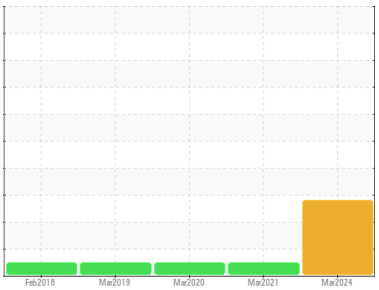
FUEL REPORT

Sample Rating Trend



WATER

Machine Id
TOSHIBA 1
Component
Diesel Fuel
Fluid
No.2 DIESEL FUEL (ULTRALOW SULPHUR) (--- GAL)

DIAGNOSIS

Recommendation
We advise that you perform a filter service, 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 silt (particulates < 14 microns in size) present in the fuel. There is a trace of moisture present in the fuel. 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. Sulfur level is acceptable for ULSD specification.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC06133765**	WC05213701	WC04933046
Sample Date		Client Info		**28 Mar 2024**	24 Mar 2021	12 Mar 2020
Machine Age	hrs	Client Info		**0**	0	0
Sample Status				**ABNORMAL**	NORMAL	NORMAL

PHYSICAL PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		*ASTM D1298	0.839	**---**	0.841	0.842
Fuel Color	text	*Visual Screen	Yllow	**Red**	Red	Red
ASTM Color	scalar	*ASTM D1500		**L4.0**	L5.0	L5.5
Visc @ 40°C	cSt	ASTM D445	3.0	**2.4**	2.53	2.51
Pensky-Martens Flash Point	°C	*PMCC Calculated	52	**59.9**	62	62

SULFUR CONTENT		method	limit/base	current	history1	history2
Sulfur	ppm	ASTM D5185m	10	**0**	6	1
Sulfur (UVF)	ppm	ASTM D5453		**11**	13	11

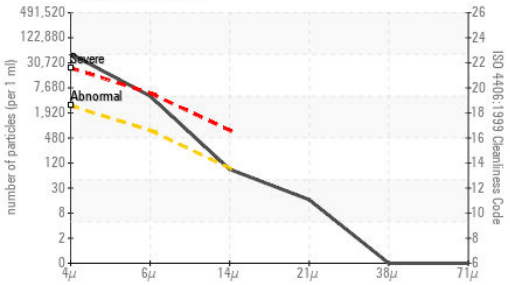
DISTILLATION		method	limit/base	current	history1	history2
Initial Boiling Point	°C	ASTM D86	165	**170**	164	162
5% Distillation Point	°C	ASTM D86		**193**	188	189
10% Distill Point	°C	ASTM D86	201	**202**	198	202
15% Distillation Point	°C	ASTM D86		**210**	208	211
20% Distill Point	°C	ASTM D86	216	**218**	216	219
30% Distill Point	°C	ASTM D86	230	**233**	230	233
40% Distill Point	°C	ASTM D86	243	**246**	244	247
50% Distill Point	°C	ASTM D86	255	**260**	259	260
60% Distill Point	°C	ASTM D86	267	**274**	273	274
70% Distill Point	°C	ASTM D86	280	**288**	288	289
80% Distill Point	°C	ASTM D86	295	**303**	305	305
85% Distillation Point	°C	ASTM D86		**314**	314	314
90% Distill Point	°C	ASTM D86	310	**325**	326	325
95% Distillation Point	°C	ASTM D86		**342**	342	341
Final Boiling Point	°C	ASTM D86	341	**356**	348	348
Distillation Residue	%	ASTM D86	3.0	**---**	1.4	1.4
Distillation Loss	%	ASTM D86	3.0	**---**	0.7	0.8

IGNITION QUALITY		method	limit/base	current	history1	history2
API Gravity		ASTM D7777	37.7	**37**	36.8	36.6
Cetane Index		ASTM D4737	<40.0	**48**	47.5	47.6

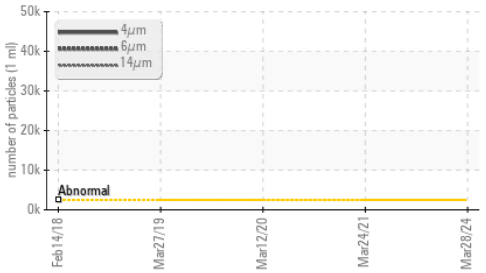
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	<1.0	**<1**	<1	<1
Sodium	ppm	ASTM D5185m	<0.1	**0**	0	0
Potassium	ppm	ASTM D5185m	<0.1	**<1**	1	<1
Water	%	ASTM D6304	<0.05	▲ **0.043**	0.004	0.003
ppm Water	ppm	ASTM D6304	<500	▲ **431**	44.9	34.1
% Gasoline	%	*In-House	<0.50	**0.0**	0.0	0.0
% Biodiesel	%	*In-House	<20.0	**0.0**	1.5	0.8

FUEL REPORT

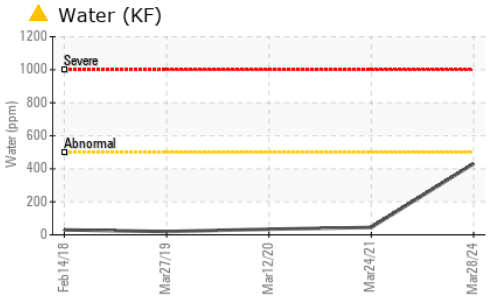
Particle Count



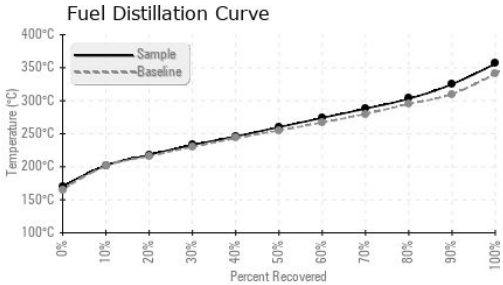
Particle Trend



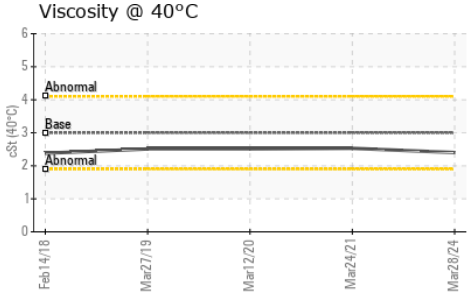
Water (KF)



Fuel Distillation Curve



Viscosity @ 40°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	▲ **43344**	---	---
Particles >6µm		ASTM D7647	>640	▲ **4259**	---	---
Particles >14µm		ASTM D7647	>80	**75**	---	---
Particles >21µm		ASTM D7647	>20	**14**	---	---
Particles >38µm		ASTM D7647	>4	**0**	---	---
Particles >71µm		ASTM D7647	>3	**0**	---	---
Oil Cleanliness		ISO 4406 (c)	>18/16/13	▲ **23/19/13**	---	---

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**	0	0
Nickel	ppm	ASTM D5185m	<0.1	**0**	<1	0
Lead	ppm	ASTM D5185m	<0.1	**0**	0	0
Vanadium	ppm	ASTM D5185m	<0.1	**0**	0	<1
Iron	ppm	ASTM D5185m	<0.1	**0**	0	0
Calcium	ppm	ASTM D5185m	<0.1	**3**	0	0
Magnesium	ppm	ASTM D5185m	<0.1	**<1**	0	0
Phosphorus	ppm	ASTM D5185m	<0.1	**0**	0	<1
Zinc	ppm	ASTM D5185m	<0.1	**0**	0	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. : WC06133765 **Received** : 29 Mar 2024
Lab Number : 06133765 **Tested** : 11 Apr 2024
Unique Number : 10953230 **Diagnosed** : 11 Apr 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)

COUCH OIL COMPANY
2907 HILLSBOROUGH RD
DURHAM, NC
US 27705
Contact: JESSE BROWN
jesse@couchoilcompany.com
T: (919)285-5408
F:

Report Id: COUDUR [WUSCAR] 06133765 (Generated: 04/12/2024 04:44:21) Rev: 1

Contact/Location: JESSE BROWN - COUDUR