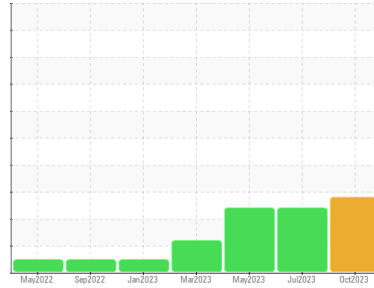




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id
0547

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0091578	GFL0084296	GFL0077605
Sample Date	Client Info		10 Oct 2023	25 Jul 2023	17 May 2023
Machine Age	kms	Client Info	341239	336924	323824
Oil Age	kms	Client Info	0	0	0
Oil Changed	Client Info		Changed	N/A	Changed
Sample Status			SEVERE	SEVERE	SEVERE

CONTAMINATION

	method	limit/base	current	history1	history2
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >100	27	20	20
Chromium	ppm	ASTM D5185(m) >20	<1	<1	<1
Nickel	ppm	ASTM D5185(m) >4	<1	0	<1
Titanium	ppm	ASTM D5185(m)	0	0	<1
Silver	ppm	ASTM D5185(m) >3	<1	0	0
Aluminum	ppm	ASTM D5185(m) >20	2	2	2
Lead	ppm	ASTM D5185(m) >40	4	4	5
Copper	ppm	ASTM D5185(m) >330	3	3	4
Tin	ppm	ASTM D5185(m) >15	1	1	1
Antimony	ppm	ASTM D5185(m)	0	0	0
Vanadium	ppm	ASTM D5185(m)	0	0	0
Beryllium	ppm	ASTM D5185(m)	0	0	0
Cadmium	ppm	ASTM D5185(m)	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	2	2	2
Barium	ppm	ASTM D5185(m) 0	<1	0	0
Molybdenum	ppm	ASTM D5185(m) 60	47	49	50
Manganese	ppm	ASTM D5185(m) 0	0	<1	<1
Magnesium	ppm	ASTM D5185(m) 1010	746	796	806
Calcium	ppm	ASTM D5185(m) 1070	823	853	919
Phosphorus	ppm	ASTM D5185(m) 1150	775	896	907
Zinc	ppm	ASTM D5185(m) 1270	934	985	992
Sulfur	ppm	ASTM D5185(m) 2060	1880	2063	2119
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >25	7	7	6
Sodium	ppm	ASTM D5185(m)	2	2	2
Potassium	ppm	ASTM D5185(m) >20	<1	<1	<1
Fuel	%	ASTM D7593* >5	11.8	9.9	11.9

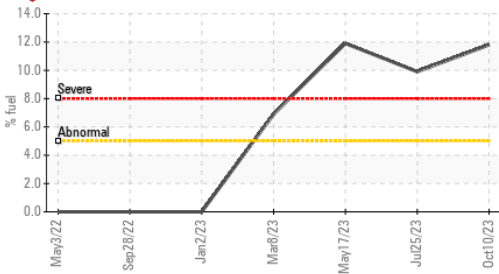
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >3	0.6	0.4	0.5
Nitration	Abs/cm	ASTM D7624* >20	14.1	12.4	11.8
Sulfation	Abs/.1mm	ASTM D7415* >30	29.1	26.7	23.8



OIL ANALYSIS REPORT

Fuel Dilution



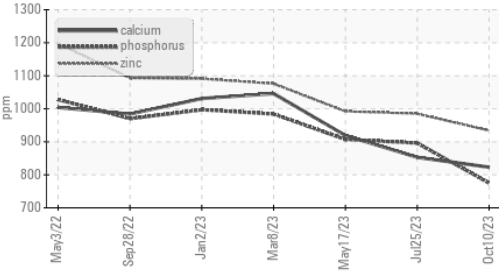
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	39.4	32.6	26.6
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	5.74	6.67	6.59

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

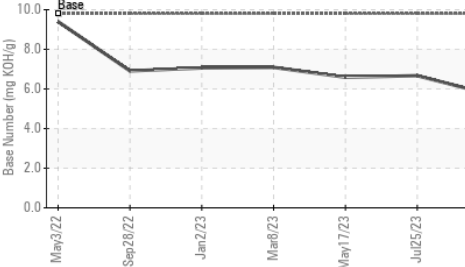
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	10.3	11.1	11.5

GRAPHS

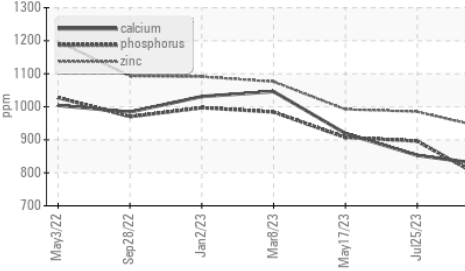
Additives



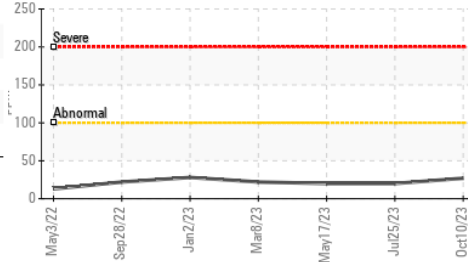
Base Number



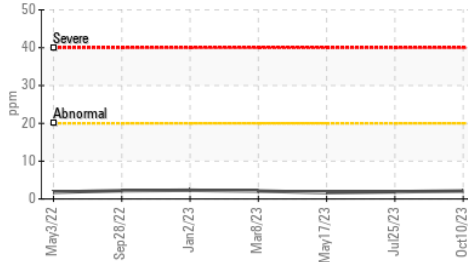
Additives



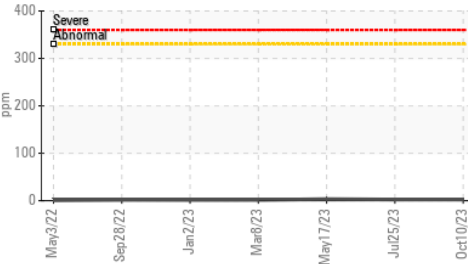
Iron (ppm)



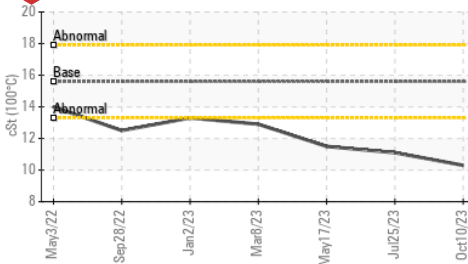
Aluminum (ppm)



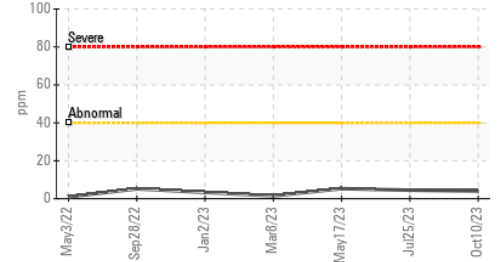
Copper (ppm)



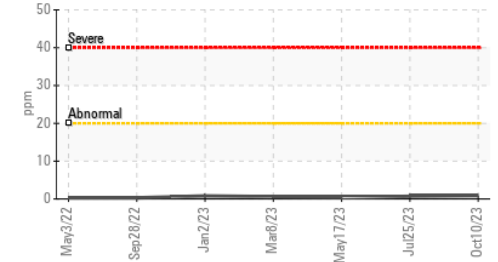
Viscosity @ 100°C



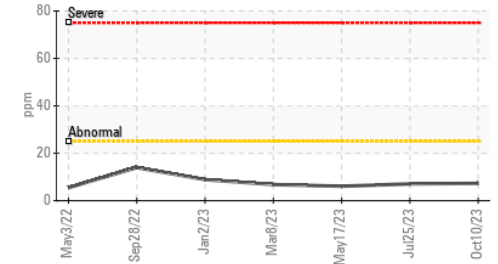
Lead (ppm)



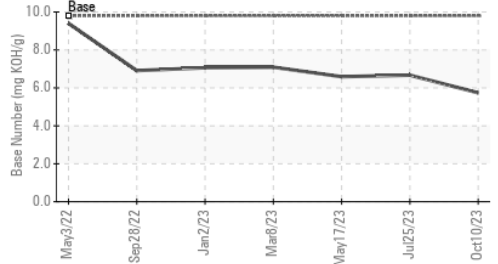
Chromium (ppm)



Silicon (ppm)



Base Number



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 550 - Rocky View County
Sample No. : GFL0091578 **Received** : 17 Oct 2023
Lab Number : 02589478 **Diagnosed** : 18 Oct 2023
Unique Number : 5658544 **Diagnostician** : Kevin Marson
Test Package : MOB 2 (Additional Tests: PercentFuel)

To discuss this sample report, contact Customer Service at 1-800-268-2131.

Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

Validity of results and interpretation are based on the sample and information as supplied.

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