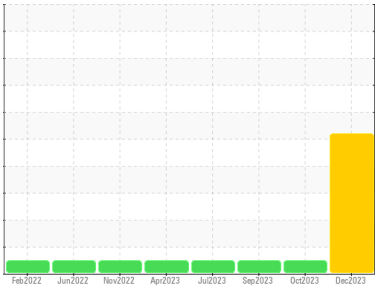
PROBLEM SUMMARY

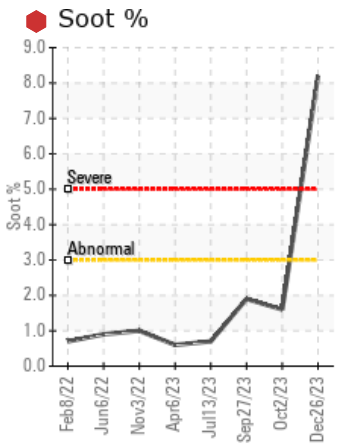
Sample Rating Trend

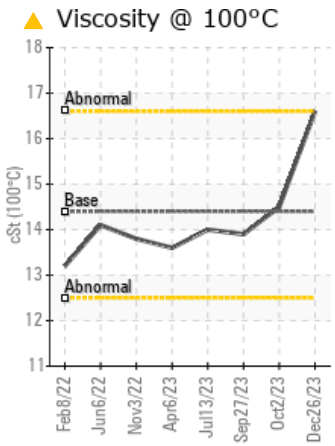


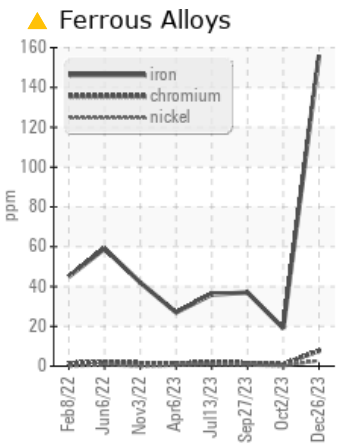
SOOT

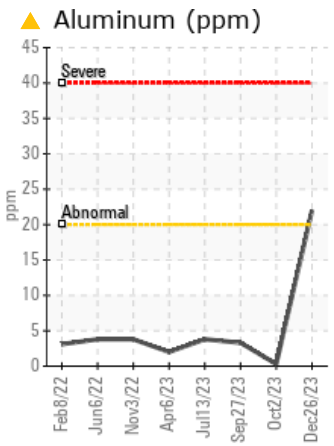
Machine Id
721054
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

COMPONENT CONDITION SUMMARY









RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend that you drain the oil and perform a filter service on this component if not already done. 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	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	▲ **156**	19	37
Aluminum	ppm	ASTM D5185m	>20	▲ **22**	<1	3
Soot %	%	*ASTM D7844	>3	⬢ **8.2**	1.6	1.9
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	▲ **0.0**	9.2	7.9
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **16.6**	14.5	13.9

Customer Id: GFL652
Sample No.: GFL0098228
Lab Number: 06050401
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	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already done.
Change Filter	---	---	?	We recommend that you drain the oil and perform a filter service on this component if not already done.
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

02 Oct 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.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

27 Sep 2023 Diag: Wes Davis

NORMAL

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.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

13 Jul 2023 Diag: Wes Davis

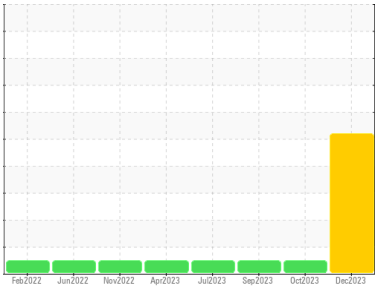
NORMAL

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.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

Sample Rating Trend



SOOT

Machine Id
721054
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend that you drain the oil and perform a filter service on this component if not already done. 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

Piston, ring and cylinder wear is indicated.

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		**GFL0098228**	GFL0083898	GFL0083864
Sample Date		Client Info		**26 Dec 2023**	02 Oct 2023	27 Sep 2023
Machine Age	hrs	Client Info		**7400**	6916	6876
Oil Age	hrs	Client Info		**2014**	6916	6876
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	▲ **156**	19	37
Chromium	ppm	ASTM D5185m	>20	**8**	<1	2
Nickel	ppm	ASTM D5185m	>4	**3**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ **22**	<1	3
Lead	ppm	ASTM D5185m	>40	**0**	<1	<1
Copper	ppm	ASTM D5185m	>330	**4**	1	2
Tin	ppm	ASTM D5185m	>15	**<1**	<1	<1
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**5**	11	2
Barium	ppm	ASTM D5185m	10	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**58**	59	56
Manganese	ppm	ASTM D5185m		**2**	<1	<1
Magnesium	ppm	ASTM D5185m	450	**910**	971	911
Calcium	ppm	ASTM D5185m	3000	**1014**	1081	1030
Phosphorus	ppm	ASTM D5185m	1150	**956**	1013	994
Zinc	ppm	ASTM D5185m	1350	**1177**	1230	1237
Sulfur	ppm	ASTM D5185m	4250	**2627**	3152	2986

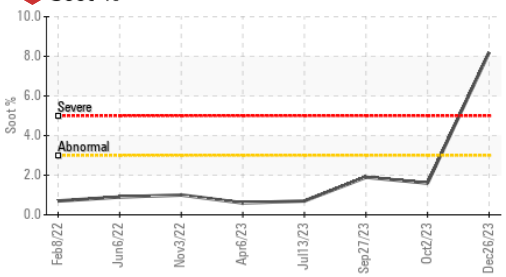
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**9**	4	8
Sodium	ppm	ASTM D5185m	>216	**7**	4	6
Potassium	ppm	ASTM D5185m	>20	**3**	2	4
Fuel	%	ASTM D3524	>5	**<1.0**	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	● **8.2**	1.6	1.9
Nitration	Abs/cm	*ASTM D7624	>20	**25.4**	7.0	10.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**40.4**	20.2	22.3

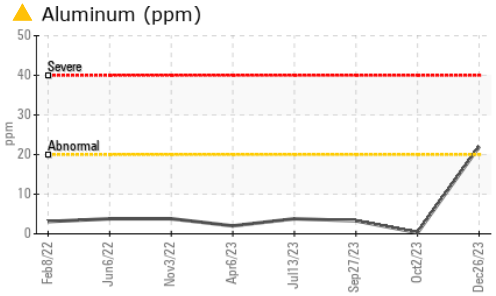
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**52.9**	13.3	17.2
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	▲ **0.0**	9.2	7.9

OIL ANALYSIS REPORT

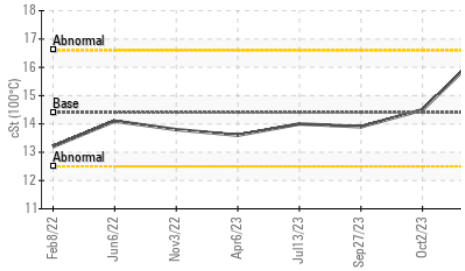
Soot %



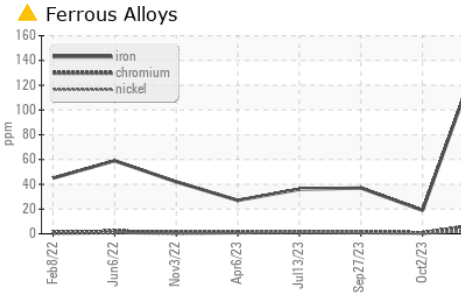
Aluminum (ppm)



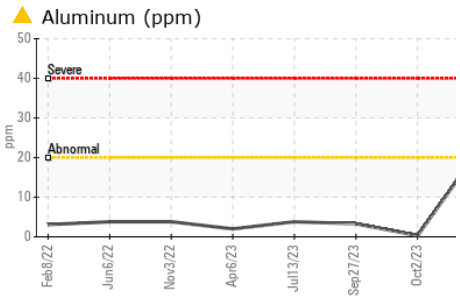
Viscosity @ 100°C



Ferrous Alloys



Aluminum (ppm)

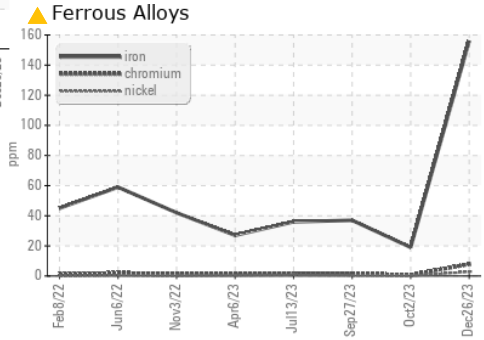


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

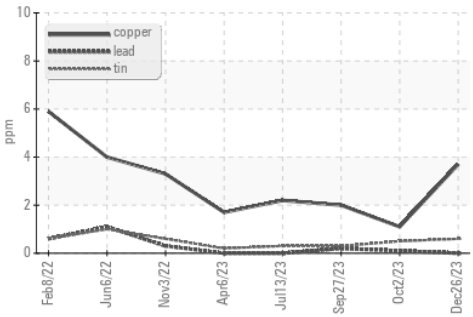
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	▲ **16.6**	14.5	13.9

GRAPHS

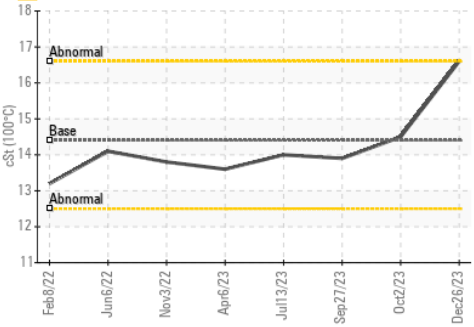
Ferrous Alloys



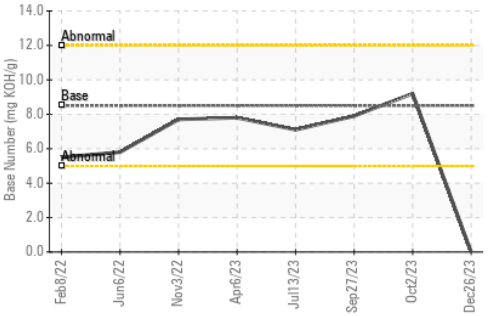
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0098228 **Recieved** : 03 Jan 2024
Lab Number : 06050401 **Diagnosed** : 05 Jan 2024
Unique Number : 10816350 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: FuelDilution)

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)

GFL Environmental - 652 - Fredericksburg Hauling
10954 Houser Drive
Fredericksburg, VA
US 22408
Contact: WILLIAM MILO
wmilo@gflenv.com
T:
F: