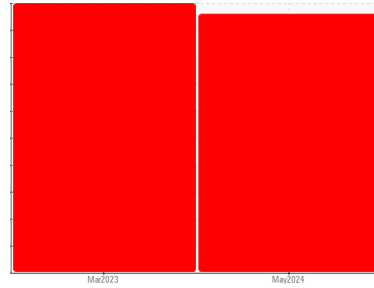




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
INTERNATIONAL 823033
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation

Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. No other corrective action is recommended at this time.

▲ Wear

Aluminum ppm levels are severe. Iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Piston wear is indicated.

▲ Contamination

Light fuel dilution occurring. Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. No other contaminants were detected in the oil.

▲ Fluid Condition

Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear. The condition of the oil is acceptable for the time in service (see recommendation).

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0122275	GFL0071125	---
Sample Date	Client Info		16 May 2024	06 Mar 2023	---
Machine Age	hrs	Client Info	15542	15094	---
Oil Age	hrs	Client Info	282	0	---
Oil Changed	Client Info		Changed	N/A	---
Sample Status			SEVERE	SEVERE	---

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	NEG	NEG	---

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		18	27	---
Iron	ppm	ASTM D5185(m) >100	▲ 171	▲ 223	---
Chromium	ppm	ASTM D5185(m) >20	4	6	---
Nickel	ppm	ASTM D5185(m) >4	1	2	---
Titanium	ppm	ASTM D5185(m)	0	<1	---
Silver	ppm	ASTM D5185(m) >3	0	0	---
Aluminum	ppm	ASTM D5185(m) >20	▲ 83	▲ 118	---
Lead	ppm	ASTM D5185(m) >40	<1	2	---
Copper	ppm	ASTM D5185(m) >330	6	9	---
Tin	ppm	ASTM D5185(m) >15	0	1	---
Antimony	ppm	ASTM D5185(m)	0	0	---
Vanadium	ppm	ASTM D5185(m)	0	0	---
Beryllium	ppm	ASTM D5185(m)	0	0	---
Cadmium	ppm	ASTM D5185(m)	0	0	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	6	3	---
Barium	ppm	ASTM D5185(m) 0	0	0	---
Molybdenum	ppm	ASTM D5185(m) 60	82	73	---
Manganese	ppm	ASTM D5185(m) 0	2	3	---
Magnesium	ppm	ASTM D5185(m) 1010	998	1012	---
Calcium	ppm	ASTM D5185(m) 1070	1110	1173	---
Phosphorus	ppm	ASTM D5185(m) 1150	1037	1140	---
Zinc	ppm	ASTM D5185(m) 1270	1221	1263	---
Sulfur	ppm	ASTM D5185(m) 2060	2619	2691	---
Lithium	ppm	ASTM D5185(m)	<1	<1	---

CONTAMINANTS

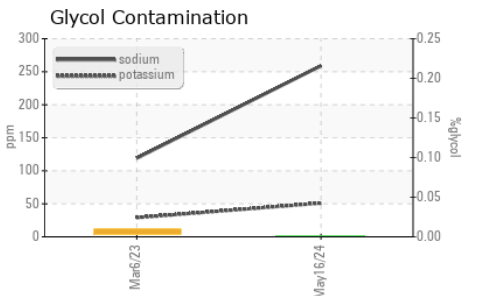
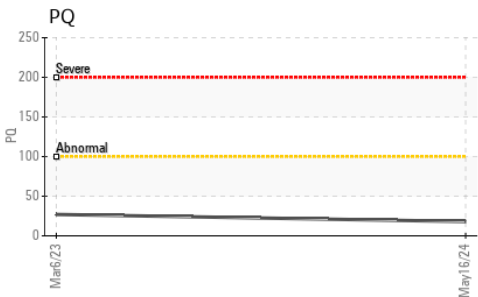
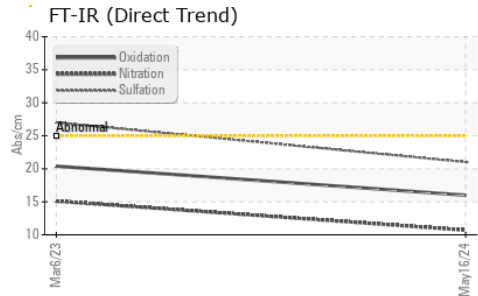
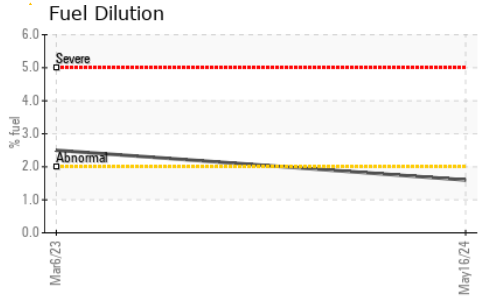
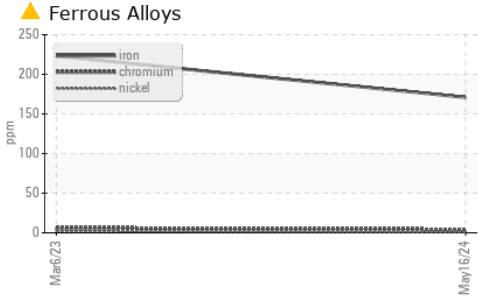
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >25	10	17	---
Sodium	ppm	ASTM D5185(m)	● 259	● 119	---
Potassium	ppm	ASTM D5185(m) >20	▲ 51	▲ 29	---
Fuel	%	ASTM D7593* >2.0	1.6	▲ 2.5	---
Glycol	%	ASTM D7922*	0.0	▲ 0.01	---

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	ASTM D7844* >3	0.9	2.2	---
Nitration	Abs/cm	ASTM D7624* >20	10.7	15.1	---
Sulfation	Abs./1mm	ASTM D7415* >30	21.0	27.0	---



OIL ANALYSIS REPORT

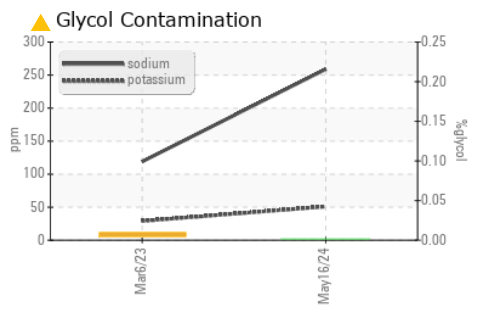
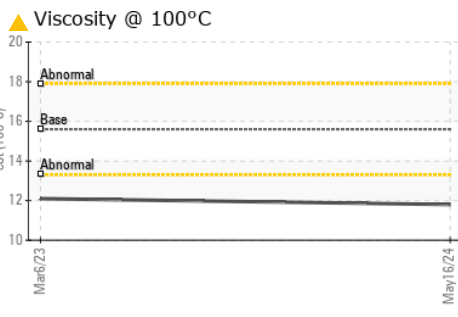
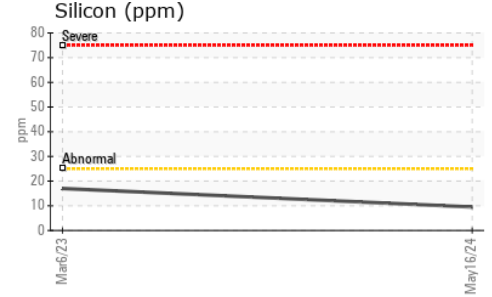
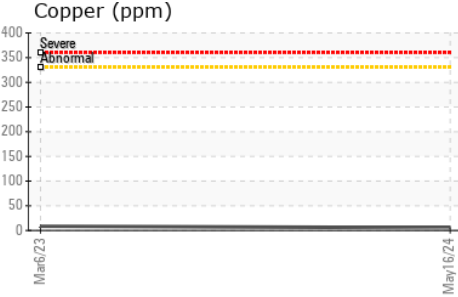
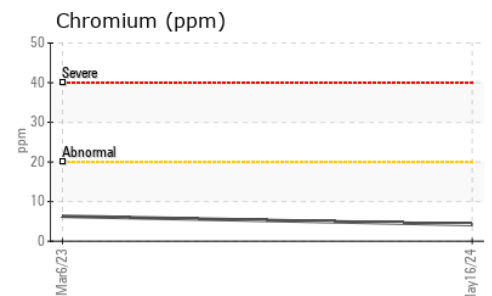
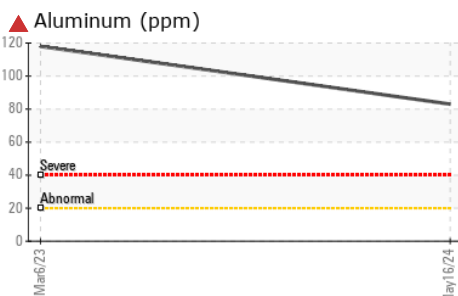
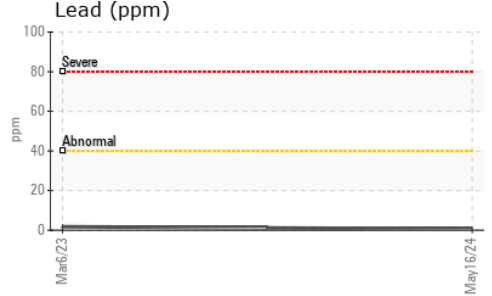
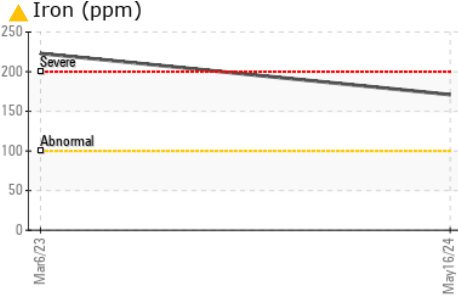


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	16.0	20.4	---

VISUAL		method	limit/base	current	history1	history2
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 D7279(m)	15.6	▲ 11.8	12.1	---

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0122275
Lab Number : 02637362
Unique Number : 5786524
Test Package : MOB 1 (Additional Tests: FuelDilution, Glycol, PercentFuel, PQ)
Received : 24 May 2024
Tested : 27 May 2024
Diagnosed : 27 May 2024 - Kevin Marson

GFL Environmental - 987 - Charlottetown
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 Charlottetown, PE
 CA C1A 7N5
 Contact: Vicki Metcalfe
 vmetcalfe@gflenv.com
 T: (782)377-5918
 F: (506)453-9490

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.