LIEBHERR

FUEL REPORT

Sample Rating Trend

ISO

Machine Id
LIEBHERR LH80M 062114-1205
Component
Diesel Fuel
Fluid
{not provided} (--- 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		**LH0286363**	---	---
Sample Date		Client Info		**13 Feb 2024**	---	---
Machine Age	hrs	Client Info		**25507**	---	---
Sample Status				**ABNORMAL**	---	---

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298		**0.854**	---	---
Fuel Color	text	*Visual Screen		**Purpl**	---	---
ASTM Color	scalar	*ASTM D1500		**L6.0**	---	---
Visc @ 40°C	cSt	ASTM D445		**3.04**	---	---
Pensky-Martens Flash Point	°C	*PMCC Calculated		**58**	---	---

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m		**5**	---	---
Sulfur (UVF)	ppm	ASTM D5453		**11**	---	---

DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86		**161**	---	---
5% Distillation Point	°C	ASTM D86		**202**	---	---
10% Distill Point	°C	ASTM D86		**218**	---	---
15% Distillation Point	°C	ASTM D86		**229**	---	---
20% Distill Point	°C	ASTM D86		**237**	---	---
30% Distill Point	°C	ASTM D86		**249**	---	---
40% Distill Point	°C	ASTM D86		**262**	---	---
50% Distill Point	°C	ASTM D86		**274**	---	---
60% Distill Point	°C	ASTM D86		**287**	---	---
70% Distill Point	°C	ASTM D86		**300**	---	---
80% Distill Point	°C	ASTM D86		**314**	---	---
85% Distillation Point	°C	ASTM D86		**323**	---	---
90% Distill Point	°C	ASTM D86		**335**	---	---
95% Distillation Point	°C	ASTM D86		**353**	---	---
Final Boiling Point	°C	ASTM D86		**351**	---	---
Distillation Residue	%	ASTM D86		**1.4**	---	---
Distillation Loss	%	ASTM D86		**0.9**	---	---

IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777		**34.2**	---	---
Cetane Index		ASTM D4737	<40.0	**46.7**	---	---

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	**0.002**	---	---
ppm Water	ppm	ASTM D6304	<500	**18**	---	---
% Gasoline	%	*In-House	<0.50	**0.0**	---	---
% Biodiesel	%	*In-House	<20.0	**0.0**	---	---

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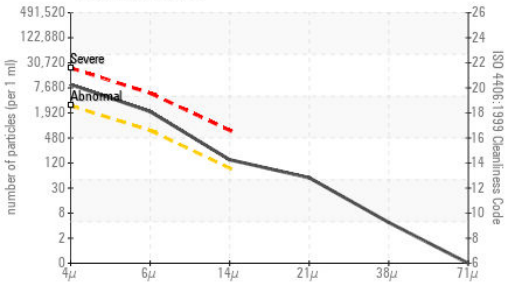
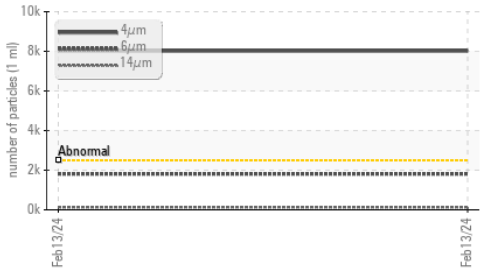
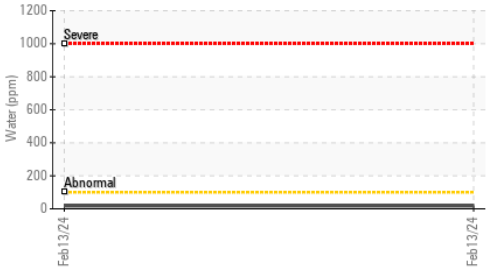
Particle Count



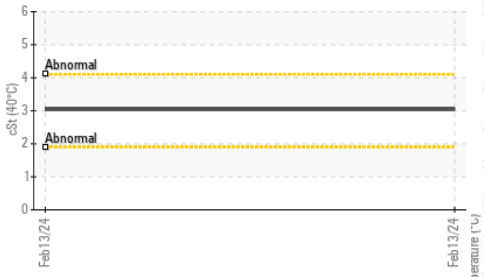
Particle Trend



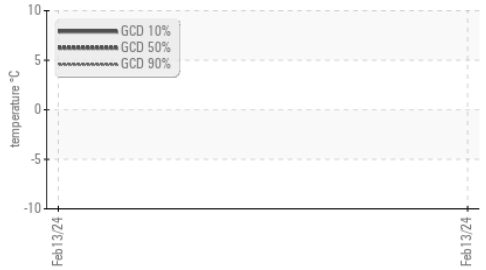
Water (KF)



Viscosity @ 40°C



Gas Chromatography (GCD)



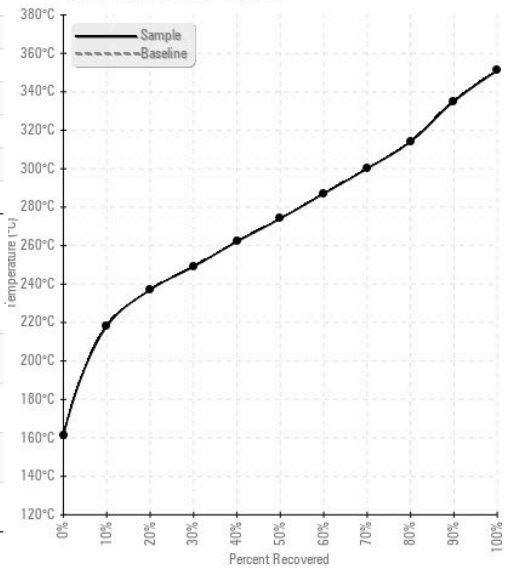
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	▲ **8019**	---	---
Particles >6µm	ASTM D7647	>640	▲ **1812**	---	---
Particles >14µm	ASTM D7647	>80	▲ **127**	---	---
Particles >21µm	ASTM D7647	>20	▲ **47**	---	---
Particles >38µm	ASTM D7647	>4	**4**	---	---
Particles >71µm	ASTM D7647	>3	**0**	---	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	▲ **20/18/14**	---	---

HEAVY METALS		method	limit/base	current	history1	history2
Aluminum	ppm	ASTM D5185m	<0.1	**0**	---	---
Nickel	ppm	ASTM D5185m	<0.1	**0**	---	---
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	**0**	---	---
Phosphorus	ppm	ASTM D5185m	<0.1	**0**	---	---
Zinc	ppm	ASTM D5185m	<0.1	**0**	---	---

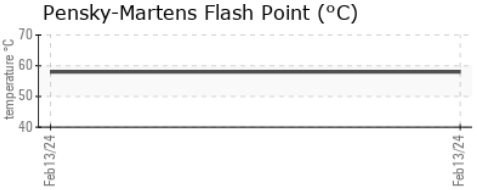
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

GRAPHS

Fuel Distillation Curve



Pensky-Martens Flash Point (°C)



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0286363 **Received** : 26 Feb 2024
Lab Number : 06100576 **Tested** : 01 Mar 2024
Unique Number : 10898806 **Diagnosed** : 01 Mar 2024 - 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)

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