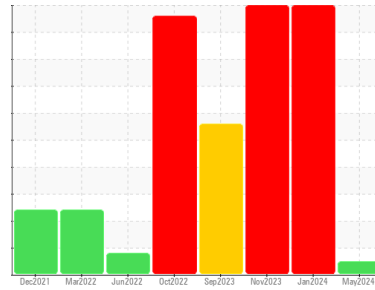




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
929024-540

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

No evidence of coolant present in the oil. 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	GFL0116211	GFL0094880	GFL0100039	
Sample Date	Client Info	21 May 2024	22 Jan 2024	27 Nov 2023	
Machine Age	hrs	Client Info	19308	19266	9493
Oil Age	hrs	Client Info	42	0	142
Oil Changed	Client Info	Not Chngd	Changed	Not Chngd	
Sample Status		NORMAL	SEVERE	SEVERE	

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

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	19	▲ 248	▲ 235
Chromium	ppm ASTM D5185m >20	<1	15	13
Nickel	ppm ASTM D5185m >4	0	2	<1
Titanium	ppm ASTM D5185m	5	<1	0
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >20	5	● 12	● 6
Lead	ppm ASTM D5185m >40	0	2	4
Copper	ppm ASTM D5185m >330	9	50	40
Tin	ppm ASTM D5185m >15	0	2	3
Vanadium	ppm ASTM D5185m	0	<1	0
Cadmium	ppm ASTM D5185m	0	<1	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	265	346	236
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	60	138	131
Manganese	ppm ASTM D5185m 0	2	3	2
Magnesium	ppm ASTM D5185m 1010	533	646	662
Calcium	ppm ASTM D5185m 1070	1374	739	771
Phosphorus	ppm ASTM D5185m 1150	844	752	843
Zinc	ppm ASTM D5185m 1270	972	905	1069
Sulfur	ppm ASTM D5185m 2060	3321	2434	2816

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	17	▲ 83	▲ 72
Sodium	ppm ASTM D5185m	39	▲ 2777	▲ 1984
Potassium	ppm ASTM D5185m >20	3	▲ 183	▲ 146
Glycol	% *ASTM D2982	NEG	▲ 0.10	▲ 0.10

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.5	0.8	0.9
Nitration	Abs/cm *ASTM D7624 >20	6.9	45.0	60.6
Sulfation	Abs/.1mm *ASTM D7415 >30	19.5	0.0	0.0

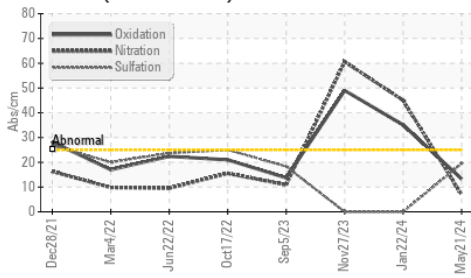
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	13.3	35.1	49.0
Base Number (BN)	mg KOH/g ASTM D2896 9.8	7.7	83.0	76.2

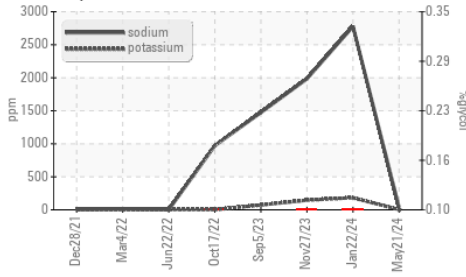


OIL ANALYSIS REPORT

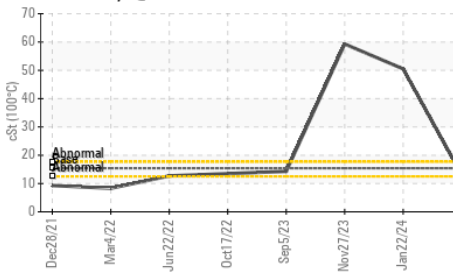
FT-IR (Direct Trend)



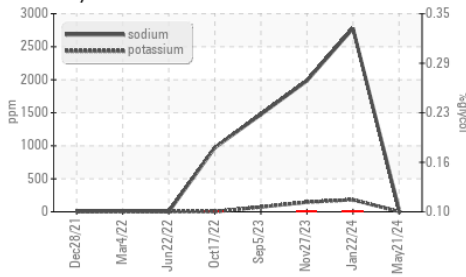
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

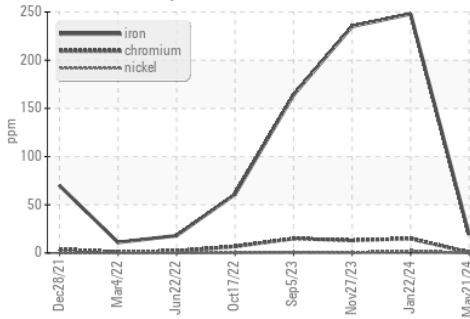


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

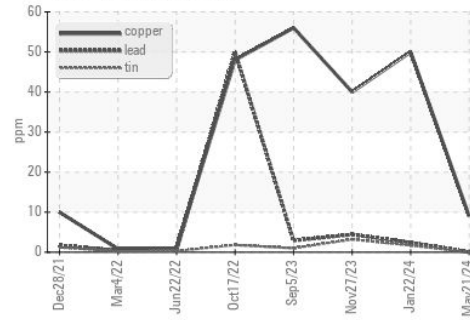
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	50.5 / 59.3

GRAPHS

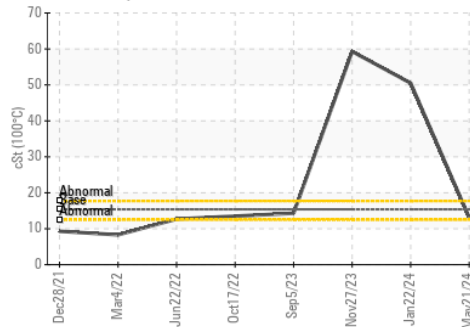
Ferrous Alloys



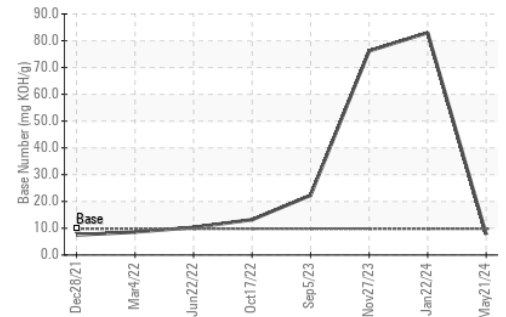
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0116211
 Lab Number : 06191743
 Unique Number : 11048495
 Test Package : FLEET

Received : 24 May 2024
 Tested : 30 May 2024
 Diagnosed : 30 May 2024 - Jonathan Hester

GFL Environmental - 626 - Cadillac Hauling
 1501 Ron Wilson St
 Cadillac, MI
 US 49601
 Contact: GARY BREWER
 gbrewerjr@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)