



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
(BB60556)
Machine Id
928032-1189
Component
Diesel Engine
Fluid
TIER ONE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0102227	GFL0102209	GFL0047354
Sample Date		Client Info		10 Apr 2024	27 Nov 2023	02 Jun 2022
Machine Age	hrs	Client Info		13049	12746	10157
Oil Age	hrs	Client Info		0	600	0
Filter Age	hrs	Client Info		0	600	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	5	8	54
Chromium	ppm	ASTM D5185m	>20	0	<1	2
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	1	16
Lead	ppm	ASTM D5185m	>40	0	0	6
Copper	ppm	ASTM D5185m	>330	7	<1	4
Tin	ppm	ASTM D5185m	>15	0	0	2
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

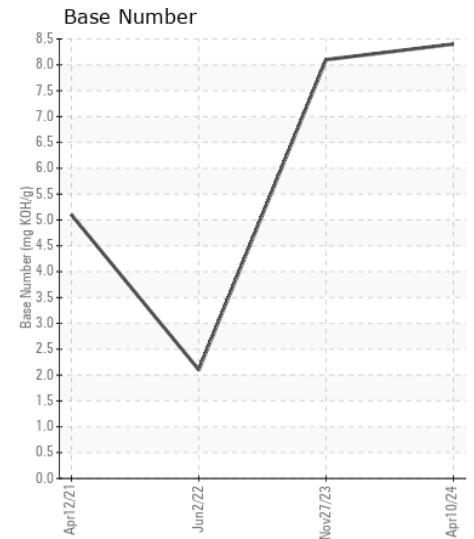
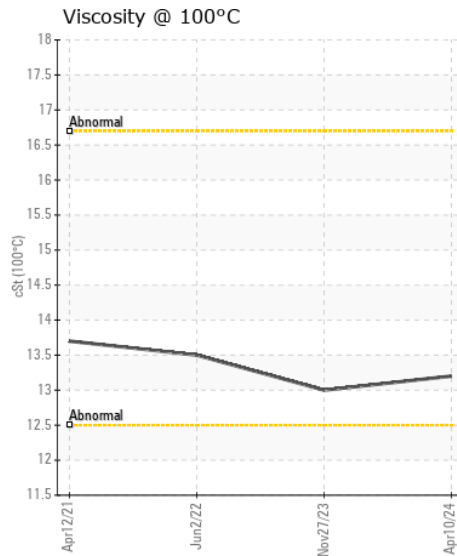
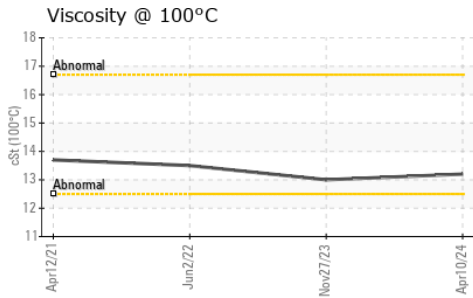
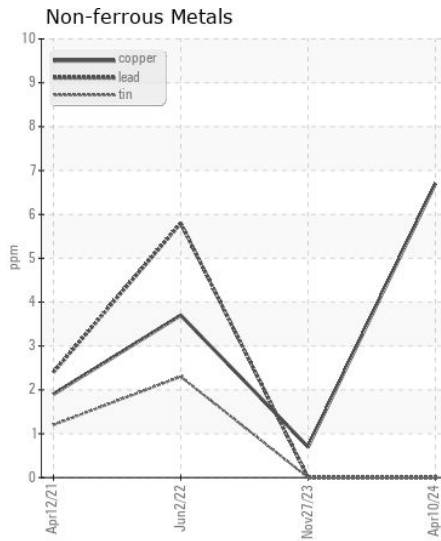
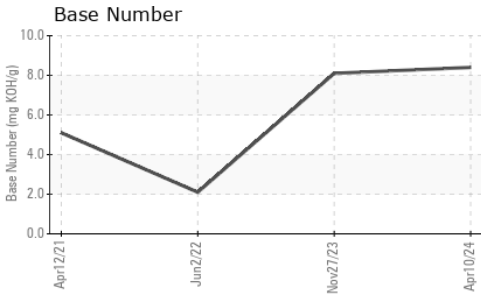
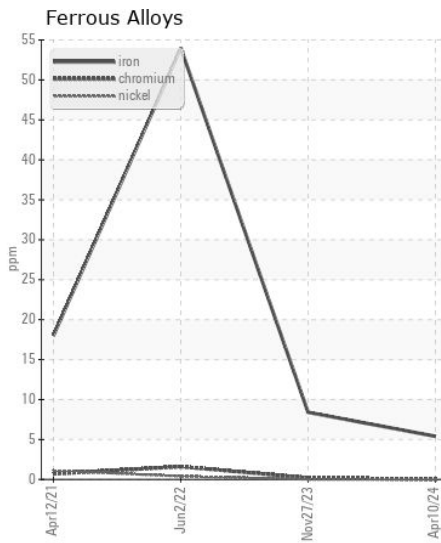
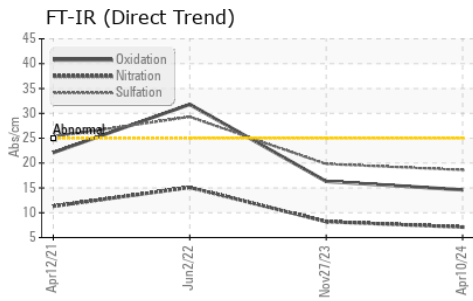
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	4	3	10
Potassium	ppm	ASTM D5185m	>20	<1	2	31
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	0.2	0.4	1.2
Nitration	Abs/cm	*ASTM D7624	>20	7.1	8.2	15.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.6	19.8	29.3
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

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		4	12	10
Boron	ppm	ASTM D5185m		12	5	8
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		57	44	61
Manganese	ppm	ASTM D5185m		<1	0	1
Magnesium	ppm	ASTM D5185m		871	758	856
Calcium	ppm	ASTM D5185m		1059	933	1251
Phosphorus	ppm	ASTM D5185m		1037	865	952
Zinc	ppm	ASTM D5185m		1220	1050	1248
Sulfur	ppm	ASTM D5185m		3645	2434	2224
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	16.3	31.8
Base Number (BN)	mg KOH/g	ASTM D2896		8.4	8.1	▲ 2.1
Visc @ 100°C	cSt	ASTM D445		13.2	13.0	13.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0102227
Lab Number : 06147140
Unique Number : 10977218
Test Package : FLEET

GFL Environmental - 638 - Greenville
 4102 Industrial Pkwy
 Harrison, MI
 US 48625
 Contact: NORM GWISDALLA
 ngwisdalla@gflenv.com

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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F: