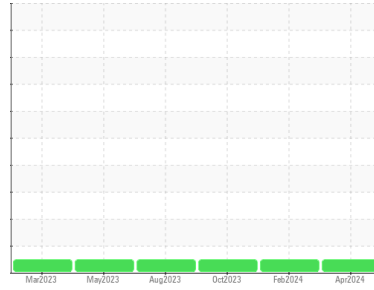




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
420086 - SW4004

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Engine)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0112090	GFL0105453	GFL0085486
Sample Date	Client Info	01 Apr 2024	06 Feb 2024	10 Oct 2023
Machine Age	mls Client Info	221489	217346	208332
Oil Age	mls Client Info	221489	217346	208332
Oil Changed	Client Info	Changed	Changed	N/A
Sample Status		NORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	<1.0
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 >80	4	4	<1
Chromium	ppm ASTM D5185m >5	<1	<1	<1
Nickel	ppm ASTM D5185m >2	<1	0	<1
Titanium	ppm ASTM D5185m	<1	<1	<1
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >30	2	1	2
Lead	ppm ASTM D5185m >30	<1	0	<1
Copper	ppm ASTM D5185m >150	4	6	6
Tin	ppm ASTM D5185m >5	<1	0	<1
Vanadium	ppm ASTM D5185m	<1	0	0
Cadmium	ppm ASTM D5185m	<1	0	<1

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	0	0	0
Barium	ppm ASTM D5185m 0	0	0	9
Molybdenum	ppm ASTM D5185m 60	59	57	52
Manganese	ppm ASTM D5185m 0	<1	0	<1
Magnesium	ppm ASTM D5185m 1010	6	14	3
Calcium	ppm ASTM D5185m 1070	2635	2725	2406
Phosphorus	ppm ASTM D5185m 1150	1028	1135	930
Zinc	ppm ASTM D5185m 1270	1297	1325	1216
Sulfur	ppm ASTM D5185m 2060	3191	3437	3290

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >20	7	5	5
Sodium	ppm ASTM D5185m	3	0	0
Potassium	ppm ASTM D5185m >20	2	4	2

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.2	0.3	0.3
Nitration	Abs/cm *ASTM D7624 >20	6.5	7.3	7.3
Sulfation	Abs/.1mm *ASTM D7415 >30	16.4	18.0	18.2

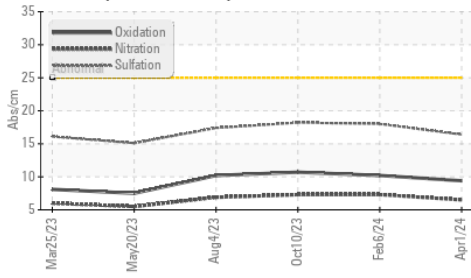
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	9.4	10.2	10.7
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.1	7.6	7.1

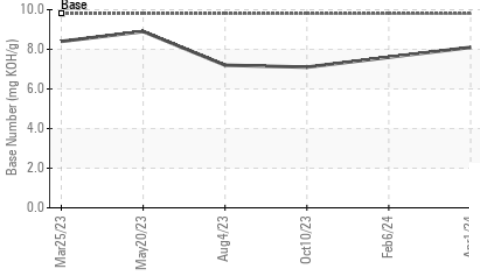


OIL ANALYSIS REPORT

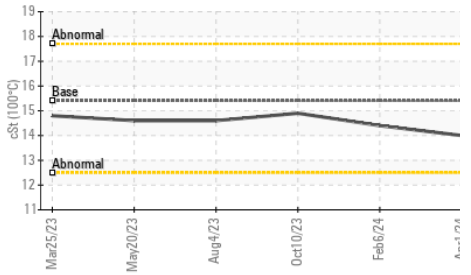
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

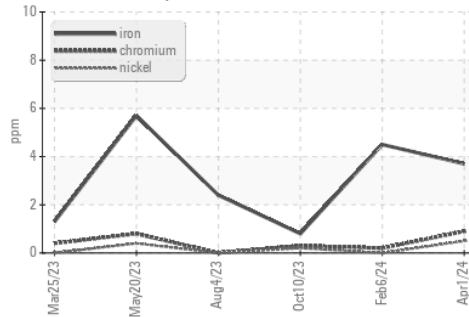


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

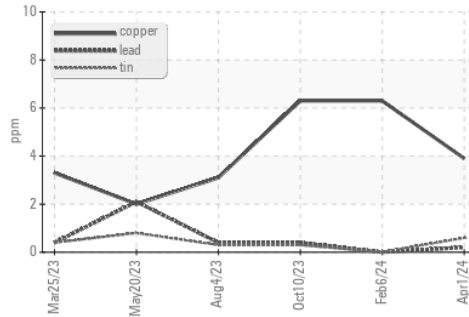
PARAMETER	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.0	14.4

GRAPHS

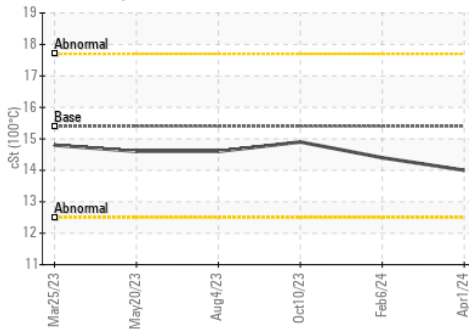
Ferrous Alloys



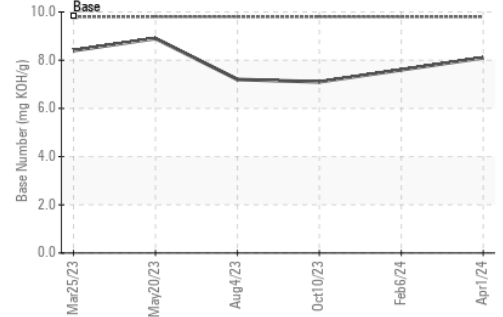
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0112090

Lab Number : 06140925

Unique Number : 10965733

Test Package : FLEET

Received : 08 Apr 2024

Tested : 08 Apr 2024

Diagnosed : 10 Apr 2024 - Jonathan Hester

GFL Environmental - 983 - Sugar Land Hauling

16011 West Belfort Street

Sugar Land, TX

US 77498

Contact: Adrian Martinez

adrianmartinez@gflenv.com

T:

F:

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)