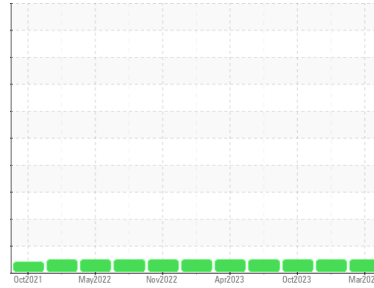




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
412041

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

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

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	GFL0110286	GFL0102780	GFL0090463
Sample Date	Client Info	04 Mar 2024	21 Nov 2023	13 Oct 2023
Machine Age	hrs	5833	5399	5332
Oil Age	hrs	1	67	489
Oil Changed	Client Info	Not Chngd	Not Chngd	Changed
Sample Status		NORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >2.0	<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 >100	9	<1	10
Chromium	ppm ASTM D5185m >20	<1	0	2
Nickel	ppm ASTM D5185m >4	0	<1	<1
Titanium	ppm ASTM D5185m	0	0	<1
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >20	3	2	7
Lead	ppm ASTM D5185m >40	0	<1	<1
Copper	ppm ASTM D5185m >330	<1	0	<1
Tin	ppm ASTM D5185m >15	0	<1	<1
Vanadium	ppm ASTM D5185m	<1	0	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	4	8	4
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	63	54	62
Manganese	ppm ASTM D5185m 0	<1	<1	0
Magnesium	ppm ASTM D5185m 1010	848	830	902
Calcium	ppm ASTM D5185m 1070	1050	988	1064
Phosphorus	ppm ASTM D5185m 1150	884	1017	958
Zinc	ppm ASTM D5185m 1270	1109	1127	1196
Sulfur	ppm ASTM D5185m 2060	2775	2972	3358

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	3	3	3
Sodium	ppm ASTM D5185m	5	2	4
Potassium	ppm ASTM D5185m >20	6	4	15

INFRA-RED

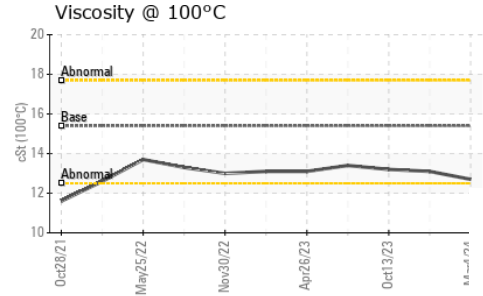
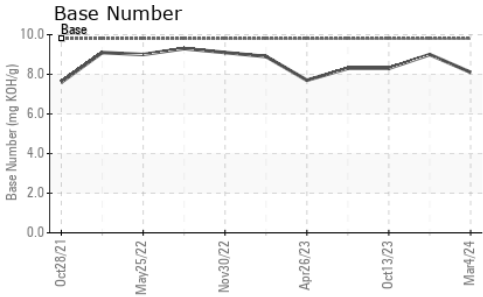
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.4	0.1	0.3
Nitration	Abs/cm *ASTM D7624 >20	7.4	5.1	7.4
Sulfation	Abs/.1mm *ASTM D7415 >30	18.3	17.2	18.8

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	13.7	12.6	14.4
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.1	9.0	8.3



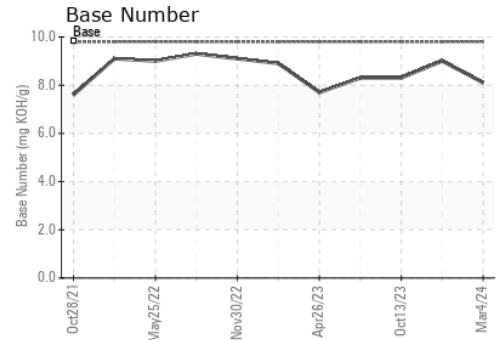
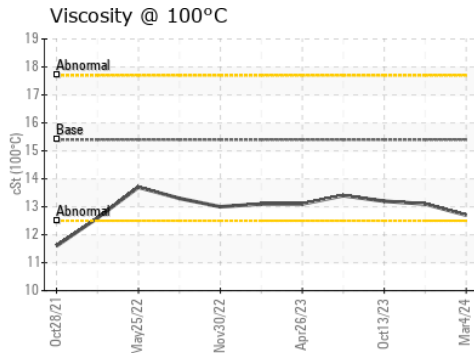
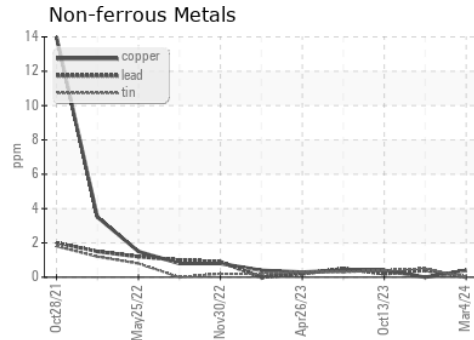
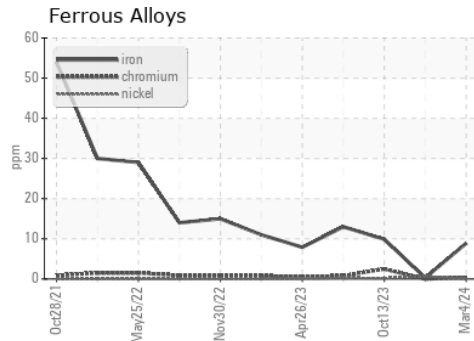
OIL ANALYSIS REPORT



VISUAL	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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.7	13.1

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0110286
Lab Number : 06111957
Unique Number : 10915454
Test Package : FLEET

Received : 07 Mar 2024
Tested : 08 Mar 2024
Diagnosed : 10 Mar 2024 - Don Baldrige

GFL Environmental - 622 - Traverse City Hauling
 160 Hughes Dr
 Traverse City, MI
 US 49686
 Contact: GARY BREWER

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)

T:
F: