900 pph)	0.997	0.994	1.015 ⁽⁸⁾	n/a ⁽²⁾	0.996
Other Perf Sensor Checks @ T/O					
ECEGT - Lab TT60_avg	n/a ⁽³⁾	n/a ⁽³⁾	n/a ⁽³⁾	n/a ⁽³⁾	n/a ⁽³⁾
Left vs Right EGT Split	n/a ⁽²⁾	-9.2F	n/a ⁽²⁾	-22.0F	n/a ⁽²⁾
N1 Powerset Verification	n/a ⁽²⁾	n/a ⁽⁵⁾	n/a ⁽²⁾	n/a ⁽⁵⁾	n/a ⁽²⁾
Exhaust Nozzle	Reference 907-1	Reference 907-1	Reference 907-1	Reference 907-1	Reference 907-1
Extrapolated Points	None	None	None	None	None
Inlet Condens Correction	No	Yes (+0.4% Fn)	No	No	No
Average Tamb	88.8F	44.1F	57.7F	68.2F	68.2F
Test Cell	967	968	968	968	968
Notes:					
⁽¹⁾ MLE Fan Stator Installed					
⁽²⁾ Pow erset definition for 22 Point Cal	is not compatible with sa	ale page program requi	rements or NTO Pow e	r w as not set properly	
⁽³⁾ Station 5.5 rakes are installed					
⁽⁴⁾ IP Bleed w as ON					
⁵⁾ Engine Pow erset definitions is corre		•			
6) T1 anomalies during this data set: 1)	4F T1 split for top 2 pow	versets, and 2) 5F T1/0	DAT/ECT2 change betw	v een 2nd & 3rd data p	oints (in 5 minutes)

Appendix II Test Facility Photos (1 Page)



Figure II-1. San Tan Facility (a) Engine Installation and (b) Test Cell Control Room.



Figure II-2. Fuel Farms at (a) San Tan and (b) Glendale Aero Services.

Appendix III Chemical Analysis Results (118 Pages)

Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis Uncontrolled in electro		alysis		x)	CMR 54628 Neal, Terr 11/10/2011 9:55 A Page 1 of	
CMR Number	546288		Submission	Date		10/20/2011 09:	49 AM	
Status	Completed		Desired Date	,		10/24/2011		
Disposition	Conforms		Commit Date			10/24/2011		
Released By	Baker, Susan		Completion I			10/21/2011 09:	41 PM	
neleased by	Daker, Susari	1	Constant and the second			apple of the second sec	41 F WI	
1000028001800000			Project / Typ	90		Certify		
Labor Charge Number	7002368937-005	50						
SAP Project	EG-002166		SAP Work C	enter		1015-EEMAZZ	ML	
Sample Origin	T1							
Oil / Fuel Type	Jet A		Material Spe	с		ASTM-D-1655		
Detailed Instructions	Gallon containe	r is for Randy William	s who will s	upply d	ispo, Ext	ension #7229		
Distribution List	Ciero, Robert V	STORE STORES		appij u	opor Ent			
Customer	Neal, Terry		Submitted B	y		Neal, Terry		
Phone	+1 480/592-7931 BA-60122		Phone			+1 480/592-79	31	
Department			Department			BA-60122		
Requesting Site	Phoenix		Dopartment			OT OUTEE		
	1 and a strength							
Test Results								
Specimen: FIMS (API)							Date: 10/21/201	
Property	y	Result	Units	LL	T UL	SOP	Analyst	
Test: A&B Coefficients								
A Coefficient		(c) 10.0326527				WI1414	Bautista, Karla	
B Coefficient		(c) 3.8290374				WI1414	Bautista, Karla	
Test: LHV								
Calorimeter		Parr 1266	-	-	_	WI1411	Bautista, Karla	
Calorimeter constant		2411.0576			-	WI1411	Bautista, Karla	
Sample Weight		0.5680				WI1411	Bautista, Karla	
Tape Weight			g		_	WI1411	Bautista, Karla	
Temperature change Fuse Correction		2.5974				WI1411	Bautista, Karla	
and the second se			cal				WI1411	
DUTRIO BOILD	c Acid					and the second se	Bautista, Karla	
Nitric Acid		12	mi			WI1411	Bautista, Karla Bautista, Karla	
LHV-FIMS			mi			and the second se	Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A	N)	12 (c) 18523	mi BTU/Ib			WI1411	Bautista, Karla Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity)	12 (c) 18523 43.9	ml BTU/lb °API			WI1411 WI1411 ASTM-D-1298	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature	0	12 (c) 18523 43.9 74	mi BTU/Ib			WI1411 WI1411	Bautista, Karla Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF)	12 (c) 18523 43.9 74 (c) 42.697	ml BTU/Ib °API °F			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		12 (c) 18523 43.9 74 (c) 42.697	ml BTU/lb °API			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF		12 (c) 18523 43.9 74 (c) 42.697 (c) 812	ml BTU/Ib °API °F			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de		12 (c) 18523 43.9 74 (c) 42.697 (c) 812	ml BTU/Ib °API °F			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F		12 (c) 18523 43.9 74 (c) 42.697 (c) 812 0.8123	ml BTU/lb °API °F kg/m^3			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104		12 (c) 18523 43.9 74 (c) 42.697 (c) 812 0.8123 VIS-2382	ml BTU/lb °API °F kg/m^3 sec			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1		12 (c) 18523 43.9 74 (c) 42.697 (c) 812 0.8123 VIS-2382 371.17	ml BTU/lb °API °F kg/m^3 sec sec			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2		12 (c) 18523 43.9 74 (c) 42.697 (c) 812 0.8123 VIS-2382 371.17 371.10	ml BTU/lb °API °F kg/m^3 sec sec sec sec			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		12 (c) 18523 43.9 74 (c) 42.697 (c) 812 0.8123 VIS-2382 371.17 371.10 (c) 371.14	ml BTU/lb °API °F kg/m^3 sec sec sec sec			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant		12 (c) 18523 43.9 74 (c) 42.697 (c) 812 0.8123 VIS-2382 371.17 371.10 (c) 371.14 (c) 1.36 0.003653	ml BTU//b °F kg/m^3 sec sec sec cst			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1		12 (c) 18523 43.9 74 (c) 42.697 (c) 812 0.8123 VIS-2382 371.17 371.10 (c) 371.14 (c) 1.36 0.003653 466.51	ml BTU/lb °API °F kg/m^3 sec sec sec cst sec			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dt Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1 Run #2		12 (c) 18523 43.9 74 (c) 42.697 (c) 812 0.8123 VIS-2382 371.17 371.10 (c) 371.14 (c) 1.36 0.003653 466.51 466.53	ml BTU/lb °API °F kg/m^3 sec sec sec cst sec sec sec sec			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla	
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1		12 (c) 18523 43.9 74 (c) 42.697 (c) 812 0.8123 VIS-2382 371.17 371.10 (c) 371.14 (c) 1.36 0.003653 466.51	ml BTU/lb °API °F kg/m^3 sec sec sec sec cst sec sec sec sec sec sec			WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla	

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: FIMS Analysis (Phoenix) Uncontrolled in electronic/hard copy. Verify version in LIMS.	CMR 546288 Neal, Terry 11/10/2011 9:55 AM Page 2 of 2
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Property	Result	Units	LL	Т	UL	SOP	Analyst
Test: Text Results							
Text Result	(see below)					ASTM-D-240	Neal, Terry 10/20/2011

	CMR Hours	
Budgeted Hours	Estimated Hours	Actual Hours
		0.5

				Test Location	s of CMR								
Location		Com	mit Date	Status		Cha	rge Nu	mber	1	Logged B	y	Last Lo	gged
Oil/Fuel Analysis: FIMS Analysis		10/24/20	11	Released	70	023689	37-005	0	Baker	r, Susan		10/21/2011	10
				CMR Me	trics								
Location	Commit Date Compliance (%)	Baseline CDC (%)	Commit Date OTTR (days)	Desired Date Compliance (%)	Desired Date OTTR (days)	SPI	CPI	Transit Time (days)	Queue Time (days)	Cycle Time (days)	Thru Time (days)	Desired Time (days)	Total Time (days
Oil/Fuel Analysis: FIMS Analysis	100.00	100.00	3.00	100.00	3.00	2.68	0.00	1.05	0.00	0.45	0.45	4.00	1.4

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	Oil/Fuel Analysis		alysis			CMR 5462 Neal, Ter 11/10/2011 10:02 A Page 1 o		
546289		Submission	Date		10/20/2011 09	10/20/2011 09:52 AM		
Completed		Desired Dat	е		10/24/2011			
Conforms		Commit Dat	e		10/24/2011			
and the second se			7.0		algebra with the best from	-95 DM		
Daker, Odsan		CONTRACTOR OF STREET			and the second second second			
	1	Project / Ty	pe		Certify			
7002368937-00	50							
EG-002166		SAP Work	Center		1015-EEMAZ	ZML		
T2								
Jet A		Material Sp	ec		ASTM-D-1655			
Gallon containe	r is for Bandy William	s who will s	supply d	lispo, F	xtension #7229			
and a second	SUPPLY AND A DESCRIPTION OF A DESCRIPTIO	e mis mil c	shiply o		The second second second			
Neal, Terry		Submitted E	By		Neal, Terry			
+1 480/592-793	1	Phone			+1 480/592-79	31		
BA-60122		Department			BA-60122			
		- opartition						
	Result	Units	LL	τι	JL SOP	Date: 10/21/201 Analyst		
	(c) 10.3961948				WI1414	Baker, Susan		
	(c) 3.9622173				WI1414	Bautista, Karla		
	Parr 1266		1		And Party of Long Street, Stre	Baker, Susan		
	and the second		-		and the second se	Baker, Susan		
				_		Baker, Susan		
			_			Baker, Susan		
			_		and the second s	Baker, Susan		
	17.				and the second se	Baker, Susan Baker, Susan		
		and the second se			and the second se	Baker, Susan		
	(c) 16525	BTUND	-	10-10	WITHT	Daker, Susan		
	44.1	°API	1	1.1	ASTM-D-1298	Bautista, Karla		
		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	1		and the second s	Bautista, Karla		
					ASTM-D-1298	Bautista, Karla		
	A STATE OF A	kg/m^3			ASTM-D-1298	Bautista, Karla		
aF	0.8114				ASTM-D-1298	Bautista, Karla		
100 A								
	VIS-2383				WI1414	Bautista, Karla		
	367.63	Sec			WI1414	Bautista, Karla		
	367.63	Sec			WI1414	Bautista, Karla		
	(c) 367.63	Sec			WI1414	Bautista, Karla		
	(c) 1.35	cst			WI1414	Bautista, Karla		
14			-		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			
	0.000070				WI1414	Bautista, Karla		
	0.003676					the second se		
	462.07				WI1414	Bautista, Karla		
	Contraction of the local distance of the loc	Sec			WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla Bautista, Karla		
	Completed Conforms Baker, Susan 7002368937-009 EG-002166 T2 Jet A Gallon containe Ciero, Robert M Neal, Terry	S46289 Completed Conforms Baker, Susan 7002368937-0050 EG-002166 T2 Jet A Gallon container is for Randy William Gallon container is for Randy William Ciero, Robert Williams, Randy Main Standy Neal, Terry +1 480/592-7931 BA-60122 Phoenix Phoenix Ciero, 10.3961948 (c) 10.3961948 (c) 3.9622173 Quart 1266 13 Quart 1266 13 Quart 1266 13 (c) 10.3961948 (c) 18525 Quart 1266 13 Quart 13 12 <	Oil/Fuel Analysis: FIMS An Uncontrolled in electronic/hard copy. V 546289 Submission Completed Commit Dat Conforms Completion Baker, Susan Project / Ty 7002368937-0050 SAP Work 0 EG-002166 SAP Work 0 T2 Material Sp Gallon container is for Randy Williams who will st Ciero, Robert Williams, Randy Neal, Terry Submitted E +1 480/592-7931 BA-60122 Phoenix Submitted E Phoenix Units (c) 10.3961948 (c) 3.9622173 Parr 1266 °C 0.5615 g 0.6142.890 (c) 18525 BA	Oil/Fuel Analysis: FIMS Analysis Subcentrolled in electronic/hard copy. Verity verity S46289 Submission Date Completed Desired Date Conforms Desired Date Baker, Susan Completion Date 7002368937-0050 EG-002166 EG-002166 SAP Work Center T2 Jet A Jet A Material Spec Gallon container is for Randy Williams who will supply of Ciero, Robert Williams, Randy Neal, Terry Submitted By +1 480/592-7931 BA-60122 Phoenix Submitted By Phoneix Department (c) 10.3961948 Department (c) 10.3961948 0 (c) 18255 TU/lb (c) 18255 TU/lb (c) 18255 TU/lb (c) 8	Oil/Fuel Analysis: FIMS Analysis (Phoen Uncentrolled in electronic/hard copy. Verity venitor in LIMS 546289 Submission Date Desired Date Completed Commit Date Desired Date Conforms Completion Date Project / Type 7002368937-0050 EG-002166 SAP Work Center T2 Material Spec Salon container is for Randy Williams who will supply dispo. E Gilon container is for Randy Williams who will supply dispo. E Project / Type Neal, Terry Submitted By Phone Phoenix Submitted By Phone Department Phone Department Vission 0 g g g (c) 10.3961948 g g g (c) 3.9622173 g g g Phoenix g g g g (c) 10.3961948 g g g g (c) 10.3961948 g g g g g (c) 10.3961948 g g g g g (c) 10.3961948 g g g g g <t< td=""><td>Oil/Fuel Analysis: FIMS Analysis (Phoenix) Uncentrolled in electronic/hand capy. Verity version in LMS. 546289 Submission Date 10/20/2011 09 Completed Desired Date 10/21/2011 09 Conforms Desired Date 10/21/2011 09 Project / Type Certify 7002366937-0050 SAP Work Center 1015-EEMAZZ Iz Material Spec ASTM-D-1655 Gallon container is for Randy Williams who will supply dispo. Extension #7229 Ciero, Robert Williams, Randy Neal, Terry +1 480/592-7931 BA-60122 Phone H 480/592-793 BA-60122 Phone BA-60122 BA-60122 Phoenix Submitted By Wil414 Q 10.3961948 Wil414 Q 10.3961948 Wil414 Q 10.3961948 Wil411 Q 10.3961948 Wil411 Q 10.3961948 Wil411 Q 10.3961948 Wil411 Q 10.5615 g Wil411 Q 10.5615 g Wil411 Q 10.5615 g Wil411 Q 10.615 g Wil411 </td></t<>	Oil/Fuel Analysis: FIMS Analysis (Phoenix) Uncentrolled in electronic/hand capy. Verity version in LMS. 546289 Submission Date 10/20/2011 09 Completed Desired Date 10/21/2011 09 Conforms Desired Date 10/21/2011 09 Project / Type Certify 7002366937-0050 SAP Work Center 1015-EEMAZZ Iz Material Spec ASTM-D-1655 Gallon container is for Randy Williams who will supply dispo. Extension #7229 Ciero, Robert Williams, Randy Neal, Terry +1 480/592-7931 BA-60122 Phone H 480/592-793 BA-60122 Phone BA-60122 BA-60122 Phoenix Submitted By Wil414 Q 10.3961948 Wil414 Q 10.3961948 Wil414 Q 10.3961948 Wil411 Q 10.3961948 Wil411 Q 10.3961948 Wil411 Q 10.3961948 Wil411 Q 10.5615 g Wil411 Q 10.5615 g Wil411 Q 10.5615 g Wil411 Q 10.615 g Wil411		

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Attn: Terry Cooper Honeywell International Inc.	CMR Result Report	CMR 546289 Neal, Terry
3131 Airlane-Engineering	Oil/Fuel Analysis: FIMS Analysis (Phoenix)	11/10/2011 10:02 AM
Phoenix, AZ 85034	Uncontrolled in electronic/hard copy. Verify version in LIMS.	Page 2 of 2

Specimen: ~Text Results	S						Date: 10/20/201
Property	Result	Units	LL	Т	UL	SOP	Analyst
Test: Text Results							
Text Result	(see below)					ASTM-D-240	Neal, Terry 10/20/2011
Lower Heating Value	(Net Heat of Combustion)	was tested	per AS	TM-D-	240		
Text Result	(see below)					per CMR inst.	Baker, Susan 10/21/2011

		CME	R Re-Test Log	g Entries		
Date	Re-Test Type	Sample Id	Test	Disp Chg	Reason	Logged By
10/21/2011	Re-test	1061330132	LHV	No	Show Reason	Baker, Susan

	CMR Hours	
Budgeted Hours	Estimated Hours	Actual Hours
-		0.5

Test Locations of CMR											
Location	Commit Date	Status	Charge Number	Logged By	Last Logged						
Oil/Fuel Analysis: FIMS Analysis	10/24/2011	Released	7002368937-0050	Baker, Susan	10/21/2011						

				CMR Me	trics								
Location	Commit Date Compliance (%)	Baseline CDC (%)	Commit Date OTTR (days)	Desired Date Compliance (%)	Desired Date OTTR (days)	SPI	CPI	Transit Time (days)	Queue Time (days)	Cycle Time (days)	Thru Time (days)	Desired Time (days)	Total Time (days)
Oil/Fuel Analysis: FIMS Analysis	100.00	100.00	3.00	100.00	3.00	2.69	0.00	1.04	0.00	0.44	0.44	4.00	1.49

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Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis Uncontrolled in electro		alysis			CMR 5475 Neal, Ter 11/10/2011 10:04 A Page 1 of				
CMR Number	547553		Submission	Date		10/28/2011 10	0:42 AM				
Status	Completed		Desired Dat	e		10/31/2011	10/31/2011				
Disposition	Info Only		Commit Da				10/31/2011				
	Design of the subscription					and the second s	10/31/2011 10:19 AM				
Released By	Rexroad, Perry		Completion			and the state of the state of the	0:19 AM				
	2		Project / Ty	pe		Info Only	Info Only				
Labor Charge Number	7002368937-00)50									
SAP Project	EG-002166		SAP Work	Center		1015-EEMAZ	ZML				
Sample Origin	T1					Reconstruction and advantage					
Oil / Fuel Type	Jet A/Biofuel		Material Sp	00		ASTM-D-165	5				
Detailed Instructions	and the second second second second	and the second		, ,							
	or the local data and the second data and the	t Bio-fuel. Not a mix.	Taken from	first true	sk beto	re off load.					
Distribution List	Ciero, Robert	Williams, Randy									
Customer	Neal, Terry		Submitted I	Bv		Neal, Terry					
Phone	+1 480/592-793		Phone	- N		+1 480/592-7	931				
	BA-60122	xxxx									
Department	seine scheroriten biegen men		Department			DA-00122	BA-60122				
Requesting Site	Phoenix										
Test Results Specimen: FIMS (API) Property		Result	Units	LL	TU	L SOP	Date: 10/31/201 Analyst				
Test: A&B Coefficients											
A Coefficient		(c) 10.6581499				WI1414	Rexroad, Perry				
B Coefficient		(c) 4.0523844				Wi1414	Rexroad, Perry				
Test: LHV											
Calorimeter		Parr 1266		-		WI1411	Rexroad, Perry				
Calorimeter constant		2411.06			_	WI1411	Rexroad, Perry				
Sample Weight		0.5679			_	WI1411	Rexroad, Perry				
Tape Weight		2.6689	g			WI1411					
Temperature change		2.0009				1404 444	Rexroad, Perry				
Fue Correction		7			_	WI1411	Rexroad, Perry				
Fuse Correction			cal			WI1411	Rexroad, Perry Rexroad, Perry				
Nitric Acid		12	cal ml			WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry				
Nitric Acid LHV-FIMS			cal ml			WI1411	Rexroad, Perry Rexroad, Perry				
Nitric Acid LHV-FIMS Test: Specific Gravity (A)		12 (c) 18941	cal ml BTU/Ib			W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity		12 (c) 18941 56.5	cal ml BTU/lb ° API			WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature		12 (c) 18941 56.5 74	cal ml BTU/Ib			WI1411 WI1411 WI1411 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity		12 (c) 18941 56.5 74 (c) 55.003	cal ml BTU/lb ° API			WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		12 (c) 18941 56.5 74 (c) 55.003	cal ml BTU/lb °API °F			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF		12 (c) 18941 56.5 74 (c) 55.003 (c) 759	cal ml BTU/lb °API °F			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de		12 (c) 18941 56.5 74 (c) 55.003 (c) 759	cal ml BTU/lb °API °F			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F		12 (c) 18941 56.5 74 (c) 55.003 (c) 759 0.7587	cal ml BTU/lb °API °F kg/m^3			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1		12 (c) 18941 56.5 74 (c) 55.003 (c) 759 0.7587 0.003676	cal ml BTU/lb ° API ° F kg/m^3 sec			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1		12 (c) 18941 56.5 74 (c) 55.003 (c) 759 0.7587 0.003676 381.21	cal ml BTU/lb ° API ° F kg/m^3 sec sec			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W1414 W1414 W1414 W1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Test: Viscosity @ 104F Other tube constant Run #1 Run #2		12 (c) 18941 56.5 74 (c) 55.003 (c) 759 0.7587 0.003676 381.21 381.11	cal ml BTU/lb ° API ° F kg/m^3 sec sec sec sec			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W1414 W1414 W1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		12 (c) 18941 56.5 74 (c) 55.003 (c) 759 0.7587 0.003676 381.21 381.11 (c) 381.16	cal ml BTU/lb ° API ° F kg/m^3 sec sec sec sec			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W1414 W1414 W1414 W1414 W1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant		12 (c) 18941 56.5 74 (c) 55.003 (c) 759 0.7587 0.003676 381.21 381.11 (c) 381.16 (c) 1.40 0.003676	cal ml BTU/lb ° API ° F kg/m*3 sec sec sec cst			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W1414 W1414 W1414 W1414 W1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1		12 (c) 18941 56.5 74 (c) 55.003 (c) 759 0.7587 0.003676 381.21 381.11 (c) 381.16 (c) 1.40 0.003676 485.03	cal ml BTU/lb ° API ° F kg/m*3 sec sec sec sec cst sec			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W1414 W1414 W1414 W1414 W1414 W1414 W1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1 Run #2		12 (c) 18941 56.5 74 (c) 55.003 (c) 759 0.7587 0.003676 381.21 381.11 (c) 381.16 (c) 1.40 0.003676 485.03 484.99	cal ml BTU/lb ° API ° F kg/m^3 sec sec sec cst sec sec sec sec			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W1414 W1414 W1414 W1414 W1414 W1414 W1414 W1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla				
Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1		12 (c) 18941 56.5 74 (c) 55.003 (c) 759 0.7587 0.003676 381.21 381.11 (c) 381.16 (c) 1.40 0.003676 485.03	cal ml BTU/lb ° API ° F kg/m^3 sec sec sec sec sec sec sec sec sec sec			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W1414 W1414 W1414 W1414 W1414 W1414 W1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry				

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: FIMS Analysis (Phoenix) Uncontrolled in electronic/hard copy. Verify version in LIMS.	CMR 547553 Neal, Terry 11/10/2011 10:04 AM Page 2 of 2
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Property	Result	Units	LL	Т	UL	SOP	Analyst
Test: Text Results							
Text Result	(see below)					ASTM-D-240	Neal, Terry 10/28/2011

	CMR Hours	
Budgeted Hours	Estimated Hours	Actual Hours
	- 0	0.8

				Test Location	s of CMR								
Location		Commit Date 10/31/2011		Status		Charg	e Num	ber	Logged By			Last Logged	
Oil/Fuel Analysis: FIMS Analysis				Released	7002368937-0050				Rexroad, Perry			10/31/2011	
				CMR Me	trics								
Location	Commit Date Compliance (%)	Baseline CDC (%)	Commit Date OTTR (days)	Desired Date Compliance (%)	Desired Date OTTR (days)	SPI	CPI	Transit Time (days)	Queue Time (days)	Cycle Time (days)	Thru Time (days)	Desired Time (days)	Tota Time (days
Oil/Fuel Analysis: FIMS Analysis	100.00	100.00	0.00	100.00	0.00	1.01	0.00	0.18	0.00	2.80	2.80	3.00	2.9

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis Uncontrolled in electro		alysis			<)	CMR 5475 Neal, Ter 11/10/2011 10:05 A Page 1 o			
CMR Number	547554		Submission	Date			10/28/2011 10):46 AM			
Status	Completed		Desired Dat	e			10/31/2011				
Disposition	Info Only		Commit Dat	te			10/31/2011	10/31/2011			
Released By	Rexroad, Perm		Completion	20			10/31/2011 10	1-25 AM			
lolodadu Dy	Hexided, Fell		Project / Ty				Info Only	7.20 AW			
abor Charge Mumber	7002368937-0		Floject / Ty	he			into Only				
Labor Charge Number				_							
SAP Project	EG-002166		SAP Work	Center			1015-EEMAZ	ZML			
Sample Origin	T2										
Oil / Fuel Type	Jet A/Biofuel		Material Sp								
Detailed Instructions	This is Straigh	t Bio-fuel. Not a mix.	Taken from								
Distribution List	Ciero, Robert	Williams, Randy									
Customer	Neal, Terry	1	Submitted E	av.			Neal, Terry				
Phone	+1 480/592-79		Phone	1			+1 480/592-7	221			
		1000	Sector Sector					551			
Department	BA-60122		Department		BA-60122						
Requesting Site	Phoenix										
Test Results											
Specimen: FIMS (API)								Date: 10/31/201			
Property		Result	Units	LL	Т	UL	SOP	Analyst			
Test: A&B Coefficients											
A Coefficient		(c) 10.4102498					Wi1414	Rexroad, Perry			
B Coefficient		(c) 3.9622725					Wi1414	Rexroad, Perry			
Test: LHV						-					
Calorimeter		Parr 1266			_	_	WI1411	Rexroad, Perry			
Calorimeter constant		2411.06					WI1411	Rexroad, Perry			
Sample Weight		0.5633		-			WI1411	Rexroad, Perry			
Tape Weight			9			_	WI1411	Rexroad, Perry			
Temperature change		2.6490					WI1411	Rexroad, Perry			
Fuse Correction			cal	10		-	WI1411 WI1411	Rexroad, Perry			
Nitric Acid								Designed Designed			
1101 5040			ml				and the second se	Rexroad, Perry			
		(c) 18939	and the second se				Wi1411	Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A	.)	(c) 18939	BTU/Ib				WI1411	Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity	0	(c) 18939 56.5	°API				WI1411 ASTM-D-1298	Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature)	(c) 18939 56.5 74	BTU/Ib				WI1411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF)	(c) 18939 56.5 74 (c) 55.003	°API °F				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		(c) 18939 56.5 74 (c) 55.003 (c) 759	°API				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de		(c) 18939 56.5 74 (c) 55.003	°API °F				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F		(c) 18939 56.5 74 (c) 55.003 (c) 759	°API °F				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant		(c) 18939 56.5 74 (c) 55.003 (c) 759 0.7587 0.003939	° API ° F kg/m^3				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Other tube constant Run #1		(c) 18939 56.5 74 (c) 55.003 (c) 759 0.7587	BTU/Ib °API °F kg/m^3 sec				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Other tube constant Run #1 Run #2		(c) 18939 56.5 74 (c) 55.003 (c) 759 0.7587 0.003939 355.80	PTU/Ib °API °F kg/m^3 sec sec				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time		(c) 18939 56.5 74 (c) 55.003 (c) 759 0.7587 0.003939 355.80 355.80	PTU/Ib ° API ° F kg/m^3 sec sec sec sec				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS		(c) 18939 56.5 74 (c) 55.003 (c) 759 0.7587 0.003939 355.80 355.84 (c) 355.82	PTU/Ib ° API ° F kg/m^3 sec sec sec sec				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		(c) 18939 56.5 74 (c) 55.003 (c) 759 0.7587 0.003939 355.80 355.84 (c) 355.82	PTU/Ib ° API ° F kg/m^3 sec sec sec sec				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant		(c) 18939 56.5 74 (c) 55.003 (c) 759 0.7587 0.003939 355.80 355.84 (c) 355.82 (c) 1.40	PTU/Ib ° API ° F kg/m^3 sec sec sec cst				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry			
LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1 Run #2		(c) 18939 56.5 74 (c) 55.003 (c) 759 0.7587 0.003939 355.80 355.84 (c) 355.82 (c) 1.40 0.003939	BTU/Ib ° API ° F kg/m*3 sec sec sec cst sec				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry			
Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Other tube constant Run #1 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1		(c) 18939 56.5 74 (c) 55.003 (c) 759 0.7587 0.003939 355.80 355.84 (c) 355.82 (c) 1.40 0.003939 449.82	BTU/Ib ° API ° F kg/m*3 sec sec sec cst sec sec sec				WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry			

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: FIMS Analysis (Phoenix) Uncentrolled in electronic/hard copy. Venify version in LIMS.	CMR 547554 Neal, Terry 11/10/2011 10:05 AM Page 2 of 2
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	CMR Hours												
Budgeted Hours	Estimated Ho	urs	Actual	Hours									
•	•	(0.0										
				Test Location	s of CMR								
Location Commit Date			Status	Charge Number			Logged By			Last Logged			
Oil/Fuel Analysis: FIMS Analysis		10/31/201	10/31/2011		7002	7002368937-0050			Rexroad, Perry			10/31/2011	
				CMR Me	trics								
Location	Commit Date Compliance (%)	Baseline CDC (%)	Commit Date OTTR (days)	Desired Date Compliance (%)	Desired Date OTTR (days)	SPI	CPI	Transit Time (days)	Queue Time (days)	Cycle Time (days)	Thru Time (days)	Desired Time (days)	Total Time (days)
Oil/Fuel Analysis: FIMS Anal	/sis 100.00	100.00	0.00	100.00	0.00	1.00	0.00	0.18	0.00	2.81	2.81	3.00	2.98

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Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMR Result Report nalysis: Oils and Fuels (Phoenix) d in electronic/hard copy. Verify version in LIMS.	Wiliams, Ra 11/11/2011 1:09 Page 1
CMR Number	547577 rev A	Submission Date	10/28/2011 01:25 PM
Status	Completed	Desired Date	11/11/2011
Disposition	Info Only	Commit Date	11/14/2011
Released By	Bautista, Karla	Completion Date	11/11/2011 01:05 PM
Dustom Id / Title	San Tan Tank #1	Project / Type	Info Only
abor Charge Number	7002368937-0050	Material Charge Number	7002368937-0180
SAP Project	EG-002166	SAP Work Center	1015-EEMAZZML
SCA Sample Origin	USA		
Sample Origin	San Tan Tank #1 Jet A		
Dil / Fuel Type	Jet A	Material Spec	ASTM-D-1655
lests Hequired	Water Content (ppm) LHV (BTU/lb) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive		
Tests Required	LHV (BTU/Ib) Viscosity Flash Point (F) Distillation Specific Gravity		
Detailed Instructions	LHV (BTU/Ib) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655 specification HEFA SPK. Run as many an (D445), flash point, freeze point (D3242), aromatics (D1319 or mercaptan sulfur (D3227), sm (D3241), existent gum (D381,	n analysis required. Sample from San alysis in-house as possible - including nt (D2386), FSII, and distilaltion (D86). D6379), sulfur (any method per spec), oke point (D1322), copper strip corrosic report washed and unwashed), and MS ry (recommend Dixie Services). Please	specific gravity, LHV, viscosity Other properties such as acidity low temp visc (D445 at -20C), on (D130), thermal stability at 260C EP (D3948) may need to be sent to
	LHV (BTU/lb) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655 specification HEFA SPK. Run as many an (D445), flash point, freeze poi (D3242), aromatics (D1319 or mercaptan sulfur (D327), sm (D3241), existent gum (D31, an accredited outside laborato	alysis in-house as possible - including nt (D2386), FSII, and distilaltion (D86). D6379), sulfur (any method per spec), oke point (D1322), copper strip corrosic report washed and unwashed), and MS	specific gravity, LHV, viscosity Other properties such as acidity low temp visc (D445 at -20C), on (D130), thermal stability at 260C EP (D3948) may need to be sent to
Detailed Instructions	LHV (BTU/lb) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655 specification HEFA SPK. Run as many an (D445), flash point, freeze poi (D3242), aromatics (D1319 or mercaptan sulfur (D3227), sm (D3241), existent gum (D381, an accredited outside laborator (D2887) at OP laboratory. Culbertson, Brad	alysis in-house as possible - including nt (D2386), FSII, and distilaltion (D86). D6379), sulfur (any method per spec), oke point (D1322), copper strip corrosic report washed and unwashed), and MS ry (recommend Dixie Services). Please	specific gravity, LHV, viscosity Other properties such as acidity low temp visc (D445 at -20C), on (D130), thermal stability at 260C EP (D3948) may need to be sent to a also run simulated distillation
Detailed Instructions Distribution List	LHV (BTU/lb) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655 specification HEFA SPK. Run as many an (D445), flash point, freeze poi (D3242), aromatics (D1319 or mercaptan sulfur (D3227), sm (D3241), existent gum (D381, an accredited outside laborator (D2887) at OP laboratory. Culbertson, Brad	alysis in-house as possible - including nt (D2386), FSII, and distilaltion (D86). D6379), sulfur (any method per spec), oke point (D1322), copper strip corrosic report washed and unwashed), and MS ry (recommend Dixie Services). Please	specific gravity, LHV, viscosity Other properties such as acidity low temp visc (D445 at -20C), on (D130), thermal stability at 260C EP (D3948) may need to be sent to a also run simulated distillation Williams, Randy
Detailed Instructions	LHV (BTU/lb) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655 specification HEFA SPK. Run as many an (D445), flash point, freeze poi (D3242), aromatics (D1319 or mercaptan sulfur (D3227), sm (D3241), existent gum (D381, an accredited outside laborator (D2887) at OP laboratory. Culbertson, Brad	alysis in-house as possible - including nt (D2386), FSII, and distilaltion (D86). D6379), sulfur (any method per spec), oke point (D1322), copper strip corrosic report washed and unwashed), and MS ry (recommend Dixie Services). Please	specific gravity, LHV, viscosity Other properties such as acidity low temp visc (D445 at -20C), on (D130), thermal stability at 260C EP (D3948) may need to be sent to a also run simulated distillation

Test Results

Property	Result	Units	11	T UL	SOP	Analyst
Test: A&B Coefficients						
A Coefficient	(c) 9.9357872				WI1414	Bautista, Karla
B Coefficient	(c) 3.7928055				WI1414	Bautista, Karla
Test: Aromatics						
Distance to Blue 1	11.5	cm			ASTM-D-1319	Baker, Susan
Distance to Front 1	69.5	cm		-	ASTM-D-1319	Baker, Susan
Distance to Blue 2	11.4	cm			ASTM-D-1319	Baker, Susan
Distance to Front 2	70.5	cm			ASTM-D-1319	Baker, Susan
Aromatics Ratio 1	(c) 0.17				ASTM-D-1319	Baker, Susan
Aromatics Ratio 2	(c) 0.16				ASTM-D-1319	Baker, Susan
% Volume Aromatics	(c) 16.5	%		-	ASTM-D-1319	Baker, Susan

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Honeyweli International Inc. 3131 Airlane-Engineering	CMR Result Report			Williams, Ran 1/11/2011 1:09 P
Phoenix, AZ 85034	Oil/Fuel Analysis: Oils and Fuel: Uncontrolled in electronic/hard copy. Verify ve			Page 2 of
	checking in order or copy. Yearly Ye			
Test: Distillation				
Initial B.P.	312	°E	ASTM-D-86	Bautista, Karla
5% Distilled	336		ASTM-D-86	Bautista, Karla
10% Distilled	346	and the second se	ASTM-D-86	Bautista, Karla
20% Distilled	360	and the second se	ASTM-D-86	Bautista, Karla
30% Distilled	376		ASTM-D-86	and the second descent of the second s
40% Distilled	388		ASTM-D-86	Bautista, Karla Bautista, Karla
50% Distilled	402	a design of the second s	ASTM-D-86	Bautista, Karla
60% Distilled			ASTM-D-86	Bautista, Karla
	418	and the second se	ASTM-D-86	Bautista, Karla Bautista, Karla
70% Distilled			ASTM-D-86	Bautista, Karla
80% Distilled	458			a contract of the second se
90% Distilled	488		ASTM-D-86	Bautista, Karla
95% Distilled	512	and the second se	ASTM-D-86	Bautista, Karla
End Point	544	And address of the local division of the loc	ASTM-D-86	Bautista, Karla
% Distilled	98.5	and the second s	ASTM-D-86	Bautista, Karla
% Residue	1.2	and the second se	ASTM-D-86	Bautista, Karla
% Loss	(c) 0.3	%	ASTM-D-86	Bautista, Karla
Test: Flash Point - c.c.				
Flash Point	106	°F	ASTM-D-56	Bautista, Karla
Barometric Pressure	28.681	inHg	ASTM-D-56	Bautista, Karla
Corrected Flash Point	(c) 108	°F	ASTM-D-56	Bautista, Karla
Test: Freeze Point				
Freeze Point	-51.7	°F	ASTM-D-2386	Bautista, Karla
Test: H/C ratio				
API Gravity @ 60 degF	(c) 42.804		ASTM-D-1298	Bautista, Karla
Avg Dist Temp	(c) 412	°E	ASTM-D-86	Bautista, Karla
% H	(c) 13.728		ASTM-D-3343-95	Bautista, Karla
H/C Ratio by weight	(c) 0.159		ASTM-D-1298	Bautista, Karla
H/C Ratio by mole	(c) 1.896		ASTM-D-1298	Bautista, Karla
Test: LHV	(0) 1.000		1 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	
Calorimeter	Parr 1266		WI1411	Bautista, Karla
Calorimeter constant	2411.0576	1	WI1411	Bautista, Karla
Sample Weight	0.5626	0	WI1411	Bautista, Karla
			WI1411	Bautista, Karla
Tape Weight		g	WI1411	a second state in the second state at the second state
Temperature change	2.5778	And in case of the local division of the loc		Bautista, Karla
Fuse Correction		cal	WI1411	Bautista, Karla
Nitric Acid		ml	WI1411	Bautista, Karla
LHV-FIMS	(c) 18546	BIU/ID	WI1411	Bautista, Karla
Test: Smoke Point				
Smoke Point	25.5	mm	ASTM-D-1322	Bautista, Karla
Test: Smoke Point-1 Reference Standard 1				
Toluene	20		ASTM-D-1322	Bautista, Karla
Iso-Octane		%	ASTM-D-1322	Bautista, Karla
Result 1		mm	ASTM-D-1322	Bautista, Karla
Result 2		mm	ASTM-D-1322	Bautista, Karla
Result 3		mm	ASTM-D-1322	Bautista, Karla
Result Avg	(c) 22	mm	ASTM-D-1322	Bautista, Karla
Expected Value	22.7	mm	ASTM-D-1322	Bautista, Karl
Test: Smoke Point-2 Reference Standard 2				
Toluene	10	%	ASTM-D-1322	Bautista, Karl
Iso-Octane		%	ASTM-D-1322	Bautista, Karla
Result 1		mm	ASTM-D-1322	Bautista, Karl
Result 2		mm	ASTM-D-1322	Bautista, Karla
Result 3		mm	ASTM-D-1322	Bautista, Karla

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	il/Fuel Analysis: Oils and Fuel			11/11/2011 1:09 F
hoenix, AZ 85034	Uncontrolled in electronic/hard copy. Verify ve	arsion in LIMS.		Page 3 o
		19982 1. 1	10711 D (000	D. 6
Result Avg	(c) 31		ASTM-D-1322	Bautista, Karl
Expected Value	30.2	mm	ASTM-D-1322	Bautista, Karla
Test: Smoke Point-3 Analysis		Internet IIII	ACTU D 1000	Deutiete Keel
Result 1 Result 2		mm	ASTM-D-1322 ASTM-D-1322	Bautista, Karl Bautista, Karl
Result 3	10.071	mm mm	ASTM-D-1322 ASTM-D-1322	Bautista, Karl
	205.04	and the second se	ASTM-D-1322	Bautista, Karl
Result Avg	(c) 26	and the second se	ASTM-D-1322	Bautista, Karl
Corrected Avg Test: Specific Gravity (A)	(c) 26.1	1000 I I	A01W-D-1322	Dauisia, Nan
	44.0	°API	ASTM-D-1298	Bautista, Karl
Observed API Gravity		°F	ASTM-D-1298	Bautista, Karl
Fuel Temperature		and the second data was a second data w	and the second design of the balance of the second design of the second	and a part of the local design of the
API Gravity @ 60 degF	(c) 42.804		ASTM-D-1298	Bautista, Karla
Density Specific Crowity 60/60 degE		kg/m^3	ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla
Specific Gravity 60/60 degF	0.8118		Mo1M-D-1298	Daulista, Nari
Test: Text Results				Baker, Susan
Text Result	(see below)		WI1416	11/08/2011
	(see below)		per CMR inst.	Bautista, Karl
	(see below)		per CMR inst.	
l ext Hesult	(000 0000)			11/08/2011
D381	(000 50,007)			11/08/2011
D381 Gum content, mg/100 mL	(000 0000)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1	(000 0000)	1		11/08/2011
Text Result D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1	(000 0000)	1 1	P	11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1	(000 0000)	11		11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453	(000 0000)	11		11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1	(000 0000)	I I		11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983	(000 0000)	I I		11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227	(000 0000)	I I		11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014	(000 0000)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445	(000 0000)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445	(occessin)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710	(occessin)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710 D1840	(occessin)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710 D1840	(occession)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710	(occession)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710 D1840 Napthalenes, volume % = 1.78 D3242	(occession)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710 D1840 Napthalenes, volume % = 1.78	(occession)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710 D1840 Napthalenes, volume % = 1.78 D3242 Acid number, mg KOH/g = 0.014 D130	for our			11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710 D1840 Napthalenes, volume % = 1.78 D3242 Acid number, mg KOH/g = 0.014 D130 Corrosion copper strip (2 h/100 °C) = 1a				11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710 D1840 Napthalenes, volume % = 1.78 D3242 Acid number, mg KOH/g = 0.014 D130 Corrosion copper strip (2 h/100 °C) = 1a D3241				11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710 D1840 Napthalenes, volume % = 1.78 D3242 Acid number, mg KOH/g = 0.014 D130 Corrosion copper strip (2 h/100 °C) = 1a D3241 Thermal oxidation stability, (2.5 h/260 °C)				11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710 D1840 Napthalenes, volume % = 1.78 D3242 Acid number, mg KOH/g = 0.014 D130 Corrosion copper strip (2 h/100 °C) = 1a D3241 Thermal oxidation stability, (2.5 h/260 °C) Heater tube deposit rating, visual = 3				11/08/2011
D381 Gum content, mg/100 mL Unwashed = 1 Washed = 1 D5453 Sulfur, mg/kg = 983 D3227 Mercaptan sulfur, mass % = 0.0014 D445 Viscosity, - 20 °C, mm2/s = 4.710 D1840 Napthalenes, volume % = 1.78 D3242 Acid number, mg KOH/g = 0.014 D130 Corrosion copper strip (2 h/100 °C) = 1a D3241 Thermal oxidation stability, (2.5 h/260 °C) Heater tube deposit rating, visual = 3				11/08/2011

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Attn: Terry Cooper Honeyweli International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034				alysis		and I	Fuels		hoenix)			CMR 547577 rev . Wiliams, Rand 11/11/2011 1:09 Pl Page 4 of
10enix, A2 80034		Un	controlled in	n electron	iic/hard.c	opy. Ve	anity ver	rsion i	n LIMS.			Page 4 of
02887												
Boiling range distribution, "	% recovered, °C											
BP 100.5												
5 140.0												
10 155.0												
20 171.0												
30 183.5												
40 196.5												
50 209.0												
60 220.0 70 234.0												
70 234.0 80 249.0												
90 268.5												
95 284.0												
FBP 333.0												
000.0												
Analyses were completed	by Dixie Service	s. Please	see atta	ached r	esults							
Test: Viscosity @ 104F	and the second second											
Tube number-104	1				-	VIS-2	2383		1	V	/11414	Bautista, Karla
Run #1						And and a state of the local division of the	1.30	sec	1 1	V	/11414	Bautista, Karla
Run #2							1.79			V	/11414	Bautista, Karla
Average Time					(c) 37				V	/11414	Bautista, Karla
CS						-	1.37	-		V	/11414	Bautista, Karla
Test: Viscosity @ 77F						101			10.00	1 1		
Other tube constant						0.003	676		11	V	/11414	Bautista, Karla
Run #1							-			VI1414	Bautista, Karla	
Run #2											WI1414 Bautista, Kar	
Average Time					1	c) 46				V	V11414	Bautista, Karla
CS							1.71			V	VI1414	Bautista, Karla
Test: Water Content (ppm)						1-1						
Run #1						2	4.05	ppn	1	A	STM-E-1064	Bautista, Karla
Run #2							3.36			A	STM-E-1064	Bautista, Karla
Water Content							3.71	-		A	STM-E-1064	Bautista, Karla
Water Content Standard	This sample	e was check	ed agains	t a 1000	ppm Q		and the second second	PP-		A	STM-E-1064	Bautista, Karla
Specimen: 1061333324												Date: 10/30/201
Property	Result	Units	LL	T	U	L	5	SOP			Analyst	
Test: Anti-Icing Additive												
DIEGMME	0 %	v/v	1		1	1	WI141	2	Russ	ell, Danie	elle Marie	
Specimen: ~Attached Res		144				-				~ ~		Date: 11/08/201
Property	Re	esult	1	Jnits	LL	Т	L.	JL	S	OP		Analyst
Test: Attached Results												P. 1
Attached Result		₿ 547577.	pdf						per CMR ins	st.	Bautista 11/08/20	
Specimen: ~Text Results	and and											Date: 11/08/201
	Result	Uni	ts	LL	T	UL			SOP		An	alyst
Property												
Property Test: Text Results												
	(see bek	w)					per	CMR	inst.		Cooper, Terry V 1/08/2011	ι.

Distillation Test for Specimen 1061333113

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3131 Airlar Phoenix, A	ne-Engir	tional Inc. neering				el Analysis:	Result Report Oils and Fuels (Pho /hard copy. Verity version in L			W	547577 rev Iliams, Rand 2011 1:09 P Page 5 of
Oil and F	uel CN	/R# 5	47577					Percent	Temperature	Material S	oec Limit
Material			et A					Distilled	(°F)	Minimum	
Material S Test Met			STM-D-1655					0%	312		
est wet	lou		13 TM-D-00					5%	336		
		Material S	Spec Limits					10%	346		
		Minimum	Maximum					20%	360		
Percent	98.5							30%	376		
Distilled	50.5							40%	388		
Percent Residue	1.2							50%	402		
Percent	tercent							60%	418		
Loss	0.3							70%	436		
	1							80%	458		
								90%	488		
								95%	512		
								100%	544		
455 -	/	× *	*	***	×	×					
056 - 031 -	1	14.1				1 1 (X 90%	1010				
aee -	0.00	1.0%	30%	50% Fannanatur	Perc	ent Distilled	C				
056 - 331 -	0x		++								
056 - 331 -	小 0%		CMR Hours)							
066 - 331 - 306 -	0x 0x	ours				al Hours					
066 - 331 - 306 -		ours -	CMR Hours		Actu 2.3	ual Hours					
066 - 331 - 306 -			CMR Hours				ns of CMB				
086 - 331 - 306			CMR Hours	ours		Test Location Status			Logged By	La	st Logged
006 - 331 - 316 - Budg 8	jeted H	-	CMR Hours Estimated H	ours	2.3 mit Date	Test Location	ns of CMR Charge Number 7002368937-0050	Baut	Logged By ista, Karla	La 11/11	st Logged

CMR Metrics

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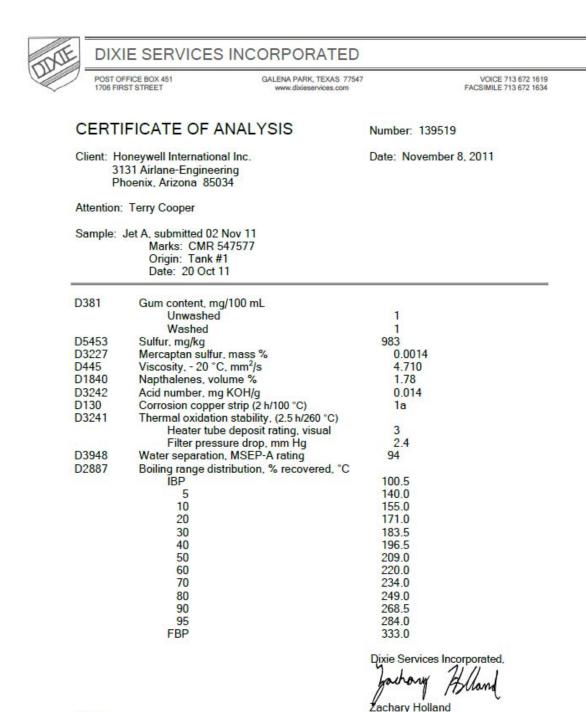
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Attr: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: Oils and Fuels (Phoenix) Uncontrolled in electronic/hard copy. Verity version in LIMS.										CMR 547577 rev A Williams, Randy 11/11/2011 1:09 PM Page 6 of 6		
Location	Commit Date Compliance (%)	Baseline CDC (%)	Commit Date OTTR (days)	Desired Date Compliance (%)	Desired Date OTTR (days)	SPI	CPI	Transit Time (days)	Queue Time (days)	Cycle Time (days)	Thru Time (days)	Desired Time (days)	Total Time (days)
Oil/Fuel Analysis: Oils and Fuels	100.00	100.00	3.00	100.00	0.00	1.22	0.00	0.07	0.00	13.92	13.92	13.98	13.99
Purchasing	100.00	100.00	6.00	100.00	6.00	1.86	0.00	0.14	6.86	-0.00	6.86	13.00	6.99

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CMR Number	547579 rev A	Submission Date	10/28/2011 01:29 PM
Status	Completed	Desired Date	11/11/2011
Disposition	Info Only	Commit Date	11/14/2011
Released By	Bautista, Karla	Completion Date	11/11/2011 03:58 PM
Custom Id / Title	San Tan Tank #2	Project / Type	Info Only
abor Charge Number	7002368937-0050	Material Charge Number	7002368937-0180
SAP Project	EG-002166	SAP Work Center	1015-EEMAZZML
SCA Sample Origin	USA		
Sample Origin	San Tan Tank #2 Jet A		
Oil / Fuel Type	Jet A	Material Spec	ASTM-D-1655
	Water Content (ppm) LHV (BTU/Ib) Viscosity Flash Point (F) Distillation Specific Gravity		
Tests Required	LHV (BTU/Ib) Viscosity Flash Point (F) Distillation		
Detailed Instructions	LHV (BTU/lb) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655 specification HEFA SPK. Run as many and (D445), flash point, freeze poin aromatics (D1319 or D6379), s (D445 at -20C), smoke point (I existent gum (D381, report was	n analysis required. Sample from San alysis in-house as possible - including it (D2386), and distilaltion (D86). Other ulfur (any method per spec), mercapta D1322), copper strip corrosion (D130), t shed and unwashed), and MSEP (D39- recommend Dixie Services). Please al	specific gravity, LHV, viscosity properties such as acidity (D3242), in sulfur (D3227), low temp viscosity thermal stability at 260C (D3241), 48) may need to be sent to an
	LHV (BTU/lb) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655 specification HEFA SPK. Run as many and (D445), flash point, freeze point aromatics (D1319 or D6379), s (D445 at -20C), smoke point (ID existent gum (D381, report was accredited outside laboratory (alysis in-house as possible - including it (D2386), and distilaltion (D86). Other ulfur (any method per spec), mercapta D1322), copper strip corrosion (D130), t shed and unwashed), and MSEP (D39-	specific gravity, LHV, viscosity properties such as acidity (D3242), in sulfur (D3227), low temp viscosity thermal stability at 260C (D3241), 48) may need to be sent to an
Detailed Instructions Distribution List	LHV (BTU/lb) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655 specification HEFA SPK. Run as many ana (D445), flash point, freeze poin aromatics (D1319 or D6379), s (D445 at -20C), smoke point (D existent gum (D381, report was accredited outside laboratory (at OP laboratory. Culbertson, Brad	alysis in-house as possible - including tt (D2386), and distilation (D86). Other ulfur (any method per spec), mercapta D1322), copper strip corrosion (D130), t shed and unwashed), and MSEP (D39- recommend Dixie Services). Please al	specific gravity, LHV, viscosity properties such as acidity (D3242), n sulfur (D3227), low temp viscosity thermal stability at 260C (D3241), 48) may need to be sent to an so run simulated distillation (D2887)
Detailed Instructions Distribution List Dustomer	LHV (BTU//b) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655 specification HEFA SPK. Run as many ana (D445), flash point, freeze poin aromatics (D1319 or D6379), s (D445 at -20C), smoke point (D existent gum (D381, report was accredited outside laboratory (at OP laboratory. Culbertson, Brad	alysis in-house as possible - including it (D2386), and distilaltion (D86). Other ulfur (any method per spec), mercapta D1322), copper strip corrosion (D130), t shed and unwashed), and MSEP (D39 recommend Dixie Services). Please al Submitted By	specific gravity, LHV, viscosity properties such as acidity (D3242), n sulfur (D3227), low temp viscosity thermal stability at 260C (D3241), 48) may need to be sent to an so run simulated distillation (D2887) Williams, Randy
Detailed Instructions	LHV (BTU/lb) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655 specification HEFA SPK. Run as many ana (D445), flash point, freeze poin aromatics (D1319 or D6379), s (D445 at -20C), smoke point (D existent gum (D381, report was accredited outside laboratory (at OP laboratory. Culbertson, Brad	alysis in-house as possible - including tt (D2386), and distilation (D86). Other ulfur (any method per spec), mercapta D1322), copper strip corrosion (D130), t shed and unwashed), and MSEP (D39- recommend Dixie Services). Please al	specific gravity, LHV, viscosity properties such as acidity (D3242), n sulfur (D3227), low temp viscosity thermal stability at 260C (D3241), 48) may need to be sent to an so run simulated distillation (D2887)

Test Results

Property	Result	Units	11	T UL	SOP	Analyst
and the second	nesuit	Units	LL	TUL	SUP	Analyst
Test: A&B Coefficients						
A Coefficient	(c) 10.3961948				WI1414	Bautista, Karla
B Coefficient	(c) 3.9622173				WI1414	Bautista, Karla
Test: Aromatics						
Distance to Blue 1	10.5	cm	1.1		ASTM-D-1319	Baker, Susan
Distance to Front 1	64	cm			ASTM-D-1319	Baker, Susan
Distance to Blue 2	10.5	cm			ASTM-D-1319	Baker, Susan
Distance to Front 2	64	cm			ASTM-D-1319	Baker, Susan
Aromatics Ratio 1	(c) 0.16				ASTM-D-1319	Baker, Susan
Aromatics Ratio 2	(c) 0.16				ASTM-D-1319	Baker, Susan
% Volume Aromatics	(c) 16.0	%			ASTM-D-1319	Baker, Susan

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Phoenix, AZ 85034	Oil/Fuel Analysis: Oils and Fuel: Uncontrolled in electronic/hard copy. Verify ve			Page 2 of
	and an order of the second start of the second start of the			
Test: Distillation				
Initial B.P.	308	°E	ASTM-D-86	Bautista, Karla
5% Distilled	336		ASTM-D-86	Bautista, Karla
10% Distilled	346	and the second se	ASTM-D-86	Bautista, Karla
20% Distilled	358	and the second se	ASTM-D-86	Bautista, Karla
30% Distilled	376		ASTM-D-86	Bautista, Karla
40% Distilled	388		ASTM-D-86	Bautista, Karla
50% Distilled	404	a design of the second s	ASTM-D-86	Bautista, Karla
60% Distilled		and the second se	ASTM-D-86	Bautista, Karla
	420	and the second se	ASTM-D-86	Bautista, Karla Bautista, Karla
70% Distilled			ASTM-D-86	Bautista, Karla
80% Distilled	458	and the second se		and the second se
90% Distilled	488		ASTM-D-86	Bautista, Karla
95% Distilled	514	and the second se	ASTM-D-86	Bautista, Karla
End Point	544	and the second division of the second divisio	ASTM-D-86	Bautista, Karla
% Distilled	98	a state of the second s	ASTM-D-86	Bautista, Karla
% Residue	1.2	and the second se	ASTM-D-86	Bautista, Karla
% Loss	(c) 0.8	%	ASTM-D-86	Bautista, Karla
Test: Flash Point - c.c.				
Flash Point	103	°F	ASTM-D-56	Bautista, Karla
Barometric Pressure	28.678	inHg	ASTM-D-56	Bautista, Karla
Corrected Flash Point	(c) 105	°F	ASTM-D-56	Bautista, Karla
Test: Freeze Point				
Freeze Point	-50.8	°F	ASTM-D-2386	Bautista, Karla
Test: H/C ratio				
API Gravity @ 60 degF	(c) 42.997		ASTM-D-1298	Bautista, Karla
Avg Dist Temp	(c) 413	°F	ASTM-D-86	Bautista, Karla
% H	(c) 13.763		ASTM-D-3343-95	Bautista, Karla
H/C Ratio by weight	(c) 0.160		ASTM-D-1298	Bautista, Karla
H/C Ratio by mole	(c) 1.902		ASTM-D-1298	Bautista, Karla
Test: LHV	(0) 1.002		1 11-01-01	
Calorimeter	Parr 1266		WI1411	Bautista, Karla
Calorimeter constant	2411.0576		WI1411	Bautista, Karla
Sample Weight	0.5607	0	WI1411	Bautista, Karla
			WI1411	Bautista, Karla
Tape Weight	2.5617	g	WI1411	a second state in the second state at the second state
Temperature change				Bautista, Karla
Fuse Correction		cal	WI1411	Bautista, Karla
Nitric Acid		ml	WI1411	Bautista, Karla
LHV-FIMS	(c) 18535	BIU/ID	WI1411	Bautista, Karla
Test: Smoke Point				
Smoke Point	24.5	mm	ASTM-D-1322	Bautista, Karla
Test: Smoke Point-1 Reference Standard 1				
Toluene	20		ASTM-D-1322	Bautista, Karla
Iso-Octane		%	ASTM-D-1322	Bautista, Karla
Result 1		mm	ASTM-D-1322	Bautista, Karla
Result 2		mm	ASTM-D-1322	Bautista, Karla
Result 3	24	mm	ASTM-D-1322	Bautista, Karla
Result Avg	(c) 22	mm	ASTM-D-1322	Bautista, Karla
Expected Value	22.7	mm	ASTM-D-1322	Bautista, Karl
Test: Smoke Point-2 Reference Standard 2				
Toluene	10	%	ASTM-D-1322	Bautista, Karl
Iso-Octane		%	ASTM-D-1322	Bautista, Karla
Result 1		mm	ASTM-D-1322	Bautista, Karl
Result 2		mm	ASTM-D-1322	Bautista, Karla
Result 3		mm	ASTM-D-1322	Bautista, Karla



	il/Fuel Analysis: Oils and Fuel			11/13/2011 8:23 F
hoenix, AZ 85034	Uncontrolled in electronic/hard copy. Verify ve	arsion in LIMS.		Page 3 o
Result Avg	(c) 31	mm	ASTM-D-1322	Bautista, Karl
Expected Value	(c) 31		ASTM-D-1322	Bautista, Karl
Test: Smoke Point-3 Analysis	30.2	mm	ASTW-D-1322	Daulista, Nati
Result 1	05	mm	ASTM-D-1322	Bautista, Karl
Result 2		mm	ASTM-D-1322	Bautista, Karl
Result 3	A DOLLAR DE LA DOLLA	mm	ASTM-D-1322	Bautista, Karl
Result Avg	(c) 25	and the second se	ASTM-D-1322	Bautista, Karl
Corrected Avg	(c) 25.1		ASTM-D-1322	Bautista, Karl
Test: Specific Gravity (A)	(0) 20.1		1101110 1011	
Observed API Gravity	44.2	°API	ASTM-D-1298	Bautista, Karl
Fuel Temperature		°F	ASTM-D-1298	Bautista, Karl
API Gravity @ 60 degF	(c) 42.997		ASTM-D-1298	Bautista, Karl
Density		kg/m^3	ASTM-D-1298	Bautista, Karl
Specific Gravity 60/60 degF	0.8109		ASTM-D-1298	Bautista, Karl
Test: Text Results	0.0109		1101110 1000	and the second second
			1484.414	Baker, Susan
Text Result	(see below)		WI1416	11/08/2011
Total Decemb	(see below)		per CMR inst.	Bautista, Karl
	(see helow)		per CMH inst.	
D381	(300 00007)			11/08/2011
	(see reput)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016	(see reput)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445	(are ready)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445 Viscosity, - 20 °C, mm2/s = 4.683	(are ready)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445 Viscosity, - 20 °C, mm2/s = 4.683 D1840	(are ready)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445 Viscosity, - 20 °C, mm2/s = 4.683 D1840 Napthalenes, volume % = 1.81	(are ready)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445 Viscosity, - 20 °C, mm2/s = 4.683 D1840 Napthalenes, volume % = 1.81 D3242	(are ready)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445 Viscosity, - 20 °C, mm2/s = 4.683 D1840	(are ready)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445 Viscosity, - 20 °C, mm2/s = 4.683 D1840 Napthalenes, volume % = 1.81 D3242 Acid number, mg KOH/g = 0.014 D130 Corrosion copper strip (2 h/100 °C) = 1a	(are ready)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445 Viscosity, - 20 °C, mm2/s = 4.683 D1840 Napthalenes, volume % = 1.81 D3242 Acid number, mg KOH/g = 0.014 D130 Corrosion copper strip (2 h/100 °C) = 1a D3241	(are ready)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445 Viscosity, - 20 °C, mm2/s = 4.683 D1840 Napthalenes, volume % = 1.81 D3242 Acid number, mg KOH/g = 0.014 D130 Corrosion copper strip (2 h/100 °C) = 1a D3241 Thermal oxidation stability, (2.5 h/260 °C)	(are ready)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445 Viscosity, - 20 °C, mm2/s = 4.683 D1840 Napthalenes, volume % = 1.81 D3242 Acid number, mg KOH/g = 0.014 D130	(are ready)			11/08/2011
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 1033 D3227 Mercaptan sulfur, mass % = 0.0016 D445 Viscosity, - 20 °C, mm2/s = 4.683 D1840 Napthalenes, volume % = 1.81 D3242 Acid number, mg KOH/g = 0.014 D130 Corrosion copper strip (2 h/100 °C) = 1a D3241 Thermal oxidation stability, (2.5 h/260 °C) Heater tube deposit rating, visual = 1				11/08/2011



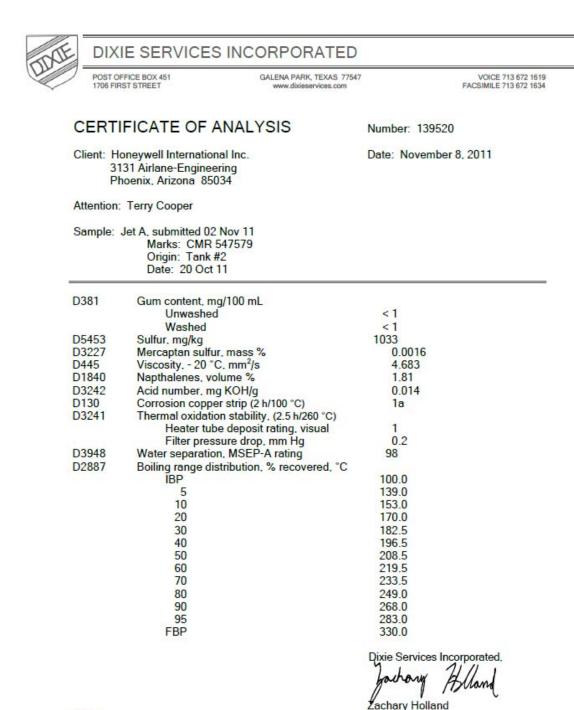
Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering			uel Ana	alysis:		nd Fu	els (Williams, Rand 1/13/2011 8:23 P
Phoenix, AZ 85034		Unc	ontrolled in	electroni	c/hard cop	y. Verity	versio	n in	LIMS.			Page 4 of
D2887												
Boiling range distribution, 9	% recovered, "	C										
BP 100.0												
5 139.0												
10 153.0												
20 170.0												
30 182.5												
40 196.5												
50 208.5												
60 219.5												
70 233.5												
80 249.0												
90 268.0												
95 283.0												
FBP 330.0												
Analyses were completed	by Dixie Servie	ces. Please	see atta	cnea n	esults.							
Test: Viscosity @ 104F						10.000						In the second
Tube number-104					V	IS-238	And in case of			WI1414		Bautista, Karla
Run #1	-					343.3				WI1414		Bautista, Karla
Run #2						343.5	All and the owner of			WI1414		Bautista, Karla
Average Time					(c	343.4		-		WI1414		Bautista, Karla
CS						(c) 1.3	85 CS	st		WI1414		Bautista, Karla
Test: Viscosity @ 77F												
Other tube constant	1				0	.00393				WI1414		Bautista, Karla
Run #1						431.8				WI1414		Bautista, Karla
Run #2						432.2	And in case of the local division of the loc			WI1414		Bautista, Karla
Average Time					(c	432.0				WI1414		Bautista, Karla
CS						(c) 1.7	70 CS	st		WI1414		Bautista, Karla
Test: Water Content (ppm)	19								1. 2. 2			
Run #1							3 pp			ASTM-E-		Bautista, Karla
Run #2							16 pp			ASTM-E-	and a state of the	Bautista, Karla
Water Content					and the second se	c) 28.3		pm		ASTM-E-	and the second second	Bautista, Karla
Water Content Standard	This san	ple was checke	d against	a 1000	ppm QC	standa	rd			ASTM-E-	1064	Bautista, Karla
Specimen: 1061333325											D	ate: 10/30/201
Property	Result	Units	LL	T	UL		SO	P		٨	nalyst	ate. 10/30/201
Test: Anti-Icing Additive	nesuit	Oritta			UL		30	ne .		A	layst	
DIEGMME	0	% v/v	1	1	1	W	412	_	Russel, I	Danielle Marie		
			-	_		Link						
Specimen: ~Attached Resi	ults										D	ate: 11/08/201
Property		Result	U	nits	LL	Т	UL		SOP			Analyst
Test: Attached Results												
Attached Result		₿ 547579.p	df					1	per CMR inst.		Bautista, I 1/08/201	
								-				
Specimen: ~Text Results											D	ate: 11/08/201
Property	Result	Unit	s l	L	τι	IL I			SOP		Ana	lyst
Test: Text Results												22
Text Result	(see b	elow)				P	er CM	IR in	nst.	Cooper,		
						1				11/08/20	11	
PO 6400124338 has be	on placed to I											

Distillation Test for Specimen 1061333115

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3131 Airlan Phoenix, A	e-Engine			Oil/Fuel A	nalysis: Oi	sult Report Is and Fuels (F rd copy. Verity version	hoenix)			lliams, Rand 2011 8:23 Pl Page 5 of
Dil and Fi	lel CM	R#	547579				Demant	Tamanata	Material S	non Limit
Material			Jet A				Percent Distilled	Temperature (°F)	Minimum	And the second s
Material S			ASTM-D-1655				0%	308	WITHTUTT	Maximu
Fest Meth	bod		ASTM-D-86				5%	336		
	N	Aaterial S	Spec Limits				10%	346		
	N	Ainimum	Maximum				20%	358		
Percent							30%	376		
Distilled	98						40%	388		
Percent	1.2						50%	404	-	
Residue							60%	404		
Percent Loss	0.8						70%	436		
2000							80%	458		
							90%	488		
							95%	514		
							100%	544		
555 530 - 504 -			Disti	ilation Curve		×				
530 - 504 - 479 -			Disti	Ilation Curve		*				
500 - 504 - 473 - 1 454 - 454 - 40706- 070 -	dor.	,	30%	50x 70x Percent	90x Distilled	1002				
500 - 504 - 473 - 473 - 474 - 4754 - 4754 - 070 - 070 - 070 - 070 - 072 - 302 -	ox ate	X T	30%	50x 70x Percent			Rea		Logge	4.9



ZBH/Im

Email Recipients: richard.gadberry@honeywell.com; terry.cooper@honeywell.com; steven.sosa@honeywell.com The information contained herein is based on laboratory observations and tests performed on samples submitted and identified by the above-named client (which may be any company, organization or individual) and conducted in accordance with methodology which may be specified by the client. No representations or warranties either expressed implied, of merchantability, fitness for any particular use, or of any other nature are made hereinder with respect to the information herein provided. Doub Services disclaims any and all lability for damage or injury which results from the use of the information contained herein, and nothing contained herein shall constitute a guarantee, warranty or representation by Doub Services with respect to the accordance, of the information, the sample, products or their suitability for use for any specific purpose. This document is intended for the sole use of the client and may not be reproduced except in full without the written approval of Dixe Services.

Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Wilams Oil/Fuel Analysis: Oils and Fuels (Phoenix) 11/09/2011 Uncontrolled in electronic/hard copy. Verity version in LIMS. Page								
CMR Number	547581	Submission Date	10/28/2011 01:58 PM						
Status	Completed	Desired Date	11/04/2011						
Disposition	Info Only	Commit Date	11/18/2011						
Released By	Bautista, Karla	Completion Date	11/08/2011 03:51 PM						
Custom Id / Title	HEFA SPK Tanker 1	Project / Type	Info Only						
abor Charge Number	7002368937-0050	Material Charge Number	7002368937-0180						
SAP Project	EG-002166	SAP Work Center	1015-EEMAZZML						
SCA Sample Origin	USA	Cheka P.3 - Subbreasteringer Prac							
Sample Origin	Delivery Tanker								
Oil / Fuel Type	HEFA SPK	Material Spec	D7566 Table 1 and A1.1						
Description Times	n/a	Engine Serial #	n/a						
	Water Content (ppm) LHV (BTU/Ib) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive	Engine Senai #	IFA						
Operating Time Tests Required	Water Content (ppm) LHV (BTU/Ib) Viscosity Flash Point (F) Distillation Specific Gravity	Engine Senai #	IFA						
	Water Content (ppm) LHV (BTU/Ib) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 sp HEFA SPK to San Tan. Ru viscosity (D445), flash poin (D3242), aromatics (D1319 mercaptan sulfur (D3227), se (D3241), existent gum (D38 an accredited outside labora (D2887) at OP laboratory.	ecification analysis required. Sample in as many analysis in-house as poss t, freeze point (D2386), and distilation or D6379), low temp viscosity (D445 a moke point (D1322), copper strip com t, report washed and unwashed), and atory (recommend Dixie Services). Ple	e from 1st tanker (Tanker 1) delivering ible - including specific gravity, LHV, (D86). Other properties such as acidity at -20C), sulfur (D5453 or D2622), osion (D130), thermal stability at 325C MSEP (D3948) may need to be sent to						
ests Required	Water Content (ppm) LHV (BTU/Ib) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 sp HEFA SPK to San Tan. Ru viscosity (D445), flash poin (D3242), aromatics (D1319 mercaptan sulfur (D3227), se (D3241), existent gum (D38 an accredited outside labora (D2887) at OP laboratory.	ecification analysis required. Sample in as many analysis in-house as poss i, freeze point (D2386), and distilation or D6379), low temp viscosity (D445 a moke point (D1322), copper strip com 1, report washed and unwashed), and itory (recommend Dixie Services). Ple Also check hydrocarbon concentration	e from 1st tanker (Tanker 1) delivering ible - including specific gravity, LHV, (D86). Other properties such as acidity at -20C), sulfur (D5453 or D2622), osion (D130), thermal stability at 325C MSEP (D3948) may need to be sent to base also run simulated distillation						
Detailed Instructions	Water Content (ppm) LHV (BTU/Ib) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 sp HEFA SPK to San Tan. Rt viscosity (D445), flash poin (D3242), aromatics (D1319) mercaptan sulfur (D3227), s (D3241), existent gum (D38 an accredited outside labora (D2887) at OP laboratory. J halogens (D7359), and trace	ecification analysis required. Sample in as many analysis in-house as poss i, freeze point (D2386), and distilation or D6379), low temp viscosity (D445 a moke point (D1322), copper strip com 1, report washed and unwashed), and itory (recommend Dixie Services). Ple Also check hydrocarbon concentration	e from 1st tanker (Tanker 1) delivering ible - including specific gravity, LHV, (D86). Other properties such as acidity at -20C), sulfur (D5453 or D2622), osion (D130), thermal stability at 325C MSEP (D3948) may need to be sent to base also run simulated distillation						
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Detailed Instructions	Water Content (ppm) LHV (BTU/Ib) Viscosity Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 sp HEFA SPK to San Tan. Rt viscosity (D445), flash poin (D3242), aromatics (D1319) mercaptan sulfur (D3227), s (D3241), existent gum (D38 an accredited outside labora (D2887) at OP laboratory. A halogens (D7359), and trace Culbertson, Brad	ecification analysis required. Sample in as many analysis in-house as poss t, freeze point (D2386), and distilation or D6379), low temp viscosity (D445 a moke point (D1322), copper strip com 1, report washed and unwashed), and atory (recommend Dixie Services). Ple Also check hydrocarbon concentration e metals (ICP, prefer UOP 389) Submitted By	e from 1st tanker (Tanker 1) delivering ible - including specific gravity, LHV, (D86). Other properties such as acidity at -20C), sulfur (D5453 or D2622), osion (D130), thermal stability at 325C MSEP (D3948) may need to be sent to ease also run simulated distillation (D2425 and D5291), nitrogen (D4629), Williams, Randy						

Property	Result	Units	111	T	11	SOP	Analyst
Test: A&B Coefficients	riesuit	Units	, LL		UL	001	Andiyat
A Coefficient	(c) 10.5588793		1.			WI1414	Bautista, Karla
B Coefficient	(c) 4.0153196		1			WI1414	Bautista, Karla
Test: Anti-Icing Additive							
DIEGMME	0	% v/v	T			WI1412	Bautista, Karla
Test: Distillation							
Initial B.P.	296	°F	1			ASTM-D-86	Bautista, Karla
5% Distilled	326	°F	1			ASTM-D-86	Bautista, Karla
10% Distilled	338	°E	1			ASTM-D-86	Bautista, Karla

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Attn: Terry Cooper Ioneywell International Inc. 8131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: Oils and Fuels Uncontrolled in electronic/hard copy. Verify veri			CMR 5475 Williams, Ran 11/09/2011 3:26 F Page 2 o
	circontonica in discontentiard copy. Yerry Yers	and the second.		1 990 2 0
20% Distilled	356	٥E	ASTM-D-86	Bautista, Karla
30% Distilled	336		ASTM-D-86	Bautista, Karla
40% Distilled	400		ASTM-D-86	Bautista, Karla
50% Distilled	424	two arts in the second s	ASTM-D-86	Bautista, Karla
60% Distilled	446	and the second se	ASTM-D-86	Bautista, Karla
70% Distilled	466	the second se	ASTM-D-86	Bautista, Karla
30% Distilled	482		ASTM-D-86	Bautista, Karla
90% Distilled	492		ASTM-D-86	Bautista, Karla
95% Distilled	506		ASTM-D-86	Bautista, Karla
End Point	500		ASTM-D-86	Bautista, Karla
% Distilled		%	ASTM-D-86	Bautista, Karla
AND TRADE OF TRAVENING TRAVENING	99		ASTM-D-86	Bautista, Karla
% Residue		the state of the s		
% Loss	(c) 0.1	70	ASTM-D-86	Bautista, Karla
Fest: Flash Point - c.c.		0E	ACTU D.CC	Deutiete Marti
Flash Point	102	and the second se	ASTM-D-56	Bautista, Karla
Barometric Pressure	28.674	and the second sec	ASTM-D-56	Bautista, Karla
Corrected Flash Point	(c) 104	*F	ASTM-D-56	Bautista, Karla
Test: Freeze Point			L Longer and L	1.0
Freeze Point	-66.1	۰F	ASTM-D-2386	Bautista, Karla
Test: LHV		245		
Calorimeter	Parr 1266		WI1411	Rexroad, Perr
Calorimeter constant	2411.06		WI1411	Rexroad, Perr
Sample Weight	0.5460	Manager and the second s	WI1411	Rexroad, Perr
Tape Weight		g	WI1411	Rexroad, Perr
Temperature change	2.5670	and the second se	WI1411	Rexroad, Perr
Fuse Correction		cal	WI1411	Rexroad, Perr
Nitric Acid		ml	WI1411	Rexroad, Perr
LHV-FIMS	(c) 18938	BTU/Ib	Wi1411	Rexroad, Perr
Test: Specific Gravity (A)				
Observed API Gravity	56.4	°API	ASTM-D-1298	Rexroad, Perr
Fuel Temperature	73	°F	ASTM-D-1298	Rexroad, Perr
API Gravity @ 60 degF	(c) 55.003		ASTM-D-1298	Rexroad, Perr
Density	(c) 759	kg/m^3	ASTM-D-1298	Rexroad, Perr
Specific Gravity 60/60 degF	0.7587		ASTM-D-1298	Rexroad, Perr
Test: Text Results				
Fext Result	(see below)		WI6360	Bautista, Karla 11/03/2011
Smoke Point =				
46mm 45mm 46mm Corrected average = 45.5 mm				
	ion of standards at 42.88mm maximum.			
Text Result	(see below)		WI1416	Bautista, Karla
No detectable volume of aromatic of				11/08/2011
Aromatics % volume = 0%				
Test: Text Results (3)				
Text Result	(see below)		per CMR inst.	Bautista, Karla



Attn: Terry Cooper **CMR Result Report** Honeywell International Inc. 3131 Airlane-Engineering Oil/Fuel Analysis: Oils and Fuels (Phoenix) Phoenix, AZ 85034 Uncontrolled in electronic/hard copy. Verify version in LIMS D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 0.15 D3227 Mercaptan sulfur, mass % = < 0.0001 D445 Viscosity, - 20 °C, mm2/s = 5.255 D1840 Napthalenes, volume % = < 0.01 D3242 Acid number, mg KOH/g = 0.002 D130 Corrosion copper strip (2 h/100 °C) = 1b D3241 Thermal oxidation stability, (2.5 h/325 °C): Heater tube deposit rating, visual = 1 Filter pressure drop, mm Hg = 0 D3948 Water separation, MSEP-A rating = 93 D2887 Boiling range distribution, % recovered, °C IBP 113.5 5 132.5 10 142.0 20 165.0 30 40 185.5 202.5 50 219.5 60 238.0 70 255.5 80 266.5 90 276.0 95 280.0 FBP 287.5 D4629 Nitrogen, mg/kg = 0.44 D5291 Carbon, mass % = 85.4 Hydrogen, mass % = 14.6 UOP389 Trace Metals, mg/kg Aluminum < 0.02

Page 3 of 6

CMR 547581

Wiliams, Randy 11/09/2011 3:26 PM

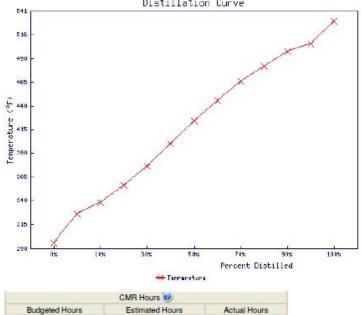
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ttn: Terry Cooper Ioneywell International Inc. 131 Airlane-Engineering Phoenix, AZ 85034		Oil/Fuel		s: Oil		Fuels					CMR 54758 Williams, Rand 11/09/2011 3:26 Pl Page 4 of
		Gingunito	nest in securi	en eller tradition	supj. n	andy vola	11111	and the same			
Calcium 0.06											
Cobalt < 0.02											
hromium < 0.02											
copper < 0.02											
on 0.05											
otassium < 0.02											
lagnesium < 0.02											
langanese < 0.02											
Nolybdenum < 0.02											
Sodium < 0.02											
lickel < 0.02											
hosphorus < 0.02											
ead < 0.02											
Strontium < 0.02											
alladium < 0.02											
latinum < 0.02											
in < 0.02											
itanium < 0.02											
anadium < 0.02											
Cinc 0.13											
analyses were completed by	Dixie Services. P	lease see	attached	result	ts.						
est: Viscosity @ 104F											
Other tube constant					0.0	03653			WI	1414	Rexroad, Perry
lun #1					3	86.05	sec		W	1414	Rexroad, Perry
Run #2	1				3	86.00	Sec		W	1414	Rexroad, Perry
verage Time					and the later set	86.03	-		W	1414	Rexroad, Perry
S) 1.41	and the second second			1414	Rexroad, Perry
Test: Viscosity @ 77F	1				10	, 1.41	Col				The strong and the strong
Other tube constant	1				0.0	03653	-	III	1A/I	1414	Rexroad, Perry
										1414	and the second se
Run #1						88.71			-		Rexroad, Perry
Run #2						88.66				1414	Rexroad, Perry
Average Time					1.7	88.69				1414	Rexroad, Perry
CS					(c) 1.79	cst		W	1414	Rexroad, Perry
Test: Water Content (ppm)											
Run #1						27.21	ppn	1	AS	TM-E-1064	Bautista, Karla
Run #2						25.91	ppm	1	AS	TM-E-1064	Bautista, Karla
Vater Content					(c)	26.56	ppn	1	AS	TM-E-1064	Bautista, Karla
Vater Content Standard	This sample wa	s checked a	against a 10	000 ppr	n QC st	andard			AS	TM-E-1064	Bautista, Karla
									0.000		
pecimen: ~Attached Result	S									0	Date: 11/08/201
	Result		Units	L	LT	U	L	SOF	>		Analyst
Property											
Property Test: Attached Besults		22.0 (3)		1				1000		Bautista.	Karla
est: Attached Results	.0 -	7581.pdf					5	per CMR inst.		11/08/20	
	Ű 54										
est: Attached Results attached Result	Ű 54									L	Date: 11/08/201
est: Attached Results ttached Result	U 54 Result	Units	LL	т	UL			SOP			Date: 11/08/201 alyst
est: Attached Results ttached Result pecimen: ~Text Results Property			LL	Т	UL	ľ.		SOP			
est: Attached Results ttached Result pecimen: ~Text Results Property est: Text Results	Result		u	т	UL	per O	MR			An per, Terry W	alyst
est: Attached Results attached Result pecimen: ~Text Results Property est: Text Results ext Result	Result (see below)		L	т	UL	per C	:MR ir			An	alyst
est: Attached Results ttached Result pecimen: ~Text Results Property est: Text Results	Result (see below)		L	т	UL	per C	:MR ir			An per, Terry W	alyst
est: Attached Results ttached Result pecimen: ~Text Results Property est: Text Results ext Result	Result (see below) a placed to Dixie		L	т	UL	per C	:MR ir			An per, Terry W	alyst

					1 ologik	Tomportatoro		
Material	noci		HEFA SPK D7566 Table 1 and A1.1		Distilled	(°F)	Minimum	Maximum
Test Meth			r diu At.T	0%	296			
					5%	326		
		Material S	Spec Limits		10%	338		
		Minimum	Maximum		20%	356		
Percent	99				30%	376		
Distilled					40%	400		
Percent Residue	0.9				50%	424		
Percent	here				60%	446		
Loss	0.1				70%	466		
					80%	482		
					90%	498		
					95%	506		
					100%	530		



1.5

8

Location	Commit Date	Status	Charge Number	Logged By	Last Logged
Oil/Fuel Analysis: Oils and Fuels	11/18/2011	Released	7002368937-0050	Bautista, Karla	11/08/2011
Purchasing	11/18/2011	Released	7002368937-0050	Cooper, Terry W.	11/08/2011

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		(CMR R Analysis: (led in electronic/	Dils and	Fuel	s (Ph					William 11/09/2011	R 547581 s, Randy 3:26 PM age 6 of 6
Location	Date Compliance (%)	Baseline CDC (%)	Date OTTR (days)	Date Compliance (%)	Desired Date OTTR (days)	SPI	CPI	Transit Time (days)	Queue Time (days)	Cycle Time (days)	Thru Time (days)	Desired Time (days)	Total Time (days)
Oil/Fuel Analysis: Oils and Fuels	100.00	100.00	10.00	0.00	-4.00	1.87	0.00	3.70	0.00	7.38	7.38	7.00	11.08
Purchasing	100.00	100.00	10.00	100.00	10.00	2.43	0.00	0.13	6.86	-0.00	6.86	17.00	6.99



DIXIE SERVICES INCORPORATED

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VOICE 713 672 1619 FACSIMILE 713 672 1634

CERTIFICATE OF ANALYSIS

Client: Honeywell International Inc. 3131 Airlane-Engineering

Number: 139516 Date: November 8, 2011

Phoenix, Arizona 85034

Attention: Terry Cooper

Sample: HEFA SPK, submitted 02 Nov 11 Marks: CMR 547581, Truck 1 Date: 28 Oct 11

D381	Gum content, mg/100 mL	
	Unwashed	< 1
	Washed	< 1
D5453	Sulfur, mg/kg	0.15
D3227	Mercaptan sulfur, mass %	< 0.0001
D445	Viscosity, - 20 °C, mm ² /s	5.255
D1840	Napthalenes, volume %	< 0.01
D3242	Acid number, mg KOH/g	0.002
D130	Corrosion copper strip (2 h/100 °C)	1b
D3241	Thermal oxidation stability, (2.5 h/325 °C)	
	Heater tube deposit rating, visual	1
	Filter pressure drop, mm Hg	0
D3948	Water separation, MSEP-A rating	93
D2887	Boiling range distribution, % recovered, °C	
	IBP	113.5
	5	132.5
	10	142.0
	20	165.0
	30	185.5
	40	202.5
	50	219.5
	60	238.0
	70	255.5
	80	266.5
	90	276.0
	95	280.0
	FBP	287.5
D4629	Nitrogen, mg/kg	0.44
D5291	Carbon, mass %	85.4
	Hydrogen, mass %	14.6

The information contained herein is based on laboratory observations and tests performed on samples submitted and identified by the above-named client (which may be any company, organization or individual) and conducted in accordance with methodology which may be specified by the client. No representations or warranties either expressed or implied, of methodation the second second and an accordance with methodology which may be specified by the client. No representations or warrantes either expressed or any and all liability for damage or injury which results from the use of the information contained herein, and nothing contained herein shall constitute a guarantee, warranty or representation by Dixie Services with respect to the information, the sample, products or items described, or their suitability for use for any specific purpose. This document is intended for the sole use of the client and may not be reproduced except in full without the written approval of Doxie Services.

Certificate November	of Analysis 139516 8, 2011		Page 2
UOP389	Trace Metals, mg/kg		
	Aluminum	< 0.02	
	Calcium	0.06	
	Cobalt	< 0.02	
	Chromium	< 0.02	
	Copper	< 0.02	
	Iron	0.05	
	Potassium	< 0.02	
	Magnesium	< 0.02	
	Manganese	< 0.02	
	Molybdenum	< 0.02	
	Sodium	< 0.02	
	Nickel	< 0.02	
	Phosphorus	< 0.02	
	Lead	< 0.02	
	Strontium	< 0.02	
	Palladium	< 0.02	
	Platinum	< 0.02	
	Tin	< 0.02	
	Titanium	< 0.02	
	Vanadium	< 0.02	
	Zinc	0.13	

Dixie Services Incorporated, Journa Hilland Zachary Holland

ZBH/cb

Email Recipients: richard.gadberry@honeywell.com; terry.cooper@honeywell.com steven.sosa@honeywell.com



3131 Airlane-Engineering Phoenix, AZ 85034		CMR Result Report el Analysis: Oils and Fuel rolled in electronic/hard copy. Verity ve	s (Phoe				Wiliams, Rand 11/13/2011 8:21 Pl Page 1 of
	Ground	toted in older strender copy. Ferry Fe					, age : a
CMR Number	547597 rev A	Submission Date			10/	28/2011 03:59 F	PM
Status	Completed	Desired Date			and the second	11/2011	
		Commit Date				18/2011	
Disposition	Info Only					Self-rest and self-rest	
Released By	Bautista, Karla	Completion Date			11/	11/2011 04:07 F	РМ
Custom Id / Title	HEFA SPK Tanker 2	Project / Type			Info	Only	
abor Charge Number	7002368937-0050	Material Charge Nu	mber		700	2368937-0180	
SAP Project	EG-002166	SAP Work Center			101	5-EEMAZZML	
SCA Sample Origin	USA						
Sample Origin	Delivery Tanker 2						
Dil / Fuel Type	HEFA SPK	Material Spec			D7	566 Table 1 and	A1 1
					n/a		
Dperating Time Tests Required	n/a Water Content (ppm)	Engine Serial #			nva	8	
	Specific Gravity Anti-ice Additive Aromatics Freeze Point						
Detailed Instructions	analysis that can be compl freeze point (D2386), and d		ecific gra	avity, I	HV, v	viscosity (D445)), flash point,
Detailed Instructions Distribution List	analysis that can be compl freeze point (D2386), and o Please also run simulated	leted in-house - including sp	ecific gri tent gum	avity, l	HV, v	viscosity (D445) ort washed and), flash point,
Distribution List	analysis that can be compl freeze point (D2386), and of Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad	leted in-house - including sp distilaltion (D86). distillation (D2887) and exis ces). Hold any remaining s	ecific gri tent gum	avity, l	.HV, v , repo ible fu	viscosity (D445) ort washed and iture analysis.), flash point,
Distribution List Customer	analysis that can be compl freeze point (D2386), and of Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy	leted in-house - including sp distilation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By	ecific gri tent gum	avity, l	HV, v , repo ible fu Wil	viscosity (D445) ort washed and iture analysis.), flash point,
Distribution List Customer	analysis that can be compl freeze point (D2386), and of Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad	leted in-house - including sp distilaltion (D86). distillation (D2887) and exis ces). Hold any remaining s	ecific gri tent gum	avity, l	HV, v , repo ible fu Wil	viscosity (D445) ort washed and iture analysis.), flash point,
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Distribution List Dustomer Phone Department	analysis that can be compl freeze point (D2386), and of Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035	leted in-house - including sp distillation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone	ecific gri tent gum	avity, l	HV, v , repo ible fu Will +1	viscosity (D445) ort washed and iture analysis. liams, Randy 602/231-7229 60035), flash point, unwashed) at
Distribution List Dustomer Phone Department Requesting Site Fest Results	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone	ecific gri tent gum	avity, I (D381 r poss	HV, v , repo ible fu Will +1	viscosity (D445) ort washed and iture analysis. liams, Randy 602/231-7229 60035), flash point,
Distribution List Dustomer Phone Department Requesting Site Fest Results Specimen: FIMS (API) Property	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone Department	ecific gri tent gum ample fo	avity, I (D381 r poss	HV, v , repo ible fu Wil +1 BA	viscosity (D445) ort washed and iture analysis. liams, Randy 602/231-7229 60035), flash point, unwashed) at Date: 11/11/201
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Distribution List Customer Phone Department Requesting Site Test Results Specimen: FIMS (API) Property Test: A&B Coefficients A Coefficient B Coefficient	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone Department	ecific gri tent gum ample fo	avity, I (D381 r poss	HV, v , repo ible fu Wil +1 BA	viscosity (D445) ort washed and iture analysis. liams, Randy 602/231-7229 -60035 SOP), flash point, unwashed) at Date: 11/11/201 Analyst
Distribution List Department Department Department Dequesting Site Test Results Specimen: FIMS (API) Property Test: A&B Coefficients A Coefficient 3 Coefficient Test: Anti-Icing Additive	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone Department (c) 10.6581499 (c) 4.0523844	ecific gra tent gum ample fo Units	avity, I (D381 r poss	HV, v , repo ible fu Wil +1 BA	viscosity (D445) ort washed and iture analysis. liams, Randy 602/231-7229 60035 SOP Wi1414 Wi1414), flash point, unwashed) at Date: 11/11/201 Analyst Bautista, Karla Bautista, Karla
Vistribution List Customer Phone Department Lequesting Site Test Results Specimen: FIMS (API) Property Fest: A&B Coefficients A Coefficient B Coefficient Coefficie	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone Department (c) 10.6581499 (c) 4.0523844	ecific gri tent gum ample fo	avity, I (D381 r poss	HV, v , repo ible fu Wil +1 BA	viscosity (D445) ort washed and iture analysis. liams, Randy 602/231-7229 -60035 -60035 SOP WI1414), flash point, unwashed) at Date: 11/11/201 Analyst Bautista, Karla Bautista, Karla
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Distribution List Customer Phone Department Requesting Site Fest Results Specimen: FIMS (API) Property Test: A&B Coefficients A Coefficient B Coefficient B Coefficient Coefficient B Coefficient Test: Anti-Icing Additive DiEGMME Test: Aromatics Distance to Blue 1 Distance to Front 1	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone Department (c) 10.6581499 (c) 4.0523844 0 0	Units	avity, I (D381 r poss	HV, v , repo ible fu Wil +1 BA	viscosity (D445) ort washed and iture analysis. liams, Randy 602/231-7229 -60035 -60035 SOP Wi1414 Wi1414 Wi1414 Wi1412 ASTM-D-1319 ASTM-D-1319), flash point, unwashed) at Date: 11/11/201 Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Distribution List Customer Phone Department Requesting Site Fest Results Specimen: FIMS (API) Property Test: A&B Coefficients A Coefficient B Coefficient Test: Anti-Icing Additive DIEGMME Test: Anti-Icing Additive DIEGMME Test: Anomatics Distance to Blue 1 Distance to Blue 2	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone Department (c) 10.6581499 (c) 4.0523844 0 0 68 0	ecific gra tent gum ample fo Units % v/v cm cm cm	avity, I (D381 r poss	HV, v , repo ible fu Wil +1 BA	viscosity (D445) ort washed and iture analysis. liams, Randy 602/231-7229 -60035 -6005 -), flash point, unwashed) at Date: 11/11/201 Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Distribution List Customer Phone Department Requesting Site Fest Results Specimen: FIMS (API) Property Test: A&B Coefficients A Coefficient B Coefficient Test: Anti-Icing Additive DiEGMME Test: Aromatics Distance to Front 1 Distance to Front 1 Distance to Front 2	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone Department (c) 10.6581499 (c) 4.0523844 0 68 0 68	Units	avity, I (D381 r poss	HV, v , repo ible fu Wil +1 BA	viscosity (D445) viture analysis. liams, Randy 602/231-7229 -60035 -7005 -60035 -6005), flash point, unwashed) at Date: 11/11/201 Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Distribution List Customer Phone Department Requesting Site Fest Results Specimen: FIMS (API) Property Test: A&B Coefficients A Coefficient B Coefficient Test: Anti-Icing Additive DiEGMME Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone Department (c) 10.6581499 (c) 4.0523844 0 0 0 0 68 0 68 0 68	ecific gra tent gum ample fo Units % v/v cm cm cm	avity, I (D381 r poss	HV, v , repo ible fu Wil +1 BA	viscosity (D445) ort washed and iture analysis. liams, Randy 602/231-7229 60035 SOP Wi1414 Wi1414 Wi1414 Wi1414 Wi1414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319), flash point, unwashed) at Date: 11/11/201 Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Distribution List Customer Phone Department Requesting Site Fest Results Specimen: FIMS (API) Property Test: A&B Coefficients A Coefficient B Coefficient Test: Anti-Icing Additive DiEGMME Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone Department (c) 10.6581499 (c) 4.0523844 0 68 0 68	ecific gra tent gum ample fo Units % v/v cm cm cm	avity, I (D381 r poss	HV, v , repo ible fu Wil +1 BA	viscosity (D445) viture analysis. liams, Randy 602/231-7229 -60035 -7005 -60035 -6005), flash point, unwashed) at Date: 11/11/201 Analyst Bautista, Karla
Distribution List Dustomer Phone Department Requesting Site Fest Results Specimen: FIMS (API)	analysis that can be compl freeze point (D2386), and o Please also run simulated OP laboratory (Dixie Servic Culbertson, Brad Williams, Randy +1 602/231-7229 BA-60035 Phoenix	leted in-house - including sp distillation (D86). distillation (D2887) and exis ces). Hold any remaining s Submitted By Phone Department (c) 10.6581499 (c) 4.0523844 0 0 0 0 68 0 68 0 68	Units	avity, I (D381 r poss	HV, v , repo ible fu Wil +1 BA	viscosity (D445) ort washed and iture analysis. liams, Randy 602/231-7229 60035 SOP Wi1414 Wi1414 Wi1414 Wi1414 Wi1414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319), flash point, unwashed) at Date: 11/11/20 Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla



3131 Airlane-Engineering	Oil/Fuel Analysis: Oils and Fuel			1/13/2011 8:21 F
Phoenix, AZ 85034	Uncontrolled in electronic/hard copy. Verify ve	arsion in LIMS.		Page 2 o
Part Distribut		05	ASTM-D-86	De tite Kerte
5% Distilled	322		and the second se	Bautista, Karla
10% Distilled	334		ASTM-D-86	Bautista, Karla
20% Distilled	354	and the second sec	ASTM-D-86	Bautista, Karla
30% Distilled	374	and the second se	ASTM-D-86	Bautista, Karla
40% Distilled	398		ASTM-D-86	Bautista, Karla
50% Distilled	422		ASTM-D-86	Bautista, Karla
60% Distilled	444		ASTM-D-86	Bautista, Karla
70% Distilled	466	and the second sec	ASTM-D-86	Bautista, Karla
80% Distilled	482		ASTM-D-86	Bautista, Karla
90% Distilled	496		ASTM-D-86	Bautista, Karla
95% Distilled	506	and the second se	ASTM-D-86	Bautista, Karla
End Point	524	°F	ASTM-D-86	Bautista, Karla
% Distilled	98.0	%	ASTM-D-86	Bautista, Karla
% Residue	1.3	%	ASTM-D-86	Bautista, Karla
% Loss	(c) 0.7	%	ASTM-D-86	Bautista, Karla
Test: Flash Point - c.c.				
Flash Point	104	°F	ASTM-D-56	Bautista, Karla
Barometric Pressure	28.671	inHg	ASTM-D-56	Bautista, Karla
Corrected Flash Point	(c) 106	°F	ASTM-D-56	Bautista, Karla
Test: Freeze Point				
Freeze Point	-66.1	°F	ASTM-D-2386	Bautista, Karla
Test: H/C ratio				
API Gravity @ 60 degF	(c) 55.102		ASTM-D-1298	Bautista, Karla
Avg Dist Temp	(c) 417	°F	ASTM-D-86	Bautista, Karla
% H	(c) 15.347		ASTM-D-3343-95	Bautista, Karla
H/C Ratio by weight	(c) 0.181		ASTM-D-1298	Bautista, Karla
H/C Ratio by mole	(c) 2.160		ASTM-D-1298	Bautista, Karla
Test: LHV		1		
Calorimeter	Parr 1266		WI1411	Rexroad, Pern
Calorimeter constant	2411.06		WI1411	Rexroad, Perr
Sample Weight	0.5564	a	WI1411	Rexroad, Perr
Tape Weight		g	W1411	Rexroad, Perr
Temperature change	2.6152		W1411	Rexroad, Perr
Fuse Correction		cal	WI1411	Rexroad, Perr
Nitric Acid		ml	WI1411	Rexroad, Perr
LHV-FIMS	(c) 18936	and the second se	W1411	Rexroad, Perr
Test: Specific Gravity (A)	(0) 10000	D. O.I.D		
Observed API Gravity	56.5	°API	ASTM-D-1298	Rexroad, Perr
Fuel Temperature	73		ASTM-D-1298	Rexroad, Perr
API Gravity @ 60 degF	(c) 55.102		ASTM-D-1298	Rexroad, Perr
Density		kg/m^3	ASTM-D-1298	Rexroad, Perr
	0.7583	Ng/III 3	ASTM-D-1298	Rexroad, Perr
Specific Gravity 60/60 degF Test: Text Results	0.7583		ASTW-D-1298	nextoad, Pen
				Bautista, Karla
Text Result	(see below)		per CMR inst.	11/04/2011

Gum content, steam, mg/100 mL: Unwashed = < 1 Washed = < 1

D2887

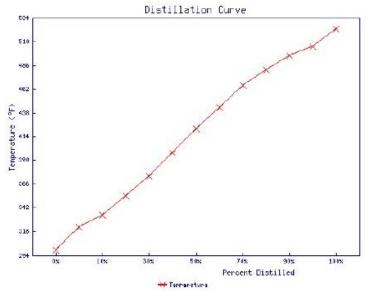
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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering		Analysis:	Result Repo Oils and Fu	els (F					CMR 547597 rev A Wiliams, Randy 11/13/2011 8:21 PM
Phoenix, AZ 85034	Uncontro	lied in electronic	c/hard copy. Verify	version	in UN	IS.			Page 3 of 4
	6 recovered, °C: ny Dixie Services. Please see	attached re	esults.						
Test: Text Results (2)				4					Bautista, Karla
Text Result			(see below	0			WI1416		11/08/2011
Aromatics % volume = 0% Test: Viscosity @ 104F Other tube constant			0.00367	6			W1414		Rexroad, Perry
Run #1			380.5				WI1414		Rexroad, Perry
Run #2			380.5	And in case of the local division of the loc			WI1414	1	Rexroad, Perry
Average Time			(c) 380.5				W11414	-	Rexroad, Perry
CS			(c) 1.4				WI1414		Rexroad, Perry
Test: Viscosity @ 77F							-		
Other tube constant			0.00367	6			WI1414		Rexroad, Perry
Run #1			484.8	0 sec)		WI1414		Rexroad, Perry
Run #2			484.7	1 sec	;		WI1414		Rexroad, Perry
Average Time			(c) 484.7				W11414		Rexroad, Perry
CS			(c) 1.7	B cst	_		WI1414		Rexroad, Perry
Test: Water Content (ppm)			47.7			1 1 1	ACTN	1004	Develope Kode
Run #1 Run #2				6 ppr 8 ppr			ASTM-E		Bautista, Karla Bautista, Karla
Water Content	_		(c) 17.2	and the first state			ASTM-E		Bautista, Karla
Water Content Standard	This sample was checked ag	ainst a 1000 (ASTM-E		Bautista, Karla
									Longing
Specimen: ~Attached Resu	llts								Date: 11/04/2011
Property	Result	Units	LL T	UL		SOP			Analyst
Test: Attached Results	1								
Attached Result	Ü 547597.pdf				per	CMR inst.		Bautista 11/04/20	
Specimen: ~Text Results									Date: 11/08/2011
Property	Result Units	LL	TUL		S	OP			alyst
Test: Text Results									
Text Result	(see below)		0	er CM	R inst	2		r, Terry V	V.
PO 6400124342 has bee							11/08/2	2011	
PO 6400124342 has bee	en paiced to Dixle.								
Distillation Test for Speci	mon EIMS (API)								
Investment of the second state of the second s	7597				F				erial Spec Limit
21 GIG I GOI GIVITI # 347					1.0	Percent Tr	emperatu	Ind Mal	enal Spec Linit



Attn: Terry Honeywell 3131 Airlan Phoenix, A2	Interna e-Engir	tional Inc. neering		Oil/Fuel Analysis: C	esult Report ils and Fuels (Phoenix) and copy. Verify version in LIMS.		W	547597 rev / Iliams, Rand 2011 8:21 Pf Page 4 of
Material Material S	necifi		IEFA SPK 07566 Table	1 and A1 1	Distilled	(°F)		Maximum
Test Meth			ASTM-D-86		0%	300		
					5%	322		
Material Spec Limits		Spec Limits		10%	334			
		Minimum	Maximum		20%	354		
Percent	98.0				30%	374		
Distilled	-				40%	398		
Percent Residue	1.3				50%	422		
Percent					60%	444		
Loss	0.7				70%	466		
					80%	482		
					90%	496		
					95%	506		
					100%	524		





DIXIE SERVICES INCORPORATED

POST OFFICE BOX 451 1706 FIRST STREET GALENA PARK, TEXAS 77547 www.dbileservices.com VOICE 713 672 1619 FACSIMILE 713 672 1634

CERTIFICATE OF ANALYSIS

Client: Honeywell International Inc. 3131 Airlane-Engineering Phoenix, Arizona 85034 Date: November 4, 2011

Number: 139515

Attention: Terry Cooper

Sample: HEFA SPK, submitted 02 Nov 11 Marks: CMR 547597

D381	Gum content, steam, mg/100 mL	
	Unwashed	< 1
	Washed	< 1
D2887	Boiling range distribution, % recovered, °C	
	IBP	113.5
	5	132.5
	10	142.0
	20	164.5
	30	183.5
	40	201.5
	50	219.0
	60	237.0
	70	254.5
	80	265.5
	90	275.5
	95	280.0
	FBP	288.0

Dixie Services Incorporated.

a ina Zachary Holland

ZBH/cb

Email Recipients: richard.gadberry@honeywell.com; terry.cooper@honeywell.com steven.sosa@honeywell.com

The information contained herein is based on laboratory observations and tests performed on samples submitted and identified by the above-named client (which may be any company, organization or individual) and conducted in accordance with methodology which may be specified by the client. No representations or warranties either expressed or implied, of metchantability, theses for any particular use, or dany other nature are made hereunder with respect to the information herein shall constitute a guarantee, warranty or representation by Dixie Services with respect to the accuracy of the information, then sample, products or items described, or their suitability for use for any specific purpose. This document is intended for the sole use of the client and may not be reproduced except in full without the written approval of Dixie Services.

Honeyweli International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis		nalysis			:)	CMR 548 Neal, Te 11/10/2011 7:44 Page 1	
		Checkloned in electr	on a rear a copy.	voluy vors	autorità L	antig.		. age 1	
CMR Number	548678		Submission	Date			11/03/2011 10	34 AM	
Status	Completed						11/07/2011		
		+	Desired Date						
Disposition	Info Only		Commit Date				11/07/2011		
Released By	Bautista, Karla	1	Completion Date				11/04/2011 11:11 AM		
			Project / Ty	pe			Info Only		
Labor Charge Number	7002368937-00	050							
SAP Project	EG-002166		SAP Work	Center			1015-EEMAZZ	MI	
Sample Origin	T1		OAT WORK	Center			TOTOTELMALL		
	and a second sec								
Dil / Fuel Type	Jet A/Biofuel	a state of the sta	Material Sp	ec			ASTM-D-1655		
Detailed Instructions	fuel mixed for	15 hrs.							
Distribution List	Ciero, Robert	Williams, Randy							
Customer	Neal, Terry		Submitted E	Зу			Neal, Terry		
Phone	+1 480/592-790	1	Phone	- 20			+1 480/592-79	31	
Department	BA-60122	RANG ST	Department						
All and a second se	contractive or the block of a		Department				BA-60122		
Requesting Site	Phoenix								
Test Results Specimen: FIMS (API) Property		Result	Units	Ц	T			Date: 11/04/20	
			Units			UL	SOP	Analyst	
Test: A&B Coefficients			Units	LL	Т	UL	SOP	Analyst	
			Units	L		UL	WI1414	Bautista, Karla	
A Coefficient		(c) 10.3551532 (c) 3.9442348	Units	L		UL			
A Coefficient B Coefficient		(c) 10.3551532	Units			UL	WI1414	Bautista, Karla	
A Coefficient B Coefficient Test: LHV		(c) 10.3551532	Units			UL	WI1414	Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter		(c) 10.3551532 (c) 3.9442348	Units			UL	WI1414 WI1414	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant		(c) 10.3551532 (c) 3.9442348 Parr 1266				UL	W11414 W11414 W11411	Bautista, Karla Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632				UL	WI1414 WI1414 WI1411 WI1411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632	g g			UL	W11414 W11414 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058	g g			UL	W11414 W11414 W11411 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19	g g g			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19	g g °C cal ml			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686	g g °C cal ml BTU/lb			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9	g g °C cal ml BTU/lb			UL	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72	g g °C cal ml BTU/lb			UL	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709	g g °C cal ml BTU/lb °API °F			UL	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709 (c) 785	g g °C cal ml BTU/lb			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11412 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11411 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11411 W11412 W142 W14	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709	g g °C cal ml BTU/lb °API °F			UL	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709 (c) 785 0.7852	g g °C cal ml BTU/lb °API °F			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709 (c) 785 0.7852 VIS-2382	g g°C cal ml BTU/lb °API °F kg/m^3			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity @ 104F Tube number-104 Run #1		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709 (c) 785 0.7852 0.7852 VIS-2382 378.09	g g °C cal ml BTU/lb °F kg/m^3 sec			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709 (c) 785 0.7852 VIS-2382 378.09 377.94	g g °C cal ml BTU/lb °API °F kg/m^3 sec sec			UL	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709 (c) 785 0.7852 VIS-2382 378.09 377.94 (c) 378.02	g g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec			UL	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709 (c) 785 0.7852 VIS-2382 378.09 377.94	g g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec			UL	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Diserved API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72 (c) 18686 49.9 72 (c) 48.709 (c) 785 0.7852 VIS-2382 378.09 377.94 (c) 378.02 (c) 1.38	g g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709 (c) 785 0.7852 0.7852 VIS-2382 377.94 (c) 378.02 (c) 1.38 0.003653	g g°C cal ml BTU/lb °API °F kg/m^3 sec sec sec cst			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MV1414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709 (c) 785 0.7852 VIS-2382 378.09 377.94 (c) 378.02 (c) 1.38 0.003653 477.50	g g°C cal ml BTU/lb °API °F kg/m*3 sec sec sec cst sec			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla	
Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1 Run #2 Average Time		(c) 10.3551532 (c) 3.9442348 Parr 1266 2411.0576 0.5632 0 2.6058 19 12 (c) 18686 49.9 72 (c) 48.709 (c) 785 0.7852 0.7852 VIS-2382 377.94 (c) 378.02 (c) 1.38 0.003653	g g°C cal ml BTU/lb °API °F kg/m^3 sec sec sec cst sec sec sec sec			UL	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MV1414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla	

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Attn: Terry Cooper Honeywell International Inc.	CMR Result Report	CMR 548678 Neal, Terry
3131 Airlane-Engineering	Oil/Fuel Analysis: FIMS Analysis (Phoenix)	11/10/2011 7:44 AM
Phoenix, AZ 85034	Uncontrolled in electronic/hard copy. Verify version in LIMS.	Page 2 of 2

Property	Result	Units	LL	T	UL	SOP	Analyst
Test: Text Results							
Text Result	(see below)					ASTM-D-240	Neal, Terry 11/03/2011

	CMR Hours	
Budgeted Hours	Estimated Hours	Actual Hours
	-2	1.5

				Test Location	s of CMR	1							
Location		Comn	nit Date	Status		Char	ge Nur	nber	1.1	.ogged By	/	Last Lo	gged
Oil/Fuel Analysis: FIMS Analysis		11/07/20	11	Released	700	236893	37-0050	0	Bautist	ta, Karla		11/04/2011	
				CMR Me	trics								
Location	Commit Date Compliance (%)	Baseline CDC (%)	Commit Date OTTR (days)	Desired Date Compliance (%)	Desired Date OTTR (days)	SPI	CPI	Transit Time (days)	Queue Time (days)	Cycle Time (days)	Thru Time (days)	Desired Time (days)	Total Time (days
Oil/Fuel Analysis: FIMS Analysis	100.00	100.00	3.00	100.00	3.00	3.90	0.00	0.94	0.00	0.09	0.09	4.00	1.0

Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis Uncontrolled in electro		nalysis (Ph			CMR 5486 Neal, Te 11/10/2011 7:42 Page 1 d					
		Checking in open	onernard copy.	Tuny Tulation in	Contrast,							
CMR Number	548679		Submission	Date		11/03/2011 10	36 AM					
Status	Completed		Desired Dat			PROPERTY AND INCOME.						
	and the second s	+				11/07/2011						
Disposition	Info Only		Commit Dat	te		11/07/2011						
Released By	Bautista, Karla	e	Completion	Date		11/04/2011 11:15 AM						
			Project / Ty	pe		Info Only						
abor Charge Number	7002368937-00	50										
SAP Project	EG-002166		SAP Work	Center		1015-EEMAZZ	MI					
Sample Origin	T2			oomor		TOTO LEMALE						
	and the second se											
Dil / Fuel Type	Jet A/Biofuel	A PARTICIPATION OF A PARTICIPATIONO OF A PARTICIPATION OF A PARTICIPATICATA PARTICIPATICATA PARTICIPATICATA PARTICIPATICATA PARTICIPATICATA PARTIC	Material Sp	ec		ASTM-D-1655						
Detailed Instructions	ibor mixed for 10 mis.											
Distribution List	Ciero, Robert	Williams, Randy										
Customer	Neal, Terry		Submitted E	Зу		Neal, Terry						
Phone	+1 480/592-793	31	Phone			+1 480/592-79	31					
Department	BA-60122	CO. 10	Department			BA-60122	160					
Requesting Site	Phoenix		soparment			DA-00122						
iequesting one	FIDERIA											
Test Results Specimen: FIMS (API)		Result	Units	LL T	UL	SOP	Date: 11/04/20					
Property Test: A&B Coefficients	n: II-	Hesuit	Units	LL I	UL	SUP	Analyst					
A Coefficient		(c) 10.4548741			1	WI1414	Bautista, Karla					
B Coefficient		(c) 3.9814940				WI1414	Bautista, Karla					
Test: LHV		(0) 0.3014340	-				Construction and a second					
Calorimeter		Parr 1266		1		WI1411	Bautista, Karla					
Calorimeter constant		2411.0576				WI1411	Bautista, Karla					
Sample Weight		0.5622	0			W11411	Bautista, Karla					
Tape Weight		11 11 11 11 11 11 11 11 11 11 11 11 11	g			WI1411	Bautista, Karla					
Temperature change		2.6046	and the second s		1	WI1411	Bautista, Karla					
Fuse Correction			cal	1 6 6	1	WI1411	Bautista, Karla					
Nitric Acid		and the second se	mi		1	WI1411	Bautista, Karla					
LHV-FIMS		(c) 18700	BTU/lb		1	W11411	Bautista, Karla					
Test: Specific Gravity (A)				1.		and the second s					
Observed API Gravity	10	50.0	°API	4 1 3	1	ASTM-D-1298	Bautista, Karla					
Fuel Temperature		71	°F	8	1	ASTM-D-1298	Bautista, Karla					
API Gravity @ 60 degF		(c) 48.893			1	ASTM-D-1298	Bautista, Karla					
Density		(c) 784	kg/m^3		1	ASTM-D-1298	Bautista, Karla					
Specific Gravity 60/60 de	3gF	0.7844	1. 1547		1	ASTM-D-1298	Bautista, Karla					
Test: Viscosity @ 104F												
Tube number-104		VIS-2383		1 2 2	1	WI1414	Bautista, Karla					
Run #1		373.82			1	WI1414	Bautista, Karla					
Run #2		373.93	Sec		1	WI1414	Bautista, Karla					
Average Time		(c) 373.88				WI1414	Bautista, Karla					
CS	E	(c) 1.37	cst		1	WI1414	Bautista, Karla					
	1.1			11 12 13								
Test: Viscosity @ 77F		0.003676				WI1414	Bautista, Karla					
Test: Viscosity @ 77F Other tube constant					1	All of a d	and the second second					
Test: Viscosity @ 77F Other tube constant Run #1		471.92				WI1414	Bautista, Karla					
Test: Viscosity @ 77F Other tube constant Run #1 Run #2		471.92 471.97	sec		1	WI1414	Bautista, Karla					
Test: Viscosity @ 77F Other tube constant Run #1 Run #2 Average Time CS		471.92	Sec Sec		1	and the second se	and the second se					

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Attn: Terry Cooper Honeywell International Inc.	CMR Result Report	CMR 548679 Neal, Terry
3131 Airlane-Engineering	Oil/Fuel Analysis: FIMS Analysis (Phoenix)	11/10/2011 7:42 AM
Phoenix, AZ 85034	Uncontrolled in electronic/hard copy, Verify version in LIMS.	Page 2 of 2

Property	Result	Units	LL	T	UL	SOP	Analyst
Test: Text Results							
Text Result	(see below)					ASTM-D-240	Neal, Terry 11/03/2011

	CMR Hours	
Budgeted Hours	Estimated Hours	Actual Hours
	-2	1.5

				Test Location	s of CMR	1							
Location		Comn	nit Date	Status		Char	ge Nur	nber	1.1	.ogged By	/	Last Lo	gged
Oil/Fuel Analysis: FIMS Analysis		11/07/20	11	Released	700	236893	37-0050	0	Bautist	ta, Karla		11/04/2011	
				CMR Me	trics								
Location	Commit Date Compliance (%)	Baseline CDC (%)	Commit Date OTTR (days)	Desired Date Compliance (%)	Desired Date OTTR (days)	SPI	CPI	Transit Time (days)	Queue Time (days)	Cycle Time (days)	Thru Time (days)	Desired Time (days)	Total Time (days
Oil/Fuel Analysis: FIMS Analysis	100.00	100.00	3.00	100.00	3.00	3.90	0.00	0.94	0.00	0.09	0.09	4.00	1.0

Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		Oil/Fuel Analysis		alysis)	Williams, Rar 01/04/2012 11:49 Page 1 c		
CMR Number	549771		Subm	ission	Date		11/10/2011	07:22 AM		
Status			-	ed Date			11/14/2011			
	Completed									
Disposition	Info Only			nit Date			and other the design of the local	11/14/2011		
Released By	Bautista, Karla		Comp	letion [Date		11/14/2011	11/14/2011 05:07 PM		
Custom Id / Title	Biofuel Blend T	1 Retest	Projec	ct / Typ	e		Info Only			
abor Charge Number	7002368937-003	50	1				6			
SAP Project	EG-002166		SAP	Work C	ente		1015-EEM	A77MI		
Sample Origin	T1		0.4	inoint o	onto	1	TOTO LEM			
	and the second s				33		ACTUDA			
Dil / Fuel Type	Jet A/Biofuel		and the second se	ial Spe			ASTM-D-1			
Detailed Instructions								5 hrs) - check specifi		
	CONTRACTOR AND ADDRESS OF THE	cs, LHV (using sulfur	content of (J.049 W	τ%).	Hush	n, need today if po	DSSIDIO		
Distribution List	Ciero, Robert Will	iams, Randy								
Sustained	Million De l		0.1	in a D	5		MARTIN	land.		
Customer	Williams, Randy			itted B	Y		Williams, F	Carlos de la companya		
Phone	+1 602/231-722	Phone				+1 602/231	-7229			
Department	BA-60035	Depar	tment			BA60035				
Requesting Site	Phoenix									
Test Results										
Specimen: 1061409714								Date: 11/14/20		
Property		Result	Units	LL	Т	UL	SOP	Analyst		
Test: A&B Coefficients										
A Coefficient	1	(c) 10.6092919					WI1414	Bautista, Karla		
B Coefficient		(c) 4.0366145					WI1414	Bautista, Karla		
Test: Aromatics										
Distance to Blue 1			cm				ASTM-D-1319	Bautista, Karla		
Distance to Front 1		275-280-2	cm	_			ASTM-D-1319	Bautista, Karla		
Distance to Blue 2		Contraction of the Contraction o	cm	-	-	-	ASTM-D-1319	Bautista, Karla		
Distance to Front 2		68.7	cm	-			ASTM-D-1319	Bautista, Karla		
Aromatics Ratio 1		(c) 0.09	1	-			ASTM-D-1319	Bautista, Karla		
Aromatics Ratio 2		(c) 0.09	0/	-	-		ASTM-D-1319 ASTM-D-1319	Bautista, Karla Bautista, Karla		
% Volume Aromatics Test: LHV		(c) 9.0	70	-	-	-	ASTN-D-1319	Dauusia, Naria		
Calorimeter		Parr 1266		1			WI1411	Bautista, Karla		
Calorimeter constant		2411.0576		-			WI1411	Bautista, Karla		
Sample Weight		0.5684	q	-	-		WI1411	Bautista, Karla		
Tape Weight			g	-	-		WI1411	Bautista, Karla		
Temperature change		2.6306				15	WI1411	Bautista, Karla		
Fuse Correction			cal			5	Wi1411	Bautista, Karla		
Nitric Acid			ml				WI1411	Bautista, Karla		
LHV-FIMS		(c) 18700	BTU/lb				WI1411	Bautista, Karla		
Test: Specific Gravity (A)										
Observed API Gravity			°API			2	ASTM-D-1298	Bautista, Karla		
Fuel Temperature			°F		1.1	-	ASTM-D-1298	Bautista, Karla		
API Gravity @ 60 degF		(c) 48.709		-		-	ASTM-D-1298	Bautista, Karla		
Density			kg/m^3	-	-		ASTM-D-1298	Bautista, Karla		
Specific Gravity 60/60 degl	6	0.7852					ASTM-D-1298	Bautista, Karla		
Test: Text Results								Bautista, Karla		

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMF Oil/Fuel Analysis Uncontrolled in electro	CMR 54977 Williams, Rand 01/04/2012 11:49 A Page 2 of		
Olefins and saturates calculated Jet A / Biofuel Olefins, % volume: 0.7 Saturates, % volume: 90.3	per ASTM D 1319			
Test: Text Results (2)				
Text Result	(see below)		WI1411	Bautista, Karla 11/14/2011
LHV using sulfur content of 0.04	9 %m and hydrogen content of	14.164 %m i	s equal to 18706 BTU/lb.	
Test: Viscosity @ 104F				
Tube number-104	VIS-2382		WI1414	Bautista, Karla
Run #1	378.37	Sec	WI1414	Bautista, Karla
Run #2	378.36	Sec	WI1414	Bautista, Karla
Average Time	(c) 378.37	Sec	WI1414	Bautista, Karla
CS	(c) 1.38	cst	WI1414	Bautista, Karla
Test: Viscosity @ 77F				
Other tube constant	0.003653		WI1414	Bautista, Karla
Run #1	477.75	Sec	WI1414	Bautista, Karla
Run #2	477.83	sec	WI1414	Bautista, Karla
Average Time	(c) 477.79	Sec	WI1414	Bautista, Karla
CS	(c) 1.75	cst	WI1414	Bautista, Karla



3131 Airlane-Engineering Phoenix, AZ 85034		CMR Oil/Fuel Analysis Uncontrolled in electro		alysis)	CMR 54977: Williams, Rand 01/04/2012 11:51 AN Page 1 of 2	
	and the second s								
CMR Number	549773	1	Submission	Date			11/10/2011 07	:26 AM	
Status	Completed		Desired Date	Ð			11/14/2011		
Disposition	Info Only		Commit Dat	е			11/14/2011		
Released By	Bautista, Karla		Completion	Date			11/14/2011 05:07 PM		
	Buddota, Hund		nance states.				Info Only		
	700000007 005		Project / Typ	DB			mio Only		
Labor Charge Number	7002368937-0050						1		
SAP Project	EG-002166		SAP Work (Center			1015-EEMAZ2	IML	
Sample Origin	T2								
Oil / Fuel Type	Jet A/Biofuel	1	Material Spe	C			D7566		
Detailed Instructions	gravity, aromatic: Rush - need toda	s, LHV (use sulfur o y if possible.	8679 (biofuel blend from San Tan tank e sulfur of 0.052 wt%).				T2 mixed for 15 I	hrs) - check specific	
Distribution List	Ciero, Robert Willia	ms, Handy							
Customer	Williams, Randy		Submitted B	y			Williams, Rand	iy	
Phone	+1 602/231-7229		Phone				+1 602/231-72	29	
Department	BA60035		Department				Contractor in the local division of the second second		
Requesting Site	Phoenix		Department				BA-60035		
Specimen: 1061409715		Popult	Unito	1.11	T		808	Date: 11/14/2011	
Property		Result	Units	LL	T	UL	SOP	Date: 11/14/2011 Analyst	
Property Test: A&B Coefficients	i i i i i i i i i i i i i i i i i i i		Units	TLL	T	UL		Analyst	
Property Test: A&B Coefficients A Coefficient		(c) 10.0988767	Units	LL	T	UL	WI1414	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient			Units		T	UL		Analyst	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics		(c) 10.0988767 (c) 3.8510781			T	UL	WI1414	Analyst Bautista, Karla Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient		(c) 10.0988767 (c) 3.8510781 6.0	cm		T	UL	WI1414 WI1414	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Front 1		(c) 10.0988767 (c) 3.8510781 6.0 67.5	cm cm		T	UL	WI1414 WI1414 ASTM-D-1319	Analyst Bautista, Karla Bautista, Karla Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2	cm cm cm		T	UL	Wi1414 Wi1414 ASTM-D-1319 ASTM-D-1319	Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Front 1 Distance to Blue 2		(c) 10.0988767 (c) 3.8510781 6.0 67.5	cm cm cm		T	UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319	Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Blue 2 Distance to Front 2		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7	cm cm cm		T	UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319	Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Blue 2 Distance to Front 2 Aromatics Ratio 1		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7 (c) 0.09	cm cm cm cm		T	UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Front 1 Distance to Blue 2 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 6.7 7 (c) 0.09 (c) 0.09	cm cm cm cm		T	UL	WI1414 WI1414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 6.7 7 (c) 0.09 (c) 0.09	cm cm cm cm		T	UL	WI1414 WI1414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7 (c) 0.09 (c) 0.09 (c) 9.0	cm cm cm cm		T	UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Calorimeter constant Sample Weight		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266	cm cm cm cm			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 W11411 W11411	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266 2411.0576 0.5600 0	cm cm cm cm g			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 MSTM-D-1319 W11411 W11411 W11411	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Blue 2 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change		(c) 10.0988767 (c) 3.8510781 6.0 6.2 6.2 67.7 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266 2411.0576 0.5600 0 2.5947	cm cm cm cm g g g °C			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 W11411 W11411 W11411 W11411 W11411	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266 2411.0576 0.5600 0 2.5947 13	cm cm cm cm g g g c c c cal			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 W11411 W11411 W11411 W11411 W11411 W11411	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266 2411.0576 0.5600 0 2.5947 13 12	cm cm cm cm %			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266 2411.0576 0.5600 0 2.5947 13	cm cm cm cm %			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 W11411 W11411 W11411 W11411 W11411 W11411	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266 2411.0576 0.5600 0 2.5947 13 12 (c) 18720	cm cm cm cm % % 9 9 °C cal ml BTU/Ib			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266 2411.0576 0.5600 0 2.5947 13 12 (c) 18720 50.3	cm cm cm cm % % 9 9 9 9 9 c C cal mi BTU/Ib			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Blue 2 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Calorimeter Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature		(c) 10.0988767 (c) 3.8510781 6.0 67.5 6.2 67.7 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266 2411.0576 0.5600 0 2.5947 13 12 (c) 18720 50.3 74	cm cm cm cm % % 9 9 °C cal ml BTU/Ib			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 W11411 W11412 W11411 W11412 W11412 W11414 W11411 W1411 W1411 W1411 W1411 W1411 W1411 W1411 W1411 W1411 W141	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Coloserved API Gravity Fuel Temperature API Gravity @ 60 degF		(c) 10.0988767 (c) 3.8510781 6.0 6.2 6.2 67.7 (c) 0.09 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266 2411.0576 0.5600 0 2.5947 13 12 (c) 18720 50.3 74 (c) 48.893	cm cm cm cm g % 9 °C cal ml BTU//b °API °F			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 W11411 W11412 ASTM-D-1298 ASTM-D-1298	Analyst Bautista, Karla	
Property Test: A&B Coefficients A Coefficient B Coefficient Test: Aromatics Distance to Blue 1 Distance to Blue 1 Distance to Front 1 Distance to Front 2 Aromatics Ratio 1 Aromatics Ratio 2 % Volume Aromatics Test: LHV Calorimeter Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature		(c) 10.0988767 (c) 3.8510781 6.0 6.2 6.2 67.7 (c) 0.09 (c) 0.09 (c) 0.09 (c) 9.0 Parr 1266 2411.0576 0.5600 0 2.5947 13 12 (c) 18720 50.3 74 (c) 48.893	cm cm cm cm % % 9 9 9 9 9 c C cal mi BTU/Ib			UL	W11414 W11414 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 ASTM-D-1319 W11411 W11412 W11411 W11412 W11412 W11414 W11411 W1411 W1411 W1411 W1411 W1411 W1411 W1411 W1411 W1411 W141	Analyst Bautista, Karla	



Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	Oil/Fuel Analysis	CMR Result Report Oil/Fuel Analysis: FIMS Analysis (Phoenix) Uncontrolled in electronic/hard copy. Verify version in LIMS.						
Text Result	(see below)	1	WI1416	Bautista, Karia 11/10/2011				
Olefins and saturates calculate Jet A / Biofuel Olefins, % volume: 0.7 Saturates, % volume: 90.3 Test: Text Results (2)								
Text Result	(see below)		Wi1411	Bautista, Karla				
	And a second			11/14/2011				
	052 %m and hydrogen content of	14.1815 %m i	s equal to 18733 BTU/lb.	1 - 2000 - 200 - 002 - 202 - 10				
Test: Viscosity @ 104F								
Tube number-104	VIS-2383		WI1414	Bautista, Karla				
Run #1	374.39	And the Rest of States of	WI1414	Bautista, Karla				
Run #2	374.65	Sec	WI1414	Bautista, Karla				
Average Time	(c) 374.52	Sec	WI1414	Bautista, Karla				
CS	(c) 1.38	cst	WI1414	Bautista, Karla				
Test: Viscosity @ 77F								
Other tube constant	0.003676		WI1414	Bautista, Karla				
Run #1	471.96	Sec	WI1414	Bautista, Karla				
Run #2	471.95	Sec	WI1414	Bautista, Karla				
Average Time	(c) 471.96	Sec	WI1414	Bautista, Karla				
CS	(c) 1.73	oot	WI1414	Bautista, Karla				

Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMR Oil/Fuel Analysis		alysis)	CMR 54984 Williams, Rand 01/04/2012 11:47 A Page 1 of	
CMR Number	549845	1	Submission	Date			11/10/2011 11:	54 AM	
Status	Completed		Desired Date	0			11/14/2011		
Disposition	Info Only		Commit Dat	•			11/14/2011		
ALCONDUCT STOLEN	end of the statistic statistics								
Released By	Bautista, Karla		Completion				11/14/2011 05:07 PM		
Custom Id / Title	T1 Biofuel Blend		Project / Typ	pe			Info Only		
Labor Charge Number	7002368937-0050								
SAP Project	EG-002166		SAP Work (Center			1015-EEMAZZ	ML	
Sample Origin	T1								
Dil / Fuel Type	Jet A/Biofuel		Material Spe			D7566			
Detailed Instructions	solution and the second second second	and a second					and the second se		
Detailed Instructions		Tan tank T1, biofu				1.000			
Dist in the line	AND DESCRIPTION OF A DE	romatics, LHV (ass	sume sultur	conten	I OT C	0.0419	om), and viscosity		
Distribution List	Ciero, Robert William	ns, Randy			_	_			
Customer	Williams, Randy		Submitted B	By			Neal, Terry		
Phone	+1 602/231-7229		Phone				+1 480/592-79	31	
Department	BA60035		Department				BA-60122		
Requesting Site	Phoenix		Dopartmont				DR OUTEE		
Test Results Specimen: 1061409713								Date: 11/14/201	
Property		Result	Units	LL	Т	UL	SOP	Analyst	
Test: A&B Coefficients									
A Coefficient	2	(c) 10.3551532		1			WI1414	Bautista, Karla	
B Coefficient		(c) 3.9442348					WI1414	Bautista, Karla	
Test: Aromatics									
Distance to Blue 1		6	cm				ASTM-D-1319	Bautista, Karla	
Distance to Front 1		67.3	cm				ASTM-D-1319	Bautista, Karla	
Distance to Blue 2		6	cm				ASTM-D-1319	Bautista, Karla	
Distance to Front 2		67.0	cm				ASTM-D-1319	Bautista, Karla	
Aromatics Ratio 1		(c) 0.09					ASTM-D-1319	Bautista, Karla	
Aromatics Ratio 2		(c) 0.09		_	_	-	ASTM-D-1319	Bautista, Karla	
% Volume Aromatics		(c) 9.0	%	_		_	ASTM-D-1319	Bautista, Karla	
Test: LHV					1.00				
Calorimeter		Parr 1266		-		-	WI1411	Bautista, Karla	
Calorimeter constant		2411.0576	-	-	-		WI1411	Bautista, Karla	
Sample Weight		0.5548		-			WI1411	Bautista, Karla	
Tape Weight			g	-	-	-	WI1411	Bautista, Karla	
Temperature change Fuse Correction		2.5686	Contraction of the local division of the loc	-	-		WI1411 WI1411	Bautista, Karla Bautista, Karla	
and the second			cal	-	-		and the second se	and the second state of th	
Nitric Acid LHV-FIMS		(c) 18699	ml BTU/b	-			WI1411 WI1411	Bautista, Karla Bautista, Karla	
Test: Specific Gravity (A)		(c) 10099	510/10			141	THE REAL PROPERTY IN CONTRACT OF THE REAL PROPERTY IN CONTRACT.	baulisia, Nalia	
Observed API Gravity (A)		50.1	°API	1	1		ASTM-D-1298	Bautista, Karla	
Fuel Temperature			°F		-	-	ASTM-D-1298	Bautista, Karla	
API Gravity @ 60 degF		(c) 48.709		-	-		ASTM-D-1298	Bautista, Karla	
Density		a standard to a standard to be a standard to be	kg/m^3	-	-		ASTM-D-1298	Bautista, Karla	
Specific Gravity 60/60 degF		0.7852		-	-		ASTM-D-1298	Bautista, Karla	
Test: Text Results		0.1002						- manufacture could be weet the	
Text Result	1	(see below)		1		-	WI1416	Bautista, Karla	

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMF Oil/Fuel Analysis Uncontrolled in electro	CMR 549845 Wiliams, Randy 01/04/2012 11:47 AN Page 2 of 2		
Olefins and saturates calculated	per ASTM D 1319			
Jet A/Biofuel				
Olefins, % volume: 0.7 Saturates, % volume: 90.3				
Test: Text Results (2)				
Text Result	(see below)		WI1411	Bautista, Karla 11/14/2011
LHV using sulfur content of 0.041	%m and hydrogen content of	14.164 %m is (equal to 18705 BTU/lb.	
Test: Viscosity @ 104F				
Tube number-104	VIS-2384		WI1414	Bautista, Karla
Run #1	350.69	Sec	WI1414	Bautista, Karla
Run #2	350.67	Sec	WI1414	Bautista, Karla
Average Time	(c) 350.68	Sec	WI1414	Bautista, Karla
CS	(c) 1.38	cst	WI1414	Bautista, Karla
Test: Viscosity @ 77F				
Other tube constant	0.003939		WI1414	Bautista, Karla
Run #1	442.77	Sec	WI1414	Bautista, Karla
Run #2	442.85	Sec	WI1414	Bautista, Karla
Average Time	(c) 442.81	Sec	WI1414	Bautista, Karla
CS	(c) 1.74	cst	WI1414	Bautista, Karla

Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis Uncontrolled in electro		alysis			;)	CMR 54984 Wiliams, Rand 11/14/2011 8:48 PI Page 1 of
CMR Number	549846		Submission	Date			11/10/2011 11:	55 AM
Status	Completed	1	Desired Date	0			11/14/2011	
Disposition	Info Only		Commit Dat	е			11/14/2011	
Released By	Bautista, Karla		Completion	Date			11/14/2011 05:	06 PM
Custom Id / Title	T2 Biofuel Blend		Project / Typ				Info Only	
	CARGE AND ADDRESS OF DESCRIPTION OF		Floject / Ty	be -			moomy	
Labor Charge Number	7002368937-005							
SAP Project	where the state of the particular second	EG-002166 SAP Work Center					1015-EEMAZZ	ML
Sample Origin	T2							
Oil / Fuel Type	Jet A/Biofuel		Material Spe	9C			D7566	
Detailed Instructions		Tan tank T2, biofuel cs, LHV (assume sul						0/11. Analyze specific
Distribution List	A Resolution of the second sec	ams, Randy Culbertson	Charles and the second					
Customer	Williams, Randy		Submitted B	8y			Neal, Terry	
Phone	+1 602/231-7229		Phone	-			+1 480/592-79	31
Department	BA-60035		Department				BA-60122	
			рераннен				DA-00122	
Requesting Site	Phoenix	-						
Test Results								
Specimen: 1061409712		Dec.th	1 failes	1.1.1	-		000	Date: 11/14/201
Property Test: A&B Coefficients		Result	Units	LL	T	UL	SOP	Analyst
A Coefficient	1	(c) 10.3551532		-	-		WI1414	Bautista, Karla
B Coefficient		(c) 3.9442348		-		-	WI1414	Bautista, Karla
Test: Aromatics		(0) 0.0442040					1111414	Delational, Indina
Distance to Blue 1		6	cm	1	1		ASTM-D-1319	Bautista, Karla
Distance to Front 1		67.2		-			ASTM-D-1319	Bautista, Karla
Distance to Blue 2			cm				ASTM-D-1319	Bautista, Karla
Distance to Front 2		67.0	cm				ASTM-D-1319	Bautista, Karla
Aromatics Ratio 1		(c) 0.09			L		ASTM-D-1319	Bautista, Karla
Aromatics Ratio 2		(c) 0.09					ASTM-D-1319	Bautista, Karla
% Volume Aromatics		(c) 9.0	%				ASTM-D-1319	Bautista, Karla
Test: LHV					61.00			1
Calorimeter		Parr 1266		-		-	WI1411	Bautista, Karla
Calorimeter constant		2411.0576		-			WI1411	Bautista, Karla
Sample Weight		0.5598		-			WI1411	Bautista, Karla
Tape Weight			g	-	-	-	WI1411	Bautista, Karla
Temperature change Fuse Correction		2.5961	°C	-	-		WI1411 WI1411	Bautista, Karla Bautista, Karla
Nitric Acid			ml	-	-		WI1411	Bautista, Karla
LHV-FIMS		(c) 18719		-	-		WI1411	Bautista, Karla
Test: Specific Gravity (A)		(0) 10/13	STOND 1		1 A A A			
Observed API Gravity		50.3	°API	1			ASTM-D-1298	Bautista, Karla
Fuel Temperature			°F			-	ASTM-D-1298	Bautista, Karla
API Gravity @ 60 degF		(c) 48.893	1				ASTM-D-1298	Bautista, Karla
Density		Construction of the Area of the Ar	kg/m^3				ASTM-D-1298	Bautista, Karla
Specific Gravity 60/60 degl	F	0.7844				-	ASTM-D-1298	Bautista, Karla
Test: Text Results								
Text Result		(see below)					WI1416	Bautista, Karla

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMF Oil/Fuel Analysis Uncontrolled in electro	CMR 549846 Williams, Randy 11/14/2011 8:48 PN Page 2 of 2		
Olefins and saturates calculated	per ASTM D 1319			
Jet A/Biofuel				
Olefins, % volume: 0.7				
Saturates, % volume: 90.3				
Test: Text Results (2)				
Text Result	(see below)		WI1411	Bautista, Karla 11/14/2011
LHV using sulfur content of 0.05	2 %m and hydrogen content of	14.1815 %m	is equal to 18732 BTU/lb.	
Test: Viscosity @ 104F				
Tube number-104	VIS-2384		WI1414	Bautista, Karla
Run #1	349.10	Sec	WI1414	Bautista, Karla
Run #2	349.23	Sec	Wi1414	Bautista, Karla
Average Time	(c) 349.17	sec	WI1414	Bautista, Karla
CS	(c) 1.38	cst	WI1414	Bautista, Karla
Test: Viscosity @ 77F				
Other tube constant	0.003939	0	WI1414	Bautista, Karla
Run #1	440.85	sec	Wi1414	Bautista, Karla
Run #2	440.80	Sec	WI1414	Bautista, Karla
Average Time	(c) 440.83	Sec	WI1414	Bautista, Karla
CS	(c) 1.74	cst	Wi1414	Bautista, Karla

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3131 Airlane-Engineering Phoenix, AZ 85034	Oil/Fuel Analysi	R Result Report s: Oils and Fuels (Phoenix) onic/hard copy. Verify version in LIMS.	CMR 55284 Cu/bertson, Bra 12/15/2011 10:46 A/ Page 1 of	
CMR Number	552845	Submission Date	12/05/2011 09:51 AM	
Status	Completed	Desired Date	12/09/2011	
Disposition	Info Only	Commit Date	12/20/2011	
Released By	Bautista, Karla	Completion Date	12/15/2011 10:37 AM	
Custom Id / Title	HEFA SPKJet A Blend Tank 1	Project / Type	Info Only	
abor Charge Number	7002368937-0050	Material Charge Number	7002368937-0180	
SAP Project	EG-002166	SAP Work Center	1015-EEMAZZML	
TSCA Sample Origin	USA			
Sample Origin	Tank 1 (San Tan)			
Oil / Fuel Type	HEFA SPK	Material Spec	D7566 Table 1 and A1.1	
Operating Time	n/a	Engine Serial #	n/a	
	Specific Gravity			
	Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point			
Detailed Instructions	Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point	buse as possible - including specific distilation (D86). Other properties a r (D445 at -20C), sulfur (D5453 or D mosion (D130), thermal stability at 3 ISEP (D3948) may need to be sent also run simulated distillation (D288	gravity, LHV, viscosity (D445), such as acidity (D3242), aromatics 2622), mercaptan sulfur (D3227), 125C (D3241), existent gum (D381, to an accredited outside laboratory 87) at OP laboratory. Also check	
Detailed Instructions Distribution List	Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 specificatio A blend. Run as many analysis in-ho flash point, freeze point (D2386), and (D1319 or D6379), low temp viscosity smoke point (D1322), copper strip co report washed and unwashed), and M (recommend Dixie Services). Please	buse as possible - including specific distilation (D86). Other properties a r (D445 at -20C), sulfur (D5453 or D mosion (D130), thermal stability at 3 ISEP (D3948) may need to be sent also run simulated distillation (D288	gravity, LHV, viscosity (D445), such as acidity (D3242), aromatics 2622), mercaptan sulfur (D3227), 125C (D3241), existent gum (D381, to an accredited outside laboratory 87) at OP laboratory. Also check	
	Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 specificatio A blend. Run as many analysis in-ho flash point, freeze point (D2386), and (D1319 or D6379), low temp viscosity smoke point (D1322), copper strip co report washed and urwashed), and M (recommend Dixie Services). Please hydrocarbon concentration (D2425 an	buse as possible - including specific distilation (D86). Other properties a r (D445 at -20C), sulfur (D5453 or D mosion (D130), thermal stability at 3 ISEP (D3948) may need to be sent also run simulated distillation (D288	gravity, LHV, viscosity (D445), such as acidity (D3242), aromatics 2622), mercaptan sulfur (D3227), 125C (D3241), existent gum (D381, to an accredited outside laboratory 87) at OP laboratory. Also check	
Distribution List Customer	Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 specificatio A blend. Run as many analysis in-ho flash point, freeze point (D2386), and (D1319 or D6379), low temp viscosity smoke point (D1322), copper strip co report washed and unwashed), and M (recommend Dixie Services). Please hydrocarbon concentration (D2425 an Williams, Randy	buse as possible - including specific distilation (D86). Other properties s (D445 at -20C), sulfur (D5453 or D) rrosion (D130), thermal stability at 3 (SEP (D3948) may need to be sent also run simulated distillation (D286 ad D5291), nitrogen (D4629), and tra	gravity, LHV, viscosity (D445), such as acidity (D3242), aromatics 2622), mercaptan sulfur (D3227), 125C (D3241), existent gum (D381, to an accredited outside laboratory 37) at OP laboratory. Also check ce metals (ICP, prefer UOP 389)	
Distribution List	Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 specificatio A blend. Run as many analysis in-ho flash point, freeze point (D2386), and (D1319 or D6379), low temp viscosity smoke point (D1322), copper strip co report washed and unwashed), and M (recommend Dixie Services). Please hydrocarbon concentration (D2425 an Williams, Randy Culbertson, Brad	buse as possible - including specific distilation (D86). Other properties s r (D445 at -20C), sulfur (D5453 or D mosion (D130), thermal stability at 3 ISEP (D3948) may need to be sent also run simulated distillation (D288 ad D5291), nitrogen (D4629), and tra	gravity, LHV, viscosity (D445), such as acidity (D3242), aromatics 2622), mercaptan sulfur (D3227), 125C (D3241), existent gum (D381, to an accredited outside laboratory 37) at OP laboratory. Also check ce metals (ICP, prefer UOP 389) Culbertson, Brad	

Т	es	tI	R	e	s	u	It	s
	~~	•		9	-	-	•••	-

Specimen: 1061418025						D	ate: 12/15/201
Property	Result	Units	LL	т	UL	Cardena and Anna	Analyst
Test: A&B Coefficients							
A Coefficient	(c) 10.3551532					W11414	Bautista, Karla
B Coefficient	(c) 3.9442348					WI1414	Bautista, Karla
Test: Anti-Icing Additive							
DIEGMME	0	% v/v				WI1412	Bautista, Karla
Test: Aromatics							
Distance to Blue 1	6.0	cm				ASTM-D-1319	Bautista, Karla
Distance to Front 1	67.0	cm				ASTM-D-1319	Bautista, Karla
Distance to Blue 2	6.2	cm				ASTM-D-1319	Bautista, Karla
Distance to Front 2	67.3	cm				ASTM-D-1319	Bautista, Karla

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: Oils and Fuels Uncontrolled in electronic/hard copy. Verify verifi		12	CMR 5528 Culbertson, Br /15/2011 10:46 A Page 2 o
Aromatics Batio 1	(-) 0.00	í î î	ASTM-D-1319	Bautista, Karla
Aromatics Ratio 2	(c) 0.09 (c) 0.09		ASTM-D-1319	Bautista, Karla
% Volume Aromatics	(c) 0.09 (c) 9.0	0/	ASTM-D-1319	Bautista, Karla
	(c) 9.0	70	ASTM-D-1319	Bautista, Kana
Test: Distillation	000	0 F	ACTM D 90	Reutiete Kerle
Initial B.P.	308		ASTM-D-86	Bautista, Karla
5% Distilled	330		ASTM-D-86	Bautista, Karla
10% Distilled	340		ASTM-D-86	Bautista, Karla
20% Distilled	358	a second s	ASTM-D-86	Bautista, Karla
30% Distilled	376	and the second se	ASTM-D-86	Bautista, Karla
40% Distilled	392		ASTM-D-86	Bautista, Karla
50% Distilled	410	°F	ASTM-D-86	Bautista, Karla
60% Distilled	430	°F	ASTM-D-86	Bautista, Karla
70% Distilled	450	°F	ASTM-D-86	Bautista, Karla
80% Distilled	470	°F	ASTM-D-86	Bautista, Karla
90% Distilled	494	°F	ASTM-D-86	Bautista, Karla
95% Distilled	510		ASTM-D-86	Bautista, Karla
End Point	532		ASTM-D-86	Bautista, Karla
% Distilled	98.7		ASTM-D-86	Bautista, Karla
% Residue	1.1	and the second se	ASTM-D-86	Bautista, Karla
and the second		and a second sec	ASTM-D-86	a second data and the second data and the second data and
% Loss	(c) 0.2	%	ASTM-D-66	Bautista, Karla
Test: Flash Point - c.c.	101			D
Flash Point	104	a structure as a second s	ASTM-D-56	Bautista, Karla
Barometric Pressure	29.208	provide the second s	ASTM-D-56	Bautista, Karla
Corrected Flash Point	(c) 105	°F	ASTM-D-56	Bautista, Karla
Test: Freeze Point				
Freeze Point	-58	°F	ASTM-D-2386	Bautista, Karla
Test: LHV				
Calorimeter	Parr 1266		WI1411	Bautista, Karla
Calorimeter constant	2419.3473		WI1411	Bautista, Karla
Sample Weight	0.5680	a	WI1411	Bautista, Karla
Tape Weight		g	WI1411	Bautista, Karla
Temperature change	2.6275		WI1411	Bautista, Karla
Fuse Correction		cal	WI1411	Bautista, Karla
Nitric Acid		ml	W11411	Bautista, Karla
LHV-FIMS		the start further start starters in the starters will be	W1411	Bautista, Karla
	(c) 18736	BTU/ID	VVII411	Dauisia, Nalia
Test: Specific Gravity (A)			I Lorenze sono	
Observed API Gravity		°API	ASTM-D-1298	Bautista, Karla
Fuel Temperature		°F	ASTM-D-1298	Bautista, Karla
API Gravity @ 60 degF	(c) 48.709		ASTM-D-1298	Bautista, Karla
Density	(c) 785	kg/m^3	ASTM-D-1298	Bautista, Karla
Specific Gravity 60/60 degF	0.7852		ASTM-D-1298	Bautista, Karla
Test: Text Results				
Text Result	(see below)		WI1416	Bautista, Karla 12/12/2011
Olefins and saturates calculated pe HEFA SPK/Jet A Olefins, % volume: 0.6 Saturates, % volume: 90.4 Test: Text Results (2)	r ASTM D 1319			1212/2011
			Lan	Bautista, Karla
Text Result	(see below)		per CMR inst.	12/15/2011
D381				



CMR 552845

Page 3 of 5

Culbertson, Brad

12/15/2011 10:46 AM

Attn: Terry Cooper CMR Result Report Honeywell International Inc. 3131 Airlane-Engineering Oil/Fuel Analysis: Oils and Fuels (Phoenix) Phoenix, AZ 85034 Uncontrolled in electronic/hard copy. Verify version in LIMS Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mass % = 0.058 D3227 Mercaptan sulfur, mass % = 0.0007 D445 Viscosity, - 20 °C, mm2/s = 4.951 D1840 Napthalenes, volume % = 0.80 D3242 Acid number, mg KOH/g = 0.008 D130 Corrosion copper strip (2 h/100 °C) = 1A D3241 Thermal oxidation stability, (2.5 h/325 °C) Heater tube deposit rating, visual = > 4 Filter pressure drop, mm Hg = > 25 (60 minutes) D3948 Water separation, MSEP-A rating = 69 D2887 Boiling range distribution, % recovered, °C IBP 109.5 05 135.0 10 148.0 20 166.0 30 182.5 40 197.5 50 210.0 60 224.0 70 241.0 80 257.5 90 271.5 95 279.0 FBP 314.0 D4629 Nitrogen, mg/kg = 3.0 D5291 Carbon, mass % = 84.9 Hydrogen, mass % = 14.3 D1322 Smoke point, mm = 31.0

UOP389

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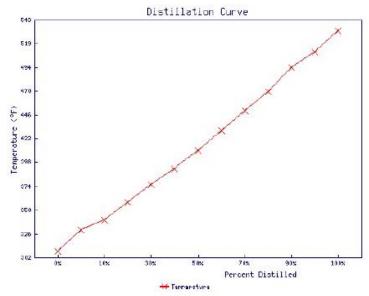
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3131 Airlane-Engi			CMR Result Report Analysis: Oils and Fuels		()	10	CMR 55284 Culbertson, Brad 2/15/2011 10:46 AM
Phoenix, AZ 8503	4	Uncontro	led in electronic/hard copy. Verify versi	ion in LIMS.			Page 4 of
Trace Metals,	malka						
Aluminum	< 0.02						
Calcium	0.04						
Cobalt	< 0.02						
Chromium	< 0.02						
Copper	0.25						
ron	< 0.02						
Potassium	< 0.02						
Lithium	< 0.02						
Magnesium	< 0.02						
Manganese	< 0.02						
Molybdenum	< 0.02						
Sodium	0.10						
Nickel	< 0.02						
Phosphorus	< 0.02						
Lead	0.02						
Strontium	< 0.02						
Palladium	< 0.02						
Platinum	< 0.02						
Tin	< 0.02						
Titanium	< 0.02						
Vanadium	< 0.02						
Zinc	0.02						
Lest: Viscositi	0 104E						
Tube number-	A second s		VIS-2383			WI1414	Bautista, Karla
Tube number- Run #1	A second s		374.58	Sec		WI1414	Bautista, Karla
Tube number- Run #1 Run #2	A second s		374.58 374.60	Sec Sec		W11414 W11414	Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time	A second s		374.58 374.60 (c) 374.59	Sec Sec Sec		W1414 W1414 W1414	Bautista, Karla Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS	104		374.58 374.60	Sec Sec Sec		W11414 W11414	Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosit	104 y @ 77F		374.58 374.60 (c) 374.59 (c) 1.38	sec sec sec cst		W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosit Other tube cor	104 y @ 77F		374.58 374.60 (c) 374.59 (c) 1.38 0.003676	sec sec sec cst		W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1	104 y @ 77F		374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78	sec sec cst sec		W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2	104 y @ 77F		374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62	sec sec cst sec sec sec		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time	104 y @ 77F		374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70	sec sec cst sec sec sec sec		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS	y @ 77F Istant		374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62	sec sec cst sec sec sec sec		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water C	y @ 77F Istant		374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74	sec sec cst sec sec sec cst		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosit: Other tube cor Run #1 Run #2 Average Time CS Test: Water C Run #1	y @ 77F Istant		374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13	sec sec cst sec sec sec cst		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water Co Run #1 Run #2	y @ 77F Istant		374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83	sec sec cst sec sec sec cst ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Test: Viscosity Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water Cor Run #1 Run #2 Water Content	y @ 77F Istant		374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83 (c) 24.98	sec sec cst sec sec sec cst ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water Co Run #1 Run #2	y @ 77F Istant	This sample was checked	374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83	sec sec cst sec sec sec cst ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water Co Run #1 Run #2 Water Content Water Content	y @ 77F Istant		374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83 (c) 24.98	sec sec cst sec sec sec cst ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water Cor Run #1 Run #2 Water Content Water Content Specimen: ~A	y @ 77F Istant		374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83 (c) 24.98	sec sec cst sec sec sec cst ppm ppm	SOP	W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water Cor Run #1 Run #2 Water Content Water Content Specimen: ~A Pro	04 y @ 77F Istant ontent (ppm) Standard ttached Result perty	S	374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83 (c) 24.98 d against a 50 ppm QC standard	sec sec cst sec sec sec cst ppm ppm	SOP	W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water Cor Run #1 Run #2 Water Content Water Content Specimen: ~A	ontent (ppm) Standard ttached Result perty d Results	S	374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83 (c) 24.98 d against a 50 ppm QC standard	sec sec cst sec sec sec cst ppm ppm ppm	SOP	W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Fube number- Run #1 Run #2 Average Time CS Fest: Viscositi Cest: Viscositi Run #1 Run #2 Average Time CS Fest: Water Content Specimen: ~A Pro Fest: Attached Resu	ontent (ppm) Standard ttached Result perty d Results ult	s Result	374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83 (c) 24.98 d against a 50 ppm QC standard	sec sec cst sec sec sec cst ppm ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064 Bautista, 12/15/20	Bautista, Karla Bautista, Karla Date: 12/15/201 Analyst Karla 11
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water Cor Run #1 Run #2 Water Content Water Content Specimen: ~Att Content Attached Resu Specimen: ~To	ontent (ppm) Standard ttached Result perty d Results ult ext Results	s Result	374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83 (c) 24.98 ed against a 50 ppm QC standard Units LL T U	sec sec cst sec sec sec cst ppm ppm ppm ppm	MR inst.	W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064 Bautista, 12/15/20	Bautista, Karla Bautista, Karla Date: 12/15/201 Analyst Karla 11 Date: 12/07/201
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water Content Water Content Water Content Specimen: ~A' Pro Test: Attached Rus Specimen: ~To Propent	04 y @ 77F istant ontent (ppm) Standard ttached Result perty d Results ult ext Results ty	s Result	374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83 (c) 24.98 d against a 50 ppm QC standard	sec sec cst sec sec sec cst ppm ppm ppm	MR inst.	W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064 Bautista, 12/15/20	Bautista, Karla Bautista, Karla
Tube number- Run #1 Run #2 Average Time CS Test: Viscosity Other tube cor Run #1 Run #2 Average Time CS Test: Water Cor Run #1 Run #2 Water Content Water Content Specimen: ~Att Content Attached Resu Specimen: ~To	04 y @ 77F istant ontent (ppm) Standard ttached Result perty d Results ult ext Results ty	s Result	374.58 374.60 (c) 374.59 (c) 1.38 0.003676 473.78 473.62 (c) 473.70 (c) 1.74 25.13 24.83 (c) 24.98 ed against a 50 ppm QC standard Units LL T UL	sec sec cst sec sec sec cst ppm ppm ppm ppm	MR inst.	W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064 Bautista, 12/15/20	Bautista, Karla Bautista, Karla Date: 12/15/201 Analyst



Attn: Terry Honeywell 3131 Airlan Phoenix, Ai	Interna ne-Engi	tional Inc. neering		CMR Rest Oil/Fuel Analysis: Oils Uncontrolled in electronic/hard of	and Fuels (Phoenix)		Cul	CMR 552845 bertson, Brac 011 10:46 AM Page 5 of 5
Distillatio	on Te	st for Spe	cimen 106	418025				
Oil and Fi		/R# 5	52845		Percent	Temperature	Material S	pec Limits
Material Material S	Pageifi		IEFA SPK 07566 Table	and A1.1	Distilled	(°F)	Minimum	Maximum
Test Meth			STM-D-86	and Att	0%	308		
					5%	330		
		Material S	pec Limits		10%	340		
		Minimum	Maximum		20%	358		
Percent	98.7				30%	376		
Distilled					40%	392		
Percent Residue	1.1				50%	410		
Percent	-				60%	430		
Loss	0.2				70%	450		
					80%	470		
					90%	494		
					95%	510		
					100%	532		





DIXIE SERVICES INCORPORATED

POST OFFICE BOX 451 1706 FIRST STREET GALENA PARK, TEXAS 77547 www.dbieservices.com VOICE 713 672 1619 FACSIMILE 713 672 1634

CERTIFICATE OF ANALYSIS

Number: 139790

Client: Honeywell International Inc. 3131 Airlane-Engineering Phoenix, Arizona 85034 Date: December 14, 2011

Attention: Terry Cooper

Sample: SPK / Jet A Blend, submitted 09 Dec 11 Origin: Tank #1 Marks: CMR 552845, 50/50 Biofuel P.O. Number 6500145455

D381	Gum content, mg/100 mL	
	Unwashed	< 1
	Washed	< 1
D5453	Sulfur, mass %	0.058
D3227	Mercaptan sulfur, mass %	0.0007
D445	Viscosity, - 20 °C, mm ² /s	4.951
D1840	Napthalenes, volume %	0.80
D3242	Acid number, mg KOH/g	0.008
D130	Corrosion copper strip (2 h/100 °C)	1A
D3241	Thermal oxidation stability, (2.5 h/325 °C)	
	Heater tube deposit rating, visual	> 4
	Filter pressure drop, mm Hg	> 25 (60 minutes)
D3948	Water separation, MSEP-A rating	69
D2887	Boiling range distribution, % recovered, °C	
	IBP	109.5
	5	135.0
	10	148.0
	20	166.0
	30	182.5
	40	197.5
	50	210.0
	60	224.0
	70	241.0
	80	257.5
	90	271.5
	95	279.0
	FBP	314.0
D4629	Nitrogen, mg/kg	3.0
D5291	Carbon, mass %	84.9
	Hydrogen, mass %	14.3
D1322	Smoke point, mm	31.0
	2.3 A 2.5 M	

The information contained herein is based on laboratory observations and tests performed on samples submitted and identified by the above-named client (which may be any company, organization or individual) and conducted in accordance with methodology which may be specified by the client. No representations or warranties either expressed or implied, of methodatolity, theses for any particular use, or dany other nature are made hereunder with respect to the information herein provided. Divide Services disclaims any and all liability for damage or injury which results from the use of the information contained herein, and nothing contained herein shall constitute a guarantee, warranty or representation by Dixie Services with respect to the accuracy of the information, the sample, products or items described, or their suitability for use for any specific purpose. This document is intended for the sole use of the client and may not be reproduced except in full without the written approval of Dixie Services.

Certificate of Analysis 139790 December 14, 2011 Page 2

UOP389	Trace Metals, mg/kg	
	Aluminum	< 0.02
	Calcium	0.04
	Cobalt	< 0.02
	Chromium	< 0.02
	Copper	0.25
	Iron	< 0.02
	Potassium	< 0.02
	Lithium	< 0.02
	Magnesium	< 0.02
	Manganese	< 0.02
	Molybdenum	< 0.02
	Sodium	0.10
	Nickel	< 0.02
	Phosphorus	< 0.02
	Lead	0.02
	Strontium	< 0.02
	Palladium	< 0.02
	Platinum	< 0.02
	Tin	< 0.02
	Titanium	< 0.02
	Vanadium	< 0.02
	Zinc	0.02

Dixie Services Incorporated,

Hlland bachary Zachary Holland

ZBH/Im

Email Recipients: richard.gadberry@honeywell.com; terry.cooper@honeywell.com steven.sosa@honeywell.com

3131 Airlane-Engineering Phoenix, AZ 85034	Oil/Fuel Analysis	R Result Report s: Oils and Fuels (Phoenix) anic/hard copy. Verify version in LIMS.	CMR 55284 Cubertson, Bra 12/15/2011 10:48 AM Page 1 of
CMR Number	552846	Submission Date	12/05/2011 09:51 AM
Status	Completed	Desired Date	12/09/2011
Disposition	Info Only	Commit Date	12/23/2011
Released By	Bautista, Karla	Completion Date	12/15/2011 10:48 AM
Custom Id / Title	HEFA SPKJet A Blend Tank 2	Project / Type	Info Only
abor Charge Number	7002368937-0050	Material Charge Number	7002368937-0180
SAP Project	EG-002166	SAP Work Center	1015-EEMAZZML
TSCA Sample Origin	USA		
Sample Origin	Tank 2 (San Tan)		
Oil / Fuel Type	HEFA SPK	Material Spec	D7566 Table 1 and A1.1
Operating Time	n/a	Engine Serial #	n/a
	Distillation Specific Gravity		
Detailed Instructions	Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point	buse as possible - including specific distilaltion (D86). Other properties s (D445 at -20C), sulfur (D5453 or D rrosion (D130), thermal stability at 3 (SEP (D3948) may need to be sent also run simulated distillation (D288	gravity, LHV, viscosity (D445), such as acidity (D3242), aromatics 2622), mercaptan sulfur (D3227), 025C (D3241), existent gum (D381, to an accredited outside laboratory 87) at OP laboratory. Also check
Detailed Instructions Distribution List	Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 specification A blend. Run as many analysis in-ho flash point, freeze point (D2386), and (D1319 or D6379), low temp viscosity smoke point (D1322), copper strip cor report washed and urwashed), and M (recommend Dixie Services). Please	buse as possible - including specific distilaltion (D86). Other properties s (D445 at -20C), sulfur (D5453 or D rrosion (D130), thermal stability at 3 (SEP (D3948) may need to be sent also run simulated distillation (D288	gravity, LHV, viscosity (D445), such as acidity (D3242), aromatics 2622), mercaptan sulfur (D3227), 025C (D3241), existent gum (D381, to an accredited outside laboratory 87) at OP laboratory. Also check
	Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 specification A blend. Run as many analysis in-ho flash point, freeze point (D2386), and (D1319 or D6379), low temp viscosity smoke point (D1322), copper strip co report washed and unwashed), and M (recommend Dixie Services). Please hydrocarbon concentration (D2425 an	buse as possible - including specific distilaltion (D86). Other properties s (D445 at -20C), sulfur (D5453 or D rrosion (D130), thermal stability at 3 (SEP (D3948) may need to be sent also run simulated distillation (D288	gravity, LHV, viscosity (D445), such as acidity (D3242), aromatics 2622), mercaptan sulfur (D3227), 025C (D3241), existent gum (D381, to an accredited outside laboratory 87) at OP laboratory. Also check
Distribution List Customer	Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 specification A blend. Run as many analysis in-ho flash point, freeze point (D2386), and (D1319 or D6379), low temp viscosity smoke point (D1322), copper strip co report washed and urwashed), and M (recommend Dixie Services). Please hydrocarbon concentration (D2425 an Williams, Randy	buse as possible - including specific distilation (D86). Other properties s (D445 at -20C), sulfur (D5453 or D) rrosion (D130), thermal stability at 3 SEP (D3948) may need to be sent also run simulated distillation (D288 d D5291), nitrogen (D4629), and tra	gravity, LHV, viscosity (D445), such as acidity (D3242), aromatics 2622), mercaptan sulfur (D3227), 325C (D3241), existent gum (D381, to an accredited outside laboratory 37) at OP laboratory. Also check ice metals (ICP, prefer UOP 389)
Distribution List	Specific Gravity Anti-ice Additive Aromatics Low Temp Viscosity Freeze Point Smoke Point Full ASTM D1655/D7566 specification A blend. Run as many analysis in-ho flash point, freeze point (D2386), and (D1319 or D6379), low temp viscosity smoke point (D1322), copper strip co report washed and unwashed), and M (recommend Dixie Services). Please hydrocarbon concentration (D2425 an Williams, Randy Culbertson, Brad	buse as possible - including specific distilation (D86). Other properties s (D445 at -20C), sulfur (D5453 or D mosion (D130), thermal stability at 3 (SEP (D3948) may need to be sent also run simulated distillation (D288 d D5291), nitrogen (D4629), and tra Submitted By	c gravity, LHV, viscosity (D445), such as acidity (D3242), aromatics 2622), mercaptan sulfur (D3227), 325C (D3241), existent gum (D381, to an accredited outside laboratory 37) at OP laboratory. Also check ice metals (ICP, prefer UOP 389) Culbertson, Brad

Toet Doculte

Specimen: 1061418034						Date: 12/15/201
Property	Result	Units	LL	TUL	SOP	Analyst
Test: A&B Coefficients						
A Coefficient	(c) 10.4548741				W11414	Bautista, Karla
B Coefficient	(c) 3.9814940				WI1414	Bautista, Karla
Test: Anti-Icing Additive						
DIEGMME	0	% v/v		1	WI1412	Bautista, Karla
Test: Aromatics						
Distance to Blue 1	6.0				WI1416	Bautista, Karla
Distance to Front 1	66.9				WI1416	Bautista, Karla
Distance to Blue 2	6.0		11		WI1416	Bautista, Karla
Distance to Front 2	66.8				WI1416	Bautista, Karla

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: Oils and Fuels Uncontrolled in electronic/hard capy. Verify verifi		12	CMR 5528 Culbertson, Br /15/2011 10:48 / Page 2 o
Annuating Datis d		1 T T	W11416	Bautista, Karla
Aromatics Ratio 1 Aromatics Ratio 2	(c) 0.09		W11416	Bautista, Karla Bautista, Karla
% Volume Aromatics	(c) 0.09			
	(c) 9.0		WI1416	Bautista, Karla
Test: Distillation	000	°F	ACTU D 00	Destine Kerk
Initial B.P. 5% Distilled		and the second se	ASTM-D-86	Bautista, Karla
			ASTM-D-86	Bautista, Karla
10% Distilled	338		ASTM-D-86	Bautista, Karl
20% Distilled	356	a private statement of the second	ASTM-D-86	Bautista, Karla
30% Distilled	376		ASTM-D-86	Bautista, Karla
40% Distilled	392		ASTM-D-86	Bautista, Karla
50% Distilled	410	and a second	ASTM-D-86	Bautista, Karla
60% Distilled	430	and the second se	ASTM-D-86	Bautista, Karla
70% Distilled	450	the second se	ASTM-D-86	Bautista, Karla
80% Distilled	472	And the Real Property lies and the Real Property	ASTM-D-86	Bautista, Karl
90% Distilled	494		ASTM-D-86	Bautista, Karl
95% Distilled	510		ASTM-D-86	Bautista, Karl
End Point	532	°F	ASTM-D-86	Bautista, Karl
% Distilled	98.5	%	ASTM-D-86	Bautista, Karla
% Residue	1.2	%	ASTM-D-86	Bautista, Karla
% Loss	(c) 0.3	%	ASTM-D-86	Bautista, Karla
Test: Flash Point - c.c.				
Flash Point	104	°F	ASTM-D-56	Bautista, Karla
Barometric Pressure	29.204	a disease of the second s	ASTM-D-56	Bautista, Karla
Corrected Flash Point	(c) 105	statement of a subscript of the subscript of the	ASTM-D-56	Bautista, Karl
Test: Freeze Point	(0) 1001			1
Freeze Point	-58	°E	ASTM-D-2386	Bautista, Karla
Test: LHV		land the second s	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Calorimeter	Parr 1266		WI1411	Bautista, Karl
Calorimeter constant	2419.3473		W11411	Bautista, Karla
Sample Weight	0.5648		WI1411	Bautista, Karla
Construction of the second		and the second se	W11411	Bautista, Karla
Tape Weight	2.6121	9	WI1411	Bautista, Karla
Temperature change		and the second sec	W1411	Bautista, Karla
Fuse Correction		cal	and the second sec	
Nitric Acid		ml	WI1411	Bautista, Karla
LHV-FIMS	(c) 18737	BIU/ID	WI1411	Bautista, Karla
Test: Specific Gravity (A)			T. Freezer	1-
Observed API Gravity		°API	ASTM-D-1298	Bautista, Karl
Fuel Temperature		°F	ASTM-D-1298	Bautista, Karla
API Gravity @ 60 degF	(c) 48.893		ASTM-D-1298	Bautista, Karla
Density		kg/m^3	ASTM-D-1298	Bautista, Karla
Specific Gravity 60/60 degF	0.7844		ASTM-D-1298	Bautista, Karla
Test: Text Results				
Text Result	(see below)		WI1416	Bautista, Karl 12/12/2011
Olefins and saturates calculated p HEFA SPK/Jet A Olefins, % volume: 0.6 Saturates, % volume: 90.4 Test: Text Results (2)	er ASTM D 1319			
			Law management	Bautista, Karl
Text Result	(see below)		per CMR inst.	



CMR 552846

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Culbertson, Brad

12/15/2011 10:48 AM

Attn: Terry Cooper CMR Result Report Honeywell International Inc. 3131 Airlane-Engineering Oil/Fuel Analysis: Oils and Fuels (Phoenix) Phoenix, AZ 85034 Uncontrolled in electronic/hard copy. Verify version in LIMS Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mass % = 0.054 D3227 Mercaptan sulfur, mass % = 0.0009 D445 Viscosity, - 20 °C, mm2/s = 4.892 D1840 Napthalenes, volume % = 0.80 D3242 Acid number, mg KOH/g = 0.009 D130 Corrosion copper strip (2 h/100 °C) = 1A D3241 Thermal oxidation stability, (2.5 h/325 °C) Heater tube deposit rating, visual = > 4 Filter pressure drop, mm Hg = 9.6 D3948 Water separation, MSEP-A rating = 83 D2887 Boiling range distribution, % recovered, °C IBP 108.5 05 134.0 10 147.5 20 165.5 30 182.0 40 197.5 50 210.0 60 224.0 70 241.5 80 257.5 90 271.5 95 279.0 FBP 316.5 D4629 Nitrogen, mg/kg = 3.1 D5291 Carbon, mass % = 85.1 Hydrogen, mass % = 14.6 D1322 Smoke point, mm = 31.0

UOP389

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	nal Inc.		CMR R	lesult Report				CMR 55284 Culbertson, Brai
3131 Airlane-Engine	ering			Dils and Fuels			12	2/15/2011 10:48 AI
Phoenix, AZ 85034		Unc	ontrolled in electronic/	hard copy. Verify versi	on in LIMS.			Page 4 of
Trace Metals, m								
Aluminum	< 0.02							
Calcium	0.04							
Cobalt	< 0.02							
Chromium	< 0.02							
Copper	0.02							
Iron	< 0.02							
Potassium	< 0.02							
Lithium	< 0.02							
Magnesium	< 0.02							
Manganese	< 0.02							
Molybdenum	< 0.02							
Sodium	< 0.02							
Nickel	< 0.02							
Phosphorus	< 0.02							
Lead	< 0.02							
Strontium	< 0.02							
Palladium	< 0.02							
Platinum	< 0.02							
Tin	< 0.02							
Titanium	< 0.02							
Vanadium	< 0.02							
Zinc	0.02							
	and the law of							
		ixie Services. Please	see attached re	suits.				
Test: Viscosity							Lange and a lot	1
Tube number-10	4	1					WI1414	
the second se				VIS-2382				Bautista, Karla
				375.64	And in case of the local division of the loc		W11414	Bautista, Karla
				and an a second s	And in case of the local division of the loc		WI1414 WI1414	Bautista, Karla Bautista, Karla
Run #2				375.64	Sec		W11414	Bautista, Karla
Run #2 Average Time				375.64 375.57	Sec		WI1414 WI1414	Bautista, Karla Bautista, Karla
Run #2 Average Time CS	@ 77F			375.64 375.57 (c) 375.61	Sec		WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity (and a state of the			375.64 375.57 (c) 375.61	Sec		WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity Other tube cons	and a state of the			375.64 375.57 (c) 375.61 (c) 1.37	Sec		W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity Other tube cons Run #1	and a state of the			375.64 375.57 (c) 375.61 (c) 1.37 0.003653	Sec		W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity o Other tube cons Run #1 Run #2	and a state of the			375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26	SOC		W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity o Other tube cons Run #1 Run #2 Average Time	and a state of the			375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33	SOC SOC SOC SOC		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity o Other tube cons Run #1 Run #2 Average Time CS	tant			375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26	SOC SOC SOC SOC		W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity o Other tube cons Run #1 Run #2 Average Time CS Test: Water Con	tant			375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73	Sec Sec Sec Sec Sec Sec Cst		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity o Other tube cons Run #1 Run #2 Average Time CS Test: Water Con Run #1	tant			375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36	sec sec sec sec cst		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Con Run #1 Run #2	tant			375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33	sec sec sec sec sec sec ppm ppm ppm sec		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Run #1 Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Cont Run #1 Run #2 Water Content	tant itent (ppm)			375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35	sec sec sec sec sec sec ppm ppm ppm sec		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Con Run #1 Run #2	tant tent (ppm)	This sample was ch	ecked against a 50	375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35	sec sec sec sec sec sec ppm ppm ppm sec		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Con Run #1 Run #2 Water Content Water Content S	tant tent (ppm)	This sample was ch	ecked against a 50	375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35	sec sec sec sec sec sec ppm ppm ppm sec		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Con Run #1 Run #2 Water Content Water Content Specimen: ~Atta	tant tent (ppm) Standard ached Results			375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35 ypm QC standard	sec sec sec sec cst ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Content Run #2 Water Content S Specimen: ~Atta Prope	tant itent (ppm) itandard ached Results erty	This sample was ch	ecked against a 50 Units	375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35	sec sec sec sec cst ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Con Run #1 Run #2 Water Content Water Content Specimen: ~Atta	tant itent (ppm) itandard ached Results erty			375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35 ypm QC standard	sec sec sec sec cst ppm ppm	SOP	W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Cont Run #1 Water Content Water Content S Specimen: ~Atta Prope Test: Attached F	tant tent (ppm) itandard ached Results rty Results		Units	375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35 ypm QC standard	sec sec sec sec cst ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064	Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Cont Run #1 Run #2 Water Content Water Content S Specimen: ~Atta Prope Test: Attached Result	tant tent (ppm) itandard ached Results rty Results	Result	Units	375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35 ypm QC standard	sec sec sec sec cst ppm ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064 D Bautista, 12/15/20	Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity i Other tube cons Run #1 Run #2 Average Time CS Test: Water Content Strest: Water Content Water Content S Specimen: ~Atta Prope Test: Attached Result Specimen: ~Tex	tant tent (ppm) itandard ached Results rty Results t Results	Result ∛ 552846.	Units	375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35 ppm QC standard	sec sec cst ppm ppm ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064 D Bautista, 12/15/20 D	Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Content Stater Content S Specimen: ~Atta Prope Test: Attached Result Specimen: ~Tex Property	tant tent (ppm) Standard ached Results erty Results t Results	Result	Units	375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35 ppm QC standard	sec sec sec sec cst ppm ppm ppm		W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064 D Bautista, 12/15/20 D	Bautista, Karla Bautista, Karla
Run #2 Average Time CS Test: Viscosity of Other tube cons Run #1 Run #2 Average Time CS Test: Water Content CS Test: Water Content Water Content S Specimen: ~Atta Prope Test: Attached Result Specimen: ~Tex	tant tent (ppm) Standard ached Results erty Results t Results	Result ∛ 552846.	Units	375.64 375.57 (c) 375.61 (c) 1.37 0.003653 474.40 474.26 (c) 474.33 (c) 1.73 27.36 29.33 (c) 28.35 9 pm QC standard	sec sec cst ppm ppm ppm ppm	inst.	W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 W11414 ASTM-E-1064 ASTM-E-1064 ASTM-E-1064 D Bautista, 12/15/20 D	Bautista, Karla Bautista, Karla



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Distillation	on Te	st for Spe	cimen 10614	18034						
Dil and F	uel CN		52846				Percent	Temperature	Material S	pec Limit
Material Material S	Specifi		EFA SPK 07566 Table 1	and A1 1			Distilled	(°F)	Minimum	Maximu
Test Met			STM-D-86				0%	308		
							5%	326		
			Spec Limits				10%	338		
		Minimum	Maximum				20%	356		
Percent	98.5						30%	376		
Distilled			-				40%	392		
Percent Residue	1.2						50%	410		
Percent							60%	430		
Loss	0.3						70%	450		
							80%	472		
							90%	494		
							95%	510		
540 519 -			Disti	ilation Curve		×	100%	532		
519 - 494 - 470 - (1) 446 - 446 - 422 - 422 - 074 - 074 - 050 -			Disti	Ilation Curve	××	*	100%	532		
519 - 494 - 470 - (-) 446 - 446 - 222 - 232 - 208 - 208 - 2074 -	05	Lix IIX		50x 70x Percent	90x Distilled	1018	100%	532		
- 199 - - 494 - - 470 - - 446 - - 446 - - 446 - - 470 -		t is		50% 70% Percent	Distilled		100%	532		
519 - 494 - 470 - 446 - 0000 - 074 - 074 - 074 - 074 - 074 - 074 -	0x			50% 70% Percent	CONTRACTOR OF A			532 ason	Logge	d By



DIXIE SERVICES INCORPORATED

POST OFFICE BOX 451 1706 FIRST STREET GALENA PARK, TEXAS 77547 www.dbieservices.com VOICE 713 672 1619 FACSIMILE 713 672 1634

CERTIFICATE OF ANALYSIS

Number: 139791

Client: Honeywell International Inc. 3131 Airlane-Engineering Phoenix, Arizona 85034 Date: December 14, 2011

Attention: Terry Cooper

Sample: SPK / Jet A Blend, submitted 09 Dec 11 Origin: Tank #2 Marks: CMR 552846, 50/50 Biofuel P.O. Number 6500145452

D381	Gum content, mg/100 mL	
	Unwashed	< 1
	Washed	< 1
D5453	Sulfur, mass %	0.054
D3227	Mercaptan sulfur, mass %	0.0009
D445	Viscosity, - 20 °C, mm ² /s	4.892
D1840	Napthalenes, volume %	0.80
D3242	Acid number, mg KOH/g	0.009
D130	Corrosion copper strip (2 h/100 °C)	1A
D3241	Thermal oxidation stability, (2.5 h/325 °C)	
	Heater tube deposit rating, visual	> 4
	Filter pressure drop, mm Hg	9.6
D3948	Water separation, MSEP-A rating	83
D2887	Boiling range distribution, % recovered, °C	
	IBP	108.5
	5	134.0
	10	147.5
	20	165.5
	30	182.0
	40	197.5
	50	210.0
	60	224.0
	70	241.5
	80	257.5
	90	271.5
	95	279.0
	FBP	316.5
D4629	Nitrogen, mg/kg	3.1
D5291	Carbon, mass %	85.1
	Hydrogen, mass %	14.6
D1322	Smoke point, mm	31.0

The information contained herein is based on laboratory observations and tests performed on samples submitted and identified by the above-named client (which may be any company, organization or individual) and conducted in accordance with methodology which may be specified by the client. No representations or warranties either argoressed or implied, of menchantability, threas for any particular use, or dany other nature are made hereunder with respect to the information herein provided. Dicks Services disclaims any and all liability for damage or injury which results from the use of the information contained herein, and nothing contained herein shall constitute a guarantee, warranty or representation by Dixie Services with respect to the accuracy of the information, the sample, products or items described, or their suitability for use for any specific purpose. This document is intended for the sole use of the client and may not be reproduced except to huil without the written approval of Dixie Services.

Certificate of Analysis 139791 December 14, 2011 Page 2

UOP389	Trace Metals, mg/kg	
	Aluminum	< 0.02
	Calcium	0.04
	Cobalt	< 0.02
	Chromium	< 0.02
	Copper	0.02
	Iron	< 0.02
	Potassium	< 0.02
	Lithium	< 0.02
	Magnesium	< 0.02
	Manganese	< 0.02
	Molybdenum	< 0.02
	Sodium	< 0.02
	Nickel	< 0.02
	Phosphorus	< 0.02
	Lead	< 0.02
	Strontium	< 0.02
	Palladium	< 0.02
	Platinum	< 0.02
	Tin	< 0.02
	Titanium	< 0.02
	Vanadium	< 0.02
	Zinc	0.02

Dixie Services Incorporated,

Hlland achany Zachary Holland

ZBH/Im

Email Recipients: richard.gadberry@honeywell.com; terry.cooper@honeywell.com steven.sosa@honeywell.com

Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034			Analysis: F	esult Report IMS Analysis (hard copy. Verify version			CMR 55303 Neal, Ten 01/04/2012 11:52 A Page 1 of	
CMR Number	553039		Sut	bmission Date	12	06/2011 10:04 /	AM	
Status	Completed		Des	Desired Date 12/		2/09/2011		
Disposition				mmit Date		/09/2011		
	Info Only					(Collision)		
Released By	Baker, Susan			mpletion Date	Name of Strength	06/2011 10:47	PM	
		1910	Pro	ject / Type	Inf	o Only		
Labor Charge Number	7000840121-0	170	_					
SAP Project	EC-001649		SA	P Work Center	10	15-EEMAZZML		
Sample Origin	T4		-					
Dil / Fuel Type	Jet A		Mat	terial Spec	AS	TM-D-1655		
Detailed Instructions	Fuel sample for	First perform						
Distribution List	Coons, Eric Pati	and the second second	nanoo cai.					
	00010, 210 11 0	or o'dit, monadi						
Customer	Neal, Terry		Sut	bmitted By	Ne	al, Terry		
Phone	+1 480/592-79	31	Pho	one	+1	480/592-7931		
Department	BA-60122		Der	partment	BA	BA-60122		
Requesting Site	Phoenix		Dot	Valument	Dr.	00122		
inducating one	THOUTIN							
Test Results								
Specimen: Jet A							Date: 12/06/201	
Property		Result	Units	LL T	UL	SOP	Analyst	
Test: A&B Coefficients								
A Coefficient	(c) 10.4984738		9.1000000	10.9000000	WI1414	Baker, Susan	
B Coefficient		c) 4.0004388		3.4000000	4.2000000	WI1414	Baker, Susan	
Test: LHV							1	
Calorimeter		Parr 1266	-			WI1411	Baker, Susan	
Calorimeter constant		2411.0576				WI1411	Baker, Susan	
Sample Weight		0.5468				WI1411	Baker, Susan	
Tape Weight		0				WI1411	Baker, Susan	
Temperature change		2.4930	°C					
E		0	1000		P	WI1411	Baker, Susan	
			cal			WI1411	Baker, Susan	
Nitric Acid		12	ml	10400	10005	WI1411 WI1411	Baker, Susan Baker, Susan	
Nitric Acid LHV-FIMS			ml	18420	18625	WI1411	Baker, Susan	
Nitric Acid LHV-FIMS Test: Specific Gravity (A)	12 (c) 18499	ml BTU/lb	18420	18625	WI1411 WI1411 WI1411	Baker, Susan Baker, Susan Baker, Susan	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity)	12 (c) 18499 44	ml BTU/lb °API	18420	18625	WI1411 WI1411 WI1411 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature)	12 (c) 18499 44 70	ml BTU/lb	18420	18625	WI1411 WI1411 WI1411	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF)	12 (c) 18499 44 70 (c) 43.105	ml BTU/lb °API °F	18420	18625	WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		12 (c) 18499 44 70 (c) 43.105	ml BTU/lb ° API ° F kg/m^3	0.799		WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de		12 (c) 18499 44 70 (c) 43.105 (c) 810	ml BTU/lb ° API ° F kg/m^3			Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F		12 (c) 18499 44 70 (c) 43.105 (c) 810	ml BTU/lb °API °F kg/m^3			Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104		12 (c) 18499 44 70 (c) 43.105 (c) 810 0.8104	ml BTU/lb °API °F kg/m^3			Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1		12 (c) 18499 44 70 (c) 43.105 (c) 810 0.8104 VIS-2384	ml BTU/lb °API °F kg/m^3 sec			Wil 411 Wil 411 Wil 411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wil 414	Baker, Susan Baker, Susan Baker, Susan Bautista, Karia Bautista, Karia Bautista, Karia Bautista, Karia Bautista, Karia	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2		12 (c) 18499 44 70 (c) 43.105 (c) 810 0.8104 VIS-2384 340.99	ml BTU/lb ° API ° F kg/m^3 sec sec			Wil1411 Wil1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wil1414 Wil1414	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time		12 (c) 18499 44 70 (c) 43.105 (c) 810 0.8104 VIS-2384 340.99 341.12	ml BTU/lb ° API ° F kg/m^3 sec sec sec sec		0.825	Wil411 Wil411 Wil411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wil414 Wil414 Wil414	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS		12 (c) 18499 44 70 (c) 43.105 (c) 810 0.8104 VIS-2384 340.99 341.12 (c) 341.06	ml BTU/lb ° API ° F kg/m^3 sec sec sec sec	0.799	0.825	Wil1411 Wil1411 Wil1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wil1414 Wil1414 Wil1414 Wil1414	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		12 (c) 18499 44 70 (c) 43.105 (c) 810 0.8104 VIS-2384 340.99 341.12 (c) 341.06	ml BTU/lb ° API ° F kg/m^3 sec sec sec sec cst	0.799	0.825	Wil1411 Wil1411 Wil1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wil1414 Wil1414 Wil1414 Wil1414	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant		12 (c) 18499 44 70 (c) 43.105 (c) 810 0.8104 VIS-2384 340.99 341.12 (c) 341.06 (c) 1.34	ml BTU/lb ° API ° F kg/m^3 sec sec sec sec cst	0.799	0.825	Wil411 Wil411 Wil411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wil414 Wil414 Wil414 Wil414 Wil414 Wil414	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1 Run #2		12 (c) 18499 44 70 (c) 43.105 (c) 810 0.8104 VIS-2384 340.99 341.12 (c) 341.06 (c) 1.34 0.003939	ml BTU/lb ° API ° F kg/m*3 sec sec cst sec cst	0.799	0.825	Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	
Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1		12 (c) 18499 44 70 (c) 43.105 (c) 810 0.8104 VIS-2384 340.99 341.12 (c) 341.06 (c) 1.34 0.003939 428.76	ml BTU/lb ° API ° F kg/m^3 sec sec sec cst sec sec sec sec sec	0.799	0.825	Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414	Baker, Susan Baker, Susan Baker, Susan Bautista, Karla Bautista, Karla	

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Phoenix, AZ 85034			Analysis: F	Idesult Report	sis (P			CMR 553104 rev Neal, Ter 01/04/2012 11:53 A Page 1 o
				3000 - 200				
CMR Number	553104 rev A		Su	bmission Dat	e	12	2/06/2011 02:04	PM
Status	Completed		-					
	1							
Disposition	Info Only			mmit Date			2/09/2011	
Released By	Rexroad, Perry		Co	mpletion Date	9	12	2/09/2011 09:33	AM
			Pro	Project / Type				
abor Charge Number	7000840121-0170							
SAP Project	EC-001649	_	SA	P Work Cent	or	10	15-EEMAZZM	1
	T1			a work oon	01	1		07-
Sample Origin	strail -	-			1			
Dil / Fuel Type	Jet A/Biofuel Performance cal with bio-fuel			terial Spec		A	STM-D-1655	
Detailed Instructions								
Distribution List	Coons, Eric Patterson, M	ichael						
Customer	Neal, Terry		Cu.	bmitted By		N	eal, Terry	
+1 480/592-7931				one		-	1 480/592-7931	
Department	BA-60122		De	partment		B	A-60122	
Requesting Site	Phoenix							
Specimen: Jet A/Biofuel Property Test: A&B Coefficients	Result		Units	LL	т	UL	SOP	Date: 12/09/201 Analyst
A Coefficient	(c) 10.814	6117		9.0000000	1000	11.0000000	1401414	
								Rexroad, Perry
Construction of the Constr			-			11.0000000		Rexroad, Perry Bexroad, Perry
B Coefficient	(c) 4.113			3.0000000		4.4000000		Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV	(c) 4.113	2802						Rexroad, Perry
Construction of the Constr	(c) 4.113 Parr	2802					WI1414	and the second
B Coefficient Test: LHV Calorimeter Calorimeter constant	(c) 4.113 Parr 24	2802 1266 9.35	a				WI1414 WI1411	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight	(c) 4.113 Parr 24	2802 1266					WI1414 WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight	(c) 4.113 Parr 24 0.	2802 1266 9.35 5779	g				W1414 W1411 W1411 W1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change	(c) 4.113 Parr 24 0.	2802 1266 9.35 5779 0 6745	g				W11414 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction	(c) 4.113 Parr 24 0.	2802 1266 9.35 5779 0 6745 23	g °C				W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid	(c) 4.113 Parr 24 0. 2.	2802 1266 9.35 5779 0 6745 23 12	g °C cal			4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS	(c) 4.113 Parr 24 0. 2.	2802 1266 9.35 5779 0 6745 23 12	g °C cal ml	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)	(c) 4.113 Parr 24 0. 2.	2802 1266 9.35 5779 0 6745 23 12 8732 49.6	g °C cal ml BTU/lb °API	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity	(c) 4.113 Parr 24 0. 2.	2802 1266 9.35 5779 0 6745 23 12 8732 49.6	g °C cal ml BTU/lb	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 4	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 3.801	°C cal ml BTU/lb °API °F	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 1 (c) 4 (c) 4	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 3.801) 785	g °C cal ml BTU/lb °API	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 1 (c) 4 (c) 4	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 3.801	°C cal ml BTU/lb °API °F	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 4 (c) 4 (c) 4	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 8.801) 785 7848	°C cal ml BTU/lb °API °F	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 1 (c) 4 (c) 4 (c) 4 (c) 0. 0.00	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 8.801) 785 7848 3676	g °C cal mi BTU/lb °API °F kg/m^3	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Dest: Viscosity @ 104F Other tube constant Run #1	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 1 (c) 4 (c) 4 (c) 0.00 30 30 31	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 8.801) 785 7848 3676 9.80	g °C cal ml BTU//b °API °F kg/m*3 sec	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MI1414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 1 (c) 4 (c) 4	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 8.801) 785 7848 3676 99.80 99.61	g °C cal ml BTU//b °API °F kg/m^3 sec sec	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 1 (c) 4 (c) 1 (c) 1 (c) 4 (c) 1 (c) 4 (c) 1 (c) 4 (c) 4	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 8.801) 785 7848 3676 9.80 9.9.61 99.61	g °C cal ml BTU/lb °API °F kg/m*3 sec sec sec sec	0.770		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 1 (c) 4 (c) 1 (c) 1 (c) 4 (c) 1 (c) 4 (c) 1 (c) 4 (c) 4	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 8.801) 785 7848 3676 99.80 99.61	g °C cal ml BTU/lb °API °F kg/m*3 sec sec sec sec	3.0000000		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	(c) 4.113 Parr 24 0. (c) 1 (c) 1 (c) 1 (c) 4 (c) 4 (c) 0. 0 0.00 30 (c) 30 (c)	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	g °C cal ml BTU/lb °API °F kg/m*3 sec sec sec sec	0.770		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 M11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 1 (c) 4 (c) 4 (c) 4 (c) 4 (c) 4 (c) 4 (c) 3 (c) 3	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 8.801) 785 8.801 3676 39.80 39.61 1.36 3676	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec cst	0.770		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 1 (c) 4 (c) 4 (c) 4 (c) 3 (c) 3 (c) 3 (c) 3 (c) 3 (c) 3 (c) 4 (c) 4	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 8.801 785 7848 3676 99.61 1.36 3676 39.71	g °C cal ml BTU/lb °F kg/m^3 sec sec sec sec cst sec	0.770		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	(c) 4.113 Parr 24 0. 2. (c) 1 (c) 1 (c) 1 (c) 1 (c) 4 (c) 4 (c) 4 (c) 4 (c) 3 (c) 3 (c) 3 (c) 3 (c) 3 (c) 3 (c) 4 (c) 4	2802 1266 9.35 5779 0 6745 23 12 8732 49.6 68 8.801) 785 8.801 3676 39.80 39.61 1.36 3676	g °C cal ml BTU/lb °F kg/m^3 sec sec sec cst sec cst sec sec	0.770		4.4000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry

Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		alysis:	Result Report FIMS Analysi /hard copy. Verify ve				CMR 554339 Neal, Terry 01/04/2012 11:55 AM Page 1 of		
CMR Number	554339	_	Submission I	Date	1	12/13/2011 11:13 AM			
Status	Completed		Desired Date		1	12/16/2011			
Disposition	Info Only		Commit Date			2/16/2011			
Released By	Baker, Susan					2/13/2011 11:39	PM		
						nfo Only	6 A - MA		
Labor Charge Number	7000840121-0170		Project / Typ	0	1	nio Only			
	EC-001649		SAP Work C	ontor	-	OIE EEMAZZM			
SAP Project	Production of the Control of Cont		SAF WOR G	enter		1015-EEMAZZML			
Sample Origin	T5			-					
Oil / Fuel Type	Jet A		Material Spe	0	F	ASTM-D-1655			
Distribution List	Williams, Randy Patterson	n, Michael							
Customer	Neal, Terry	-	Submitted By		N	Veal, Terry			
	CONTRACTOR DE LA CONTRACT		Contract of the second second			1 480/592-7931			
Phone	+1 480/592-7931		Phone						
Department	BA60122		Department		E	3A60122			
Requesting Site	Phoenix								
Specimen: Jet A Property Test: A&B Coefficients	Result	Units	LL	T	UL	SOP	Date: 12/13/2011 Analyst		
A Coefficient	(c) 10.0988767		9.1000000		10.9000000	WI1414	Baker, Susan		
B Coefficient	(c) 3.8510781		3.4000000		4.2000000		Baker, Susan		
Test: LHV	(0) 0.0010101					1.1101.101	A comparison of the second		
Calorimeter	Parr 1266		1			WI1411	Baker, Susan		
Calorimeter constant	2419.3473					WI1411	Baker, Susan		
Sample Weight	0.6645	g				Wi1411	Baker, Susan		
Tape Weight	0	g	0			WI1411	Baker, Susan		
Temperature change	3.0288	°C				Wi1411	Baker, Susan		
Fuse Correction	20	cal				Wi1411	Baker, Susan		
Nitric Acid	12	ml				WI1411	Baker, Susan		
LHV-FIMS	(c) 18529	BTU/lb	18420		18625	WI1411	Baker, Susan		
Test: Specific Gravity (A)									
Observed API Gravity		° API	-	-		ASTM-D-1298	Baker, Susan		
Fuel Temperature	The second se	°F	-			ASTM-D-1298	Baker, Susan		
API Gravity @ 60 degF	(c) 42.098	La/mAQ				ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan		
Density Specific Gravity 60/60 degF	(c) 815 0.8151	kg/m^3	0.799		0.825	ASTM-D-1298	Baker, Susan Baker, Susan		
Test: Viscosity @ 104F	0.0101		0.733		0.025	A31W-D-1280	Daner, Susan		
Tube number-104	VIS-2384					WI1414	Baker, Susan		
Run #1	349.65	Sec				WI1414	Baker, Susan		
Run #2	349.68	Sec				WI1414	Baker, Susan		
Average Time	(c) 349.66					WI1414	Baker, Susan		
CS	(c) 1.38	cst	1.08		1.49	W1414	Baker, Susan		
Test: Viscosity @ 77F						W1414	Del		
Other tube constant	0.003923					MILTIN	Baker, Susan		
Other tube constant Run #1	441.25					WI1414	Baker, Susan		
Other tube constant Run #1 Run #2	441.25 441.20	sec				WI1414 WI1414	Baker, Susan Baker, Susan		
Other tube constant Run #1	441.25	Sec Sec	0.32			WI1414	Baker, Susan		

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3131 Airlane-Engineering Phoenix, AZ 85034	Oil/Fuel Analysis: Oi	sult Report Is and Fuels (Phoenix) rd copy. Verify version in LIMS.	Culbertson, Bra 01/04/2012 11:55 A Page 1 of	
	- Production of		Process in addressed factors and address	
CMR Number	554591	Submission Date	12/14/2011 11:59 AM	
Status	Completed	Desired Date	12/15/2011	
Disposition	Info Only	Commit Date	12/15/2011	
Released By	Bautista, Karla	Completion Date	12/15/2011 05:29 PM	
Custom Id / Title	Glendale Aero Tank #2 Samples	Project / Type	Info Only	
abor Charge Number	7002368937-0050			
SAP Project	EG-002166	SAP Work Center	1015-EEMAZZML	
SCA Sample Origin	USA			
Sample Origin	Glendale Aero Tank #2			
Dil / Fuel Type	Jet A	Material Spec		
	Flash Point (F) Distillation Specific Gravity Aromatics Freeze Point			
Detailed Instructions	Distillation Specific Gravity Aromatics	or use at San Tan. These samp the Glendale Aero Services fur the fuel samples provided. Tw	eles will provide additional el farm. Please expedite analyses	
Detailed Instructions Distribution List	Distillation Specific Gravity Aromatics Freeze Point Fuel samples were taken from Glendale A HEFA fuel being shipped from WPAFB for confidence in the fuel system integrity at Please perform the following analyses on	or use at San Tan. These samp the Glendale Aero Services fur the fuel samples provided. Tw	eles will provide additional el farm. Please expedite analyses	
	Distillation Specific Gravity Aromatics Freeze Point Fuel samples were taken from Glendale A HEFA fuel being shipped from WPAFB for confidence in the fuel system integrity at Please perform the following analyses on fuel tank filter and one sample was taken	or use at San Tan. These samp the Glendale Aero Services fur the fuel samples provided. Tw	eles will provide additional el farm. Please expedite analyses	
Distribution List	Distillation Specific Gravity Aromatics Freeze Point Fuel samples were taken from Glendale A HEFA fuel being shipped from WPAFB for confidence in the fuel system integrity at Please perform the following analyses on fuel tank filter and one sample was taken Ciero, Robert Wiliams, Randy Keeton, Tony J	or use at San Tan. These samp the Glendale Aero Services fur the fuel samples provided. Tw from the tank sump.	els will provide additional el farm. Please expedite analyses to samples were taken from the	
Distribution List	Distillation Specific Gravity Aromatics Freeze Point Fuel samples were taken from Glendale A HEFA fuel being shipped from WPAFB for confidence in the fuel system integrity at Please perform the following analyses on fuel tank filter and one sample was taken Ciero, Robert Williams, Randy Keeton, Tony J Culbertson, Brad	or use at San Tan. These samp the Glendale Aero Services fur the fuel samples provided. Tw from the tank sump. Submitted By	eles will provide additional el farm. Please expedite analyses to samples were taken from the Culbertson, Brad	

Test Results

Specimen: Fuel Tank Filter							ate: 12/15/201
Property	Result	Units	LL	Т	UL	SOP	Analyst
Test: A&B Coefficients							
A Coefficient	(c) 10.4548741					WI1414	Bautista, Karla
B Coefficient	(c) 3.9814940					WI1414	Bautista, Karla
Test: Aromatics							
Distance to Blue 1	12.9	cm				ASTM-D-1319	Bautista, Karla
Distance to Front 1	67.9	cm				ASTM-D-1319	Bautista, Karla
Distance to Blue 2	13.0	cm				ASTM-D-1319	Bautista, Karla
Distance to Front 2	68.0	cm				ASTM-D-1319	Bautista, Karla
Aromatics Ratio 1	(c) 0.19					ASTM-D-1319	Bautista, Karla
Aromatics Ratio 2	(c) 0.19					ASTM-D-1319	Bautista, Karla
% Volume Aromatics	(c) 19.0	%				ASTM-D-1319	Bautista, Karla
Test: Distillation							
Initial B.P.	312	°F				ASTM-D-86	Bautista, Karla
5% Distilled	334	°F		1		ASTM-D-86	Bautista, Karla
10% Distilled	344	°F		1		ASTM-D-86	Bautista, Karla
20% Distilled	360	°F		T		ASTM-D-86	Bautista, Karla

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Attn: Terry Cooper Honeywell International Inc.	CMR Result Report	-		Culbertson, B
3131 Airlane-Engineering	Oil/Fuel Analysis: Oils and Fuels		01	/04/2012 11:55
Phoenix, AZ 85034	Uncontrolled in electronic/hard copy. Verify version	on in LIMS.		Page 2 d
30% Distilled	376	°F	ASTM-D-86	Bautista, Karla
40% Distilled	390	°F	ASTM-D-86	Bautista, Karla
50% Distilled	404	°F	ASTM-D-86	Bautista, Karl
60% Distilled	424	°F	ASTM-D-86	Bautista, Karl
70% Distilled	442	°F	ASTM-D-86	Bautista, Karla
80% Distilled	464	°F	ASTM-D-86	Bautista, Karl
90% Distilled	494	°F	ASTM-D-86	Bautista, Karl
95% Distilled	518	°F	ASTM-D-86	Bautista, Karl
End Point	544	°F	ASTM-D-86	Bautista, Karl
% Distilled	98.6	%	ASTM-D-86	Bautista, Karl
% Residue	1.1	%	ASTM-D-86	Bautista, Karl
% Loss	(c) 0.3	%	ASTM-D-86	Bautista, Karl
Test: Flash Point - c.c.	N4			
Flash Point	107	°F	ASTM-D-56	Bautista, Karl
Barometric Pressure	28.984	inHg	ASTM-D-56	Bautista, Karl
Corrected Flash Point	(c) 108	and subject of the second s	ASTM-D-56	Bautista, Karl
Test: Freeze Point				
Freeze Point	-50.8	°F	ASTM-D-2386	Bautista, Karl
Test: LHV				
Calorimeter	Parr 1266		WI1411	Bautista, Karl
Calorimeter constant	2419.3473		WI1411	Bautista, Karl
Sample Weight	0.5500	a	WI1411	Bautista, Karl
Tape Weight		g	WI1411	Bautista, Karl
Temperature change	2.5050		WI1411	Bautista, Karl
Fuse Correction		cal	WI1411	Bautista, Karl
Nitric Acid		ml	WI1411	Bautista, Karl
HV-FIMS	(c) 18508	and a design of the local data was a set of the local data	WI1411	Bautista, Karl
Test: Specific Gravity (A)				
Observed API Gravity	42.8	°API	ASTM-D-1298	Bautista, Karl
Fuel Temperature		°F	ASTM-D-1298	Bautista, Karl
API Gravity @ 60 degF	(c) 41.992		ASTM-D-1298	Bautista, Karl
Density		kg/m^3	ASTM-D-1298	Bautista, Karl
Specific Gravity 60/60 degF	0.8156	ngrin o	ASTM-D-1298	Bautista, Karl
Test: Text Results	0.0100		1 10000	
		- E		Bautista, Karl
Text Result	(see below)		WI1416	12/15/2011
Olefins and saturates calculated per let A Dlefins, % volume: 1.4	ar ASTM D 1319			
Saturates, % volume: 79.6				
Test: Viscosity @ 104F				
Tube number-104	VIS-2383		WI1414	Bautista, Karl
Run #1	373.13	sec	WI1414	Bautista, Karl
Run #2	373.20	Contraction of the local division of the loc	WI1414	Bautista, Karl
Average Time	(c) 373.16		WI1414	Bautista, Karl
CS	(c) 1.37		WI1414	Bautista, Karl
Test: Viscosity @ 77F	107.1101	he series and the series of th	an annances	
Other tube constant	0.003676		WI1414	Bautista, Karl
Run #1	470.13	sec	WI1414	Bautista, Karl
Run #2	470.34		WI1414	Bautista, Karl
				and the second se



Honeyweli International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: Oils and Fuels (Uncontrolled in electronic/hard copy. Verify versio		x)		01	Culbertson, Br /04/2012 11:55 A Page 3 o
10611X, A2 00004	Uncontrolled in electronic/hard copy, venty version	on in Lima.				rage 3 0
	1		2.3	1	Lawrence	
cs	(c) 1.73	cst		_	WI1414	Bautista, Karla
Test: Water Content (ppm)		_	-			-
Run #1	39.11		_	_	ASTM-E-1064	Bautista, Karla
Run #2	40.86	and the second second			ASTM-E-1064	Bautista, Karla
Water Content	(c) 39.99	ppm			ASTM-E-1064	Bautista, Karla
Water Content Standard	This sample was checked against a 100 ppm QC standard				ASTM-E-1064	Bautista, Karla
Specimen: Tank Sump.					D	ate: 12/15/201
Property	Result	Units	11	TUL	SOP	Analyst
Test: A&B Coefficients	Tiosur	Orino		1 00	001	ritialyst
A Coefficient	(c) 10.1310614		1	-	WI1414	Bautista, Karla
B Coefficient		-	-		WI1414	Bautista, Karla
and the second state of th	(c) 3.8658411		-		WILITIN	Dautista, Naria
Test: Aromatics	10.0	1.00			10711 0 1010	Design Real
Distance to Blue 1	12.8		-	-	ASTM-D-1319	Bautista, Karla
Distance to Front 1	66.9	and the second se	-	-	ASTM-D-1319	Bautista, Karla
Distance to Blue 2	12.8	and a second processing of the second se	-	_	ASTM-D-1319	Bautista, Karla
Distance to Front 2	66.9	cm			ASTM-D-1319	Bautista, Karla
Aromatics Ratio 1	(c) 0.19				ASTM-D-1319	Bautista, Karla
Aromatics Ratio 2	(c) 0.19				ASTM-D-1319	Bautista, Karla
% Volume Aromatics	(c) 19.0	%			ASTM-D-1319	Bautista, Karla
Test: Distillation						
Initial B.P.	310	°F			ASTM-D-86	Bautista, Karla
5% Distilled	330	°F			ASTM-D-86	Bautista, Karla
10% Distilled	342				ASTM-D-86	Bautista, Karla
20% Distilled	358			_	ASTM-D-86	Bautista, Karla
30% Distilled	374		-		ASTM-D-86	Bautista, Karla
40% Distilled	388			-	ASTM-D-86	Bautista, Karla
			-	-	ASTM-D-86	Bautista, Karla
50% Distilled	402	and the second s		_	and the second se	
60% Distilled	420		-	_	ASTM-D-86	Bautista, Karla
70% Distilled	438		-	_	ASTM-D-86	Bautista, Karla
80% Distilled	460			_	ASTM-D-86	Bautista, Karla
90% Distilled	490	°F			ASTM-D-86	Bautista, Karla
95% Distilled	518	°F	1		ASTM-D-86	Bautista, Karla
End Point	540	°F	1		ASTM-D-86	Bautista, Karla
% Distilled	98.3	%			ASTM-D-86	Bautista, Karla
% Residue	1.2	%			ASTM-D-86	Bautista, Karla
% Loss	(c) 0.5	%			ASTM-D-86	Bautista, Karla
Test: Flash Point - c.c.						
Flash Point	104	۰F	1		ASTM-D-56	Bautista, Karla
Barometric Pressure	28.981			_	ASTM-D-56	Bautista, Karla
Corrected Flash Point	(c) 105	and the second second		_	ASTM-D-56	Bautista, Karla
Test: Freeze Point	(6) 100				AGTIV-D-00	Dautiona, Naria
Freeze Point	-52.6	0 E	-	-	ASTM-D-2386	Bautista, Karla
	-52.0	- 1	1	_	ASTW-D-2300	Daulisia, Nalia
Test: LHV					Lanes and	
Calorimeter	Parr 1266		-		WI1411	Bautista, Karla
Calorimeter constant	2419.3473			_	WI1411	Bautista, Karla
Sample Weight	0.5543			_	WI1411	Bautista, Karla
Tape Weight		g			WI1411	Bautista, Karla
Temperature change	2.5302	°C	10.0		WI1411	Bautista, Karla
Fuse Correction	20	cal			WI1411	Bautista, Karla
Nitric Acid	12	ml			WI1411	Bautista, Karla
LHV-FIMS	(c) 18538				WI1411	Bautista, Karla



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Fuel Temperature		°F	ASTM-D-1298	Bautista, Karla	
API Gravity @ 60 degF	(c) 42.504		ASTM-D-1298	Bautista, Karla	
Density		kg/m^3	ASTM-D-1298	Bautista, Karla	
Specific Gravity 60/60 degF	0.8132		ASTM-D-1298	Bautista, Karla	
Test: Text Results					
Text Result	(see below)		WI1416	Bautista, Karla 12/15/2011	
Saturates, % volume: 79.7 Test: Viscosity @ 104F Tube number-104 Run #1	VIS-2382 368.50	Sec	W11414 W11414	Bautista, Karla Bautista, Karla	
Run #2	368.42	sec	WI1414	Bautista, Karla	
Average Time	(c) 368.46	Sec	WI1414	Bautista, Karla	
CS	(c) 1.35	cst	WI1414	Bautista, Karla	
Test: Viscosity @ 77F					
Other tube constant	0.003653		WI1414	Bautista, Karla	
Run #1	463.36	Sec	WI1414		
Run #2	463.64	Sec	WI1414	Bautista, Karla	
				Bautista, Karla Bautista, Karla	
Average Time	(c) 463.50	Sec	WI1414		
CS	(c) 463.50 (c) 1.69	a service of the second s	WI1414 WI1414	Bautista, Karla	
		a service of the second s		Bautista, Karla Bautista, Karla	
CS		cst		Bautista, Karla Bautista, Karla	
CS Test: Water Content (ppm)	(c) 1.69	ppm	WI1414	Bautista, Karla Bautista, Karla Bautista, Karla	
CS Test: Water Content (ppm) Run #1	(c) 1.69 76.54	ppm ppm ppm	WI1414 ASTM-E-1064	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla	

Distillation Test for Specimen Fuel Tank Filter

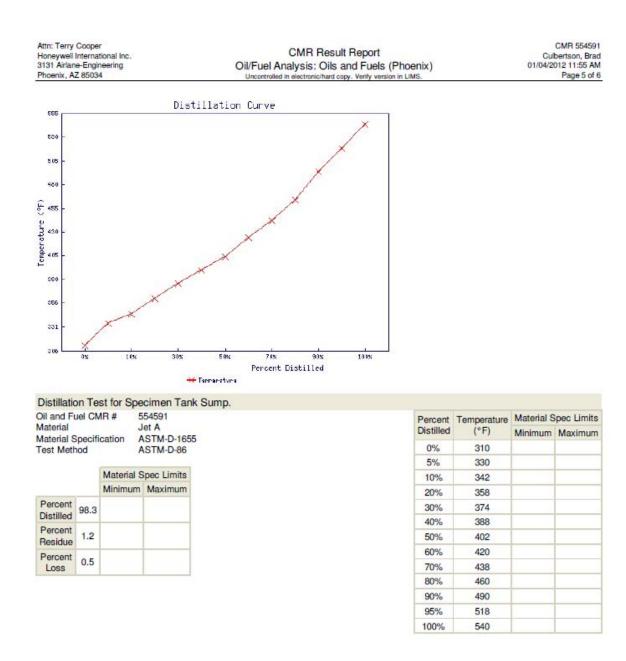
Oil and Fuel CMR # 554591 Material Jet A ASTM-D-1655 Material Specification Test Method ASTM-D-86

		Material S	pec Limits
		Minimum	Maximum
Percent Distilled	98.6		
Percent Residue	1.1		
Percent Loss	0.3		

Percent	Temperature	Material S	pec Limits
Distilled	(°F)	Minimum	Maximum
0%	312		
5%	334		
10%	344		
20%	360		
30%	376		
40%	390		
50%	404		
60%	424		
70%	442		
80%	464		
90%	494		
95%	518		
100%	544		

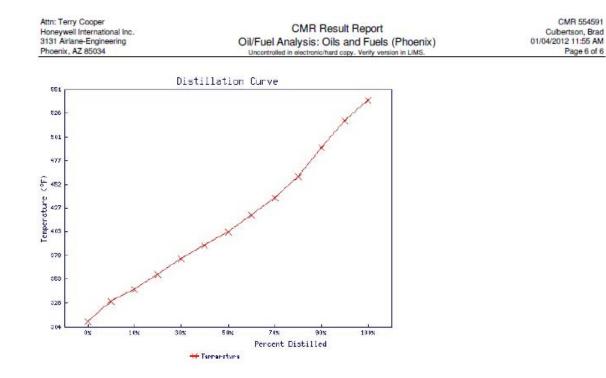
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Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMR Oil/Fuel Analysis Uncontrolled in electron		uels (CMR 554920 Neal, Terry 01/04/2012 11:56 AM Page 1 of 2	
CMR Number	554928		Submission (Data			12/16/2011 12:2	5 DM	
Status	Completed	-	Desired Date				12/19/2011		
Disposition	Info Only		Commit Date Completion Date				12/19/2011		
Released By	Baker, Susan						12/16/2011 10:0	8 PM	
		1	Project / Type				Info Only		
Labor Charge Number	7002368937-005	0							
SAP Project	EG-002166		SAP Work Center				1015-EEMAZZN	A1	
	USA						TUTO-LEMAZZI		
TSCA Sample Origin	property of a second								
Sample Origin	T1						president and the second s		
Oil / Fuel Type	Jet A/Biofuel		Material Spec	C			ASTM-D-1655		
Detailed Instructions	This is Straight I	Bio-fuel. Not a mix. 1	Taken from th	hird true	ck be	fore o	off load.		
Distribution List	Ciero, Robert Willia	ams, Randy Patterson,	Michael						
Customer	Neal, Terry		Submitted By	/			Neal, Terry		
Phone	+1 480/592-7931		Phone	6			+1 480/592-793	1	
						BA-60122			
Department	BA-60122		Department				BA-00122		
Requesting Site	Phoenix								
Test Results Specimen: Jet A/Biofuel			11.34		-		000	Date: 12/16/2011	
Property Track A&D Caefficients		Result	Units	LL	Т	UL	SOP	Analyst	
Test: A&B Coefficients A Coefficient		(c) 10.6590670		1			WI1414	Baker, Susan	
B Coefficient		(c) 4.0577716		-			WI1414	Baker, Susan	
Test: LHV		(c) 4.0077710					Milala	baker, Susan	
Calorimeter		Parr 1266	1	1			WI1411	Baker, Susan	
Calorimeter constant		2419.3473					WI1411	Baker, Susan	
Sample Weight		0.5631		-			WI1411	Baker, Susan	
Tape Weight			g				WI1411	Baker, Susan	
Temperature change			Э	-			WI1411		
		2 6505	°C						
and south a second s		2.6505				-		Baker, Susan	
Fuse Correction		18	cal				WI1411	Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid		18 12	cal ml					Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS)	18	cal ml				WI1411 WI1411	Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)	18 12 (c) 18989	cal ml				WI1411 WI1411	Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)	18 12 (c) 18989 56.2	cal ml BTU/lb				WI1411 WI1411 WI1411	Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature)	18 12 (c) 18989 56.2	cal ml BTU/lb °API °F				WI1411 WI1411 WI1411 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF)	18 12 (c) 18989 56.2 72 (c) 54.905	cal ml BTU/lb °API °F				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		18 12 (c) 18989 56.2 72 (c) 54.905	cal ml BTU/lb °API °F				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF		18 12 (c) 18989 56.2 72 (c) 54.905 (c) 54.905 (c) 759	cal ml BTU/lb °API °F				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F		18 12 (c) 18989 56.2 72 (c) 54.905 (c) 54.905 (c) 759	cal ml BTU/lb °API °F kg/m^3				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dr Test: Viscosity @ 104F Tube number-104		18 12 (c) 18989 56.2 72 (c) 54.905 (c) 54.905 (c) 759 0.7591	cal ml BTU/lb °API °F kg/m^3				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 dd Test: Viscosity @ 104F Tube number-104 Run #1		18 12 (c) 18989 56.2 72 (c) 54.905 (c) 7591 0.7591 VIS-2384	cal ml BTU/lb °API °F kg/m^3 sec				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2		18 12 (c) 18989 56.2 72 (c) 54.905 (c) 54.905 (c) 759 0.7591 VIS-2384 343.03	cal ml BTU/lb °API °F kg/m^3 sec sec				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de		18 12 (c) 18989 56.2 72 (c) 54.905 (c) 759 0.7591 VIS-2384 343.03 343.05	cal ml BTU/lb °API °F kg/m^3 sec sec sec sec				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414	Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS		18 12 (c) 18989 56.2 72 (c) 54.905 (c) 759 0.7591 VIS-2384 343.03 343.05 (c) 343.04	cal ml BTU/lb °API °F kg/m^3 sec sec sec sec				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414	Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time		18 12 (c) 18989 56.2 72 (c) 54.905 (c) 759 0.7591 VIS-2384 343.03 343.05 (c) 343.04	cal ml BTU/lb °API °F kg/m^3 sec sec sec sec cst				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414	Baker, Susan Baker, Susan	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		18 12 (c) 18989 56.2 72 (c) 54.905 (c) 759 0.7591 VIS-2384 343.03 343.05 (c) 343.04 (c) 1.35	cal ml BTU/lb °API °F kg/m^3 sec sec sec cst				W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414	Baker, Susan Baker, Susan	

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Attn: Terry Cooper Honeyweli International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	Oil/Fuel Analysis	CMR Result Report Oil/Fuel Analysis: Oils and Fuels (Phoenix) Uncontrolled in electronic/hard copy. Verify version in LIMS.				
Average Time	(c) 433.06	Sec	WI1414	Baker, Susan		
CS	(c) 1.71		WI1414	Baker, Susan		

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMR Oil/Fuel Analysis Uncontrolled in electron		uels (CMR 55497: Neal, Terry 01/04/2012 11:58 AM Page 1 of 2	
CMR Number	554972		Submission (Data			12/16/2011 04-/		
			Submission Date				12/16/2011 04:44 PM		
Status	Completed		Desired Date				12/19/2011		
Disposition	Info Only	(Commit Date Completion Date				12/19/2011		
Released By	Baker, Susan	(12/16/2011 10:3	30 PM	
		1	Project / Type				Info Only		
Labor Charge Number	7002368937-0050								
SAP Project	EG-002166	1	SAP Work C	ontor			1015-EEMAZZM	AL	
	the second se		SAF WOR O	enter			1013-EEMAZZI		
TSCA Sample Origin	USA								
Sample Origin	T2								
Oil / Fuel Type	Jet A/Biofuel		Material Spec	C			547553		
Detailed Instructions	This is Straight B	io-fuel. Not a mix. T	aken from fo	ourth tr	uck t	oefore	off load.		
Distribution List	Ciero, Robert Willia	ms, Randy Patterson,	Michael						
Customer	Neal, Terry		Submitted By	/			Neal, Terry		
Phone						the second s			
		Phone				+1 480/592-7931			
Department	BA-60122		Department				BA-60122		
Requesting Site	Phoenix								
Test Results Specimen: Jet A/Biofuel Property		Result	Units	11	т	UL	SOP	Date: 12/16/2011 Analyst	
Test: A&B Coefficients		nesuit	Units	LL	1	UL	SUP	Analyst	
A Coefficient		(c) 10.4984738		1			WI1414	Baker, Susan	
B Coefficient		(c) 4.0004388					WI1414	Baker, Susan	
Test: LHV		(0)		1		6			
Calorimeter		Parr 1266					WI1411	Baker, Susan	
Calorimeter constant		2419.3473					WI1411	Baker, Susan	
Sample Weight		0.5728	g				WI1411	Baker, Susan	
Tape Weight		0	g				WI1411	Baker, Susan	
Temperature change		2.6968	the West of the Second				WI1411	Baker, Susan	
Fuse Correction		20	cal				WI1411	Baker, Susan	
Nitric Acid		12	ml				WI1411	Baker, Susan	
LHV-FIMS		(c) 18990	BTU/Ib				WI1411	Baker, Susan	
Test: Specific Gravity (A)									
Observed API Gravity			°API				ASTM-D-1298	Baker, Susan	
Fuel Temperature		72	°F		1		ASTM-D-1298	Baker, Susan	
API Gravity @ 60 degF		(c) 55.496		-			ASTM-D-1298	Baker, Susan	
Density			kg/m^3				ASTM-D-1298	Baker, Susan	
Specific Gravity 60/60 de	gF	0.7567					ASTM-D-1298	Baker, Susan	
Test: Viscosity @ 104F							1		
Tube number-104		VIS-2383		-	_		WI1414	Baker, Susan	
Run #1		364.76		-		-	WI1414	Baker, Susan	
Run #2		364.79		-			WI1414	Baker, Susan	
Average Time		(c) 364.78		-		_	WI1414	Baker, Susan	
CS		(c) 1.34	CST				WI1414	Baker, Susan	
Test: Viscosity @ 77F		0.0000770						Delay C	
Other tube constant		0.003676		-	-	-	WI1414	Baker, Susan	
Run #1 Run #2		460.43		-			WI1414	Baker, Susan	
		460.41	200				WI1414	Baker, Susan	

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Attn: Terry Cooper Honeyweli International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Oil/Fuel Analysis: Uncontrolled in electron	CMR 554972 Neal, Terry 01/04/2012 11:58 AM Page 2 of 2		
Average Time	(c) 460.42	Sec	WI1414	Baker, Susan
CS	(c) 1.69	cst	WI1414	Baker, Susan

Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		nalysis:	Result Report FIMS Analysi	s (Pl			CMR 55497 Neal, Terr 01/04/2012 11:58 Al Page 1 of	
CMR Number	554973		Submission I	Date	1	2/16/2011 04:5	I PM	
Status	Completed		Desired Date 1			12/19/2011		
Disposition	Info Only					2/19/2011		
	AND CONTRACTOR OF A		2123223			a discourse and the second		
Released By	Baker, Susan		Completion E		10	2/16/2011 10:33	3 PM	
			Project / Typ	e	1	nfo Only		
Labor Charge Number	7002368937-0050							
SAP Project	EG-002166		SAP Work C	enter	1	015-EEMAZZM	Ľ	
Sample Origin	T1				-			
Oil / Fuel Type	Jet A/Biofuel		Material Spe	~	1	STM-D-1655		
Distribution List	Ciero, Robert Williams, Randy Patt		100 CO.	<u> </u>		101000		
Distribution List	Ciero, Robert Williams, R.	andy Patte	rson, Michael					
Customer	Neal, Terry		Submitted B	v	N	Veal, Terry		
Phone	+1 480/592-7931		Phone			1 480/592-7931		
	BA60122							
Department			Department		E	3A60122		
Requesting Site	Phoenix							
Test Results Specimen: Jet A/Biofuel Property	Result	Units	LL	T	UL	SOP	Date: 12/16/201 Analyst	
Test: A&B Coefficients								
A Coefficient	(c) 10.1964298		9.0000000		11.0000000		Baker, Susan	
B Coefficient	(c) 3.8875493		3.0000000		4.4000000	WI1414	Baker, Susan	
Test: LHV			4					
Calorimeter	Parr 1266					WI1411	Baker, Susan	
Calorimeter constant	2419.3473					WI1411	Baker, Susan	
Sample Weight	0.5560		_			WI1411 WI1411	Baker, Susan Baker, Susan	
Tape Weight	2.5724	g	-	-		W1411	Baker, Susan	
Temperature change Fuse Correction		cal		-		W1411	Baker, Susan	
Nitric Acid		ml				W1411	Baker, Susan	
LHV-FIMS	(c) 18744	the local distance of	18420		18800	WI1411	Baker, Susan	
Test: Specific Gravity (A)	(c) 10/44	Diono	10120		10000		Durin, Groun	
Observed API Gravity	49.8	° API				ASTM-D-1298	Baker, Susan	
Fuel Temperature		°F				ASTM-D-1298	Baker, Susan	
API Gravity @ 60 degF	(c) 48.503		1			ASTM-D-1298	Baker, Susan	
Density		kg/m^3				ASTM-D-1298	Baker, Susan	
Specific Gravity 60/60 degF	0.7861		0.770		0.825	ASTM-D-1298	Baker, Susan	
Test: Viscosity @ 104F								
Tube number-104	VIS-2382					WI1414	Baker, Susan	
Bun #1	374.25					WI1414	Baker, Susan	
11011 11 1	374.29	Sec				WI1414	Baker, Susan	
Run #2		Sec				WI1414	Baker, Susan	
Run #2 Average Time	(c) 374.27				1.50	WI1414	Baker, Susan	
Run #2 Average Time CS	(c) 374.27 (c) 1.37		1.00		100 m m		Durini, output	
Run #2 Average Time CS Test: Viscosity @ 77F	(c) 1.37		1.00		18.5.0			
Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	(c) 1.37 0.003653	cst	1.00			W11414	Baker, Susan	
Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	(c) 1.37 0.003653 470.60	cst sec	1.00			WI1414	Baker, Susan Baker, Susan	
Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1 Run #2	(c) 1.37 0.003653 470.60 470.56	cst sec sec	1.00			WI1414 WI1414	Baker, Susan Baker, Susan Baker, Susan	
Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	(c) 1.37 0.003653 470.60	cst sec sec sec	1.30			WI1414	Baker, Susan Baker, Susan	

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Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		Analysis:	Result Repor FIMS Analys	is (Phoenix)		CMR 55501 Neal, Terr 01/04/2012 11:59 AM Page 1 of	
CMR Number	555010		Submission	Date	12/17/2011 08:	27 AM	
Status	Completed		Desired Dat	e	12/20/2011		
Disposition	Info Only		Commit Dat		12/21/2011		
	Man International States		112100	C	sign replaces a control or in		
Released By	Rexroad, Perry		Completion		12/21/2011 06:	:05 AM	
	presents in a balance balance		Project / Ty	pe	Info Only		
Labor Charge Number	7002368937-0050						
SAP Project	EG-002166		SAP Work (Center	1015-EEMAZZ	ML	
Sample Origin	T2						
Oil / Fuel Type	Jet A/Biofuel		Material Spe	ac	ASTM-D-1655		
Distribution List	Ciero, Robert Williams, Randy Path		100 CC 10		1000		
Distribution List	Ciero, Hobert Wildins, I	ianoy raite	a a di i, i vilcinatti				
Customer	Neal, Terry		Submitted E	lv.	Neal, Terry		
Phone	and the second se		Phone		+1 480/592-79	21	
	+1 480/592-7931					31	
Department	BA-60122		Department		BA60122		
Requesting Site	Phoenix						
Specimen: Jet A/Biofuel Property Test: A&B Coefficients	Result	Units	LL	T UL	SOP	Date: 12/21/2011 Analyst	
Test: A&B Coefficients							
A Coefficient	(c) 10.6590670		9.0000000	11.0000000		Rexroad, Perry	
B Coefficient Test: LHV	(c) 4.0577716		3.0000000	4.4000000	WI1414	Rexroad, Perry	
	Dem 1000		-		14010.000	Devened Deven	
Calorimeter	Parr 1266		-		WI1411	Rexroad, Perry	
Calorimeter Calorimeter constant	2419.35				WI1411	Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight	2419.35 0.5555				WI1411 WI1411	Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight	2419.35 0.5555 0	g			WI1411 WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change	2419.35 0.5555 0 2.5620	g °C			WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight	2419.35 0.5555 0 2.5620 12	g			Wi1411 Wi1411 Wi1411 Wi1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction	2419.35 0.5555 0 2.5620 12	g °C cal ml	18420	18800	W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid	2419.35 0.5555 0 2.5620 12 12	g °C cal ml	18420	18800	W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS	2419.35 0.5555 0 2.5620 12 12 (c) 18705	g °C cal ml	18420	18800	W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)	2419.35 0.5555 0 2.5620 12 12 (c) 18705 49.4 68	g °C cal ml BTU/lb	18420	18800	W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity	2419.35 0.5555 0 2.5620 12 12 (c) 18705 49.4	g °C cal ml BTU/lb	18420	18800	W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density	2419.35 0.5555 0 2.5620 12 12 (c) 18705 49.4 68 (c) 48.594 (c) 786	g °C cal ml BTU/lb			WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF	2419.35 0.5555 0 2.5620 12 12 (c) 18705 49.4 68 (c) 48.594	g °C cal ml BTU/lb °API °F	18420		W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF	2419.35 0.5555 0 2.5620 12 12 (c) 18705 49.4 68 (c) 48.594 (c) 786	g °C cal ml BTU/lb °API °F			WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F	2419.35 0.5555 0 2.5620 12 12 (c) 18705 (c) 18705 49.4 68 (c) 48.594 (c) 786 0.7857	g °C cal ml BTU/lb °API °F kg/m^3			WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant	2419.35 0.5555 0 2.5620 12 12 (c) 18705 (c) 48.594 (c) 48.594 (c) 786 0.7857 0.003676	g °C cal ml BTU/lb °API °F kg/m^3 sec			WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414	Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time	2419.35 0.5555 0 2.5620 12 12 (c) 18705 49.4 (c) 48.594 (c) 48.594 (c) 786 0.7857 0.003676 366.88 366.99 (c) 366.94	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec	0.770	0.825	W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 M11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS	2419.35 0.5555 0 2.5620 12 (c) 18705 49.4 (c) 18705 49.4 (c) 48.594 (c) 786 0.7857 0.003676 366.88 366.99	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec		0.825	W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	2419.35 0.5555 0 2.5620 12 12 (c) 18705 49.4 (c) 18705 49.4 (c) 48.594 (c) 786 0.7857 0.003676 366.88 366.99 (c) 386.94 (c) 1.35	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec	0.770	0.825	WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	2419.35 0.5555 0 2.5620 12 (c) 18705 (c) 18705 (c) 18705 0.003676 0.7857 0.003676 366.88 366.99 (c) 366.94 (c) 1.35	g °C cal ml BTU/lb °F kg/m^3 sec sec sec cst	0.770	0.825	W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 M1414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	2419.35 0.5555 0 2.5620 12 (c) 18705 (c) 18705 (c) 18705 0.003676 366.88 366.99 (c) 366.94 (c) 1.35 0.003676 464.30	g °C cal ml BTU/lb °F kg/m^3 sec sec sec cst sec	0.770	0.825	W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	2419.35 0.5555 0 2.5620 12 (c) 18705 (c) 18705 (c) 18705 0.003676 0.7857 0.003676 366.88 366.99 (c) 366.94 (c) 1.35	g °C cal ml BTU/lb °F kg/m^3 sec sec sec sec sec sec sec sec	0.770	0.825	W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 M1414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis Uncontrolled in electro		Fuels			:)	CMR 55518 Neal, Terr 01/04/2012 12:00 PM Page 1 of 2	
CMR Number	555180		Submission	Date			12/19/2011 12	2:27 PM	
Status	Completed		Desired Dat	0			12/21/2011		
	1						12/21/2011		
Disposition	Info Only		Commit Da	Sec			and the state of t		
Released By	Rexroad, Perry		Completion	Date			12/21/2011 07	7:52 AM	
			Project / Ty	pe			Info Only		
Labor Charge Number	7002368937-00	050							
SAP Project	EG-002166		SAP Work	Center			1015-EEMAZ	ZML	
TSCA Sample Origin	USA							29470a	
Sample Origin	T2								
	Contraction of the local division of the loc						-		
Oil / Fuel Type	Jet A/Biofuel		Material Sp				547553		
Detailed Instructions	A PROPERTY OF A	Bio-fuel. Not a mix.	and the second second	fifth tr	JCK b	pefore	off load.		
Distribution List	Ciero, Robert W	Iliams, Randy Patterson,	Michael						
0.1			A 1						
Customer	Neal, Terry		Submitted I	3y			Neal, Terry		
Phone	+1 480/592-793	Phone				+1 480/592-7	931		
Department	BA-60122	Department				BA-60122			
Requesting Site	Phoenix								
Property Test: A&B Coefficients		Result	Units	LL	T	UL	SOP	Analyst	
A Coefficient		(c) 10.5561674					W11414	Rexroad, Perry	
B Coefficient		(c) 4.0193355		1	-	-	WI1414	Rexroad, Perry	
Test: LHV		(0) 4.0100000		-					
Calorimeter		Parr 1266		1			W1411	Rexroad, Perry	
Calorimeter constant		2419.35		1			WI1411	Rexroad, Perry	
Sample Weight		0.5678	g				W11411	Rexroad, Perry	
Tape Weight		0	g				WI1411	Rexroad, Perry	
Temperature change		2.6641	°C				W1411	Rexroad, Perry	
Fuse Correction			cal	100			WI1411	Rexroad, Perry	
Nitric Acid		and the second se	ml	-		_	W1411	Rexroad, Perry	
LHV-FIMS		(c) 18934	BTU/lb	_			W11411	Rexroad, Perry	
Test: Specific Gravity (A))	F.0.4		-		_			
Observed API Gravity			°API °F	-		_	ASTM-D-1298	Rexroad, Perry	
Fuel Temperature			-	-	-		ASTM-D-1298	Rexroad, Perry	
API Gravity @ 60 degF Density		(c) 55.397	kg/m^3	-	-	-	ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry	
Specific Gravity 60/60 de	νE	(c) 757	kynn-3	1	-		ASTM-D-1298	Rexroad, Perry	
Test: Viscosity @ 104F	Э	0.7571					1010-1200	I newrodu, reny	
Other tube constant		0.003939	-	1			W11414	Rexroad, Perry	
Run #1		345.42					W11414	Rexroad, Perry	
Run #2		345.49					W11414	Rexroad, Perry	
Average Time		(c) 345.46					WI1414	Rexroad, Perry	
CS		(c) 1.36	cst				W11414	Rexroad, Perry	
Test Missesity @ 775									
Test: Viscosity @ 77F							WI1414	Rexroad, Perry	
Other tube constant		0.003939		-	-				
Other tube constant Run #1 Run #2		0.003939 437.06 437.17	Sec				WI1414 WI1414	Rexroad, Perry Rexroad, Perry	

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Attn: Terry Cooper Honeyweli International Inc. 3131 Airiane-Engineering Phoenix, AZ 85034	CMF Oil/Fuel Analysis Uncentrolled in electro	CMR 555180 Neal, Terry 01/04/2012 12:00 PM Page 2 of 2		
Average Time	(c) 437.12	Sec	WI1414	Rexroad, Perry
CS	(c) 1.72	cst	W11414	Rexroad, Perry

Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034			Analysis: F	Iesult Report IMS Analysis hard copy. Verify version			CMR 55530 Neal, Ten 01/04/2012 12:01 P Page 1 of
				9000 - 80			
CMR Number	555309		Su	bmission Date	1	2/20/2011 07:14	AM
Status	Completed	í	De	sired Date	1	2/23/2011	
Disposition				Commit Date 12			
	Info Only		-				
Released By	Rexroad, F	Perry					AM
			Pro	oject / Type	Ir	fo Only	
abor Charge Number	700236893	37-0050					
SAP Project	EG-002166	6	SA	P Work Center	1	015-EEMAZZML	
Sample Origin	T5	T5					
Dil / Fuel Type	Jet A		Ma	terial Spec	4	STM-D-1655	
Detailed Instructions	and the second		and the second se	and the second se		STM-D-1000	
	Sample was taken from truck Ciero, Robert Williams, Randy Cul		Convertion of the second	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Distribution List	Ciero, Rober	t Williams, Randy	Culbertson, B	rad Patterson, Micl	nael		
Customer	Neal, Terry		Su	bmitted By	N	eal, Terry	
Phone	+1 480/592-7931			one		1 480/592-7931	
Department	BA-60122			partment		A-60122	
	Phoenix		De	partment	0	A-00122	
Requesting Site	THOUTIN						
Test Results							
Specimen: Jet A							Date: 12/21/201
Property		Result	Units	LL T	UL	SOP	Analyst
Test: A&B Coefficients							
A Coefficient		(c) 10.1964298		9.1000000	10.9000000	WI1414	Rexroad, Perry
B Coefficient		(c) 3.8875493		3.4000000	4.2000000	WI1414	Rexroad, Perry
Test: LHV							
Calorimeter		Parr 1266				WI1411	Rexroad, Perry
Calorimeter constant		2419.35				WI1411	Rexroad, Perry
		0 5705	0			Wi1411	riexious, reny
Sample Weight		0.5795	9			W11411	Rexroad, Perry
Tape Weight		0	g			WI1411 WI1411	
Tape Weight Temperature change		0 2.6391	g °C			WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction		0 2.6391 21	g °C cal			WI1411 WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid		0 2.6391 21 12	g °C cal ml			WI1411 WI1411 WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS		0 2.6391 21	g °C cal ml	18420	18625	WI1411 WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)		0 2.6391 21 12 (c) 18506	g °C cal ml BTU/lb	18420	18625	W1411 W1411 W1411 W1411 W1411 W1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity		0 2.6391 21 12 (c) 18506 42.6	g °C cal ml BTU/lb °API	18420	18625	W11411 W11411 W11411 W11411 W11411 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature		0 2.6391 21 12 (c) 18506 42.6 69	g °C cal ml BTU/lb	18420	18625	Wi1411 Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF		0 2.6391 21 12 (c) 18506 42.6 69 (c) 41.801	°C cal ml BTU//b °API °F	18420	18625	Wi1411 Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		0 2.6391 21 (c) 18506 42.6 69 (c) 41.801 (c) 817	g °C cal ml BTU/lb °API			Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF		0 2.6391 21 12 (c) 18506 42.6 69 (c) 41.801	°C cal ml BTU//b °API °F	0.799		Wi1411 Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F		0 2.6391 21 (c) 18506 42.6 69 (c) 41.801 (c) 817 0.8165	°C cal ml BTU//b °API °F			Wi1411 Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant		0 2.6391 21 (c) 18506 42.6 69 (c) 41.801 (c) 817 0.8165 0.003676	°API °F kg/m ³			Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wi1414	Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1		0 2.6391 21 12 (c) 18506 42.6 6 (c) 41.801 (c) 817 0.8165 0.003676 372.49	° C cal ml BTU/lb ° API ° F kg/m*3 sec			Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2		0 2.6391 21 12 (c) 18506 42.6 6 6 9 (c) 41.801 (c) 817 0.8165 0.003676 372.49 372.41	° C cal ml BTU/lb ° API ° F kg/m*3 sec sec			Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time		0 2.6391 21 12 (c) 18506 42.6 69 (c) 41.801 (c) 817 0.8165 0.003676 372.49 372.41 (c) 372.45	° API ° API ° F kg/m^3 sec sec sec		0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS		0 2.6391 21 12 (c) 18506 42.6 6 6 9 (c) 41.801 (c) 817 0.8165 0.003676 372.49 372.41	° API ° API ° F kg/m^3 sec sec sec	0.799	0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MI1414 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		0 2.6391 21 12 (c) 18506 42.6 69 (c) 41.801 (c) 817 0.8165 0.003676 372.49 372.41 (c) 372.45 (c) 1.37	g °C cal ml BTU//b °API °F kg/m*3 sec sec sec sec cst	0.799	0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MI1414 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant		0 2.6391 21 (c) 18506 42.6 69 (c) 41.801 (c) 817 0.8165 0.003676 372.49 372.41 (c) 372.45 (c) 1.37	g °C cal ml BTU//b °API °F kg/m*3 sec sec sec cst	0.799	0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Mi1414 Wi1414 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature		0 2.6391 21 12 (c) 18506 42.6 69 (c) 41.801 (c) 817 0.8165 0.003676 372.49 372.41 (c) 372.45 (c) 1.37 0.003676 469.07	g °C cal ml BTU//b °API °F kg/m^3 sec sec sec sec sec sec	0.799	0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Mi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1		0 2.6391 21 (c) 18506 42.6 69 (c) 41.801 (c) 817 0.8165 0.003676 372.49 372.41 (c) 372.45 (c) 1.37	° C cal mi BTU//b ° F kg/m^3 sec sec sec cst sec sec sec sec sec	0.799	0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Mi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry

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Honeyweli International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		Analysis:	Result Report FIMS Analysis	s (Phoenix)		CMR 555407 rev A Neal, Terry 01/04/2012 12:03 PM Page 1 of 1		
CMR Number	555407 rev A		Submission I	Date	12/20/2011 02:	00 PM		
Status	Completed		Desired Date		12/23/2011			
					-			
Disposition	Info Only		Commit Date	2	12/23/2011			
Released By	Rexroad, Perry		Completion D	Date	12/21/2011 09:	24 AM		
			Project / Typ	e	Info Only			
Labor Charge Number	7002368937-0050							
SAP Project	EG-002166		SAP Work C	enter	1015-EEMAZZ	'MI		
	T2		SAF WOR O	enter	TOTO-LEMAZZ			
Sample Origin	and the second s		and the second					
Oil / Fuel Type	Jet A/Biofuel		Material Spec	c	ASTM-D-1655	Y		
Distribution List	Ciero, Robert Williams, Randy Culbertson, Brad Patterson, M		erson, Michael					
Customer	Neal, Terry		Submitted By	Y	Neal, Terry			
Phone	+1 480/592-7931		Phone		+1 480/592-79	31		
					BA-60122			
Department	BA60122 Department		BA-00122					
Requesting Site	Phoenix							
	(c) 10.5561674	-	9.0000000	11.0000000		Rexroad, Perry		
A Coefficient	(c) 10.5561674		9.0000000	11.0000000	WI1414	Rexroad, Perry		
B Coefficient	(c) 4.0193355		3.0000000	4.4000000	WI1414	Rexroad, Perry		
Test: LHV		-				200		
Calorimeter	Parr 1266	-			WI1411	Morton, Jeremy		
Calorimeter constant	2419.3473	-			WI1411			
Sample Weight	0.5690	g				Morton, Jeremy		
					WI1411	Rexroad, Perry		
Tape Weight	0	g			WI1411	Rexroad, Perry Morton, Jeremy		
Tape Weight Temperature change	0 2.6301	°C			WI1411 WI1411	Rexroad, Perry Morton, Jeremy Rexroad, Perry		
Tape Weight Temperature change Fuse Correction	0 2.6301 22	°C cal			WI1411 WI1411 WI1411	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry		
Tape Weight Temperature change Fuse Correction Nitric Acid	0 2.6301 22 12	°C cal ml	18420	18800	WI1411 WI1411 WI1411 WI1411	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS	0 2.6301 22	°C cal ml	18420	18800	WI1411 WI1411 WI1411	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)	0 2.6301 22 12 (c) 18716	°C cal ml BTU/lb	18420	18800	WI1411 WI1411 WI1411 WI1411	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Rexroad, Perry		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity	0 2.6301 22 12 (c) 18716 49.5	°C cal ml BTU/lb	18420	18800	W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature	0 2.6301 22 12 (c) 18716 49.5 72	°C cal ml BTU/lb	18420	18800	W11411 W11411 W11411 W11411 W11411 ASTM-D-1298	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Rexroad, Perry Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297	°C cal ml BTU/lb	18420	18800	W1411 W1411 W1411 W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297	°C cal ml BTU/lb °API °F	0.770		W1411 W1411 W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297 (c) 48.297 (c) 787 0.7870	°C cal ml BTU/lb °API °F			WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297 (c) 48.297 (c) 787 0.7870 0.7870	°C cal ml BTU/lb °API °F kg/m*3			WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297 (c) 48.297 (c) 787 0.7870 VIS-2382 371.8	°C cal ml BTU/lb °API °F kg/m^3 sec			WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297 (c) 48.297 (c) 787 0.7870 VIS-2382 371.8 371.7	°C cal ml BTU/lb °API °F kg/m^3 sec sec			WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297 (c) 787 0.7870 VIS-2382 371.8 371.7 (c) 371.8	°C cal ml BTU/lb °API °F kg/m^3 sec sec sec	0.770	0.825	WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297 (c) 48.297 (c) 787 0.7870 VIS-2382 371.8 371.7	°C cal ml BTU/lb °API °F kg/m^3 sec sec sec		0.825	WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297 (c) 48.297 (c) 787 0.7870 VIS-2382 371.8 371.7 (c) 371.8	°C cal ml BTU/lb °API °F kg/m*3 sec sec sec sec sec cst	0.770	0.825	WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297 (c) 48.297 (c) 787 0.7870 VIS-2382 371.8 371.7 (c) 371.8 (c) 1.36	°C cal ml BTU/lb °API °F kg/m*3 sec sec sec sec cst	0.770	0.825	WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297 (c) 48.297 (c) 787 0.7870 VIS-2382 371.8 371.7 (c) 371.8 (c) 1.36 (c) 1.36	°C cal ml BTU/lb °API °F kg/m*3 sec sec sec sec cst sec	0.770	0.825	WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MI1414 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy		
Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	0 2.6301 22 12 (c) 18716 49.5 72 (c) 48.297 (c) 48.297 (c) 787 0.7870 VIS-2382 371.8 371.7 (c) 371.8 (c) 1.36	°C cal ml BTU/lb °API °F kg/m^3 kg/m^3 sec sec sec cst sec sec sec	0.770	0.825	WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Morton, Jeremy Rexroad, Perry Rexroad, Perry Morton, Jeremy Morton, Jeremy		

Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	0		Analysis: F	esult Report IMS Analysis			CMR 55668 Neal, Terr 01/03/2012 10:31 A Page 1 of
Phoenix, A2 63034		Uncontrol	ed in electronic/h	ard copy. Verify version	on in LIMS.		Fage 1 0
CMR Number	556685		Sut	mission Date	0	1/03/2012 07:44	AM
Status	Completed		-	sired Date		1/06/2012	
						1/06/2012	
Disposition	Info Only		Cor				
Released By	Rexroad, Perry		Cor				AM
			Pro	ject / Type	In	fo Only	
Labor Charge Number	7002368937-0050						
SAP Project	EG-002166		SA	P Work Center	10	015-EEMAZZML	_
Sample Origin	T5		- 07028		1		lan
Dil / Fuel Type	Jet A		Ma	terial Spec		STM-D-1655	
Detailed Instructions	Sample was taken from truck		and the second second	and the second se		31M-D-1055	
	Ciero, Robert Williams, Randy Cul		a state of the sta	11111111111111111111111111111111111111	6		
Distribution List	Ciero, Robert Williams,	Randy	Culbertson, Br	ad Patterson, Mici	hael		
Customer	Neal, Terry		Sut	mitted By	N	eal, Terry	
Phone	+1 480/592-7931		Pho	one	+	1 480/592-7931	
Department	BA-60122		Der	partment	В	A-60122	
Requesting Site	Phoenix						
Test Results							
Specimen: Jet A							Date: 01/03/201:
Property	Resul	t	Units	LL T	UL	SOP	Analyst
Test: A&B Coefficients							~
A Coefficient	(c) 10.0			9.1000000	10.9000000		Rexroad, Perry
B Coefficient	(c) 3.8	422996		3.4000000	4.2000000	WI1414	Rexroad, Perry
Test: LHV		1000					Descent Desce
Calorimeter Calorimeter constant		rr 1266 419.35				WI1411 WI1411	Rexroad, Perry Rexroad, Perry
Sample Weight		0.5534	0			W11411	
Tape Weight			9				
the second se		0	0				Rexroad, Perry
Temperature change			g °C			WI1411	Rexroad, Perry Rexroad, Perry
		2.5252					Rexroad, Perry
Fuse Correction		2.5252 17	°C			WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid		2.5252 17 12	°C cal	18420	18625	WI1411 WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS		2.5252 17 12	°C cal ml	18420	18625	WI1411 WI1411 WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)		2.5252 17 12 18540 44.0	°C cal ml BTU/lb	18420	18625	WI1411 WI1411 WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature	(c)	2.5252 17 12 18540 44.0 71	°C cal ml BTU/lb	18420	18625	Wi1411 Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF	(c)	2.5252 17 12 18540 44.0 71 42.997	°C cal ml BTU/lb °API °F	18420	18625	Wi1411 Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density	(c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811	°C cal ml BTU/lb			Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF	(c)	2.5252 17 12 18540 44.0 71 42.997	°C cal ml BTU/lb °API °F	0.799		Wi1411 Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F	(c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811 0.8109	°C cal ml BTU/lb °API °F			Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant	(c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811 0.8109 003653	°C cal mi BTU/lb °API °F kg/m^3			Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wi1414	Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1	(c) (c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811 0.8109 003653 364.04	°C cal ml BTU/lb °API °F kg/m^3 sec			Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2	(c) (c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811 0.8109 003653 364.04 363.97	°C cal ml BTU/lb °API °F kg/m^3 sec sec			Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wi1414	Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time	(c) (c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811 0.8109 003653 364.04 363.97 364.01	°C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec		0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS	(c) (c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811 0.8109 003653 364.04 363.97	°C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec	0.799	0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MIM-D-1298 Wi1414 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	(c) (c) (c) (c) (c) (c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811 0.8109 003653 364.04 363.97 364.01	°C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec	0.799	0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MIM-D-1298 Wi1414 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	(c) (c) (c) (c) (c) (c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811 0.8109 003653 364.04 363.97 364.01 (c) 1.33	°C cal ml BTU//b °F kg/m^3 sec sec sec cst	0.799	0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Mi1414 Wi1414 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1 Run #1 Run #1 Run #1 Run #1 Run #1 Run #1 Run #1 Run #2	(c) (c) (c) (c) (c) (c) (c) (c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811 0.8109 003653 364.04 363.97 364.01 (c) 1.33 003653	°C cal ml BTU//b °F kg/m^3 sec sec cst sec	0.799	0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Mi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	(c) (c) (c) (c) (c) (c) (c) (c)	2.5252 17 12 18540 44.0 71 42.997 (c) 811 0.8109 003653 364.04 363.97 364.01 (c) 1.33 003653 453.41	°C cal ml BTU//b °API °F kg/m^3 sec sec sec cst sec sec cst sec sec	0.799	0.825	Wi1411 Wi1411 Wi1411 Wi1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 Mi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis Uncontrolled in electro		Fuels			:)	CMR 556749 Neal, Terry 01/04/2012 12:04 PN Page 1 of 2	
CMR Number	556749		Submission	Data			01/03/2012 0	1-05 PM	
	and the second second second second								
Status	Completed		Desired Dat				01/04/2012		
Disposition	Info Only		Commit Dat	te			01/04/2012		
Released By	Rexroad, Perry		Completion	Date			01/04/2012 1	0:23 AM	
			Project / Ty	pe			Info Only		
Labor Charge Number	7002368937-00	50							
SAP Project	EG-002166		SAP Work	Center			1015-EEMAZ	7MI	
TSCA Sample Origin	USA		OAI MOIN	Center			TOTOTELMAL		
	personal and								
Sample Origin	T2						-		
Oil / Fuel Type	Jet A/Biofuel		Material Sp	ec			547553		
Detailed Instructions	This is Straight	Bio-fuel. Not a mix.	Taken from	sixth t	ruck	befor	e off load.		
Distribution List		iams, Randy Patterson,							
Customer	Neal, Terry	Neal, Terry		3v			Neal, Terry		
Phone	+1 480/592-7931		Submitted E Phone				+1 480/592-7	0.94	
							331		
Department	BA-60122	Department				BA-60122	22		
Requesting Site	Phoenix								
Test Results Specimen: FIMS								Date: 01/04/2012	
Property		Result	Units	LL	т	UL	SOP	Analyst	
Test: A&B Coefficients									
A Coefficient		(c) 10.2955248					WI1414	Rexroad, Perry	
B Coefficient		(c) 3.9245917					W11414	Rexroad, Perry	
Test: LHV									
Calorimeter		Parr 1266		1			WI1411	Rexroad, Perry	
Calorimeter constant		2419.35		-		_	W11411	Rexroad, Perry	
Sample Weight		0.5624		-			W1411	Rexroad, Perry	
Tape Weight			g	_			W11411	Rexroad, Perry	
Temperature change		2.6438		-			W11411	Rexroad, Perry	
Fuse Correction			cal			-	W11411	Rexroad, Perry	
Nitric Acid			ml	-	-	-	W11411	Rexroad, Perry	
LHV-FIMS		(c) 18959	BIU/ID		_		W11411	Rexroad, Perry	
Test: Specific Gravity (A)	50.4		-					
Observed API Gravity			°API	-			ASTM-D-1298	Rexroad, Perry	
Fuel Temperature			°F	-		-	ASTM-D-1298	Rexroad, Perry	
API Gravity @ 60 degF		(c) 55.200	lun/m AO	-	-	-	ASTM-D-1298 ASTM-D-1298	Rexroad, Perry	
Density	-5	And a result of the	kg/m^3	-				Rexroad, Perry	
Constitution Constitution CO/CO de	igi-	0.7579					ASTM-D-1298	Rexroad, Perry	
	000070						Wi1414	Rexroad, Perry	
Test: Viscosity @ 104F	0.003676						W11414	Rexroad, Perry	
Run #1		370.25	Sec				W11414		
Test: Viscosity @ 104F Other tube constant Run #1 Run #2						_			
Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time		370.25	Sec				W11414	Rexroad, Perry Rexroad, Perry	
Test: Viscosity @ 104F Other tube constant Run #1		370.25 370.21	SEC SEC				the second se	and the second se	
Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time		370.25 370.21 (c) 370.23	SEC SEC				WI1414	Rexroad, Perry	
Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS		370.25 370.21 (c) 370.23	SEC SEC				WI1414	Rexroad, Perry	
Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		370.25 370.21 (c) 370.23 (c) 1.36	sec cst sec				Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry	

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Attn: Terry Cooper Honeyweli International Inc. 3131 Airiane-Engineering Phoenix, AZ 85034	CMF Oil/Fuel Analysis Uncontrolled in electro	CMR 556749 Neal, Terry 01/04/2012 12:04 PM Page 2 of 2		
Average Time	(c) 465.51	sec	WI1414	Rexroad, Perry
CS	(c) 1.71	cst	WI1414	Rexroad, Perry

Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		Analysis:	Result Repor FIMS Analys	sis (Phoeni	x)		CMR 55682 Neal, Terr 01/04/2012 12:05 Pl Page 1 of	
			1995 - 199					
CMR Number	556826		Submission	Date		01/04/2012 06:	31 AM	
Status	Completed	_	Desired Date			01/09/2012		
	100							
Disposition	Info Only		Commit Date			01/09/2012		
Released By	Rexroad, Perry		Completion	Date		01/04/2012 09:	55 AM	
			Project / Ty	pe		Info Only		
Labor Charge Number	7002368937-0050							
SAP Project	EG-002166		SAP Work	Center		1015-EEMAZZ	ML	
Sample Origin	T5		174,856,107,664	0.00000				
Oil / Fuel Type	Jet A		Material Sp	00		ASTM-D-1655		
Distribution List	Ciero, Robert Williams, Randy Cull				-	AS TW-D-1000		
Distribution List	Ciero, Robert Willams, P	nalicy Cub	erison, brau (Pa	terson, wichas	91			
Customer	Neal, Terry		Submitted E	By		Neal, Terry		
	and the state of the second			.,		And the state of the state of the space	04	
Phone	+1 480/592-7931 BA60122		Phone			+1 480/592-79	31	
Department			Department			BA60122		
Requesting Site	Phoenix							
Specimen: Jet A Property	Result	Units	LL	T UL	2	SOP	Date: 01/04/2012 Analyst	
Test: A&B Coefficients								
A Coefficient	(c) 10.1613768		9.1000000	10.90	000000	WI1414	Rexroad, Perry	
B Coefficient	(c) 3.8800235		3.4000000	4.20	000000	WI1414	Rexroad, Perry	
Test: LHV								
Calorimeter	Parr 1266					WI1411	Rexroad, Perry	
Calorimeter constant	2419.35					WI1411	Rexroad, Perry	
Sample Weight	0.5555		-			WI1411	Rexroad, Perry	
Tape Weight	Contra 1975	g				WI1411		
Temperature change							Rexroad, Perry	
	2.5348					WI1411	Rexroad, Perry	
Fuse Correction	16	cal				WI1411	Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid	16	cal ml	18420		18625	WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS	16	cal ml	18420		18625	WI1411	Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)	16 12 (c) 18542	cal ml BTU/lb	18420		18625	WI1411 WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity	16 12 (c) 18542 43.6	cal ml BTU/lb °API	18420		18625	WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature	16 12 (c) 18542 43.6 67	cal ml BTU/lb	18420		18625	W11411 W11411 W11411 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity	(c) 18542 43.6 67 (c) 42.997	cal ml BTU/lb °API	18420		18625	W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF	(c) 18542 43.6 67 (c) 42.997	cal ml BTU/lb °API °F	0.799			W1411 W1411 W1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density	43.6 (c) 18542 (c) 18542 (c) 42.997 (c) 42.997 (c) 811	cal ml BTU/lb °API °F				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF	16 12 (c) 18542 43.6 67 (c) 42.997 (c) 811 0.8109 0.003653	cal ml BTU/lb °API °F kg/m^3				WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1	(c) 18542 (d) 18	cal ml BTU/lb °API °F kg/m^3 sec				W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2	(c) 18542 (d) 18	cal ml BTU/lb ° API ° F kg/m^3 sec sec				W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time	(c) 18542 (d) 18	cal ml BTU/lb °F kg/m^3 sec sec sec	0.799		0.825	W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS	(c) 18542 (d) 18	cal ml BTU/lb °F kg/m^3 sec sec sec			0.825	W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	16 12 (c) 18542 43.6 67 (c) 42.997 (c) 811 0.8109 0.003653 362.06 362.11 (c) 362.09 (c) 1.32	cal ml BTU/lb °F kg/m^3 sec sec sec	0.799		0.825	W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	16 12 (c) 18542 43.6 67 (c) 42.997 (c) 42.997 (c) 811 0.8109 0.003653 362.06 362.06 (c) 1.32 (c) 1.32	cal ml BTU/lb °API °F kg/m^3 sec sec sec sec cst	0.799		0.825	W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	16 12 (c) 18542 43.6 67 (c) 42.997 (c) 42.997 (c) 811 0.8109 0.003653 362.06 362.06 (c) 1.32 (c) 1.32 0.003653	cal ml BTU/lb °API °F kg/m^3 sec sec sec sec cst sec	0.799	Image: Section of the sectio	0.825	W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	16 12 (c) 18542 43.6 67 (c) 42.997 (c) 42.997 (c) 811 0.8109 0.003653 362.06 362.06 (c) 1.32 (c) 1.32	cal ml BTU/lb °F kg/m^3 sec sec sec cst sec sec sec sec	0.799	Image: Section of the sectio	0.825	W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		Analysis:	Result Report FIMS Analys	sis (I			CMR 556827 Neal, Terry 01/04/2012 12:05 PN Page 1 of 1	
	P. Martin Martineza							
CMR Number	556827		Submission	n Date	e	01/04/2012 06:33 AM		
Status	Completed		Desired Date			01/09/2012		
Disposition	Info Only		Commit Date			01/09/2012		
Released By	Rexroad, Perry					01/04/2012 11:	20 AM	
Tieleased by	Hexides, Ferry		Completion Date			and the second second second	20 AM	
Labor Charge Number	7002368937-0050		Project / Ty	pe		Info Only		
SAP Project	EG-002166		SAP Work	Cent	er	1015-EEMAZZ	ML	
Sample Origin	T2							
Oil / Fuel Type	Jet A/Biofuel		Material Sp	ec		ASTM-D-1655		
Distribution List	Ciero, Robert Williams, Randy Culbertson, B		ertson, Brad Par	tterso	n, Michael			
0	N	-	O. b			No.1 Toront		
Customer	Neal, Terry		Submitted I	зу		Neal, Terry		
Phone	+1 480/592-7931		Phone			+1 480/592-79	31	
Department	BA60122		Department	t		BA60122		
Requesting Site	Phoenix							
Specimen: Jet A/Biofuel Property	Result	Units	LL	т	UL	SOP	Date: 01/04/2012 Analyst	
Test: A&B Coefficients								
A Coefficient	(c) 10.2955248		9.0000000		11.0000000		Rexroad, Perry	
B Coefficient	(c) 3.9245917		3.0000000		4.4000000	WI1414	Rexroad, Perry	
Test: LHV Calorimeter	Parr 1266		1			WI1411	Rexroad, Perry	
Calorimeter constant	2419.35			r - r		WI1411	Rexroad, Perry	
Sample Weight	0.5469	0	1			WI1411	Rexroad, Perry	
Tape Weight		g	-			WI1411	Rexroad, Perry	
Temperature change	2.5336					WI1411	Rexroad, Perry	
Fuse Correction		cal				WI1411	Rexroad, Perry	
Nitric Acid		ml	-			WI1411	Rexroad, Perry	
LHV-FIMS	(c) 18743	BTU/lb	18420		18800	WI1411	Rexroad, Perry	
Test: Specific Gravity (A)								
Observed API Gravity	49.8	°API				ASTM-D-1298	Rexroad, Perry	
Fuel Temperature		°F				ASTM-D-1298	Rexroad, Perry	
API Gravity @ 60 degF	(c) 49.008		-			ASTM-D-1298	Rexroad, Perry	
Density	A DESCRIPTION OF A DESC	kg/m^3	-			ASTM-D-1298	Rexroad, Perry	
Specific Gravity 60/60 degF Test: Viscosity @ 104F	0.7839		0.770		0.825	ASTM-D-1298	Rexroad, Perry	
Other tube constant	0.003939		1	T		WI1414	Rexroad, Perry	
Run #1	346.09	Sec				WI1414	Rexroad, Perry	
Run #2	346.01		1			WI1414	Rexroad, Perry	
Average Time	(c) 346.05					WI1414	Rexroad, Perry	
CS	(c) 1.36		1.00		1.50	WI1414	Rexroad, Perry	
Test: Viscosity @ 77F								
Other tube constant	0.003939					WI1414	Rexroad, Perry	
Run #1	434.38	Sec				WI1414	Rexroad, Perry	
	101 50	200				WI1414	Rexroad, Perry	
Run #2	434.50	386				and the second	and the second se	
Run #2 Average Time CS	434.50 (c) 434.44 (c) 1.71	Sec	1.30			Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry	

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis Uncontrolled in electro		Fuels)	CMR 556939 Neal, Terry 01/09/2012 9:42 AM Page 1 of 2	
CMR Number	556939		Submission Date				01/04/2012 12:36 PM		
Status	Completed		Desired Date				01/05/2012		
	and the second sec								
Disposition	Info Only		Commit Date				01/05/2012		
Released By Baker, Susar		(Completion Date				01/04/2012 07:11 PM		
		1	Project / Type				Info Only		
Labor Charge Number	7002368937-005	50							
SAP Project	EG-002166		SAP Work Center				1015-EEMAZZML		
TSCA Sample Origin	USA								
	personal and								
Sample Origin	T2		88380 BAD20						
Oil / Fuel Type	Jet A/Biofuel		Material Spec				547553		
Detailed Instructions	This is Straight Bio-fuel. Not a m		ix. Taken from SEVENTH truck be				afore off load.		
Distribution List	Ciero, Robert Will	ams, Randy Patterson,	Michael						
Customer	Neal, Terry		Submitted By				Neal, Terry		
Phone	+1 480/592-793		Phone				+1 480/592-7931		
	BA-60122	A	Department				BA-60122		
Department	of the local division in the local division		Department DA-00122						
Requesting Site	Phoenix								
Test Results									
Specimen: 1061428406								Date: 01/04/2012	
Property		Result	Units	LL	Т	UL	SOP	Analyst	
Test: A&B Coefficients			11	1.0	-		Terme and a		
A Coefficient		(c) 10.4548741		-			WI1414	Baker, Susan	
B Coefficient		(c) 3.9814940			_		WI1414	Baker, Susan	
Test: LHV Calorimeter		Parr 1266	1				WI1411	Baker, Susan	
Calorimeter constant		2419.3473		-			WI1411	Baker, Susan	
Sample Weight		0.5775	0	-			WI1411	Baker, Susan	
Tape Weight			g	-			WI1411	Baker, Susan	
Temperature change		2.7196	the West of the Second				WI1411	Baker, Susan	
Fuse Correction		Contrast dum	cal				WI1411	Baker, Susan	
Nitric Acid			ml				WI1411	Baker, Susan	
LHV-FIMS		(c) 18992	and the second se	-	-		WI1411	Baker, Susan	
	1	101 10002	ar i writer		-	-		1. Contraction of the second s	
Test: Specific Gravity (A	2								
Test: Specific Gravity (A Observed API Gravity)	56.6	°API				ASTM-D-1298	Baker, Susan	
Observed API Gravity)		°API °F					Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature		71	°API °F				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF		71 (c) 55.397	°F				ASTM-D-1298	Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		71 (c) 55.397					ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF		71 (c) 55.397 (c) 757	°F				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de		71 (c) 55.397 (c) 757	°F kg/m^3				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F		71 (c) 55.397 (c) 757 0.7571 VIS-2382	°F kg/m^3				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104		71 (c) 55.397 (c) 757 0.7571	°F kg/m^3 sec				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1		71 (c) 55.397 (c) 757 0.7571 VIS-2382 374.74	°F kg/m^3 sec sec				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2		71 (c) 55.397 (c) 757 0.7571 VIS-2382 374.74 374.76	°F kg/m^3 sec sec sec				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS		71 (c) 55.397 (c) 757 0.7571 VIS-2382 374.74 374.76 (c) 374.75	°F kg/m^3 sec sec sec				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time		71 (c) 55.397 (c) 757 0.7571 VIS-2382 374.74 374.76 (c) 374.75	°F kg/m^3 sec sec sec cst				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	
Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		71 (c) 55.397 (c) 757 0.7571 VIS-2382 374.74 374.76 (c) 374.75 (c) 1.37	°F kg/m^3 sec sec sec cst				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414	Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan Baker, Susan	

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Baker, Susan

WI1414

Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMF Oil/Fuel Analysis Uncontrolled in electro		ls (Phoenix)	CMR 556939 Neal, Terry 01/09/2012 9:42 AM Page 2 of 2
Average Time	(c) 472.27	Sec	WI1414	Baker, Susan

(c) 1.73 cst

CS

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Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034			nalysis: F	esult Report MS Analysi	is (Ph			CMR 55705 Ciero, Robe 01/05/2012 3:07 P Page 1 of
CMR Number	557050		-	Submission Date			01/05/2012 07:45 AM	
Status	Completed			Desired Date		01/09/2012		
Disposition	Info Only					01/09/2012		
ALCOND. NO. 1	A REAL PROPERTY AND A REAL			Commit Date			CONTRACTOR AND INCOME.	
Released By	Bautista, Karla		-	Completion			01/05/2012 02:	14 PM
Custom Id / Title	BioFuel/Jet A 50/50 Mix			Project / T	ype		Info Only	
Labor Charge Number	7002368937-0050							
SAP Project	EG-002166		SAP Work	Cente	er	1015-EEMAZZ	ML	
Sample Origin	T2							
Oil / Fuel Type	Jet A/Biofuel		-	Material Sp	Dec		ASTM-D-1655	
Detailed Instructions	This is a 50/50 blend of B	ioEr	uel and let			2 at 7:30 an	and the second se	
Distribution List	Neal, Terry Williams, Randy	-		An other states and states and			10/11/3/12.	
visitioution List	Neal, Terry Williams, Handy	Guit	ertson, brau	Eaton, Jason I	Patters	son, Mike		
Customer	Ciero, Robert			Submitted	By		Ciero, Robert	
Phone	+1 480/592-7938			Phone			+1 480/592-79	38
Department	BA-60122				+		BA-60122	
Requesting Site	Phoenix			Department			BA-60122	
inducating one	THOURA	_						
Specimen: let A/Biofuel								
Specimen: Jet A/Biofuel Property	Result		Units	LL	T	UL	SOP	Date: 01/05/201 Analyst
Property Test: A&B Coefficients		20	Units		т			Analyst
Property Test: A&B Coefficients A Coefficient	(c) 10.498473	-	Units	9.0000000	т	11.0000000	WI1414	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient		-	Units		Т		WI1414	Analyst
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV	(c) 10.498473	88	Units	9.0000000	T	11.0000000	WI1414	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter	(c) 10.498473 (c) 4.000438	38 36	Units	9.0000000	T	11.0000000	WI1414 WI1414	Analyst Bautista, Karla Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant	(c) 10.498473 (c) 4.000433 Parr 126	38 36 73		9.0000000	T	11.0000000	WI1414 WI1414 WI1411	Analyst Bautista, Karla Bautista, Karla Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight	(c) 10.498473 (c) 4.000433 Parr 126 2419.343	38 36 73	9	9.0000000	T	11.0000000	WI1414 WI1414 WI1411 WI1411	Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter Calorimeter constant Sample Weight Tape Weight	(c) 10.498473 (c) 4.000433 Parr 126 2419.343	38 36 73 20 0	9	9.0000000		11.0000000	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411	Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction	(c) 10.498473 (c) 4.000438 Part 126 2419.343 0.563 2.593	88 73 20 72 72	g g °C cal	9.0000000	T	11.0000000	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411	Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid	(c) 10.498473 (c) 4.000438 Parr 126 2419.343 0.563 2.593	88 66 73 20 9 72 15 12	g g °C cal ml	9.0000000	T	11.0000000 4.4000000	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411	Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS	(c) 10.498473 (c) 4.000438 Parr 126 2419.343 0.563 2.593 (c) 1872	88 66 73 20 9 72 15 12	g g °C cal ml	9.0000000		11.0000000 4.4000000	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411	Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)	(c) 10.498473 (c) 4.000438 Parr 126 2419.343 0.563 2.593 (c) 1873	38 36 73 20 0 72 15 12 12 12 12	g g °C cal ml BTU/Ib	9.0000000	T	11.0000000 4.4000000	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411	Analyst Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity	(c) 10.498473 (c) 4.000438 Parr 126 2419.343 0.563 2.593 (c) 1873 50	88 66 73 20 9 72 15 12 12 12 8	g g °C cal ml BTU/Ib °API	9.0000000	T	11.0000000 4.4000000	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 STM-D-1298	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature	(c) 10.498473 (c) 4.000438 Parr 126 2419.34 0.563 2.593 (c) 1873	38 36 73 20 0 72 15 0 72 12 12 12 12 8 1 28 1 28 1 28 1 28 1	g g °C cal ml BTU/Ib °API	9.0000000	T	11.0000000 4.4000000	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF	(c) 10.498473 (c) 4.000438 Parr 126 2419.34 0.563 2.593 (c) 1873 50 (c) 48.89 (c) 48.89	888 666 73 20 72 115 12 115 128 1 28 1 28 1 28 1 28 1 2	g g °C cal ml BTU//b °API °F	9.0000000		11.0000000 4.4000000	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 STM-D-1298	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density	(c) 10.498473 (c) 4.000438 Part 126 2419.343 0.563 2.593 (c) 1872 50 (c) 48.88 (c) 78	88 66 73 20 72 15 12 12 12 12 12 12 12 13 0 93 12 13 12 13 12 13 14 14 14 14 14 14 14 14 14 14 14 14 14	g g °C cal ml BTU/Ib °API	9.0000000		11.0000000 4.4000000 18800	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg	(c) 10.498473 (c) 4.000438 Part 126 2419.343 0.563 2.593 (c) 1872 50 (c) 48.88 (c) 78	88 66 73 20 72 15 12 12 12 12 12 12 12 13 0 93 12 13 12 13 12 13 14 14 14 14 14 14 14 14 14 14 14 14 14	g g °C cal ml BTU//b °API °F	9.0000000		11.0000000 4.4000000 18800	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Deserved API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F	(c) 10.498473 (c) 4.000438 Part 126 2419.343 0.563 2.593 (c) 1872 50 (c) 48.88 (c) 78	38 36 73 20 0 72 15 12 15 12 15 12 13 34 14 44	g g °C cal ml BTU//b °API °F	9.0000000		11.0000000 4.4000000 18800	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104	(c) 10.498473 (c) 4.000434 Parr 126 2419.343 0.563 2.593 (c) 1873 (c) 1873 500 (c) 48.85 (c) 48.85 (c) 48.85 (c) 78 gF 0.784	38 36 73 20 0 72 112 12 12 12 12 13 33 34 44 34	g 9 °C cal ml BTU/Ib °F kg/m^3	9.0000000		11.0000000 4.4000000 18800	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2	(c) 10.498473 (c) 4.000438 Parr 122 2419.343 0.563 2.593 (c) 1872 (c) 1872 (c) 1872 (c) 48.85 (c) 78 gF 0.78- VIS-238 340.1 340.1	88 66 73 20 0 72 15 0 72 15 0 72 15 0 72 15 0 12 13 84 14 84 18 5 5 5 5 5 5 5 5 5 5 5 5 5	g g °C cal ml BTU/Ib °F kg/m*3 sec sec	9.0000000		11.0000000 4.4000000 18800	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1414 WI1414 WI1414 WI1414	Analyst Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity @ 104F Tube number-104 Run #1 Run #1 Run #2 Average Time	(c) 10.498473 (c) 4.000438 Parr 122 2419.343 0.563 2.593 (c) 1872 (c) 1872 (c) 1872 (c) 1872 (c) 48.88 (c) 71 gF 0.784 VIS-233 340. 340. 340.	38 36 73 20 0 72 15 12 12 12 12 12 33 34 18 25 222	g g °C cal ml BTU/Ib °F kg/m*3 sec sec sec sec	9.0000000 3.0000000		11.0000000 4.4000000 18800 0.825	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1414 WI1414 WI1414 WI1414 WI1414	Analyst Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Tape Weight Tape Weight Tape Weight Test: Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS	(c) 10.498473 (c) 4.000438 Parr 122 2419.343 0.563 2.593 (c) 1872 (c) 1872 (c) 1872 (c) 48.85 (c) 78 gF 0.78- VIS-238 340.1 340.1	38 36 73 20 0 72 15 12 12 12 12 12 33 34 18 25 222	g g °C cal ml BTU/Ib °F kg/m*3 sec sec sec sec	9.0000000		11.0000000 4.4000000 18800 0.825	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1414 WI1414 WI1414 WI1414	Analyst Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Tape Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	(c) 10.498473 (c) 4.000438 Part 126 2419.343 0.563 2.593 (c) 1873 (c) 1873 (c) 48.88 (c) 78 (c) 78 (38 36 73 20 0 72 15 12 12 12 13 34 14 34 18 22 34 18 34 18 34	g g °C cal ml BTU/lb °F kg/m*3 sec sec sec sec	9.0000000 3.0000000		11.0000000 4.4000000 18800 0.825	WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1414 WI1414 WI1414 WI1414 WI1414	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Desred API Gravity @ 60 degF Density Specific Gravity @ 0046 Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	(c) 10.498473 (c) 4.000438 Parr 126 2419.343 0.563 (c) 1873 (c) 1873 (c) 48.85 (c) 78 (c) 1.5 (c) 340.3 (c) 1.5 (c) 1	38 36 73 20 0 72 15 0 12 12 12 12 13 34 14 34 18 22 34 34 34 34 33	g g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec cst	9.0000000 3.0000000		11.0000000 4.4000000 18800 0.825	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Analyst Analyst Bautista, Karla Bautista, Ka
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	(c) 10.498473 (c) 4.000438 Parr 126 2419.343 0.563 (c) 1873 (c) 1873 (c) 1873 (c) 48.85 (c) 78 (c) 1.3 (c) 340.1 (c) 340.1 (c) 1.3 (c) 340.2 (c) 1.3 (c) 1.	38 36 73 20 0 72 15 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 13 34 14 34 34 34 334 334 334 334 339 51	g g °C cal ml BTU/lb °F kg/m^3 sec sec sec cst sec	9.0000000 3.0000000		11.0000000 4.4000000 18800 0.825	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Analyst Bautista, Karla
Property Test: A&B Coefficients A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	(c) 10.498473 (c) 4.000438 Parr 126 2419.343 0.563 (c) 1873 (c) 1873 (c) 48.85 (c) 78 (c) 1.5 (c) 340.3 (c) 1.5 (c) 1	38 36 73 20 0 72 15 12 12 12 12 12 12 12 12 12 12 13 34 14 34 18 22 34 18 34 34 34 34 33 34 39 51 40	g g ° C cal ml BTU/lb ° API ° F kg/m^3 sec sec sec sec sec sec sec sec	9.0000000 3.0000000		11.0000000 4.4000000 18800 0.825	WI1414 WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Analyst Analyst Bautista, Karla Bautista, Ka

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Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034			Analysis:	Result Report FIMS Analysis			CMR 55769 Neal, Terr 01/11/2012 4:15 Pl Page 1 of
		Ground		crisic copy. roing rois			
CMR Number	557695		S	ubmission Date	01	/10/2012 11:13	AM
Status	and the second second second second			esired Date	1000	/13/2012	Com.
	Completed						
Disposition	Info Only		C	ommit Date	01	/13/2012	
Released By	Bautista, Karla		C	ompletion Date	01	/11/2012 04:13	PM
			P	roject / Type	Int	o Only	
abor Charge Number	7002368937-	0050					
SAP Project	EG-002166		S	AP Work Center	10	15-EEMAZZML	
Sample Origin	T5		_				
Dil / Fuel Type				starial Cases		STM-D-1655	
	Jet A	1210 00 110	and the second se	aterial Spec		51M-D-1655	
Detailed Instructions	a total of the second second	A CONTRACT OF A	ALC: NO DE LA COMPANY	ff load into tank 2			
Distribution List	Ciero, Robert	Williams, Randy	Culbertson, I	Brad Patterson, Mic	hael		
Customer	Neal, Terry		S	ubmitted By	Ne	al, Terry	
Phone	+1 480/592-7	7931		hone		480/592-7931	
Department	BA-60122			epartment			
Requesting Site	Phoenix			epannent	D/	A-60122	
Test Results							
Specimen: Jet A							Date: 01/11/201
Property		Result	Units	LL T	UL	SOP	Analyst
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A Coefficient			11 11	1			
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B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight		(c) 3.8051731 Parr 1266 2419.3473 0.5595	g			W11414 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight		(c) 3.8051731 Parr 1266 2419.3473 0.5595	g g			W11414 W11411 W11411 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction		(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16	g g °C cal			W11414 W11411 W11411 W11411 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid		(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12	g g °C cal ml	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS		(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16	g g °C cal ml		4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)		(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517	g g °C cal ml BTU/Ib	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity		(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 43.6	g g °C cal ml BTU/lb	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature		(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 43.6 70	g g °C cal ml BTU/Ib	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF		(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697	g g °C cal ml BTU/lb °API °F	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 812	g g °C cal ml BTU/lb	3,4000000	4.2000000	WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg	F	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697	g g °C cal ml BTU/lb °API °F	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F	F	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 812 0.8123	g g °C cal ml BTU/lb °API °F	3,4000000	4.2000000	WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104	F	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 42.697 (c) 812 0.8123 VIS-2384	g g °C cal ml BTU/lb °API °F kg/m^3	3,4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1	F	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 812 0.8123 VIS-2384 340.05	g g °C cal ml BTU/lb °F kg/m^3 sec	3,4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2	F	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 812 0.8123 VIS-2384 340.05 339.75	g g °C cal ml BTU/lb °API °F kg/m*3 sec sec	3,4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time	F	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 (c) 18517 (c) 812 0.8123 VIS-2384 340.05 339.75 (c) 339.90	g g °C cal mi BTU/lb °API °F kg/m^3 sec sec sec sec	3,4000000	4.2000000	WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1414 WI1414 WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS	F	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 812 0.8123 VIS-2384 340.05 339.75	g g °C cal mi BTU/lb °API °F kg/m^3 sec sec sec sec	3,4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	F	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 812 0.8123 VIS-2384 340.05 339.75 (c) 339.90 (c) 1.34	g g °C cal ml BTU/lb °API °F kg/m*3 sec sec sec sec sec cst	3,4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	- - <t< td=""><td>(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 812 0.8123 VIS-2384 340.05 339.75 (c) 339.90 (c) 1.34 0.003939</td><td>g g °C cal ml BTU/lb °API °F kg/m*3 sec sec sec cst</td><td>3,4000000</td><td>4.2000000</td><td>WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414</td><td>Bautista, Karla Bautista, Karla</td></t<>	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 812 0.8123 VIS-2384 340.05 339.75 (c) 339.90 (c) 1.34 0.003939	g g °C cal ml BTU/lb °API °F kg/m*3 sec sec sec cst	3,4000000	4.2000000	WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	- - - -	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 42.697 (c) 812 0.8123 VIS-2384 340.05 339.75 (c) 339.90 (c) 1.34 0.003939 424.99	g g °C cal ml BTU/lb °API °F kg/m*3 sec sec sec cst sec	3,4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414 W11414	Bautista, Karla Bautista, Karla
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	- - - - - <tr< td=""><td>(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 812 0.8123 VIS-2384 340.05 339.75 (c) 339.90 (c) 1.34 0.003939</td><td>g g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec cst sec sec sec</td><td>3,4000000</td><td>4.2000000</td><td>WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414</td><td>Bautista, Karla Bautista, Karla</td></tr<>	(c) 3.8051731 Parr 1266 2419.3473 0.5595 0 0 2.5485 16 12 (c) 18517 43.6 70 (c) 42.697 (c) 812 0.8123 VIS-2384 340.05 339.75 (c) 339.90 (c) 1.34 0.003939	g g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec cst sec sec sec	3,4000000	4.2000000	WI1414 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 WI1411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414 WI1414	Bautista, Karla

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3131 Airlane-Engineering Phoenix, AZ 85034		Analysis:	Result Report FIMS Analysis			CMR 55803 Neal, Ten 01/13/2012 11:08 A Page 1 of	
Fildellix, A2 63034	Uncontri	alled in electronic	c/hard copy. Venty versio	on in LIMS.		Fage For	
CMR Number	558038	9	ubmission Date	0	1/12/2012 10:45	AM	
	Carl State of State of State				1/16/2012 10.45	AM	
Status	Completed		Desired Date 0				
Disposition	Info Only Rexroad, Perry		ommit Date	01	1/16/2012		
Released By			ompletion Date	01	1/13/2012 07:46	AM	
		P	roject / Type	In	fo Only		
abor Charge Number	7002368937-0050						
SAP Project	The second s		AP Work Center	10	015-EEMAZZMI		
Sample Origin			Al Holk Conter			86	
	at closes.				OTH D 4055		
Dil / Fuel Type	Jet A	and the second sec	laterial Spec	A	STM-D-1655		
Detailed Instructions	Sample was taken from tru	ALC: NOT ON THE OWNER.	A DESCRIPTION OF A DESC				
Distribution List	Ciero, Robert Williams, Randy	Culbertson,	Brad Patterson, Micl	hael			
Customer	Neal, Terry	S	ubmitted By	N	eal, Terry		
Phone	+1 480/592-7931	P	hone	+	1 480/592-7931		
Department	BA-60122		epartment		A-60122		
Requesting Site	Phoenix		opaninent	U	DA-00122		
Specimen: Jet A Property	Result	Units	LL T	UL	SOP	Date: 01/13/201 Analyst	
	TIODUL	Grate					
Test: A&B Coefficients						rindyst	
Test: A&B Coefficients A Coefficient	(c) 10.3326430		9.1000000	10.9000000	1	Rexroad, Perry	
A Coefficient	(c) 10.3326430 (c) 3.9412133		9.1000000	10.9000000	WI1414		
A Coefficient B Coefficient				survey and an order of the balances	WI1414	Rexroad, Perry	
A Coefficient B Coefficient Test: LHV		3		survey and an order of the balances	WI1414	Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter	(c) 3.9412133 Parr 1266 2419.35	3		survey and an order of the balances	WI1414 WI1414	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant	(c) 3.9412133 Parr 1266 2419.35 0.5705	3 5 g		survey and an order of the balances	W11414 W11414 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight	(c) 3.9412133 Parr 1266 2419.35 0.5705	5 5 9 9 9		survey and an order of the balances	W11414 W11414 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change	(c) 3.9412133 Parr 1266 2419.35 0.5705 (2.598	5 5 9 9 9 1 °C		survey and an order of the balances	W11414 W11414 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction	(c) 3.9412133 Parr 1266 2419.35 0.5705 (0 2.5981 21	3 5 5 9 9 9 9 2 5 2 1 8 6 1 8 6 1 8 1 8 1 8 1 8 1 8 1 8 1 8		survey and an order of the balances	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid	(c) 3.9412133 Parr 1266 2419.33 0.5705 (2.5981 21 21	3 5 5 9 9 9 0 9 0 2 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS	(c) 3.9412133 Parr 1266 2419.33 0.5705 (2.5981 21 21	3 5 5 9 9 9 9 2 5 2 1 8 6 1 8 6 1 8 1 8 1 8 1 8 1 8 1 8 1 8		4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.5981 12 (c) 18504	3 5 5 9 9 9 9 0 9 1 0 2 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.5981 21 (c) 18504 42.4	3 5 5 9 9 9 0 9 0 0 0 0 0 0 0 0 0 0 0 0 0	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.5981 21 (c) 18504 42.4	3 5 5 9 9 0 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
	(c) 3.9412133 Parr 1266 2419.35 0.5705 (c) 2.5981 12 (c) 18504 42.4 65 (c) 41.907	3 5 5 9 9 0 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF	(c) 3.9412133 Parr 1266 2419.35 0.5705 (c) 2.5981 12 (c) 18504 42.4 65 (c) 41.907 (c) 816	3 5 5 6 9 9 9 9 9 9 9 9 9 1 9 7 1 1 9 7 7 7 8 8 8 9 7 7 7 8 8 9 7 9 9 9 9 9	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.598 22.598 (c) 18504 (c) 18504 (c) 18504 (c) 41.907 (c) 8160 (c) 8160	3 3 5 9 5 9 6 °C 1 °C 2 ml 4 BTU/lb 4 BTU/lb 5 °F 7 Kg/m^33	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.598 22.598 (c) 18504 (c) 18504 (c) 18504 (c) 41.907 (c) 8160 (c) 41.907 (c) 8160 (c) 8160	3 3 5 9 9 °C 1 °C 2 ml 4 BTU/lb 5 °F 7 Kg/m^3	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Density Specific Gravity @ 104F Other tube constant Run #1	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.5987 (c) 18504 (c) 18504 (c) 18504 (c) 41.907 (c) 816 0.8160 0.003935 338.50	3 5 6 5 7 6 8 8 9 9 9 9 9 9 9 9 9 9 9	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Density Specific Gravity 60/60 degF Density Other tube constant Run #1 Run #2	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.598 22.598 (c) 18504 (c) 18504 (c) 18504 (c) 41.907 (c) 8160 (c) 41.907 (c) 8160 (c) 8160	3 5 5 6 7 6 8 9 9 9 9 9 9 9 9 9 9 9 9 9	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.5981 21 (c) 18504 (c) 18504 (c) 41.907 (c) 816 - 0.8160 0.003938 338.50 338.51	3 5 5 6 7 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MI1414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.5981 (c) 18504 (c) 18504 (c) 18504 (c) 41.907 (c) 8166 0.8160 0.003939 338.50 338.51 (c) 338.51 (c) 338.51	3 5 5 6 7 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.5981 (c) 18504 (c) 18504 (c) 18504 (c) 41.907 (c) 8166 0.8160 0.003939 338.50 338.51 (c) 338.51 (c) 338.51	3	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.598 (c) 18504 (c) 18504 (c) 18504 (c) 41.907 (c) 41.907 (c) 41.907 (c) 8160 (c) 41.907 (c) 838.51 (c) 338.51 (c) 338.51 (c) 338.51 (c) 1.32 0.003938 425.11	3 3 4 8 6 7 8 9 10 10 10 10	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 M11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	
A Coefficient B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF	(c) 3.9412133 Parr 1266 2419.33 0.5705 (c) 2.598 (c) 18504 (c) 18504 (c) 18504 (c) 41.900 (c) 8166 0.003935 338.51 (c) 338.51 (c) 338.51 (c) 1.33 0.003935	3	3.4000000	4.2000000	W11414 W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry	

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3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis Uncontrolled in electro		Fuels			:)	CMR 55807/ Neal, Terry 01/13/2012 11:09 AM Page 1 of 2		
CMR Number	558070		Submission	Date			01/12/2012 0	01/12/2012 01:05 PM		
			Desired Date							
Status	Completed						01/13/2012			
Disposition	Info Only		Commit Dat	Sec			01/13/2012			
Released By	Rexroad, Perry		Completion Date				01/13/2012 08:32 AM			
			Project / Ty	pe			Info Only			
Labor Charge Number	7002368937-005	50								
SAP Project	EG-002166 USA		SAP Work	Center			1015-EEMAZ	ZML		
TSCA Sample Origin							1.			
Sample Origin	T2									
	Jet A/Biofuel		Matarial Co.				547553			
Oil / Fuel Type Detailed Instructions			Material Sp							
Distribution List		Bio-fuel. Not a mix.		Ninth t	писк	Detor	e on load.			
Distribution List	Ciero, Hobert Will	ams, Randy Patterson,	michaei							
Customer	Neal, Terry		Submitted E	RV			Neal, Terry			
	a function of the local division of the loca			-y			The second second second second	0.04		
Phone	+1 480/592-793	R	Phone					+1 480/592-7931		
Department	BA-60122		Department				BA-60122			
Requesting Site	Phoenix									
Specimen: FIMS Property	6	Result	Units	LL	Т	UL	SOP	Date: 01/13/2012 Analyst		
Test: A&B Coefficients										
	(c) 10 5090			1	1		-	Derest Deres		
A Coefficient		(c) 10.5090025				-	WI1414	Rexroad, Perry		
B Coefficient		(c) 10.5090025 (c) 3.9991590					WI1414 WI1414	Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV		(c) 3.9991590					WI1414	Rexroad, Perry		
B Coefficient Test: LHV Calorimeter		(c) 3.9991590 Parr 1266					WI1414	Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant		(c) 3.9991590 Parr 1266 2419.35	q				WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight		(c) 3.9991590 Parr 1266 2419.35 0.5720					W11414 W11411 W11411	Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant		(c) 3.9991590 Parr 1266 2419.35 0.5720	g				W11414 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767	g				W11414 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 20	g °C				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 20	g °C cal ml				W11414 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 2.070 12 (c) 18900	g °C cal ml BTU/lb				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 20 12 (c) 18900 55.4	g °C cal ml BTU/lb				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 20 12 (c) 18900 55.4 62	g °C cal ml BTU/lb				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 20 12 (c) 18900 55.4 62 (c) 55.102	g °C cal ml BTU/lb °API °F				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 20 12 (c) 18900 55.4 62 (c) 55.102 (c) 758	g °C cal ml BTU/lb				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 20 12 (c) 18900 55.4 62 (c) 55.102	g °C cal ml BTU/lb °API °F				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 20 12 (c) 18900 55.4 62 (c) 55.102 (c) 758 0.7583 0.003653	g °C cal mi BTU/lb °API °F kg/m*3				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 W11414	Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 2.6767 (c) 18900 (c) 18900 55.4 62 (c) 55.102 (c) 758 0.7583 0.003653 381.10	g °C cal mi BTU/lb °F kg/m^3 sec				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414	Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 def Test: Viscosity @ 104F Other tube constant Run #1 Run #2		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 220 (c) 18900 (c) 18900 55.4 62 (c) 55.102 (c) 758 0.7583 0.003653 381.10 381.12	g °C cal ml BTU/lb °F kg/m^3 sec sec				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414	Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 220 (c) 18900 (c) 18900 (c) 758 0.7583 0.003653 381.10 381.12 (c) 381.11	g °C cal ml BTU/lb °API °F kg/m*3 sec sec sec sec				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414	Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 220 (c) 18900 (c) 18900 55.4 62 (c) 55.102 (c) 758 0.7583 0.003653 381.10 381.12	g °C cal ml BTU/lb °API °F kg/m*3 sec sec sec sec				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414	Rexroad, Perry		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 20 12 (c) 18900 55.4 62 (c) 55.102 (c) 758 0.7583 0.003653 381.10 381.12 (c) 381.11 (c) 1.39	g °C cal ml BTU/lb °API °F kg/m*3 sec sec sec sec				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 M11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414	Rexroad, Perry Rexrod		
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS		(c) 3.9991590 Parr 1266 2419.35 0.5720 0 2.6767 220 (c) 18900 (c) 18900 (c) 758 0.7583 0.003653 381.10 381.12 (c) 381.11	g °C cal ml BTU//b °F kg/m^3 sec sec sec cst				W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414	Rexroad, Perry		

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Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMF Oil/Fuel Analysis Uncontrolled in electro		Fuels			:)	CMR 55810 Neal, Terr 01/13/2012 11:10 AM Page 1 of		
CMR Number	558101		Submission	Date			01/12/2012 02	01/12/2012 02:34 PM		
Status			Desired Date							
	Completed			-			01/13/2012			
Disposition	Info Only		Commit Dat	Sec			01/13/2012			
Released By	Rexroad, Perry		Completion Date				01/13/2012 08:36 AM			
			Project / Ty	pe			Info Only			
abor Charge Number	7002368937-00	50								
SAP Project	EG-002166		SAP Work	Center			1015-EEMAZ	ZML		
TSCA Sample Origin	USA									
Sample Origin	T1									
	Jet A/Biofuel		Material Ca				547553			
Oil / Fuel Type Detailed Instructions			Material Sp							
	And and a second s	Bio-fuel. Not a mix.	and the second second	Eighth	truc	k beto	ore off load.			
Distribution List	Ciero, Robert Wil	liams, Randy Patterson,	Michael							
Pustomor	Nool Terms		Cubmitted F	2.4			Neel Terre			
Customer	Neal, Terry		Submitted E	by .			Neal, Terry			
Phone	+1 480/592-793	1	Phone				+1 480/592-7	931		
Department	BA-60122		Department				BA-60122	BA-60122		
Requesting Site	Phoenix									
Specimen: FIMS Property Test: A&B Coefficients	á	Result	Units	LL	T	UL	SOP	Date: 01/13/2012 Analyst		
A Coefficient		(c) 10.5090025		1		-	W1414	Rexroad, Perry		
B Coefficient		(c) 3.9991590		-	-		W11414	Rexroad, Perry		
Test: LHV		(c) 0.0001000		-				rickroud, ronry		
Calorimeter		1000 PT 1000 P								
		Parr 1266					W1411	Rexroad, Perry		
Calorimeter constant		Parr 1266 2419.25		1			WI1411 WI1411	Rexroad, Perry Rexroad, Perry		
Calorimeter constant Sample Weight		2419.25	q					Rexroad, Perry Rexroad, Perry Rexroad, Perry		
Sample Weight		2419.25 0.5701					W11411	Rexroad, Perry		
Calorimeter constant Sample Weight Tape Weight Temperature change		2419.25 0.5701	g				WI1411 WI1411	Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change		2419.25 0.5701 0 2.6704	g				W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction		2419.25 0.5701 0 2.6704 22	g °C				W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid		2419.25 0.5701 0 2.6704 22	g °C cal ml				W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)	2419.25 0.5701 0 2.6704 22 12 (c) 18909	g °C cal ml BTU/lb				W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity) 	2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5	g °C cal ml BTU/lb				W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature) 	2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63	g °C cal ml BTU/lb				W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF) 	2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63 (c) 55.102	g °C cal ml BTU/lb °API °F				W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63 (c) 55.102 (c) 758	g °C cal ml BTU/lb				W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F		2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63 (c) 55.102 (c) 758 0.7583	g °C cal mi BTU/lb °API °F kg/m^3				W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant		2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63 (c) 55.102 (c) 758 0.7583 0.003676	g °C cal mi BTU/lb °API °F kg/m*3				W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414	Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1		2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63 (c) 55.102 (c) 758 0.7583 0.003676 378.62	g °C cal mi BTU/lb °F kg/m^3 sec				W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414	Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2		2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63 (c) 55.102 (c) 758 0.7583 0.003676 378.62 378.59	g °C cal mi BTU/lb °F kg/m^3 sec sec				W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time		2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63 (c) 55.102 (c) 758 0.7583 0.003676 378.62 378.59 (c) 378.61	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec				W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroa		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS		2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63 (c) 55.102 (c) 758 0.7583 0.003676 378.62 378.59	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec				W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63 (c) 55.102 (c) 758 0.7583 0.003676 378.62 378.59 (c) 378.61 (c) 1.39	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec				W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry		
Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS		2419.25 0.5701 0 2.6704 22 12 (c) 18909 55.5 63 (c) 55.102 (c) 758 0.7583 0.003676 378.62 378.59 (c) 378.61	g °C cal ml BTU//b °API °F kg/m^3 sec sec sec cst				W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry		

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Attn: Terry Cooper Honeyweli International Inc. 3131 Airiane-Engineering Phoenix, AZ 85034	CMF Oil/Fuel Analysis Uncentrolled in electro	CMR 558101 Neal, Terry 01/13/2012 11:10 AM Page 2 of 2		
Average Time	(c) 478.68	Sec	W11414	Rexroad, Perry
CS	(c) 1.76	ret	W11414	Rexroad, Perry

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: FIMS Analysis (Phoenix) Uncontrolled in electronic/hard copy. Verify version in LIMS.						CMR 558104 Neal, Terry 01/13/2012 11:53 AM Page 1 of
				10101			
CMR Number	558104		Submission Date			01/12/2012 03:00 PM	
Status	Completed		Desired Date			01/16/2012	
Disposition	Info Only		Commit Date			01/16/2012	
Released By	Rexroad, Perry		Completion Date			01/13/2012 11:	50 AM
	How out, Forty		Project / Ty		8	Info Only	
Labor Charge Number	7002368937-0050		Floject / Ty	he		Into Only	
						1015 551477	
SAP Project	And an and the second second second			1015-EEMAZZ	ML		
Sample Origin	T1						
Oil / Fuel Type	Jet A/Biofuel	1	Material Sp	ec		556827	
Distribution List	Ciero, Robert Williams, F	Randy Culb	ertson, Brad Pat	terso	n, Michael		
Oustamar	Neel Tom	-	Outprolition of F			Neel Trees	
Customer	Neal, Terry		Submitted E	ру		Neal, Terry	
Phone	+1 480/592-7931		Phone			+1 480/592-79	31
Department	BA-60122		Department			BA60122	
Requesting Site	Phoenix						
Specimen: Jet A/Biofuel Property	Result	Units	LL	т	UL	SOP	Date: 01/13/2012 Analyst
Test: A&B Coefficients	(-) 10 2061049		9.0000000		11.0000000	WILLANA	Poweroad Power
A Coefficient B Coefficient	(c) 10.3961948 (c) 3.9622173	-	3.0000000		4.4000000		Rexroad, Perry Rexroad, Perry
Test: LHV	(0) 3.3022173		3.0000000	Se	4.4000000	WITHT	nexidad, reny
Calorimeter	Parr 1266		1			WI1411	Rexroad, Perry
Calorimeter constant	2419.35			1 T		WI1411	Rexroad, Perry
Sample Weight	0.5616	0	-	-		WI1411	Rexroad, Perry
Tape Weight		g				WI1411	Rexroad, Perry
Temperature change	2.5910					WI1411	Rexroad, Perry
Fuse Correction		cal				WI1411	Rexroad, Perry
Nitric Acid	12	ml				WI1411	Rexroad, Perry
LHV-FIMS	(c) 18708	BTU/lb	18420		18800	WI1411	Rexroad, Perry
Test: Specific Gravity (A)							
Observed API Gravity	48.4	°API				ASTM-D-1298	Rexroad, Perry
Fuel Temperature		°F				ASTM-D-1298	Rexroad, Perry
API Gravity @ 60 degF	(c) 48.205					ASTM-D-1298	Rexroad, Perry
Density	and the second se	kg/m^3				ASTM-D-1298	Rexroad, Perry
Specific Gravity 60/60 degF Test: Viscosity @ 104F	0.7874		0.770		0.825	ASTM-D-1298	Rexroad, Perry
Other tube constant	0.003653					WI1414	Rexroad, Perry
Run #1	368.19	Sec	-	-		WI1414	Rexroad, Perry
Run #2	368.24		-			WI1414	Rexroad, Perry
Average Time	(c) 368.22					WI1414	Rexroad, Perry
CS	(c) 1.35		1.00		1.50	WI1414	Rexroad, Perry
Test: Viscosity @ 77F							
	0.003653					WI1414	Rexroad, Perry
Other tube constant						WI1414	Rexroad, Perry
Other tube constant Run #1	466.56	Sec					There is a start of the start o
	466.56 466.77					WI1414	Rexroad, Perry
Run #1		sec					

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: FIMS Analysis (Phoenix) Uncentrolled in electronic/hard copy. Vently version in LIMS.					CMR 558168 Neal, Terry 01/13/2012 11:07 AM Page 1 of 1		
CMR Number	558168		Submission Date			01/13/2012 06:05 AM		
Status	Completed		Desired Date			01/16/2012		
Disposition	Info Only		Commit Dat			01/16/2012		
	Rexroad, Perry						50 AM	
Released By	Hexroad, Perry		Completion			01/13/2012 10:	58 AM	
			Project / Type			Info Only		
Labor Charge Number	7002368937-0050	_						
SAP Project	EG-002166		SAP Work (Center		1015-EEMAZZ	ML	
Sample Origin	T2	T2						
Oil / Fuel Type	Jet A/Biofuel		Material Spe	BC		556827		
Distribution List	Ciero, Robert Williams, F	Randy Culb			lichael			
Customer	Neal, Terry		Submitted E	3v		Neal, Terry		
Phone	+1 480/592-7931		Phone	-		+1 480/592-79	31	
							,,	
Department	BA-60122		Department			BA60122		
Requesting Site	Phoenix							
Property Test: A&B Coefficients	Result	Units	LL	Т	UL	SOP	Analyst	
Test: A&B Coefficients								
A Coefficient	(c) 10.5561674		9.0000000		11.0000000		Rexroad, Perry	
B Coefficient	(c) 4.0193355		3.0000000	17	4.4000000	WI1414	Rexroad, Perry	
Test: LHV	Den (000		1				Descend Desce	
Calorimeter Calorimeter constant	Parr 1266 2419.35	-				Wi1411 Wi1411	Rexroad, Perry	
The second s	0.5733					WI1411	Rexroad, Perry Rexroad, Perry	
Sample Weight Tape Weight		g				WI1411	Rexroad, Perry	
Temperature change	2.6463					WI1411	Rexroad, Perry	
Fuse Correction		cal	-	-		WI1411	Rexroad, Perry	
Nitric Acid		ml	-	-		WI1411	Rexroad, Perry	
LHV-FIMS	(c) 18717	and the second second	18420	2	18800	WI1411	Rexroad, Perry	
Test: Specific Gravity (A)								
Observed API Gravity	48.8	° API				ASTM-D-1298	Rexroad, Perry	
Fuel Temperature	61	°F				ASTM-D-1298	Rexroad, Perry	
API Gravity @ 60 degF	(c) 48.709					ASTM-D-1298	Rexroad, Perry	
Density	(c) 785	kg/m^3				ASTM-D-1298	Rexroad, Perry	
Density			0.770		0.825	ASTM-D-1298	Rexroad, Perry	
Specific Gravity 60/60 degF	0.7852		A					
Specific Gravity 60/60 degF Test: Viscosity @ 104F			1					
Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104	E896					WI1414	Rexroad, Perry	
Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1	E896 658.95					WI1414	Rexroad, Perry	
Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2	E896 658.95 658.99	Sec				Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry	
Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time	E896 658.95 658.99 (c) 658.99	Sec Sec	1.00		1.50	WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS	E896 658.95 658.99	Sec Sec	1.00		1.50	Wi1414 Wi1414	Rexroad, Perry Rexroad, Perry	
Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	E896 658.95 658.99 (c) 658.97 (c) 1.36	Sec Sec	1.00		1.50	W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS	E896 658.95 658.99 (c) 658.97 (c) 1.36 E896	sec sec cst	1.00		1.50	WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Tube number-77 Run #1	E896 658.95 658.99 (c) 658.97 (c) 1.36 E896 830.38	sec cst sec	1.00		1.50	W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Specific Gravity 60/60 degF Test: Viscosity @ 104F Tube number-104 Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Tube number-77	E896 658.95 658.99 (c) 658.97 (c) 1.36 E896	sec cst sec sec	1.00		1.50	W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	

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Honeyweli International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		Oil/Fuel Analysis		Fuels)	Cubertson, Brad 01/18/2012 10:39 AM Page 1 of 2
	550540			2-1-			01/10/0010	00-10 414
CMR Number	558518		Submission I				01/16/2012	08:12 AM
Status	Completed		esired Date				01/27/2012	
Disposition	Info Only		commit Date				01/27/2012	
Released By	Bautista, Karla		Completion E				01/18/2012	10:36 AM
Custom Id / Title	HEFA SPK Tanke		Project / Type Material Charge Number				Info Only	
Labor Charge Number	7002368937-0050						7002368937	
SAP Project	EG-002166	S	AP Work C	enter			1015-EEMA	ZZML
FSCA Sample Origin	USA							
Sample Origin	Delivery Tanker							
Oil / Fuel Type	HEFA SPK	N	laterial Spe	0			D7566 Table	e 1 and A1.1
Operating Time	n/a	E	ingine Seria	#			n/a	
Detailed Instructions	HEFA SPK to Sar viscosity (D445), 1 (D3242), aromatic mercaptan sulfur ((D3241), existent an accredited outs (D2887) at OP lab halogens (D7359),	/D7566 specification n Tan. Run as mar flash point, freeze g s (D1319 or D6379) (D3227), smoke poi gum (D381, report side laboratory (reco oratory. Also chec and trace metals (ny analysis i point (D2386), low temp int (D1322), washed and ommend Dis k hydrocarb (ICP, prefer	in-hous i), and viscosi unwas cie Ser ion cor UOP 3	distil ity (D r strip shed), vices	possi lation 445 a corro , and l). Ple	ble - including spe (D86). Other prop t -20C), sulfur (D5 sion (D130), them MSEP (D3948) m ase also run simu	mal stability at 325C ay need to be sent to
Distribution List	Please use sampl Wiliams, Randy	es from CMR 5581	01 for analy	ses.				
Distribution List	willarits, narioy							
Customer	Culbertson, Brad	s	ubmitted By	r			Culbertson,	Brad
Phone	+1 602/231-2423		hone				+1 602/231-	
Department	BA-60035		epartment				BA60035	
Requesting Site	Phoenix		oparation				211 00000	
Test Results								
Specimen: 1061432518								Date: 01/16/2012
Property	65 E	Result	Units	LL	T	UL	SOP	Analyst
Test: A&B Coefficients								
A Coefficient		(c) 10.5588793		-	1		WI1414	Bautista, Karla
		(c) 4 0153196	1		-	-	WI1414	Bautista Karla

(c) 4.0153196 **B** Coefficient WI1414 Bautista, Karla Test: Anti-Icing Additive DIEGMME 0 % v/v WI1412 Bautista, Karla Test: Specific Gravity (A) Observed API Gravity 56.1 °API ASTM-D-1298 Bautista, Karla

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Attn: Terry Cooper Honeyweli International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Oil/Fuel Analysis Uncontrolled in electron	CMR 558518 Culbertson, Brad 01/18/2012 10:39 AM Page 2 of 2		
Fuel Temperature		°F	ASTM-D-1298	Bautista, Karla
API Gravity @ 60 degF	(c) 55.003		ASTM-D-1298	Bautista, Karla
Density	(c) 759	kg/m^3	ASTM-D-1298	Bautista, Karla
Specific Gravity 60/60 degF	0.7587		ASTM-D-1298	Bautista, Karla
Test: Viscosity @ 104F				
Tube number-104	VIS-2383		WI1414	Bautista, Karla
Run #1	383.65	Sec	WI1414	Bautista, Karla
Run #2	383.47	Sec	WI1414	Bautista, Karla
Average Time	(c) 383.56	Sec	WI1414	Bautista, Karla
CS	(c) 1.41	cst	WI1414	Bautista, Karla
Test: Viscosity @ 77F				
Other tube constant	0.003676		WI1414	Bautista, Karla
Run #1	486.47	Sec	WI1414	Bautista, Karla
Run #2	486.58	Sec	WI1414	Bautista, Karla
Average Time	(c) 486.53	Sec	WI1414	Bautista, Karla
CS	(c) 1.79	cst	WI1414	Bautista, Karla

Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		CMR Result Report Analysis: Oils and Fuels (Phoeni: Iled in electronic/hard copy. Verify version in LIMS.	CMR 55852 Cubertson, Bra 01/24/2012 8:29 Al Page 1 of
CMR Number	558520	Submission Date	01/16/2012 08:13 AM
Status	Completed	Desired Date	01/27/2012
Disposition	Info Only	Commit Date	01/27/2012
Released By	Bautista, Karla	Completion Date	01/23/2012 03:50 PM
Custom Id / Title	HEFA SPK Tanker 9	Project / Type	Info Only
Labor Charge Number	7002368937-0050	Material Charge Number	7002368937-0180
SAP Project	EG-002166	SAP Work Center	1015-EEMAZZML
TSCA Sample Origin	USA		
Sample Origin	Delivery Tanker		
Oil / Fuel Type	HEFA SPK	Material Spec	D7566 Table 1 and A1.1
Operating Time	n/a	Engine Serial #	n/a
	Flash Point (F) Distillation Specific Gravity Anti-ice Additive Aromatics Freeze Point Smoke Point		
Detailed Instructions		ecification analysis (less OP analysis). Sample from 9th tanker (Tanker 9)
		n Tan. Run only analyses that can be I5), flash point, freeze point (D2386), a n (D86).	performed in-house - including specific
Distribution List	gravity, LHV, viscosity (D44 point (D1322), and distillation	n Tan. Run only analyses that can be I5), flash point, freeze point (D2386), a n (D86).	performed in-house - including specific
Distribution List	gravity, LHV, viscosity (D44 point (D1322), and distillation Please use samples from C	n Tan. Run only analyses that can be I5), flash point, freeze point (D2386), a n (D86).	performed in-house - including specific
	gravity, LHV, viscosity (D44 point (D1322), and distillation Please use samples from C	n Tan. Run only analyses that can be I5), flash point, freeze point (D2386), a n (D86).	performed in-house - including specific
Distribution List Customer Phone	gravity, LHV, viscosity (D44 point (D1322), and distillation Please use samples from C Williams, Randy	n Tan. Run only analyses that can be I5), flash point, freeze point (D2386), a n (D86). MR 558070 for analyses.	performed in-house - including specific aromatics (D1319 or D6379), smoke
Customer	gravity, LHV, viscosity (D44 point (D1322), and distillation Please use samples from C Williams, Randy Culbertson, Brad	n Tan. Run only analyses that can be (5), flash point, freeze point (D2386), a n (D86). MR 558070 for analyses. Submitted By	performed in-house - including specific aromatics (D1319 or D6379), smoke Culbertson, Brad

Teat	Desults	
rest	Results	

Specimen: 1061432523						Date: 01/23/201
Property	Result	Units	LL T	UL	SOP	Analyst
Test: A&B Coefficients						
A Coefficient	(c) 10.5588793		I II		WI1414	Bautista, Karla
B Coefficient	(c) 4.0153196				WI1414	Bautista, Karla
Test: Anti-Icing Additive						
DIEGMME	0	% v/v			WI1412	Bautista, Karla
Test: Distillation						
Initial B.P.	300	°F			ASTM-D-86	Bautista, Karla
5% Distilled	320	°F			ASTM-D-86	Bautista, Karla
10% Distilled	330	°F			ASTM-D-86	Bautista, Karla
20% Distilled	350	°F			ASTM-D-86	Bautista, Karla
30% Distilled	374	°F		-	ASTM-D-86	Bautista, Karla
40% Distilled	400	°F			ASTM-D-86	Bautista, Karla
50% Distilled	424	°F		1	ASTM-D-86	Bautista, Karla

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3131 Airlane-Engineering Phoenix, AZ 85034	Oil/Fuel Analysis: Oils and Fuels Uncontrolled in electronic/hard copy. Verify			01/24/2012 8:29 Page 2 c
60% Distilled	450	°E	ASTM-D-86	Bautista, Karla
70% Distilled	468		ASTM-D-86	Bautista, Karla
80% Distilled	484		ASTM-D-86	Bautista, Karla
90% Distilled	500	and the second se	ASTM-D-86	Bautista, Karla
95% Distilled	510	and the second se	ASTM-D-86	Bautista, Karla
End Point	526		ASTM-D-86	Bautista, Karla
% Distilled	98.0		ASTM-D-86	Bautista, Karla
% Residue	1.2		ASTM-D-86	Bautista, Karla
% Loss	(c) 0.8	and the second se	ASTM-D-86	Bautista, Karla
Test: Flash Point - c.c.	(0) 0.8	70	ASTM-D-00	Dautista, Nalia
Flash Point	103	°F	ASTM-D-56	Bautista, Karla
Barometric Pressure			ASTM-D-56	Bautista, Karla
Corrected Flash Point	29.002	and the second se	ASTM-D-56	Bautista, Karla
Corrected Flash Point Test: Freeze Point	(c) 104		MO1W-D-96	Dauista, Naria
			ACTH D OCCO	Deutiete Marte
Freeze Point	-61.6		ASTM-D-2386	Bautista, Karla
Test: LHV	Bar 1000		and a second	
Calorimeter	Parr 1266		WI1411	Rexroad, Perr
Calorimeter constant	2414.60		WI1411	Rexroad, Perr
Sample Weight	0.5690		WI1411	Rexroad, Perr
Tape Weight		9	WI1411	Rexroad, Perr
Temperature change	2.6622		WI1411	Rexroad, Perr
Fuse Correction		cal	WI1411	Rexroad, Perr
Nitric Acid		ml	WI1411	Rexroad, Perr
LHV-FIMS	(c) 18896	BTU/Ib	WI1411	Rexroad, Perr
Test: Smoke Point-1 Reference Standard 1			- 28 - 218	22
Toluene	5	%	ASTM-D-1322	Bautista, Karla
Iso-Octane	95	%	ASTM-D-1322	Bautista, Karla
Result 1	36	mm	ASTM-D-1322	Bautista, Karla
Result 2	36	mm	ASTM-D-1322	Bautista, Karla
Result 3	36	mm	ASTM-D-1322	Bautista, Karla
Result Avg	(c) 36	mm	ASTM-D-1322	Bautista, Karla
Expected Value	35.4	mm	ASTM-D-1322	Bautista, Karla
Test: Smoke Point-2 Reference Standard 2				
Toluene	0	%	ASTM-D-1322	Bautista, Karla
Iso-Octane	100	%	ASTM-D-1322	Bautista, Karla
Result 1	43	mm	ASTM-D-1322	Bautista, Karla
Result 2	42	mm	ASTM-D-1322	Bautista, Karla
Result 3	43	mm	ASTM-D-1322	Bautista, Karla
Result Avg	(c) 43	mm	ASTM-D-1322	Bautista, Karla
Expected Value	42.8	mm	ASTM-D-1322	Bautista, Karla
Test: Specific Gravity (A)				
Observed API Gravity	56.1	°API	ASTM-D-1298	Bautista, Karla
Fuel Temperature	69	°F	ASTM-D-1298	Bautista, Karla
API Gravity @ 60 degF	(c) 55.102		ASTM-D-1298	Bautista, Karla
Density	(c) 758	kg/m^3	ASTM-D-1298	Bautista, Karla
Specific Gravity 60/60 degF	0.7583		ASTM-D-1298	Bautista, Karla
Test: Text Results				
Text Result	(see below)		WI1416	Bautista, Karla 01/20/2012
No detectable volume of aromatic conten	t.		101101 - 10	
Aromatics % volume = 0%				
Test: Text Results (2)				
Taxt Bacult	(see below)		Wilegen	Bautista, Karla

Horse twell-convention of the convention of the sector of

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	CMR Result Report Oil/Fuel Analysis: Oils and Fuels Uncontrolled in electronic/hard copy. Verity ve)	CMR 558520 Culbertson, Brad 01/24/2012 8:29 AM Page 3 of 4
rext nesul	(see nerve)	i i	UDCOINT	01/23/2012
Smoke Point =				
50 mm 50 mm 50 mm Corrected average = 49.5 mm Results are estimate only due	to limitation of standards at 42.8 mm maximum.			
Test: Viscosity @ 104F				
Tube number-104	VIS-2382		WI1414	Bautista, Karla
Bun #1	386.05	Sec	WI1414	Bautista, Karla
Run #2	386.20	Sec	WI1414	Bautista, Karla
Average Time	(c) 386.13	Sec	WI1414	Bautista, Karla
CS	(c) 1.41	cst	WI1414	Bautista, Karla
Test: Viscosity @ 77F				
Other tube constant	0.003653		WI1414	Bautista, Karla
Run #1	489.76	Sec	WI1414	Bautista, Karla
Run #2	489.82	Sec	WI1414	Bautista, Karla
Average Time	(c) 489.79	Sec	WI1414	Bautista, Karla
CS	(c) 1.79	cst	WI1414	Bautista, Karla
Test: Water Content (ppm)				
Run #1	20.17	ppm	ASTM-E-1064	Bautista, Karla
Run #2	19.59	ppm	ASTM-E-1064	Bautista, Karla
Water Content	(c) 19.88	ppm	ASTM-E-1064	Bautista, Karla
Water Content Standard	This sample was checked against a 50 ppm QC standard		ASTM-E-1064	

Distillation Test for Specimen 1061432523

Oil and Fuel CMR #	558520
Material	HEFA SPK
Material Specification	D7566 Table 1 and A1.1
Test Method	ASTM-D-86

	Material S	pec Limits
	Minimum	Maximum
0		

Percent Distilled	98.0	
Percent Residue	1.2	
Percent Loss	0.8	

Percent	Temperature	Material S	pec Limits
Distilled	(°F)	Minimum	Maximum
0%	300		
5%	320		
10%	330		
20%	350		
30%	374		
40%	400		
50%	424		
60%	450		
70%	468		
80%	484		
90%	500		
95%	510		
100%	526		

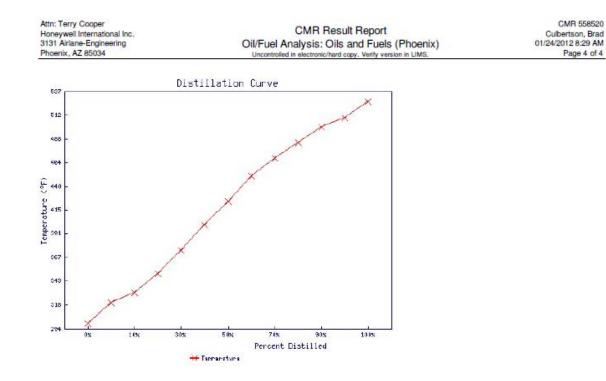
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CMR 558520

Page 4 of 4



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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		C Oil/Fuel Analy Uncontrolled in el		nd Fuels				CMR 55891 Neal, Terr 01/20/2012 1:34 PP Page 1 of	
				28 - 520 					
CMR Number	558918		Submissi	on Date			01/18/2012 05:	19 AM	
Status	Completed		Desired D				01/20/2012		
		-							
Disposition	Info Only		Commit E	14. State 1			01/23/2012		
Released By	Rexroad, Per	ny	Completio	on Date			01/20/2012 12:	01 PM	
			Project /	Туре			Info Only		
abor Charge Number	7002368937-	0050							
SAP Project	EG-002166		SAP Wor	k Center			1015-EEMAZZ	ML	
TSCA Sample Origin	USA							0403	
Sample Origin	T2								
	Contract of Contract of Contract						E 47550		
Oil / Fuel Type	Jet A/Biofuel		Material S				547553		
Detailed Instructions	and the second sec	ght Bio-fuel. Not a mi	and the second se	m Tenth tr	uck t	pefore	off load.		
Distribution List	Ciero, Robert	Williams, Randy Patters	on, Michael						
	1								
Customer	Neal, Terry		Submittee	d By			Neal, Terry		
Phone	+1 480/592-7	931	Phone				+1 480/592-793	31	
Department	BA-60122		Departme	int			BA-60122		
Requesting Site	Phoenix								
Specimen: FIMS Property		Result	Units	LL	т	UL	SOP	Date: 01/20/2012 Analyst	
Test: A&B Coefficients									
A Coefficient		(c) 10.6590670					WI1414	Rexroad, Perry	
B Coefficient		(c) 4.0577716					WI1414	Rexroad, Perry	
Test: LHV									
Calorimeter		Parr 1266			_		WI1411	Rexroad, Perry	
Calorimeter constant		2414.60		-			WI1411	Rexroad, Perry	
Sample Weight		0.5556					WI1411	Rexroad, Perry	
Tape Weight		2.6157	g				WI1411 WI1411	Rexroad, Perry Rexroad, Perry	
Temperature change Fuse Correction			cal				WI1411	Rexroad, Perry	
Nitric Acid			ml				WI1411	Rexroad, Perry	
LHV-FIMS		(c) 18951		18400			WI1411	Rexroad, Perry	
				10400					
		(c) 10951	BTOND	10400					
Test: Specific Gravity (A)			° API	10400			ASTM-D-1298	Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity		56.1		18400			ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature		56.1	°API	18400				and the second	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF		56.1 69 (c) 55.102	°API	18400			ASTM-D-1298	Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density		56.1 69 (c) 55.102	°API °F	18400			ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg		56.1 69 (c) 55.102 (c) 758	°API °F	10400			ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Other tube constant		56.1 69 (c) 55.102 (c) 758 0.7583 0.003676	° API ° F kg/m^3				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1		56.1 69 (c) 55.102 (c) 758 0.7583 0.003676 367.04	° API ° F kg/m^3 sec				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Other tube constant Run #1 Run #2		56.1 69 (c) 55.102 (c) 758 0.7583 0.003676 367.04 367.19	°API °F kg/m^3 sec sec				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time		56.1 69 (c) 55.102 (c) 758 0.7583 0.003676 367.04 367.04 367.19 (c) 367.12	°API °F kg/m^3 sec sec sec				ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS		56.1 69 (c) 55.102 (c) 758 0.7583 0.003676 367.04 367.19	°API °F kg/m^3 sec sec sec	1.2		1.5	ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 de Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F		56.1 69 (c) 55.102 (c) 758 0.7583 0.003676 367.04 367.19 (c) 367.12 (c) 1.35	°API °F kg/m^3 sec sec sec cst			1.5	ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	
Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 deg		56.1 69 (c) 55.102 (c) 758 0.7583 0.003676 367.04 367.04 367.19 (c) 367.12	° API ° F kg/m^3 sec sec sec cst			1.5	ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 WI1414 WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry	

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	C Oil/Fuel Analy Uncontrolled in el	CMR 558918 Neal, Terry 01/20/2012 1:34 PM Page 2 of 2				
Average Time	(c) 465.14	Sec			WI1414	Rexroad, Perry
CS	(c) 1.71	cst	1.65	1.85	WI1414	Rexroad, Perry

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Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034			Analysis: I	Result Report FIMS Analysis hard copy. Verity vers			CMR 55893 Neal, Ten 01/20/2012 1:35 P Page 1 of
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CMR Number	558935		Sul	mission Date	0	1/18/2012 06:48	AM
	and the second se					the second second	AW
Status	Completed			sired Date	i.	1/23/2012	
Disposition	Info Only		Cor	nmit Date	0	1/23/2012	
Released By	Rexroad, Perry		Cor	mpletion Date	0	1/20/2012 11:33	AM
			Pro	ject / Type	In	fo Only	
abor Charge Number	7002368937-0050						
SAP Project	EG-002166		SA	P Work Center	10	015-EEMAZZML	L
Sample Origin	T5		- 0702				69
Dil / Fuel Type	Jet A		-	torial Case		STM-D-1655	
Detailed Instructions	A REAL PROPERTY AND A REAL		100 C	terial Spec	1	STM-D-1655	
	Sample was taken from	-	ALC: NOT	A CONTRACT OF A CONTRACT			
Distribution List	Ciero, Robert Williams, Ran	dy C	Culbertson, Br	ad Patterson, Mic	hael		
Customer	Neal, Terry		Sul	omitted By	N	eal, Terry	
Phone	+1 480/592-7931		Ph	one	+	1 480/592-7931	
Department	BA-60122		Der	partment	В	A-60122	
Requesting Site	Phoenix						
Test: A&B Coefficients	nesuit		Units		UL	301	Analyst
Property	Result		Units	LL T	UL	SOP	Analyst
A Coefficient	(c) 10.23104	69		9,1000000	10.0000000	1404.41.4	
							Reyroad Perry
	the second se	and the second s		3,4000000	10.9000000 4.2000000	and the second se	Rexroad, Perry Rexroad, Perry
B Coefficient	(c) 3.90322	and the second s		in the second	The second	and the second se	
B Coefficient Test: LHV	the second se	88		in the second	The second	and the second se	
B Coefficient Test: LHV Calorimeter	(c) 3.90322	66		in the second	The second	WI1414	Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant	(c) 3.90322 Parr 12	66 60	g	in the second	The second	WI1414 WI1411 WI1411 WI1411	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight	(c) 3.90322 Parr 12 2414	66 60		in the second	The second	WI1414 WI1411 WI1411	Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change	(c) 3.90322 Parr 12 2414	66 60 88 0 58	g °C	in the second	The second	W11414 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction	(c) 3.90322 Parr 12 2414 0.56	66 60 88 0 58 19	g °C cal	in the second	The second	W11414 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid	(c) 3.90322 Parr 12 2414 0.56 2.55	66 60 88 0 58 19 12	g °C cal ml	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS	(c) 3.90322 Parr 12 2414 0.56 2.55	66 60 88 0 58 19 12	g °C cal	in the second	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A)	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185	66 60 68 0 58 19 12 11	g °C cal ml BTU/lb	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185	88 66 60 88 0 58 19 12 11 3.1	g °C cal ml BTU/lb °API	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185	888 66 60 888 0 558 19 12 511 3.1 70	g °C cal ml BTU/lb °API	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 M11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185 (c) 185 (c) 42.2	888 66 60 888 0 558 19 12 611 3.1 70 805	g °C cal ml BTU/lb °API °F	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185 (c) 185 (c) 42.2 (c) 82	888 66 60 888 0 558 19 12 511 3.1 70 505 615	g °C cal ml BTU/lb °API	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 M11411 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185 (c) 185 (c) 42.2 (c) 82	888 66 60 888 0 558 19 12 511 3.1 70 505 615	g °C cal ml BTU/lb °API °F	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185 (c) 185 (c) 42.2 (c) 82	888 666 60 888 0 558 19 12 511 3.1 70 505 515 46	g °C cal ml BTU/lb °API °F	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Dbserved API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Dest: Viscosity @ 104F Other tube constant Run #1	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185 (c) 185 (c) 42.2 (c) 8 (c) 8	888 666 60 888 0 558 19 12 611 3.1 70 05 53 46 53 43	g °C cal ml BTU//b °API °F kg/m^3 sec	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Density Specific Gravity @ 104F Other tube constant Run #1 Run #2	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185 (c) 185 (c) 42.2 (c) 8 0.81 0.0036 366 366	888 666 60 888 0 558 119 12 611 3.1 70 805 115 46 53 43 51	g °C cal ml BTU//b °API °F kg/m^3 sec sec sec	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185 (c) 185 (c) 42.2 (c) 85 0.81 0.0036 366 366 (c) 366	888 66 60 888 0 558 19 12 11 11 3.1 70 005 115 46 53 43 51 47	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS	(c) 3.90322 Parr 12 2414 0.56 2.55 (c) 185 (c) 185 (c) 42.2 (c) 8 0.81 0.0036 366 366	888 66 60 888 0 558 19 12 11 13 11 3.1 70 005 115 46 53 43 51 47	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 MSTM-D-1298 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Bun #1 Run #2 Average Time CS Test: Viscosity @ 77F	(c) 3.90322 Part 12 2414 0.56 2.55 (c) 185 (c) 185 (c) 42.2 (c) 185 (c) 185 (c	888 66 60 888 0 558 19 12 111 3.1 70 055 115 46 53 43 51 47 34 34	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec sec	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 STM-D-1298 M11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Dbserved API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	(c) 3.90322 Part 12 2414 0.56 2.55 (c) 185 (c) 185 (c) 42.2 (c) 185 (c) 185 (c	888 66 60 60 888 0 958 19 12 11 70 05 115 46 53 43 51 47 34 53	g °C cal ml BTU/lb °API °F kg/m^3 sec sec sec cst	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Tape Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density Specific Gravity 60/60 degF Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	(c) 3.90322 Part 12 2414 0.56 2.55 (c) 185 (c)	88 66 60 88 0 58 19 12 111 3.1 70 505 115 446 553 443 551 447 334 53 18 53	g °C cal ml BTU//b °F kg/m^3 sec sec sec cst sec cst	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 M11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry
B Coefficient Test: LHV Calorimeter Calorimeter constant Sample Weight Temperature change Fuse Correction Nitric Acid LHV-FIMS Test: Specific Gravity (A) Observed API Gravity Fuel Temperature API Gravity @ 60 degF Density	(c) 3.90322 Part 12 2414 0.56 2.55 (c) 185 (c)	88 66 60 88 0 58 19 12 311 70 005 115 446 553 443 51 47 334 53 18 24	g °C cal ml BTU//b °F kg/m^3 sec sec sec cst sec sec cst	3.4000000	4.2000000	W11414 W11411 W11411 W11411 W11411 W11411 W11411 W11411 W11411 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 ASTM-D-1298 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry

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3131 Airlane-Engineering Phoenix, AZ 85034		CMR Result Report el Analysis: Oils and Fuels trolled in electronic/hard copy. Verity ven					CMR 55898 Culbertson, Bra 02/01/2012 8:46 AM Page 1 of
		10.00 B					
CMR Number	558982	Submission Date			01/18	/2012 10:0	MAG
Status	Completed	Desired Date				/2012	
Disposition	Info Only	Commit Date				/2012	
Released By	Bautista, Karla	Completion Date			Concession in the	/2012 06:14	4 PM
Custom Id / Title	HEFA SPK Tanker 7	Project / Type			Info (
abor Charge Number	7002368937-0050	Material Charge Nur	nber		And in case of	368937-018	0
SAP Project	EG-002166	SAP Work Center				EEMAZZN	
ISCA Sample Origin	USA						-
Sample Origin	Delivery Tanker						
Dil / Fuel Type	HEFA SPK	Material Spec			D756	6 Table 1 a	nd A1.1
Operating Time	n/a	Engine Serial #			n/a		
ests Required	Water Content (ppm)						
	Low Temp Viscosity Freeze Point Smoke Point						
Detailed Instructions	Eull ASTM D1655/D7566	pecification analysis required	Samp	e from	7th ta	nker (Tank	er 7) delivering
	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1318 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory, and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous	allon epoxy lined can from CM	se as pos distillatio ty (D445 strip con hed), and rices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D242	incluc), Oth (D130 P (D39 Iso ru 25 and	ding specifie ar properties fur (D5453), thermal s 948) may ne n simulated d D5291), n	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation itrogen (D4629),
	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1319 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga	tun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM	se as pos distillatio ty (D445 strip con hed), and rices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D242	incluc), Oth (D130 P (D39 Iso ru 25 and	ding specifie ar properties fur (D5453), thermal s 948) may ne n simulated d D5291), n	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation itrogen (D4629),
Distribution List	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1318 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory, and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous	Aun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses.	se as pos distillatio ty (D445 strip con hed), and rices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D242	includ), Oth (D130 P (D39 Iso ru 25 and nalyse	ding specific er properties fur (D5453), thermal s 948) may no n simulated d D5291), n es and send	c gravity, LHV, s such as acidity or D2622), ttability at 325C eed to be sent to d distillation itrogen (D4629), can to OP lab
Distribution List Customer	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad	Aun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses.	se as pos distillatio ty (D445 strip con hed), and rices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D242	includ). Oth (D130 P (D39 Iso ru 25 and halyse Culbe	ding specific ar properties fur (D5453 i), thermal s 948) may no n simulated d D5291), n as and send artson, Brac	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation litrogen (D4629), l can to OP lab
Distribution List Customer Phone	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad +1 602/231-2423	Aun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses.	se as pos distillatio ty (D445 strip con hed), and rices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D242	includ (D130 P (D39 Iso ru 25 and halyse +1 60	ding specific ar properties fur (D5453 i), thermal s 948) may no n simulated d D5291), n es and send ertson, Brac 92/231-2423	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation litrogen (D4629), l can to OP lab
Distribution List Customer Phone Department	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad +1 602/231-2423 BA-60035	Aun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses.	se as pos distillatio ty (D445 strip con hed), and rices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D242	includ). Oth (D130 P (D39 Iso ru 25 and halyse Culbe	ding specific ar properties fur (D5453 i), thermal s 948) may no n simulated d D5291), n es and send ertson, Brac 92/231-2423	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation itrogen (D4629), l can to OP lab
Distribution List Customer Phone Department	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad +1 602/231-2423	Aun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses.	se as pos distillatio ty (D445 strip con hed), and rices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D242	includ (D130 P (D39 Iso ru 25 and halyse +1 60	ding specific ar properties fur (D5453 i), thermal s 948) may no n simulated d D5291), n es and send ertson, Brac 92/231-2423	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation itrogen (D4629), l can to OP lab
Distribution List Customer Phone Department Requesting Site	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad +1 602/231-2423 BA-60035	Aun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses.	se as pos distillatio ty (D445 strip con hed), and rices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D242	includ (D130 P (D39 Iso ru 25 and halyse +1 60	ding specific ar properties fur (D5453 i), thermal s 948) may no n simulated d D5291), n es and send ertson, Brac 92/231-2423	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation itrogen (D4629), l can to OP lab
Distribution List Customer Phone Department Requesting Site	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad +1 602/231-2423 BA-60035	Aun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses.	se as pos distillatio ty (D445 strip con hed), and rices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D242	includ (D130 P (D39 Iso ru 25 and halyse +1 60	ding specific ar properties fur (D5453 i), thermal s 948) may no n simulated d D5291), n es and send ertson, Brac 92/231-2423	c gravity, LHV, s such as acidity or D2622), stability at 325C ed to be sent to d distillation itrogen (D4629), I can to OP lab
Distribution List Customer Phone Department Requesting Site Test Results Specimen: 1061433789 Property	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad +1 602/231-2423 BA-60035 Phoenix	Aun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses.	se as pos distillatio ty (D445 strip con hed), and rices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D24) 9 for ar	includ). Otho (D1300) (D300) (D330) (D350) (D3	ding specific ar properties fur (D5453 i), thermal s 948) may no n simulated d D5291), n es and send ertson, Brac 92/231-2423	c gravity, LHV, s such as acidity or D2622), stability at 325C ed to be sent to d distillation itrogen (D4629), I can to OP lab
Distribution List Customer Phone Department Requesting Site Test Results Specimen: 1061433789 Property Test: A&B Coefficients	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad +1 602/231-2423 BA-60035 Phoenix	Aun as many analyses in-hous nt, freeze point (D2386), and i 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses. Submitted By Phone Department	se as pos distillatio ty (D445 strip con hed), and vices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D24) 9 for ar	includ). Otho (D1300) (D300) (D330) (D350) (D3	fing specific er properties fur (D5453)), thermal s J48) may ne en simulated d D5291), n es and send ertson, Brac 12/231-2423 20035	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation itrogen (D4629), can to OP lab d d d d d d d d d d d d d d d d d d d
Distribution List Customer Phone Department Requesting Site Fest Results Specimen: 1061433789 Property Test: A&B Coefficients A Coefficient	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad +1 602/231-2423 BA-60035 Phoenix	Aun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixle Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses. Submitted By Phone Department Result (c) 10.5561674	se as pos distillatio ty (D445 strip con hed), and vices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D24) 9 for ar	includ). Otho (D1300) (D300) (D330) (D350) (D3	ding specific er properties fur (D5453)), thermal s 948) may né en simulated d D5291), n es and send ertson, Brace 92/231-2423 50035 SOP WI1414	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation itrogen (D4629), l can to OP lab d d d Date: 01/31/201 Analyst Bautista, Karla
Distribution List Customer Phone Department Requesting Site Test Results Specimen: 1061433789 Property Test: A&B Coefficients A Coefficient B Coefficient	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad +1 602/231-2423 BA-60035 Phoenix	Aun as many analyses in-hous nt, freeze point (D2386), and i 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). allon epoxy lined can from CM e analyses. Submitted By Phone Department	se as pos distillatio ty (D445 strip con hed), and vices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D24) 9 for ar	includ). Otho (D1300) (D300) (D330) (D350) (D3	fing specific er properties fur (D5453)), thermal s J48) may ne en simulated d D5291), n es and send ertson, Brac 12/231-2423 20035	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation itrogen (D4629), can to OP lab d d d d d d d d d d d d d d d d d d d
Detailed Instructions Distribution List Customer Phone Department Requesting Site Test Results Specimen: 1061433789 Property Test: A&B Coefficients A Coefficient B Coefficient Test: Anti-Icing Additive DiEGMME	HEFA SPK to San Tan. F viscosity (D445), flash poi (D3242), aromatics (D1315 mercaptan sulfur (D3227), (D3241), existent gum (D3 an accredited outside labo (D2887) at OP laboratory. and trace metals (ICP, pre Please use sample in 1-ga when finished with in-hous Williams, Randy Culbertson, Brad +1 602/231-2423 BA-60035 Phoenix	Aun as many analyses in-hous nt, freeze point (D2386), and 9 or D6379), low temp viscosi smoke point (D1322), copper 81, report washed and unwas ratory (recommend Dixie Sen Also check hydrocarbon con fer UOP 389). Allon epoxy lined can from CM e analyses. Submitted By Phone Department (c) 10.5561674 (c) 4.0193355	se as pos distillatio ty (D445 strip con hed), and vices). P centratio	ssible - n (D86) at -200 rosion d MSEF lease a n (D24) 9 for ar	includ). Otho (D1300) (D300) (D330) (D350) (D3	ding specific er properties fur (D5453)), thermal s 948) may né en simulated d D5291), n es and send ertson, Brace 92/231-2423 50035 SOP WI1414	c gravity, LHV, s such as acidity or D2622), stability at 325C eed to be sent to d distillation itrogen (D4629), can to OP lab d d d d d d d d d d d d d d d d d d d

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Attn: Terry Cooper Honeywell International Inc.	CMR Result Report			CMR 5589 Culbertson, Br
1131 Airlane-Engineering	Oil/Fuel Analysis: Oils and Fuels			02/01/2012 8:46 /
Phoenix, AZ 85034	Uncontrolled in electronic/hard copy. Verify ver	rsion in LIMS.		Page 2 o
Initial B.P.	302	°F	ASTM-D-86	Bautista, Karla
5% Distilled	320	۰F	ASTM-D-86	Bautista, Karla
10% Distilled	330	°F	ASTM-D-86	Bautista, Karla
20% Distilled	348	°F	ASTM-D-86	Bautista, Karla
30% Distilled	370	°F	ASTM-D-86	Bautista, Karla
40% Distilled	392	°F	ASTM-D-86	Bautista, Karla
50% Distilled	416	°F	ASTM-D-86	Bautista, Karla
60% Distilled	438	°F	ASTM-D-86	Bautista, Karla
70% Distilled	458	°F	ASTM-D-86	Bautista, Karla
80% Distilled	476	°F	ASTM-D-86	Bautista, Karla
90% Distilled	494	°F	ASTM-D-86	Bautista, Karla
95% Distilled	504	°E	ASTM-D-86	Bautista, Karla
End Point	522	°E	ASTM-D-86	Bautista, Karla
% Distilled	99.0		ASTM-D-86	Bautista, Karla
% Residue	0.9	the second se	ASTM-D-86	Bautista, Karla
% Loss	(c) 0.1	a sinter a second se	ASTM-D-86	Bautista, Karla
Test: Flash Point - c.c.	(0) 0.1	the state of the s		
Flash Point	104	۰F	ASTM-D-56	Bautista, Karla
Barometric Pressure	29.003	and the second se	ASTM-D-56	Bautista, Karla
Corrected Flash Point	(c) 105		ASTM-D-56	Bautista, Karla
Test: Freeze Point	(c) 105		No The D-00	Dautista, Naria
Freeze Point	-65.2	°F	ASTM-D-2386	Bautista, Karla
	-05.2	· · F	ASTN-0-2300	Daulota, Nalia
Test: LHV Calorimeter	Parr 1266		WI1411	Rexroad, Perr
	2414.60			and the second s
Calorimeter constant			WI1411	Rexroad, Perr
Sample Weight	0.5739		WI1411 WI1411	Rexroad, Perr
Tape Weight		g	and all the set of the	Rexroad, Perr
Temperature change		°C	WI1411	Rexroad, Perr
Fuse Correction		cal	WI1411	Rexroad, Perr
Nitric Acid		mi	WI1411	Rexroad, Perr
LHV-FIMS	(c) 18928	BIU/ID	WI1411	Rexroad, Perr
Test: Smoke Point-1 Reference Stand				D. C. M. L
Toluene		%	ASTM-D-1322	Bautista, Karla
Iso-Octane	95		ASTM-D-1322	Bautista, Karla
Result 1		mm	ASTM-D-1322	Bautista, Karla
Result 2		mm	ASTM-D-1322	Bautista, Karla
Result 3		mm	ASTM-D-1322	Bautista, Karla
Result Avg	(c) 36		ASTM-D-1322	Bautista, Karla
Expected Value	35.4	mm	ASTM-D-1322	Bautista, Karla
Test: Smoke Point-2 Reference Stand			10 000 miles	10
Toluene		%	ASTM-D-1322	Bautista, Karla
Iso-Octane	100	%	ASTM-D-1322	Bautista, Karla
Result 1	43	mm	ASTM-D-1322	Bautista, Karla
Result 2		mm	ASTM-D-1322	Bautista, Karla
Result 3	43	mm	ASTM-D-1322	Bautista, Karla
Result Avg	(c) 43		ASTM-D-1322	Bautista, Karla
Expected Value	42.8	mm	ASTM-D-1322	Bautista, Karla
Test: Specific Gravity (A)				
Observed API Gravity	56.2	°API	ASTM-D-1298	Bautista, Karla
Fuel Temperature		°F	ASTM-D-1298	Bautista, Karla
API Gravity @ 60 degF	(c) 55.299		ASTM-D-1298	Bautista, Karla
Density		kg/m^3	ASTM-D-1298	Bautista, Karla
Specific Gravity 60/60 degF	0.7575		ASTM-D-1298	Bautista, Karla
Test: Text Results	0.7575			a second second second for

used, duplicated, or disclosed for any purpose without prior writen permission of Honeywell. All Rights Reserved. This technical data may be controlled by the U.S. Department of State International Traffic in Arms Regulations (ITAR) 22 CFR 120-130 or the U.S. Department of Commerce Export Administration Regulations (EAR), and may not be exported outside of the United States or shared with foreign persons, as defined by the U.S. Department of State ITAR, without the appropriate prior authorizations from the U.S. Government. Diversion contrary to U.S. export laws and regulations is prohibited.



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Text Result	(see below)	WI1416	Bautista, Karla 01/20/2012
No detectable volume of aromatic	content.		011202012
Aromatics % volume = 0%			
Test: Text Results (2) Text Result	(see below)	WI6360	Bautista, Karla
Smoke Point =			01/23/2012
	tation of standards at 42.8 mm maximum.		
Test: Text Results (3) Text Result	(see below)	per CMR inst.	Bautista, Karla
D381 Gum content, mg/100 mL Unwashed = < 1 Washed = < 1 D5453 Sulfur, mg/kg = 3.3 D3227 Mercaptan sulfur, mass % = < 0.000 D445 Kinematic viscosity, - 20 °C, mm2/s D1840 Napthalenes, volume % = 0.01 D3242 Acid number, mg KOH/g = 0.002 D130 Corrosion copper strip (2 h/100 °C) = D3241 Thermal oxidation stability, (2.5 h/322 Heater tube deposit rating, visual = 1 Filter pressure drop, mm Hg = 0 D3948 Water separation, MSEP-A rating = 8 D2887 Boiling range distribution, % recovere	= 4.913 = 1b 5 °C) .0		



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	concentrated in concentrated copy. Yonly Yo	and all the second		
30 180.0				
40 198.5				
50 215.5				
50 231.0				
70 250.0				
30 262.5				
0 273.0				
95 279.0				
-BP 295.0				
04629				
Nitrogen, mg/kg = 0.4				
D5291				
Carbon and Hydrogen, mass % = 99	9.9			
	(12)			
JOP389 Trace Metals, mg/kg				
Aluminum < 0.02				
Calcium < 0.02				
Cobalt < 0.02				
Chromium < 0.02				
Copper < 0.02				
ron < 0.02				
Potassium < 0.02				
Magnesium < 0.02				
Manganese < 0.02				
Molybdenum < 0.02				
Sodium < 0.02				
vickel < 0.02				
Phosphorus < 0.02				
_ead < 0.02				
Strontium < 0.02				
Palladium < 0.02				
Platinum < 0.02				
Tin < 0.02				
Titanium < 0.02				
Vanadium < 0.02				
Zinc < 0.02				
Analyses were completed by Divie	Services. Please see attached results.			
Fest: Viscosity @ 104F	Services. Thease see all denou results.			
Tube number-104	VIS-2384		WI1414	Bautista, Karla
Run #1	345.47	Sec	WI1414	Bautista, Karla
Run #2	345.63	Sec	WI1414	Bautista, Karla
Average Time	(c) 345.55	Sec	WI1414	Bautista, Karla
os	(c) 1.36	cst	WI1414	Bautista, Karla
Test: Viscosity @ 77F				
Other tube constant	0.003939		WI1414	Bautista, Karla
Run #1	436.74	Sec	WI1414	Bautista, Karla
	436.69		WI1414	1 m
			WI1414	Bautista, Karla
Run #2	(c) 436.72	Sec	AA11-01-0	Bautista, Karla Bautista, Karla
Run #2 Average Time CS			WI1414	and the state of the local division of the state of the s
Run #2 Average Time CS	(c) 436.72		and the second se	Bautista, Karla
Run #2 Average Time	(c) 436.72	cst	and the second se	Bautista, Karla



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Water Content					(c)	19.89 p	pm	Î Î	É	ASTM-	E-1064	Bautista, Karla
Water Content Standard	This sample v	was checked	against a	50 ppr	n QC sta	andard				ASTM-	E-1064	Bautista, Karla
Specimen: ~Attached Resu	lts										C	Date: 01/31/2012
Property	Result		Units	1	LT	UL		S	OP			Analyst
Test: Attached Results												1.1.1.1
Attached Result	₩ 55	58982.pdf					per C	MR ins	st.		Bautista, 01/31/20	Contraction of the second s
Specimen: ~Text Results											C	Date: 01/20/2012
Property	Result	Units	LL	Т	UL		SO	Р			An	alyst
Test: Text Results												
Text Result	(see below)					per CN	IR inst.			Cooper, 01/20/20		
PO 6500152174 placed	and sampel shipped	to Dixie p	er reque	st								

Distillation Test for Specimen 1061433789

Oil and Fuel CMR # Material	558982 HEFA SPK
Material Specification	D7566 Table 1 and A1.1
Test Method	ASTM-D-86

		Material Spec Limits		
		Minimum	Maximum	
Percent Distilled	99.0			
Percent Residue	0.9			
Percent Loss	0.1			

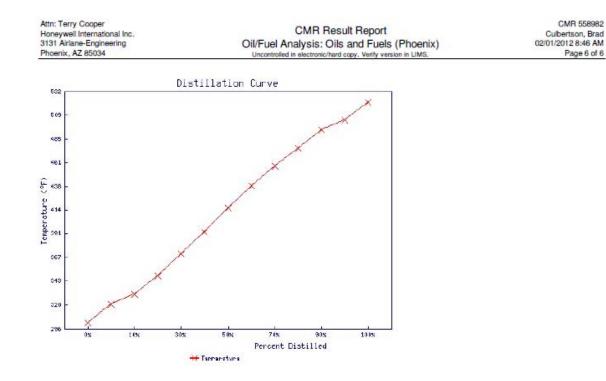
Percent	Temperature (°F)	Material S	pec Limits
Distilled		Minimum	Maximum
0%	302		
5%	320		
10%	330		
20%	348		
30%	370		
40%	392		
50%	416		
60%	438		
70%	458		
80%	476		
90%	494		
95%	504		
100%	522		

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Page 6 of 6



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CERTIFICATE OF ANALYSIS

Date: January 31, 2012

Number: 140249

Client: Honeywell International Inc. 3131 Airlane-Engineering Phoenix, Arizona 85034

Attention: Terry Cooper

Sample: HEFA SPK, submitted 23 Jan 12 Origin: Truck 7 Marks: CMR 558982

D381	Gum content, mg/100 mL	
	Unwashed	< 1
	Washed	< 1
D5453	Sulfur, mg/kg	3.3
D3227	Mercaptan sulfur, mass %	< 0.0001
D445	Kinematic viscosity, - 20 °C, mm ² /s	4.913
D1840	Napthalenes, volume %	0.01
D3242	Acid number, mg KOH/g	0.002
D130	Corrosion copper strip (2 h/100 °C)	1b
D3241	Thermal oxidation stability, (2.5 h/325 °C)	
	Heater tube deposit rating, visual	1
	Filter pressure drop, mm Hg	0.0
D3948	Water separation, MSEP-A rating	86
D2887	Boiling range distribution, % recovered, °C	
	IBP	115.0
	5	132.5
	10	142.0
	20	163.0
	30	180.0
	40	198.5
	50	215.5
	60	231.0
	70	250.0
	80	262.5
	90	273.0
	95	279.0
	FBP	295.0
D4629	Nitrogen, mg/kg	0.4
D5291	Carbon and Hydrogen, mass %	99.9

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Certificate of Analysis 140249 January 31, 2012 Page 2

UOP389	Trace Metals, mg/kg	
	Aluminum	< 0.02
	Calcium	< 0.02
	Cobalt	< 0.02
	Chromium	< 0.02
	Copper	< 0.02
	Iron	< 0.02
	Potassium	< 0.02
	Magnesium	< 0.02
	Manganese	< 0.02
	Molybdenum	< 0.02
	Sodium	< 0.02
	Nickel	< 0.02
	Phosphorus	< 0.02
	Lead	< 0.02
	Strontium	< 0.02
	Palladium	< 0.02
	Platinum	< 0.02
	Tin	< 0.02
	Titanium	< 0.02
	Vanadium	< 0.02
	Zinc	< 0.02

Dixie Services Incorporated,

achany Alland Zachary Holland

ZBH/cb

Email Recipients: richard.gadberry@honeywell.com; terry.cooper@honeywell.com steven.sosa@honeywell.com

Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034		Analysis	Result Repo FIMS Analy	sis (CMR 559008 Neal, Terry 01/20/2012 1:37 PN Page 1 of 1
-			25.265				
CMR Number	559008		Submission	Date	A	01/18/2012 12:	25 PM
			Desired Dat		0	STATISTICS OF STREET,	2011
Status	Completed	100				01/23/2012	
Disposition	Info Only		Commit Dat	te		01/23/2012	
Released By	Rexroad, Perry		Completion	Date	•	01/20/2012 12:	30 PM
			Project / Ty	pe		Info Only	
Labor Charge Number	7002368937-0050						
SAP Project	EG-002166		SAP Work	Cent	or	1015-EEMAZZ	MI
	T2		SAI WOIK	Cerne		TOTO-LEMAZZ	
Sample Origin	and the second se	_					
Oil / Fuel Type	Jet A/Biofuel		Material Sp			ASTM-D-1655	
Distribution List	Ciero, Robert Williams, F	Randy Culb	ertson, Brad Pat	terso	n, Michael		
Customer	Neal, Terry		Submitted E	sy		Neal, Terry	
Phone	+1 480/592-7931		Phone			+1 480/592-79	31
Department	BA60122		Department			BA60122	
Requesting Site	Phoenix						
Test Results Specimen: Jet A/Biofuel Property	Result	Units	LL	т	UL	SOP	Date: 01/20/2012 Analyst
Test: A&B Coefficients	ricourt	Orinta			02	001	rinayar
A Coefficient	(c) 10.3961948		9.0000000		11.0000000	WI1414	Rexroad, Perry
B Coefficient	(c) 3.9622173		3.0000000		4.4000000	an end aller data to	Rexroad, Perry
Test: LHV	1 111 - 12		1			And the second se	
Calorimeter	Parr 1266					WI1411	Rexroad, Perry
Calorimeter constant	2414.60					WI1411	Rexroad, Perry
Sample Weight	0.5481	g				WI1411	Rexroad, Perry
Tape Weight	0	g				WI1411	Rexroad, Perry
Temperature change	2.5397	°C				WI1411	Rexroad, Perry
Fuse Correction	22	cal				WI1411	Rexroad, Perry
Nitric Acid	12	ml				WI1411	Rexroad, Perry
LHV-FIMS	(c) 18720	BTU/lb	18420		18800	WI1411	Rexroad, Perry
Test: Specific Gravity (A)				_			
Observed API Gravity		°API	-	-		ASTM-D-1298	Rexroad, Perry
Fuel Temperature	and the second se	°F		-		ASTM-D-1298	Rexroad, Perry
API Gravity @ 60 degF	(c) 48.503					ASTM-D-1298	Rexroad, Perry
Density	(c) 786 0.7861	kg/m^3	0.770		0.005	ASTM-D-1298	Rexroad, Perry
Operating Constitution day 5			0.770	S	0.825	ASTM-D-1298	Rexroad, Perry
Specific Gravity 60/60 degF	0.7661						
Test: Viscosity @ 104F				TT T		WI1414	Berroad Perry
Test: Viscosity @ 104F Other tube constant	0.003653	Sec				WI1414 WI1414	Rexroad, Perry Rexroad, Perry
Test: Viscosity @ 104F Other tube constant Run #1	0.003653 368.98					WI1414	Rexroad, Perry
Test: Viscosity @ 104F Other tube constant Run #1 Run #2	0.003653 368.98 368.88	Sec					and the second se
Test: Viscosity @ 104F Other tube constant Run #1	0.003653 368.98	Sec Sec	1.00		1.50	WI1414 WI1414	Rexroad, Perry Rexroad, Perry
Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time	0.003653 368.98 368.88 (c) 368.93	Sec Sec	1.00		1.50	WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry
Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS	0.003653 368.98 368.88 (c) 368.93	Sec Sec	1.00		1.50	WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry
Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F	0.003653 368.98 368.88 (c) 368.93 (c) 1.35	sec sec cst	1.00		1.50	W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant	0.003653 368.98 368.88 (c) 368.93 (c) 1.35 0.003653	sec sec cst sec	1.00		1.50	W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
Test: Viscosity @ 104F Other tube constant Run #1 Run #2 Average Time CS Test: Viscosity @ 77F Other tube constant Run #1	0.003653 368.98 368.88 (c) 368.93 (c) 1.35 0.003653 465.17	sec sec cst sec sec	1.00		1.50	W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry

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CERTIFICATE OF ANALYSIS

Client: Honeywell International Inc. 3131 Airlane-Engineering Phoenix, Arizona 85034 Number: 140535 Revised 3/15/12 Date: March 1, 2012

Attention: Terry Cooper

Sample: HEFA SPK, submitted 22 Feb 12 Marks: CMR 561373

This certificate is revised to report the individual results for D5291 Carbon and Hydrogen.

D381	Existent gum, mg/100 mL	<1
D5453	Sulfur, mg/kg	26
D3227	Mercaptan sulfur, mass %	< 0.0001
D445	Kinematic viscosity, - 20 °C, mm ² /s	4,909
D1840	Napthalenes, volume %	0.03
D3242	Acid number, mg KOH/g	0.003
D130	Corrosion copper strip (2 h/100 °C)	1b
D3241	Thermal oxidation stability, (2.5 h/325 °C)	
	Heater tube deposit rating, visual	1
	Filter pressure drop, mm Hg	0.0
D3948	Water separation, MSEP-A rating	92
D2887	Boiling range distribution, % recovered, °C	
	IBP	114.5
	5	132.5
	10	141.5
	20	162.5
	30	179.0
	40	197.5
	50	213.5
	60	229.0
	70	248.5
	80	261.5
	90	272.0
	95	278.0
	FBP	291.0
D4629	Nitrogen, mg/kg	< 0.10
D5291	Carbon, mass %	84.6
	Hydrogen, mass %	15.3
IP 585	Total FAME content, mg/kg	< 4.0
D5452	Particulate contamination, mg/L	0.2
	Volume	1.0

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3131 Airlane-Engineering Phoenix, AZ 85034		nalysis: Oils and Fu in electronic/hard copy. Verify						03/15/2012 7:59 / Page 1 c
CMR Number	561373 rev B	Submission [Date			02	/02/2012 04:4	40 PM
Status	Completed	Desired Date		03/14/2012				
Disposition	NonConforms	Commit Date					/14/2012	
Released By	Baker, Susan	Completion Date		03	03/14/2012 10:25 PM			
Custom Id / Title	Glendale HEFA SPK	Project / Type Material Charge Number		Certify				
abor Charge Number	7002368937-0050			7002368937-0180				
SAP Project	EG-002166	SAP Work Center		10	15-EEMAZZ	ML		
SCA Sample Origin	USA			hereit				
Sample Origin	Glendale Storage Tank	-						
	and the state of the							
Dil / Fuel Type	HEFA SPK	Material Spec				D	7566	
Tests Required	Smoke Point							
Distribution List	later. Hold can #1 for further analysis Culbertson, Brad	s (or if needed for OP	analysis).				
	0.00010011, 0100							
Customer	Williams, Randy	Submitted By				W	illiams, Randy	y
Phone	+1 602/231-7229	Phone				+1	602/231-722	9
Department	BA-60035	Department				B	A60035	
Requesting Site	Phoenix							
Test Results								
Specimen: ASTM-D-1655			Links		Ŧ			Date: 03/14/20
Property Test: Anti-Icing Additive	Result		Units	LL	1	UL	SOP	Analyst
DIEGMME		0.0	% v/v			-	WI1412	Bautista, Karla
Test: Conductivity		0.0	10 4/4	-	-	-		Custona, rus a
Conductivity	1	184	pS/m		T	-	WI6400	Bautista, Karla
Temperature		23.7					WI6400	Bautista, Karla
Test: Distillation								
Initial B.P.		302	°F				ASTM-D-86	Bautista, Karla
5% Distilled	-	320					ASTM-D-86	Bautista, Karla
10% Distilled		330	°F			401	ASTM-D-86	Bautista, Karla
20% Distilled		350	°F				ASTM-D-86	Bautista, Karla
30% Distilled		370					ASTM-D-86	Bautista, Karla
40% Distilled		392	°F				ASTM-D-86	Bautista, Karla
50% Distilled		414	°F				ASTM-D-86	Bautista, Karla
50% Distilled		436					ASTM-D-86	Bautista, Karla
70% Distilled		458					ASTM-D-86	Bautista, Karla
30% Distilled		476					ASTM-D-86	Bautista, Karla
90% Distilled		494					ASTM-D-86	Bautista, Karla
95% Distilled		506					ASTM-D-86	Bautista, Karla
End Point		524				572	ASTM-D-86	Bautista, Karla
% Distilled		98.5					ASTM-D-86	Bautista, Karla
		1.0	100			4.5	ACTLA D. OC.	
% Residue		1.0	70			1.5	ASTM-D-86	Bautista, Karla

 Flash Point
 103
 ° F
 100.4
 ASTM-D-56
 Bautista, Karla

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 ASTM-D-56
 Bautista, Karla

(c) 0.5 %

% Loss

Test: Flash Point - c.c.

1.5 ASTM-D-86

Bautista, Karla

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Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	ational Inc. CMR Result Report gineering Oil/Fuel Analysis: Oils and Fuels (Phoenix)			CMR 561373 rev B Williams, Randy 03/15/2012 7:59 AM Page 2 of 5		
	checkstoned in contentiate copy. For	Totaloit in c				
Barometric Pressure	28.842	inHa		1	ASTM-D-56	Bautista, Karla
Corrected Flash Point	(c) 105	And and an owner of the second se			ASTM-D-56	Bautista, Karla
Test: Freeze Point	(0) 100			-		
Freeze Point	-67	°F		-40	ASTM-D-2386	Bautista, Karla
Test: LHV			1			
Calorimeter	Parr 1266	1			WI1411	Rexroad, Perry
Calorimeter constant	2414.60			-	WI1411	Rexroad, Perry
Sample Weight	0.5625	a		-	WI1411	Rexroad, Perry
Tape Weight		g		-	WI1411	Rexroad, Perry
Temperature change	2.6485			-	WI1411	Rexroad, Perry
Fuse Correction		cal		1	WI1411	Rexroad, Perry
Nitric Acid		ml		-	WI1411	Rexroad, Perry
LHV-FIMS	(c) 18953		18400		WI1411	Rexroad, Perry
Test: LHV (MJ/kg)	(0) 10000	DIGID	10400	-U		riexious, reity
Calorimeter	Parr 1266	1		-	WI1411	Rexroad, Perry
Calorimeter constant	2414.60		1	1	WI1411	Rexroad, Perry
Sample Weight	0.5625	0		-	WI1411	Rexroad, Perry
Tape Weight					WI1411	Rexroad, Perry
Temperature change	2.6485	g		-	WI1411	Rexroad, Perry
Fuse Correction		cal		-	WI1411	Rexroad, Perry
Nitric Acid		Contract of the local division of the local		-	WI1411	Rexroad, Perry
LHV-FIMS		mi		-	WI1411	Rexroad, Perry
LHV-FIMS LHV-converted	(c) 18953	descent and a second second second			WI1411	and the second sec
	(c) 44.09	MJ/Kg			W11411	Rexroad, Perry
Test: Specific Gravity (A)		0.0.01		-	ACT14 D 1000	Designed Design
Observed API Gravity		°API °F		-	ASTM-D-1298	Rexroad, Perry
Fuel Temperature				-	ASTM-D-1298	Rexroad, Perry
API Gravity @ 60 degF	(c) 54.905	Lin Int AO	700	770	ASTM-D-1298 ASTM-D-1298	Rexroad, Perry
Density		kg/m^3	730	and a subscription of the	NAME AND ADDRESS OF TAXABLE PARTY.	
Specific Gravity 60/60 degF Test: Text Results	0.7591		0.730	0.770	ASTM-D-1298	Rexroad, Perry
Text Result	(see below)				WI1416	Bautista, Karla 02/06/2012
No detectable volume of aromatic	content.					02/06/2012
Aromatics % volume = 0%						
Test: Text Results (2)						D. C. L.
Text Result	(see below)				WI6360	Bautista, Karla 02/08/2012
Smoke Point =						
50 mm 50 mm 50 mm						
Corrected average = 50 mm						
Results are estimate only due to limit Test: Text Results (3)	ation of standards at 42.8 mm maximum.					
Text Result	(see below)				per CMR inst.	Bautista, Karla 03/01/2012
D381 Existent gum, mg/100 mL = < 1 D5453			1			030112012
Sulfur, mg/kg = 26						

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CMR 561373 rev B

03/15/2012 7:59 AM

Williams, Randy

Page 3 of 5

Attn: Terry Cooper **CMR Result Report** Honeywell International Inc. 3131 Airlane-Engineering Oil/Fuel Analysis: Oils and Fuels (Phoenix) Phoenix, AZ 85034 Uncontrolled in electronic/hard copy. Verify version in LIMS D3227 Mercaptan sulfur, mass % = < 0.0001 D445 Kinematic viscosity, - 20 °C, mm2/s = 4.909 D1840 Napthalenes, volume % = 0.03 D3242 Acid number, mg KOH/g = 0.003 D130 Corrosion copper strip (2 h/100 °C) = 1b D3241 Thermal oxidation stability, (2.5 h/325 °C) Heater tube deposit rating, visual = 1 Filter pressure drop, mm Hg = 0.0 D3948 Water separation, MSEP-A rating = 92 D2887 Boiling range distribution, % recovered, °C IBP 114.5 05 132.5 141.5 10 20 162.5 30 179.0 40 50 197.5 213.5 60 70 229.0 248.5 80 261.5 90 272.0 95 278.0 FBP 291.0 D4629 Nitrogen, mg/kg = < 0.10 D5291 Carbon and Hydrogen, mass % = 99.9 IP 585 Total FAME content, mg/kg = < 4.0 D5452 Particulate contamination, mg/L = 0.2 Volume = 1.0 **UOP389** Trace Metals, mg/kg Aluminum < 0.02

Calcium

0.02

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Honeywell Intern 3131 Airlane-Eng Phoenix, AZ 850			Analysis	Result Repo	uels (F				CMR 561373 rev I Williams, Rand 3/15/2012 7:59 AM
moenix, AZ 850	34	Uncontro	alled in electron	nic/hard copy. Verify	y version	in LIMS.			Page 4 of
Cobalt	< 0.02								
Chromium	< 0.02								
Copper	< 0.02								
ron	0.02								
Potassium	0.04								
Agnesium	< 0.02								
Manganese	< 0.02								
Volybdenum									
Sodium	0.02								
Nickel	< 0.02								
Phosphorus	< 0.02								
ead	< 0.02								
Strontium	< 0.02								
Palladium	< 0.02								
Platinum	< 0.02								
Tin	< 0.02								
Titanium	< 0.02								
Vanadium	< 0.02								
Lithium	< 0.02								
Zinc	< 0.02								
Analyses wer	e completed h	y Dixie Services. Please see	attached	results					
Test: Text Re		, Dine controco	anaonoa	- countor					
Text Result				from baland	1			per CMR inst.	Bautista, Karla
D5453 - Sulfu	ır (maximum v	s not conform to ASTM D7566 alue = 15 mg/kg)	requireme	(see below) ents due to the	e follow	ing analysis	:		03/01/2012
D5453 - Sulfu Results = 26	ir (maximum v 6 mg/kg		i requireme		e follow	ing analysis	:	per cristine.	03/01/2012
D5453 - Sulfu Results = 26 Test: Viscosit	r (maximum v 6 mg/kg ty @ 104F		i requireme			ing analysis		WI1414	Rexroad, Perry
D5453 - Sulfu Results = 26 Test: Viscosit Other tube co	r (maximum v 6 mg/kg ty @ 104F		requireme	ents due to the		ing analysis			
D5453 - Sulfu Results = 26 Test: Viscosit Other tube co Run #1	r (maximum v 6 mg/kg ty @ 104F		i requireme	o.003676	Sec	ing analysis		WI1414	Rexroad, Perry
D5453 - Sulfu Results = 26 Test: Viscosit Other tube co Run #1 Run #2	rr (maximum v 3 mg/kg ty @ 104F Instant		i requireme	0.003676 366.73	Sec Sec	ing analysis		WI1414 WI1414	Rexroad, Perry Rexroad, Perry
D5453 - Sulfu Results = 26 Test: Viscosit Other tube co Run #1 Run #2 Average Time	rr (maximum v 3 mg/kg ty @ 104F Instant		i requireme	0.003676 366.73 366.64 (c) 366.69	Sec Sec Sec	ing analysis		W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry Rexroad, Perry
D5453 - Sulfu Results = 26 Test: Viscosit Other tube co Run #1 Run #2 Average Time CS	rr (maximum v 8 mg/kg ty @ 104F onstant		i requireme	0.003676 366.73 366.64	Sec Sec Sec			WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
D5453 - Sulfu Results = 26 Fest: Viscosil Dther tube co Run #1 Run #2 Average Time CS Fest: Viscosil	rr (maximum v 6 mg/kg ty @ 104F onstant e ty @ 77F		i requireme	0.003676 366.73 366.64 (c) 366.69	sec sec sec cst			WI1414 WI1414 WI1414 WI1414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
D5453 - Sulfu Results = 26 Test: Viscosit Other tube co Run #1 Run #2 Average Time CS Test: Viscosit Other tube co	rr (maximum v 6 mg/kg ty @ 104F onstant e ty @ 77F		i requireme	0.003676 366.73 366.64 (c) 366.69 (c) 1.35 0.003676	sec sec sec cst			W11414 W11414 W11414 W11414 W11414 W11414	Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry Rexroad, Perry
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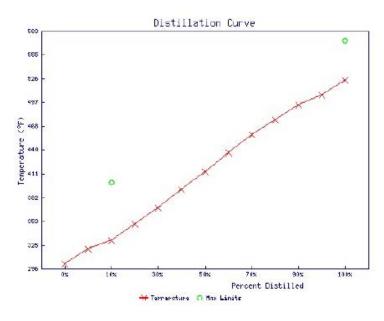
Attn: Terry Cooper Honeywell International Inc. 3131 Airlane-Engineering Phoenix, AZ 85034	C Oil/Fuel Analy Uncontrolled in el	CMR 561373 rev B Williams, Randy 03/15/2012 7:59 AM Page 5 of 5	
Text Result	(see below)	per CMR inst.	Cooper, Terry W. 02/21/2012

Distillation Test for Specimen ASTM-D-1655&Jet A

Oil and Fuel CMR #	561373
Material	HEFA SPK
Material Specification	D7566
Test Method	ASTM-D-86

		Material Spec Limit		
		Minimum	Maximum	
Percent Distilled	98.5			
Percent Residue	1.0		1.5	
Percent Loss	0.5		1.5	

Percent	Temperature	Material Spec Limits				
Distilled	(°F)	Minimum	Maximum			
0%	302					
5%	320					
10%	330		401			
20%	350					
30%	370					
40%	392					
50%	414					
60%	436					
70%	458					
80%	476					
90%	494					
95%	506					
100%	524		572			



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Appendix IV

EFDV, HMU, and Fuel Filter Posttest Inspection Report

(10 Pages)

HTF7000 FHC0832 Bio-Fuel Evaluation

N. E. Wilson

Engineer II Hydro-mechanical Fuel Controls Fuel and Actuation, MCOE

G. E. Kline

Sr. Project Engineer Hydro-mechanical Fuel Controls Fuel and Actuation, MCOE The HTF7000 hydro-mechanical fuel control, ecology flow divider valve and fuel filter element were delivered to Honeywell Aerospace in South Bend, IN for an evaluation of performance after testing with bio-fuel. Substantial testing has been conducted including bypass valve performance, low pump speed performance and simulated engine break-in test. The following will report the testing results including ATP test results, findings during teardown and complete photographs of the valve assemblies.

Keywords: Bio-fuel, HTF7000, FHC0832, ATP, FDAZ0727

Models: FH-C6

1 INTRODUCTION

The hydro-mechanical fuel control (HMU, PN 442599, SN FHC0832), ecology flow divider valve (EFDV, PN 442425, SN FDAZ0727) and fuel filter element (PN 2688211) for the HTF7000 engine were delivered to Honeywell Aerospace in South Bend, IN to evaluate the performance before and after completing 345 hours of accelerated engine cycle testing with a 50/50 blend of stand JET A and HEFA-SPK bio-fuel meeting the requirements of D7566. The ATP was performed in April of 2011 in Rocky Mount, NC and then again as received in March of 2012 in South Bend, IN. Subsequent transient testing was completed per PDARs 953, 973S4 and 746 on test cell 1421 in South Bend for reference. Upon completion of all required tests, a complete teardown and pictorial evaluation was completed with photographs reported in section 3.

2 TEST RESULTS

2.1 HMU

All test points for the as-shipped ATP from Rocky Mount were in-limits. The run-as-received (RAR) ATP yielded several high-flow test points that were low out of limits (LOOL), in particular TP 660, 670 and 675. Repeat testing from paragraph 6 of the ATP was completed for comparitive analysis to the previous test results. As was the case in the original RAR, TP 660, 670 and 675 resulted in LOOL flow and another out of limits test point, TP 640, which was high out of limits (HOOL).

To summarize the results and comparison of the ATP data:

- As-shipped ATP all points within limits
- As-received ATP high-flow points LOOL (TP 660, 670, 675)
- Paragraph 6 of ATP after several tests with bio-fuel high-flow points LOOL (TP 660, 670, 675) and TP 640 HOOL.

2.2 EFDV

An ATP was completed as-shipped and as-received and reported no test points that were out of limits.

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3 TEARDOWN COMPONENT PHOTOGRAPHS



Figure 1

Figure 2

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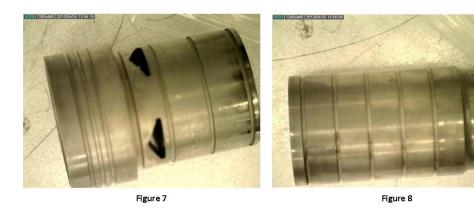
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Figure 6



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Figure 9

Figure 10

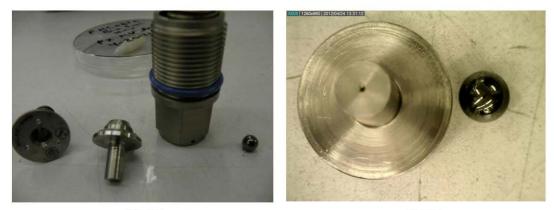


Figure 11

Figure 12

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Figure 13

Figure 14



Figure 15

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Figure 16



Figure 17



Figure 18

Figure 19

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Figure 20

Figure 21



Figure 22

Figure 23

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3.3 FUEL FILTER ELEMENT

The fuel filter element was delivered to the supplier and had a post-test analysis performed. No major findings related to biofuel exposure were observed.

4 CONCLUSIONS

Upon completion of the testing and teardown of the HMU, EFDV and fuel filter element, including visual inspection of the valve assemblies, there were no major findings. The component test results and findings are reflective only of the limited exposure to bio-fuel and may not be indicative or long-term use. There was a small amount of particulate collected in the metering valve and P_x channel upon removal of the LVDT and metering valve. This material appeared to be comprised of a gum substance with what appeared to be flecks of dirt. The material has been since collected although no formal material lab analysis was conducted. All valves exhibited signs of normal use and the pump gears and impeller were in good working condition.

The test points that were HOOL and LOOL are thought to be the result of head drop and not to be a consequence of bio-fuel exposure. It is recommended that further investigation of the head drop be evaluated.

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Signatures		
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_	G. E. Kline	Date
Author	Senior Project Engineer Hydro-mechanical Fuel Controls Fuel and Actuation, MCOE	(mm/dd/yyyy)
-	G. Lafferty	Date
Approved By	Senior Project Engineer Hydro- mechanical Fuel Controls Fuel and Actuation, MCOE	(mm/dd/yyyy)
_	B.J. McRoberts	Date
Approved By	Chief Engineer Hydro-mechanical Fuel Controls Fuel and Actuation, MCOE	(mm/dd/yyyy)
_	M.D. Thompson	Date
Reviewed By	Senior Technical Manager Product Design Fuel and Actuation, MCOE	(mm/dd/yyyy)
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Honeywell Aerospace, South Bend	Indiana 46628 7/18/2012	ERS-PROJ-FCNT-0000110 REV 0 / 10
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