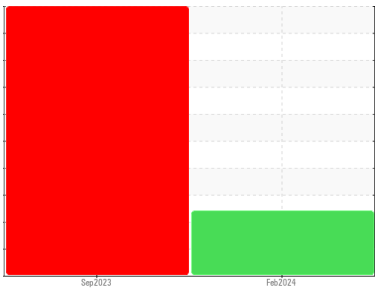
FUEL REPORT

Sample Rating Trend



ISO

Machine Id
CORESITE-RESTON-UST3
Component
Bottom Diesel Fuel
Fluid
DIESEL FUEL No. 2 (--- GAL)

DIAGNOSIS

Recommendation
We advise that you filter this fluid before use. All laboratory tests indicate that this sample meets specifications for No.2 ultra-low-sulfur diesel fuel.

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

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

Fuel Condition
Sulfur value derived by ASTM D5453 method for ULSD validation. Sulfur level is acceptable for ULSD specification.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0914215**	WC0787067	---
Sample Date		Client Info		**14 Feb 2024**	14 Sep 2023	---
Machine Age	hrs	Client Info		**0**	0	---
Sample Status				**ABNORMAL**	SEVERE	---

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298		**0.839**	---	---
Fuel Color	text	*Visual Screen		**Red**	---	---
ASTM Color	scalar	*ASTM D1500		**L4.5**	L4.5	---
Visc @ 40°C	cSt	ASTM D445	4.1	**2.4**	2.37	---
Pensky-Martens Flash Point	°C	*PMCC Calculated		**58**	---	---

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		**0**	5	---
Sulfur (UVF)	ppm	ASTM D5453		**7**	8	---

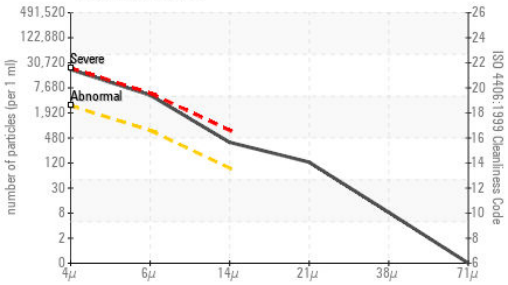
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86		**162**	---	---
5% Distillation Point	°C	ASTM D86		**186**	---	---
10% Distill Point	°C	ASTM D86		**196**	---	---
15% Distillation Point	°C	ASTM D86		**205**	---	---
20% Distill Point	°C	ASTM D86		**213**	---	---
30% Distill Point	°C	ASTM D86		**227**	---	---
40% Distill Point	°C	ASTM D86		**243**	---	---
50% Distill Point	°C	ASTM D86		**257**	---	---
60% Distill Point	°C	ASTM D86		**272**	---	---
70% Distill Point	°C	ASTM D86		**288**	---	---
80% Distill Point	°C	ASTM D86		**305**	---	---
85% Distillation Point	°C	ASTM D86		**315**	---	---
90% Distill Point	°C	ASTM D86		**327**	---	---
95% Distillation Point	°C	ASTM D86		**344**	---	---
Final Boiling Point	°C	ASTM D86		**353**	---	---
Distillation Residue	%	ASTM D86		**1.4**	---	---
Distillation Loss	%	ASTM D86		**0.7**	---	---

IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777		**37.2**	---	---
Cetane Index		ASTM D4737	<40.0	**47.9**	---	---

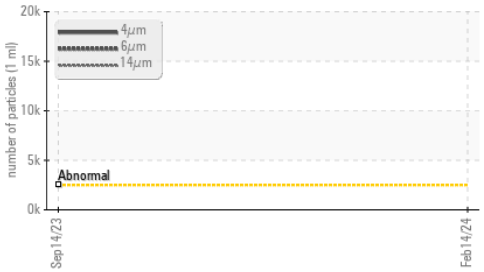
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	**0**	<1	---
Sodium	ppm	ASTM D5185m	<0.1	**0**	<1	---
Potassium	ppm	ASTM D5185m	<0.1	**0**	0	---
Water	%	ASTM D6304	<0.05	**0.004**	0.011	---
ppm Water	ppm	ASTM D6304	<500	**49**	119.2	---
% Gasoline	%	*In-House	<0.50	**0.0**	0.0	---
% Biodiesel	%	*In-House	<20.0	**0.0**	0.0	---

FUEL REPORT

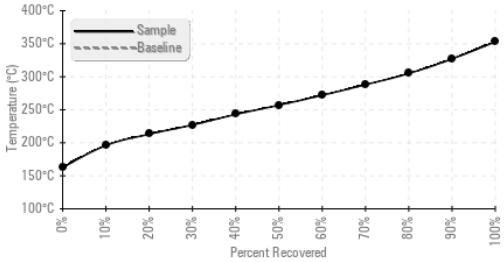
Particle Count



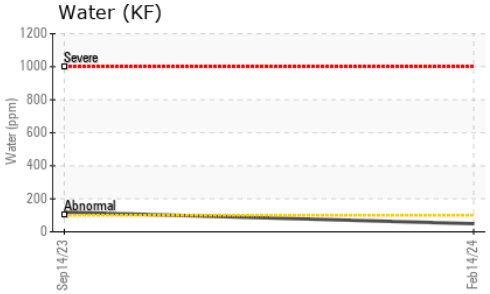
Particle Trend



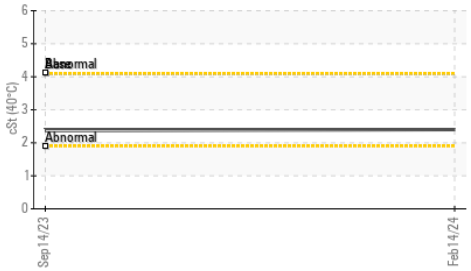
Fuel Distillation Curve



Water (KF)



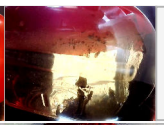
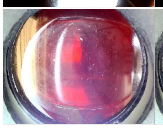
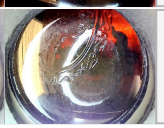
Viscosity @ 40°C



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ **18354**	---	---
Particles >6µm	ASTM D7647	>640	▲ **4467**	---	---
Particles >14µm	ASTM D7647	>80	▲ **332**	---	---
Particles >21µm	ASTM D7647	>20	▲ **111**	---	---
Particles >38µm	ASTM D7647	>4	▲ **7**	---	---
Particles >71µm	ASTM D7647	>3	**0**	---	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ **21/19/16**	---	---

MICROBIAL		method	limit/base	current	history1	history2
Bacteria	CFU/ml	WC-Method	>=100000	**0**	▲ 100	---
Yeast	CFU/ml	WC-Method	>=100000	**0**	▲ 10000	---
Mold	Colonies	WC-Method	MODER	**---**	---	---

HEAVY METALS		method	limit/base	current	history1	history2
Aluminum	ppm	ASTM D5185m	<0.1	**0**	0	---
Nickel	ppm	ASTM D5185m	<0.1	**0**	0	---
Lead	ppm	ASTM D5185m	<0.1	**0**	0	---
Vanadium	ppm	ASTM D5185m	<0.1	**0**	0	---
Iron	ppm	ASTM D5185m	<0.1	**0**	0	---
Calcium	ppm	ASTM D5185m	<0.1	**0**	<1	---
Magnesium	ppm	ASTM D5185m	<0.1	**0**	1	---
Phosphorus	ppm	ASTM D5185m	<0.1	**0**	2	---
Zinc	ppm	ASTM D5185m	<0.1	**0**	0	---

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

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0914215 **Received** : 26 Feb 2024
Lab Number : 06101274 **Tested** : 04 Mar 2024
Unique Number : 10899504 **Diagnosed** : 04 Mar 2024 - Doug Bogart
Test Package : DF-2 (Additional Tests: BACTERIA, 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