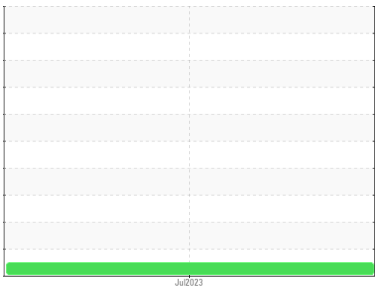
FUEL REPORT

Sample Rating Trend



NORMAL

Machine Id
UNC ROCKINGHAM - GEN 4
Component
Diesel Fuel
Fluid
DIESEL FUEL No. 2 (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. All laboratory tests indicate that this sample meets specifications for No.2 diesel fuel.

Corrosion
All metal levels are normal indicating no corrosion in the system.

Contaminants
There is a moderate amount of particulates present in the fuel. There is no bacteria or fungus (yeast and/or mold) indicated in the sample. The water content is negligible.

Fuel Condition
Sulfur value derived by ASTM D5453 method for ULSD validation.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0767485**	---	---
Sample Date		Client Info		**14 Jul 2023**	---	---
Machine Age	hrs	Client Info		**0**	---	---
Sample Status				**NORMAL**	---	---

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298		**0.849**	---	---
Fuel Color	text	*Visual Screen		**Red**	---	---
ASTM Color	scalar	*ASTM D1500		**L4.5**	---	---
Visc @ 40°C	cSt	ASTM D445	4.1	**2.59**	---	---
Pensky-Martens Flash Point	°C	*PMCC Calculated		**60**	---	---

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		**1099**	---	---
Sulfur (UVF)	ppm	ASTM D5453		**925**	---	---

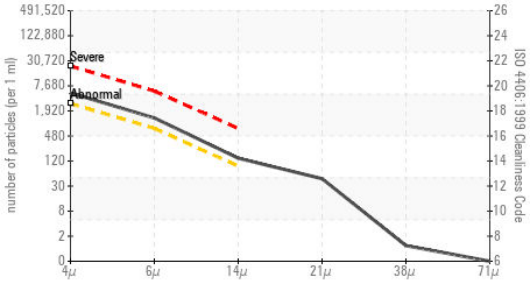
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86		**166**	---	---
5% Distillation Point	°C	ASTM D86		**195**	---	---
10% Distill Point	°C	ASTM D86		**206**	---	---
15% Distillation Point	°C	ASTM D86		**215**	---	---
20% Distill Point	°C	ASTM D86		**222**	---	---
30% Distill Point	°C	ASTM D86		**236**	---	---
40% Distill Point	°C	ASTM D86		**248**	---	---
50% Distill Point	°C	ASTM D86		**261**	---	---
60% Distill Point	°C	ASTM D86		**273**	---	---
70% Distill Point	°C	ASTM D86		**286**	---	---
80% Distill Point	°C	ASTM D86		**302**	---	---
85% Distillation Point	°C	ASTM D86		**311**	---	---
90% Distill Point	°C	ASTM D86		**323**	---	---
95% Distillation Point	°C	ASTM D86		**342**	---	---
Final Boiling Point	°C	ASTM D86		**351**	---	---
Distillation Residue	%	ASTM D86		**1.4**	---	---
Distillation Loss	%	ASTM D86		**0.6**	---	---

IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777		**35.2**	---	---
Cetane Index		ASTM D4737	<40.0	**43.0**	---	---

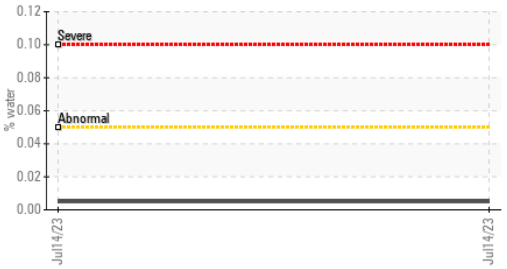
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	**0**	---	---
Sodium	ppm	ASTM D5185m	<0.1	**<1**	---	---
Potassium	ppm	ASTM D5185m	<0.1	**0**	---	---
Water	%	ASTM D6304	<0.05	**0.005**	---	---
ppm Water	ppm	ASTM D6304	<500	**59.1**	---	---
% Gasoline	%	*In-House	<0.50	**0.0**	---	---
% Biodiesel	%	*In-House	<20.0	**0.0**	---	---

FUEL REPORT

Particle Count



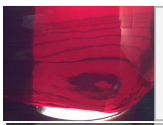
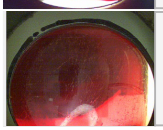
Water



Viscosity @ 40°C

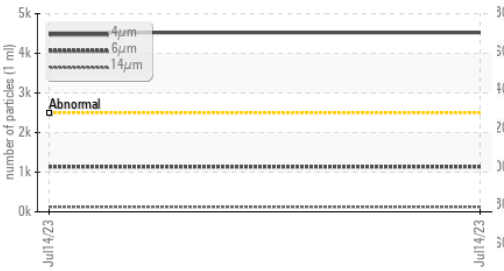
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	**4523**	---	---
Particles >6µm		ASTM D7647	>640	**1139**	---	---
Particles >14µm		ASTM D7647	>80	**124**	---	---
Particles >21µm		ASTM D7647	>20	**40**	---	---
Particles >38µm		ASTM D7647	>4	**1**	---	---
Particles >71µm		ASTM D7647	>3	**0**	---	---
Oil Cleanliness		ISO 4406 (c)	>18/16/13	**19/17/14**	---	---

HEAVY METALS		method	limit/base	current	history1	history2
Aluminum	ppm	ASTM D5185m	<0.1	**<1**	---	---
Nickel	ppm	ASTM D5185m	<0.1	**0**	---	---
Lead	ppm	ASTM D5185m	<0.1	**0**	---	---
Vanadium	ppm	ASTM D5185m	<0.1	**<1**	---	---
Iron	ppm	ASTM D5185m	<0.1	**0**	---	---
Calcium	ppm	ASTM D5185m	<0.1	**0**	---	---
Magnesium	ppm	ASTM D5185m	<0.1	**<1**	---	---
Phosphorus	ppm	ASTM D5185m	<0.1	**<1**	---	---
Zinc	ppm	ASTM D5185m	<0.1	**0**	---	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

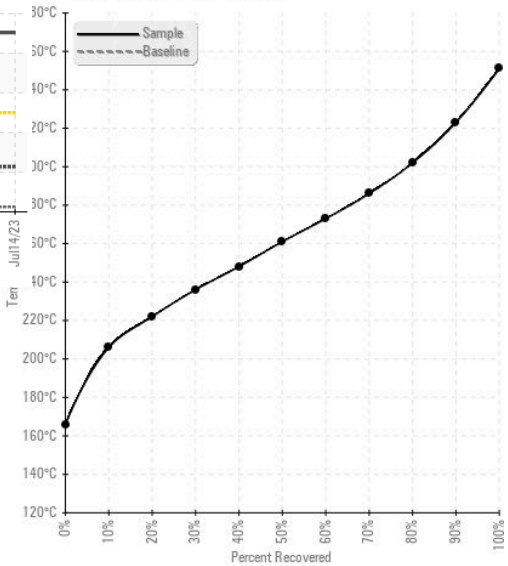
GRAPHS

Particle Trend

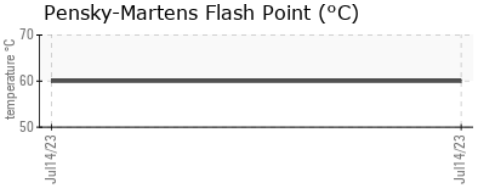


Particle Trend

Fuel Distillation Curve



Pensky-Martens Flash Point (°C)



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0767485 **Received** : 19 Jul 2023
Lab Number : 05902713 **Diagnosed** : 26 Jul 2023
Unique Number : 10564069 **Diagnostician** : Doug Bogart
Test Package : DF-2 (Additional Tests: Screen)

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

VITAL FUEL SYSTEMS
1076 CLASSIC RD
APEX, NC
US 27539
Contact: JOHN MORREALE
jmorreale@vitalfuelsystems.com
T: (919)629-8180
F: (919)303-7399