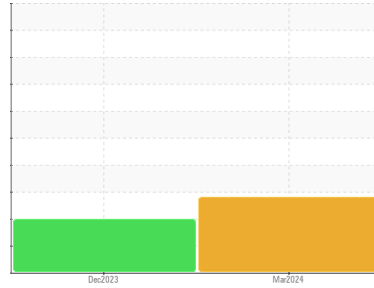




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
213061

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Elemental level of silicon (Si) above normal indicating ingress of seal material. Light fuel dilution occurring.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0070967	GFL0100155	---
Sample Date	Client Info	11 Mar 2024	07 Dec 2023	---
Machine Age	hrs	1479	330	---
Oil Age	hrs	1479	330	---
Oil Changed	Client Info	Not Chngd	N/A	---
Sample Status		ABNORMAL	ABNORMAL	---

CONTAMINATION

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

WEAR METALS

method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>100	19	8	---
Chromium	ppm	ASTM D5185m	>20	2	<1	---
Nickel	ppm	ASTM D5185m	>2	0	0	---
Titanium	ppm	ASTM D5185m	>2	<1	<1	---
Silver	ppm	ASTM D5185m	>2	2	<1	---
Aluminum	ppm	ASTM D5185m	>25	3	3	---
Lead	ppm	ASTM D5185m	>40	0	0	---
Copper	ppm	ASTM D5185m	>330	16	12	---
Tin	ppm	ASTM D5185m	>15	0	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
Cadmium	ppm	ASTM D5185m		0	0	---

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	0	80	92	---
Barium	ppm	ASTM D5185m	0	<1	0	---
Molybdenum	ppm	ASTM D5185m	60	2	<1	---
Manganese	ppm	ASTM D5185m	0	2	2	---
Magnesium	ppm	ASTM D5185m	1010	685	664	---
Calcium	ppm	ASTM D5185m	1070	1239	1193	---
Phosphorus	ppm	ASTM D5185m	1150	1010	994	---
Zinc	ppm	ASTM D5185m	1270	1103	1156	---
Sulfur	ppm	ASTM D5185m	2060	4026	3675	---

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>25	▲ 27	23	---
Sodium	ppm	ASTM D5185m		12	11	---
Potassium	ppm	ASTM D5185m	>20	5	6	---
Fuel	%	ASTM D3524	>5	▲ 3.7	▲ 2.7	---

INFRA-RED

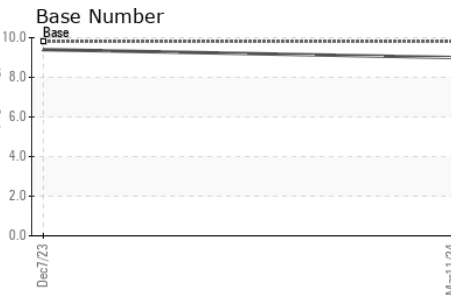
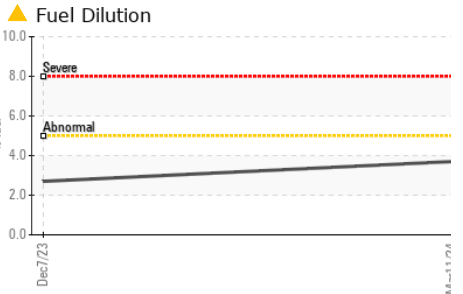
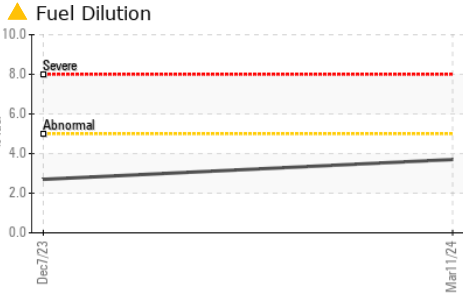
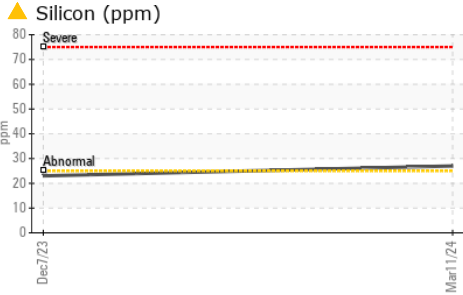
method	limit/base	current	history1	history2		
Soot %	%	*ASTM D7844	>3	0.1	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	7.5	6.0	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.9	18.5	---

FLUID DEGRADATION

method	limit/base	current	history1	history2		
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.4	12.2	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	9.0	9.4	---



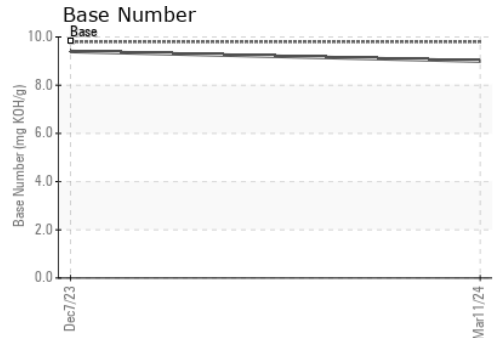
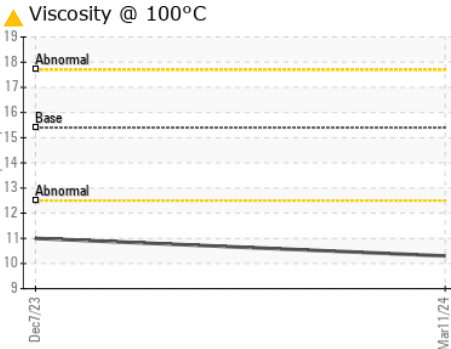
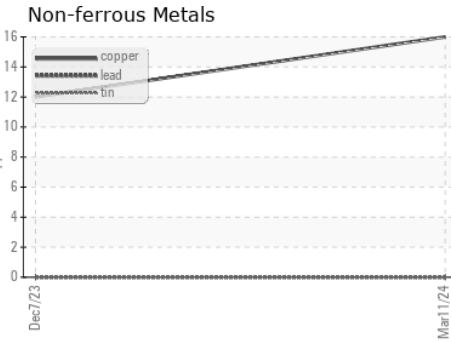
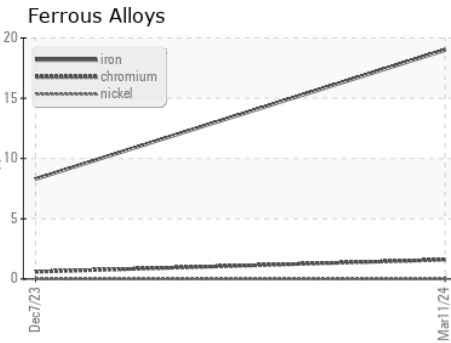
OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 10.3	▲ 11.0

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0070967 **Received** : 12 Mar 2024
Lab Number : 06115683 **Tested** : 14 Mar 2024
Unique Number : 10924516 **Diagnosed** : 14 Mar 2024 - Sean Felton
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

GFL Environmental - 657 - Charlottesville Hauling
 5498 Richmond Road
 Troy, VA
 US 22974
 Contact: Brian Ulickas
 bulickas@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)

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F: