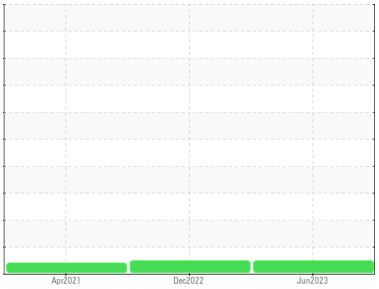
FUEL REPORT

Sample Rating Trend



NORMAL

Machine Id
Carver Healthcare Kohler
Component
Diesel Fuel
Fluid
OFF-ROAD (1047 GAL)

DIAGNOSIS

Recommendation
Recommend pre-filtering before use. All laboratory tests indicate that this sample meets specifications for No.2 diesel fuel, low sulfur.

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.

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number		Client Info		**WC0783060**	WC0580748	WCDF03725
Sample Date		Client Info		**19 Jun 2023**	02 Dec 2022	26 Apr 2021
Machine Age	hrs	Client Info		**1551**	1455	0
Sample Status				**NORMAL**	NORMAL	ABNORMAL

PHYSICAL PROPERTIES		method	limit/base	current	history 1	history 2
Specific Gravity		*ASTM D1298		**0.844**	0.844	---
Fuel Color	text	*Visual Screen		**Red**	Red	---
ASTM Color	scalar	*ASTM D1500		**L4.5**	L4.5	L6.5
Visc @ 40°C	cSt	ASTM D445		**2.53**	2.5	2.54
Pensky-Martens Flash Point	°C	*PMCC Calculated		**64**	64	---
Cloud Point	°C	ASTM D5771		**-12**	-12	---
Pour Point	°C	ASTM D5950		**-30**	-31	---

SULFUR CONTENT		method	limit/base	current	history 1	history 2
Sulfur	ppm	ASTM D5185m		**241**	250	374
Sulfur (UVF)	ppm	ASTM D5453		**178**	171	250

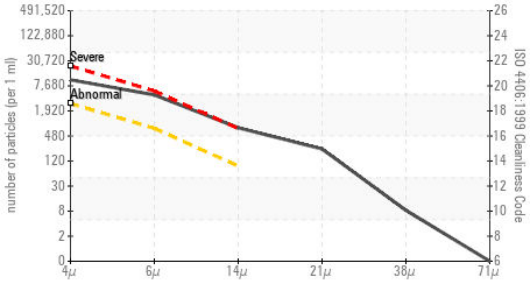
DISTILLATION		method	limit/base	current	history 1	history 2
Initial Boiling Point	°C	ASTM D86		**168**	167	---
5% Distillation Point	°C	ASTM D86		**191**	191	---
10% Distill Point	°C	ASTM D86		**203**	203	---
15% Distillation Point	°C	ASTM D86		**212**	211	---
20% Distill Point	°C	ASTM D86		**220**	219	---
30% Distill Point	°C	ASTM D86		**234**	234	---
40% Distill Point	°C	ASTM D86		**248**	247	---
50% Distill Point	°C	ASTM D86		**261**	261	---
60% Distill Point	°C	ASTM D86		**275**	275	---
70% Distill Point	°C	ASTM D86		**290**	290	---
80% Distill Point	°C	ASTM D86		**306**	306	---
85% Distillation Point	°C	ASTM D86		**315**	315	---
90% Distill Point	°C	ASTM D86		**327**	326	---
95% Distillation Point	°C	ASTM D86		**343**	343	---
Final Boiling Point	°C	ASTM D86		**351**	353	---
Distillation Residue	%	ASTM D86		**1.4**	1.4	---
Distillation Loss	%	ASTM D86		**0.7**	0.4	---

IGNITION QUALITY		method	limit/base	current	history 1	history 2
API Gravity		ASTM D7777		**36.2**	36.2	---
Cetane Index		ASTM D4737	<40.0	**47.3**	47.3	---

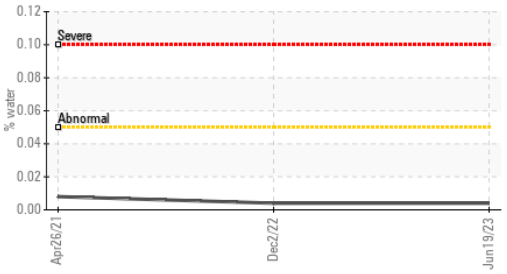
CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	<1.0	**0**	0	0
Sodium	ppm	ASTM D5185m	<0.1	**0**	<1	<1
Potassium	ppm	ASTM D5185m	<0.1	**<1**	0	4
Water	%	ASTM D6304	<0.05	**0.004**	0.004	0.008
ppm Water	ppm	ASTM D6304	<500	**44.9**	43.4	84.7
% Gasoline	%	*In-House	<0.50	**0.0**	0.0	0.0
% Biodiesel	%	*In-House	<20.0	**0.0**	0.0	1.0

FUEL REPORT

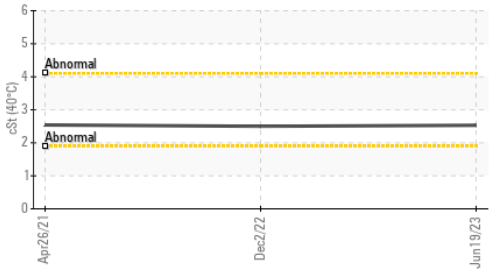
Particle Count



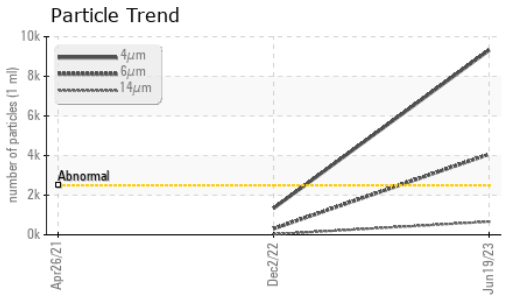
Water



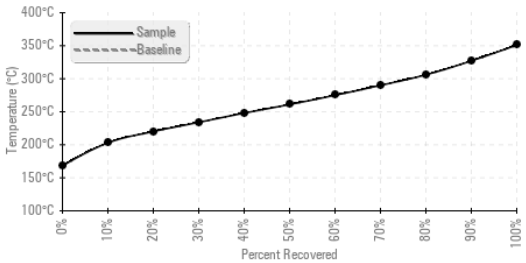
Viscosity @ 40°C



Particle Trend

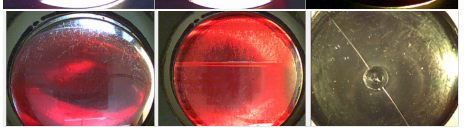


Fuel Distillation Curve



FLUID CLEANLINESS	method	limit/base	current	history 1	history 2
Particles >4µm	ASTM D7647	>2500	**9315**	1338	---
Particles >6µm	ASTM D7647	>640	**4070**	310	---
Particles >14µm	ASTM D7647	>80	**663**	26	---
Particles >21µm	ASTM D7647	>20	**206**	5	---
Particles >38µm	ASTM D7647	>4	**7**	0	---
Particles >71µm	ASTM D7647	>3	**0**	0	---
Oil Cleanliness	ISO 4406 (c)	>18/16/13	**20/19/17**	18/15/12	---

HEAVY METALS		method	limit/base	current	history 1	history 2
Aluminum	ppm	ASTM D5185m	<0.1	**0**	0	<1
Nickel	ppm	ASTM D5185m	<0.1	**<1**	0	<1
Lead	ppm	ASTM D5185m	<0.1	**0**	0	0
Vanadium	ppm	ASTM D5185m	<0.1	**0**	0	0
Iron	ppm	ASTM D5185m	<0.1	**0**	0	0
Calcium	ppm	ASTM D5185m	<0.1	**10**	2	8
Magnesium	ppm	ASTM D5185m	<0.1	**7**	0	<1
Phosphorus	ppm	ASTM D5185m	<0.1	**8**	7	1
Zinc	ppm	ASTM D5185m	<0.1	**7**	<1	4

SAMPLE IMAGES	method	limit/base	current	history 1	history 2
Color					
Bottom					

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0783060 **Received** : 21 Jun 2023
Lab Number : 05880407 **Diagnosed** : 05 Jul 2023
Unique Number : 10525510 **Diagnostician** : Doug Bogart
Test Package : DF-3 (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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MORRISVILLE, NC
US 27560
Contact: ROBERT MCARTHUR
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Report Id: BITCAR [WUSCAR] 05880407 (Generated: 07/05/2023 09:58:03) Rev: 1

Submitted By: ROBERT MCARTHUR