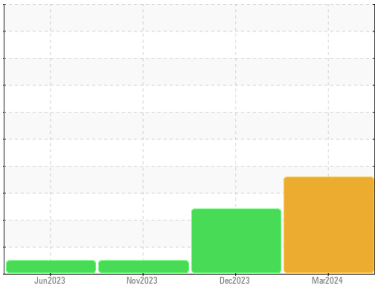
PROBLEM SUMMARY

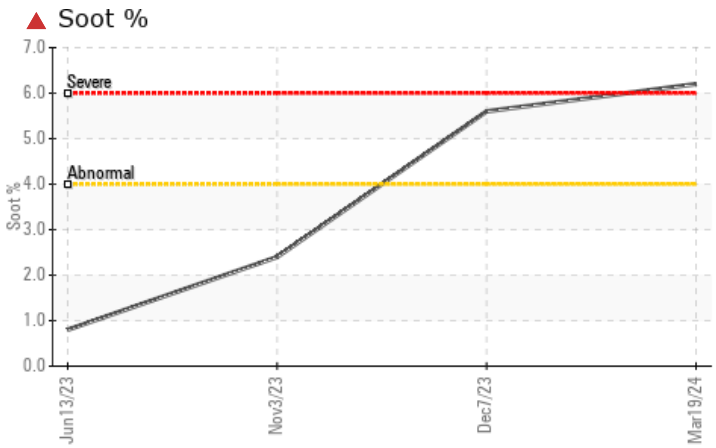
Area
(YA112253) {UNASSIGNED}
Machine Id
2445
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (60 QTS)

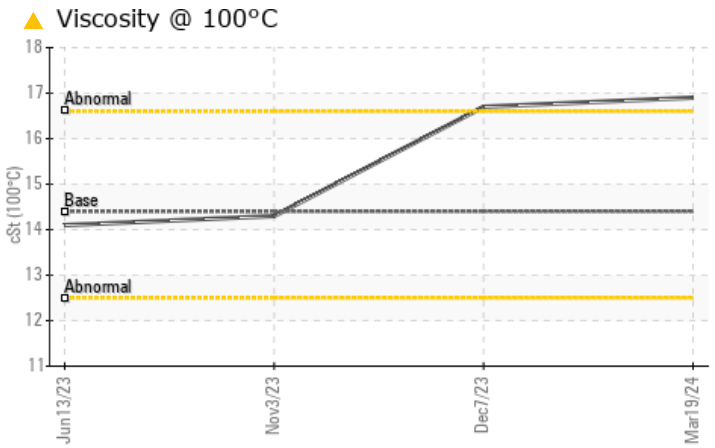
Sample Rating Trend



SOOT

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	NORMAL
Soot %	%	*ASTM D7844	>4	▲ **6.2**	▲ 5.6	2.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	▲ **0.0**	▲ 0.0	8.1
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **16.9**	▲ 16.7	14.3

Customer Id: GFL005
Sample No.: GFL0109700
Lab Number: 06126159
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.
Check Combustion	---	---	?	We advise that you check for faulty combustion, plugged air filters, or aftercoolers.

HISTORICAL DIAGNOSIS

07 Dec 2023 Diag: Jonathan Hester

DEGRADATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.All component wear rates are normal. There is an abnormal amount of solids and carbon present in the oil. The oil viscosity is higher than normal. The BN level is low.

view report

03 Nov 2023 Diag: Wes Davis

NORMAL

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.Metal levels are typical for a new component breaking in. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

13 Jun 2023 Diag: Don Baldridge

NORMAL

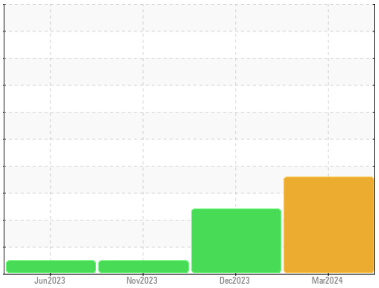
Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Area
(YA112253) {UNASSIGNED}
Machine Id
2445
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (60 QTS)

Sample Rating Trend



SOOT

DIAGNOSIS

▲ Recommendation
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Wear
All component wear rates are normal.

▲ Contamination
There is an abnormal amount of solids and carbon present in the oil.

▲ Fluid Condition
The oil viscosity is higher than normal. The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0109700**	GFL0092678	GFL0092712
Sample Date		Client Info		**19 Mar 2024**	07 Dec 2023	03 Nov 2023
Machine Age	hrs	Client Info		**33730**	32603	332
Oil Age	hrs	Client Info		**592**	721	332
Oil Changed		Client Info		**Changed**	Changed	Not Changd
Sample Status				**SEVERE**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	**56**	63	33
Chromium	ppm	ASTM D5185m	>20	**2**	2	1
Nickel	ppm	ASTM D5185m	>5	**<1**	<1	<1
Titanium	ppm	ASTM D5185m	>2	**<1**	0	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	4	5
Lead	ppm	ASTM D5185m	>40	**5**	6	2
Copper	ppm	ASTM D5185m	>330	**7**	24	11
Tin	ppm	ASTM D5185m	>15	**1**	2	1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

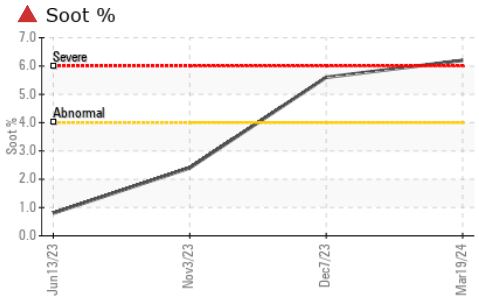
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**5**	8	10
Barium	ppm	ASTM D5185m	10	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**66**	63	64
Manganese	ppm	ASTM D5185m		**<1**	1	<1
Magnesium	ppm	ASTM D5185m	450	**907**	864	924
Calcium	ppm	ASTM D5185m	3000	**1184**	1259	1219
Phosphorus	ppm	ASTM D5185m	1150	**1024**	1011	1055
Zinc	ppm	ASTM D5185m	1350	**1214**	1289	1332
Sulfur	ppm	ASTM D5185m	4250	**2804**	2854	3136

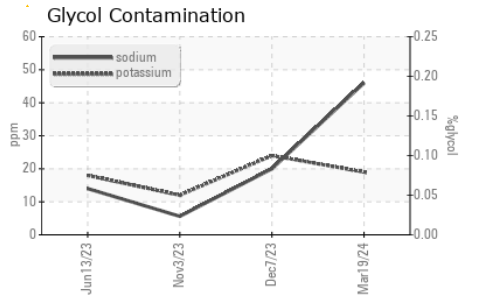
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**6**	7	6
Sodium	ppm	ASTM D5185m	>216	**46**	20	6
Potassium	ppm	ASTM D5185m	>20	**19**	24	12
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

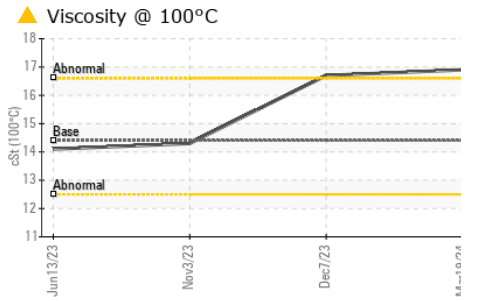
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	▲ **6.2**	▲ 5.6	2.4
Nitration	Abs/cm	*ASTM D7624	>20	**19.5**	13.5	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**45.2**	30.6	22.7

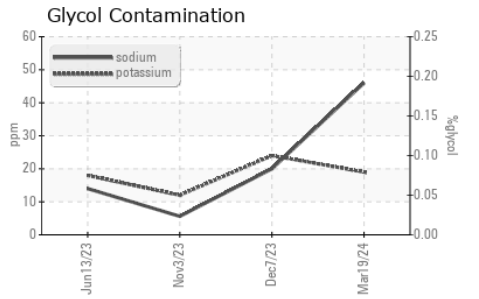
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**48.9**	18.3	14.8
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	▲ **0.0**	▲ 0.0	8.1

OIL ANALYSIS REPORT





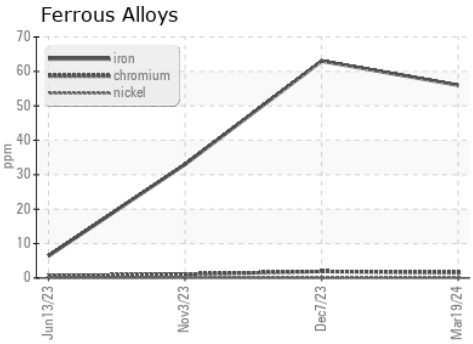


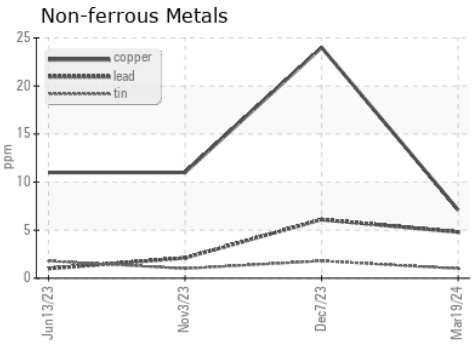


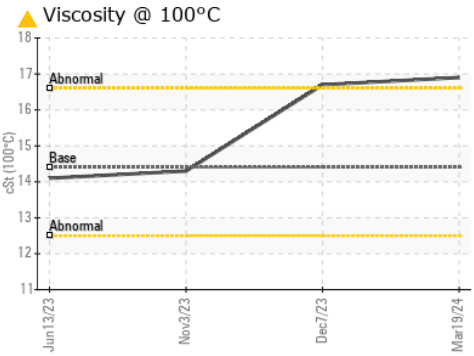
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

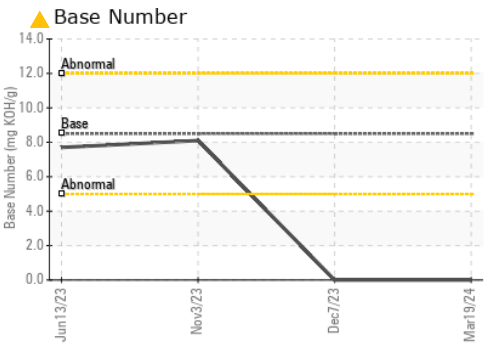
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **16.9**	▲ 16.7	14.3

GRAPHS









Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0109700
Lab Number : 06126159
Unique Number : 10940310
Test Package : FLEET (Additional Tests: Glycol)

Received : 22 Mar 2024
Tested : 26 Mar 2024
Diagnosed : 26 Mar 2024 - Jonathan Hester

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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