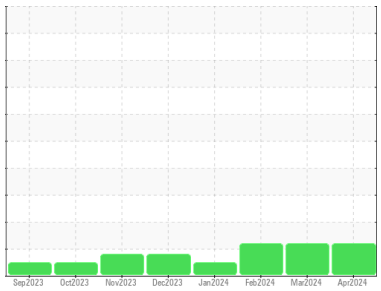
FUEL REPORT

Sample Rating Trend



ISO

Machine Id
IDEM FO2T 12-13
Component
Diesel Fuel
Fluid
No.2 DIESEL FUEL (HIGH-SULPHUR) (--- GAL)

DIAGNOSIS

Recommendation
We advise that you filter this fluid before use if applicable. ASTM D240 result 17,929 BTU/lb. Test performed at subcontracted ISO 17025 laboratory. All laboratory tests indicate that this sample meets specifications for No.2 low-sulfur diesel fuel. Please note that this is a corrected copy for laboratory data update.

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

Contaminants
There is a high amount of silt (particulates < 14 microns in size) 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		**WC0934834**	WC0926732	WC0911759
Sample Date		Client Info		**15 Apr 2024**	15 Mar 2024	15 Feb 2024
Machine Age	hrs	Client Info		**0**	0	0
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298	0.839	**---**	0.863	0.863
Specific Gravity		*ASTM D1298		**0.863**	0.863	---
Fuel Color	text	*Visual Screen	Yllow	**Red**	Red	Red
ASTM Color	scalar	*ASTM D1500		**L4.0**	L4.5	L4.5
Visc @ 40°C	cSt	ASTM D445	3.0	**2.76**	2.75	2.67
Pensky-Martens Flash Point	°C	*PMCC Calculated	52	**67.5**	68.9	63
Cloud Point	°C	ASTM D5771		**-21**	-21	-21
Pour Point	°C	ASTM D5950		**-39**	-39	-38

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m	500	**61**	24	23
Sulfur (UVF)	ppm	ASTM D5453		**38**	24	25

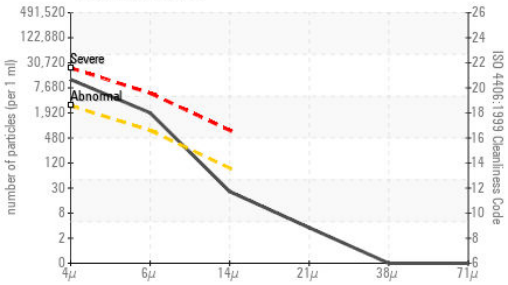
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86	165	**178**	171	173
5% Distillation Point	°C	ASTM D86		**205**	198	198
10% Distill Point	°C	ASTM D86	201	**214**	211	211
15% Distillation Point	°C	ASTM D86		**222**	221	221
20% Distill Point	°C	ASTM D86	216	**229**	230	228
30% Distill Point	°C	ASTM D86	230	**243**	243	242
40% Distill Point	°C	ASTM D86	243	**255**	256	254
50% Distill Point	°C	ASTM D86	255	**266**	268	265
60% Distill Point	°C	ASTM D86	267	**278**	281	278
70% Distill Point	°C	ASTM D86	280	**290**	295	290
80% Distill Point	°C	ASTM D86	295	**303**	311	304
85% Distillation Point	°C	ASTM D86		**312**	321	312
90% Distill Point	°C	ASTM D86	310	**322**	338	323
95% Distillation Point	°C	ASTM D86		**337**	342	340
Final Boiling Point	°C	ASTM D86	341	**351**	345	352
Distillation Residue	%	ASTM D86	3.0	**---**	1.5	1.4
Distillation Loss	%	ASTM D86	3.0	**---**	4.3	0.5

IGNITION QUALITY	method	limit/base	current	history1	history2
API Gravity	ASTM D7777	37.7	**32**	32.5	32.5
Cetane Index	ASTM D4737	<40.0	**41**	42.6	41.6

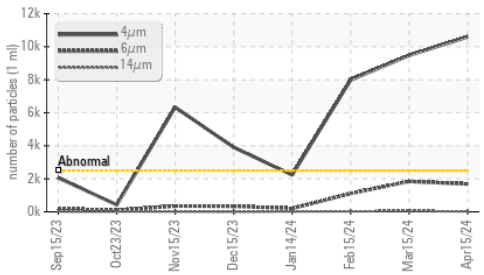
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	**0**	0	0
Sodium	ppm	ASTM D5185m	<0.1	**<1**	2	<1
Potassium	ppm	ASTM D5185m	<0.1	**0**	<1	<1
Water	%	ASTM D6304	<0.05	**0.005**	0.005	0.003
ppm Water	ppm	ASTM D6304	<500	**55**	53	39
% Gasoline	%	*In-House	<0.50	**0.0**	0.0	0.0
% Biodiesel	%	*In-House	<20.0	**0.0**	0.0	0.0

FUEL REPORT

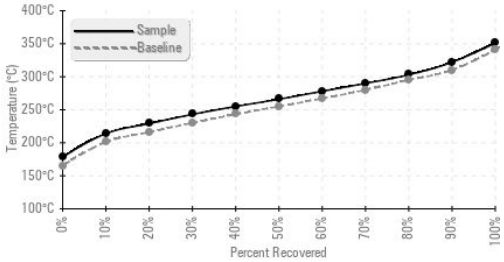
Particle Count



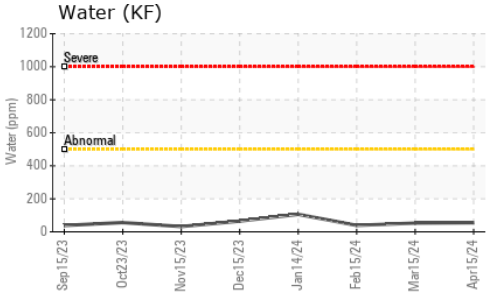
Particle Trend



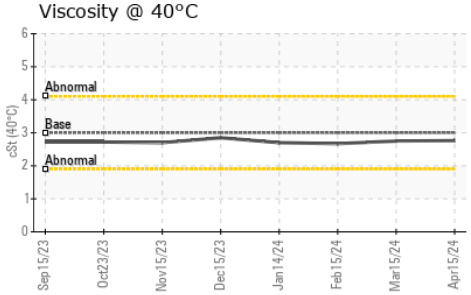
Fuel Distillation Curve



Water (KF)

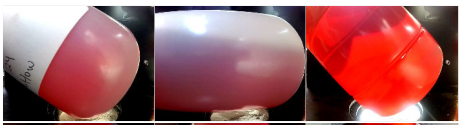


Viscosity @ 40°C



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ **10595**	▲ 9475	▲ 7984
Particles >6µm	ASTM D7647	>640	▲ **1686**	▲ 1841	● 1102
Particles >14µm	ASTM D7647	>80	**22**	46	28
Particles >21µm	ASTM D7647	>20	**3**	8	6
Particles >38µm	ASTM D7647	>4	**0**	0	0
Particles >71µm	ASTM D7647	>3	**0**	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ **21/18/12**	▲ 20/18/13	▲ 20/17/12

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

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0934834
Lab Number : 06155022
Unique Number : 10990445
Test Package : DF-3 (Additional Tests: Fuel, Screen)

Received : 19 Apr 2024
Tested : 01 May 2024
Diagnosed : 18 Jul 2024 - Doug Bogart

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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