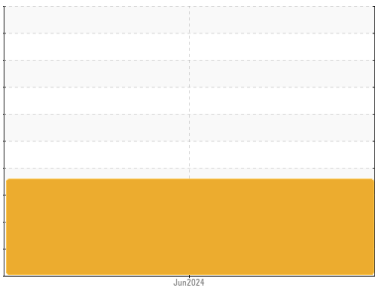
FUEL REPORT

Sample Rating Trend



WATER

Machine Id
DUKE CANCER CENTER
Component
Diesel Fuel
Fluid
No.2 DIESEL FUEL (ULTRALOW SULPHUR) (--- GAL)

DIAGNOSIS

Recommendation
We advise that you follow the water drain-off procedure for this component, and use off-line filtration to improve the cleanliness of the system fluid.

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

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

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0949677**	---	---
Sample Date		Client Info		**07 Jun 2024**	---	---
Machine Age	hrs	Client Info		**0**	---	---
Sample Status				**ABNORMAL**	---	---

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Fuel Color	text	*Visual Screen	Yllow	**Red**	---	---
ASTM Color	scalar	*ASTM D1500		**L4.5**	---	---
Visc @ 40°C	cSt	ASTM D445	3.0	**2.53**	---	---
Pensky-Martens Flash Point	°C	*PMCC Calculated	52	**63**	---	---

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m	10	**170**	---	---
Sulfur (UVF)	ppm	ASTM D5453		**150**	---	---

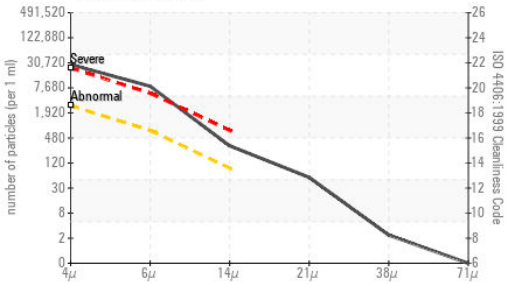
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86	165	**174**	---	---
5% Distillation Point	°C	ASTM D86		**199**	---	---
10% Distill Point	°C	ASTM D86	201	**209**	---	---
15% Distillation Point	°C	ASTM D86		**217**	---	---
20% Distill Point	°C	ASTM D86	216	**225**	---	---
30% Distill Point	°C	ASTM D86	230	**239**	---	---
40% Distill Point	°C	ASTM D86	243	**252**	---	---
50% Distill Point	°C	ASTM D86	255	**264**	---	---
60% Distill Point	°C	ASTM D86	267	**277**	---	---
70% Distill Point	°C	ASTM D86	280	**291**	---	---
80% Distill Point	°C	ASTM D86	295	**305**	---	---
85% Distillation Point	°C	ASTM D86		**315**	---	---
90% Distill Point	°C	ASTM D86	310	**325**	---	---
95% Distillation Point	°C	ASTM D86		**342**	---	---
Final Boiling Point	°C	ASTM D86	341	**356**	---	---

IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777	37.7	**35**	---	---
Cetane Index		ASTM D4737	<40.0	**47**	---	---

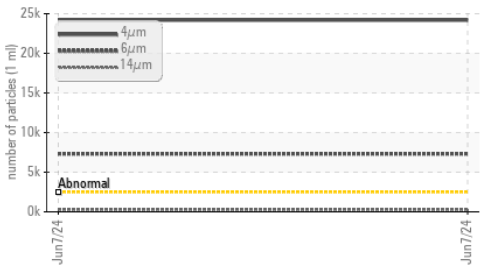
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	**0**	---	---
Sodium	ppm	ASTM D5185m	<0.1	**1**	---	---
Potassium	ppm	ASTM D5185m	<0.1	**1**	---	---
Water	%	ASTM D6304	<0.05	**0.021**	---	---
ppm Water	ppm	ASTM D6304	<500	**217**	---	---
% Gasoline	%	*In-House	<0.50	**0.0**	---	---
% Biodiesel	%	*In-House	<20.0	**0.0**	---	---

FUEL REPORT

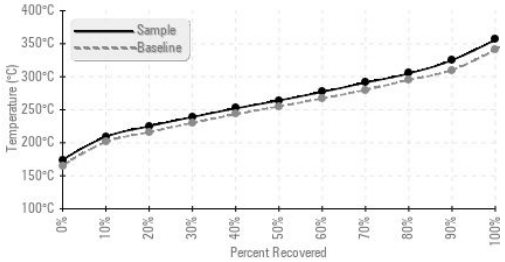
Particle Count



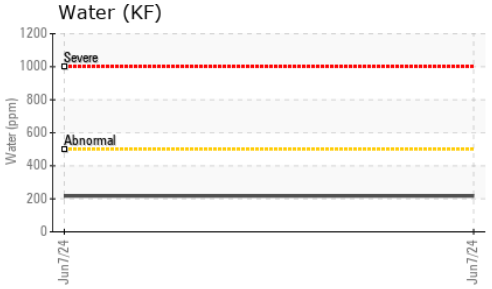
Particle Trend



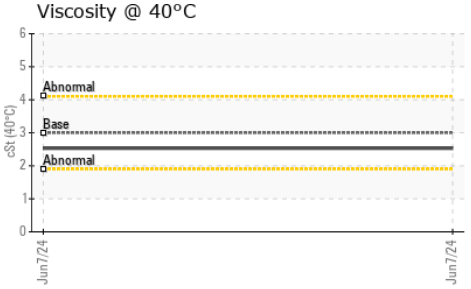
Fuel Distillation Curve



Water (KF)



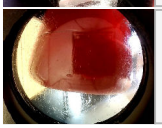
Viscosity @ 40°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	▲ **24186**	---	---
Particles >6µm		ASTM D7647	>640	▲ **7316**	---	---
Particles >14µm		ASTM D7647	>80	▲ **274**	---	---
Particles >21µm		ASTM D7647	>20	▲ **48**	---	---
Particles >38µm		ASTM D7647	>4	**2**	---	---
Particles >71µm		ASTM D7647	>3	**0**	---	---
Oil Cleanliness		ISO 4406 (c)	>18/16/13	▲ **22/20/15**	---	---

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

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

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0949677 **Received** : 10 Jun 2024
Lab Number : 06205271 **Tested** : 19 Jun 2024
Unique Number : 11072732 **Diagnosed** : 19 Jun 2024 - Doug Bogart
Test Package : DF-2 (Additional Tests: Bacteria, Fuel, 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)

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