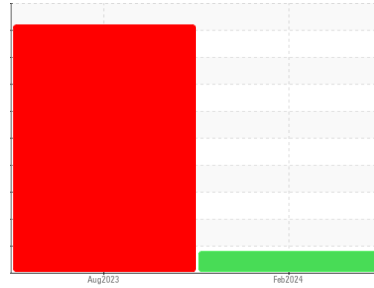




# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Machine Id  
**827089**

Component  
**Diesel Engine**

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

## DIAGNOSIS

### Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

### Wear

The copper level is abnormal. All other 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 acceptable for the time in service.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>GFL0067038</b>	GFL0066951	---
Sample Date	Client Info	<b>02 Feb 2024</b>	09 Aug 2023	---
Machine Age	hrs	<b>13246</b>	11167	---
Oil Age	hrs	<b>0</b>	0	---
Oil Changed	Client Info	<b>Changed</b>	Changed	---
Sample Status		<b>ABNORMAL</b>	SEVERE	---

## CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<b>&lt;1.0</b>	<1.0	---
Water	WC Method >0.2	<b>NEG</b>	NEG	---

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >110	<b>74</b>	86	---
Chromium	ppm ASTM D5185m >4	<b>3</b>	4	---
Nickel	ppm ASTM D5185m >2	<b>1</b>	<1	---
Titanium	ppm ASTM D5185m	<b>&lt;1</b>	0	---
Silver	ppm ASTM D5185m >2	<b>0</b>	0	---
Aluminum	ppm ASTM D5185m >25	<b>7</b>	11	---
Lead	ppm ASTM D5185m >45	<b>1</b>	3	---
Copper	ppm ASTM D5185m >85	<b>▲ 93</b>	▲ 89	---
Tin	ppm ASTM D5185m >4	<b>&lt;1</b>	<1	---
Vanadium	ppm ASTM D5185m	<b>0</b>	<1	---
Cadmium	ppm ASTM D5185m	<b>&lt;1</b>	0	---

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<b>171</b>	22	---
Barium	ppm ASTM D5185m 0	<b>&lt;1</b>	0	---
Molybdenum	ppm ASTM D5185m 60	<b>144</b>	104	---
Manganese	ppm ASTM D5185m 0	<b>2</b>	1	---
Magnesium	ppm ASTM D5185m 1010	<b>780</b>	1309	---
Calcium	ppm ASTM D5185m 1070	<b>1687</b>	1665	---
Phosphorus	ppm ASTM D5185m 1150	<b>814</b>	1309	---
Zinc	ppm ASTM D5185m 1270	<b>996</b>	1737	---
Sulfur	ppm ASTM D5185m 2060	<b>2612</b>	3646	---

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >30	<b>17</b>	18	---
Sodium	ppm ASTM D5185m	<b>64</b>	▲ 466	---
Potassium	ppm ASTM D5185m >20	<b>4</b>	▲ 12	---
Glycol	% *ASTM D2982	<b>NEG</b>	◆ 0.10	---

## INFRA-RED

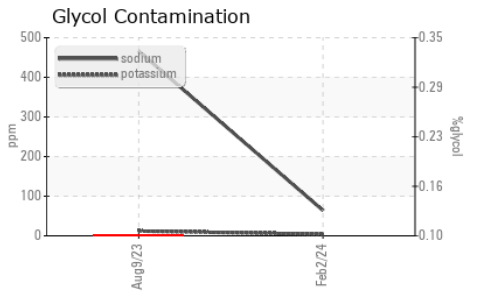
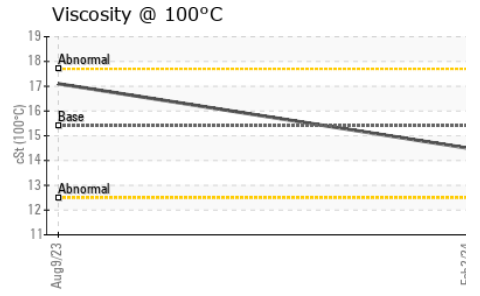
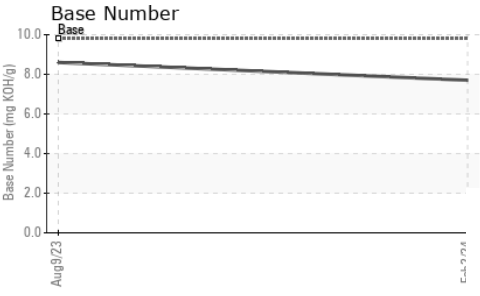
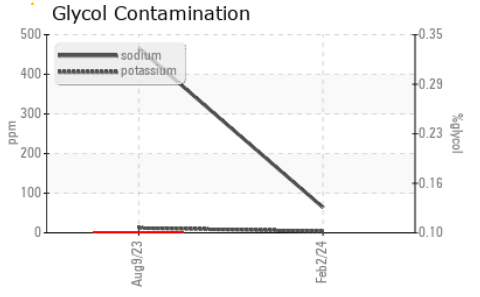
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	<b>1.9</b>	2.1	---
Nitration	Abs/cm *ASTM D7624 >20	<b>11.9</b>	17.5	---
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>27.1</b>	31.6	---

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>20.6</b>	28.3	---
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>7.7</b>	8.6	---



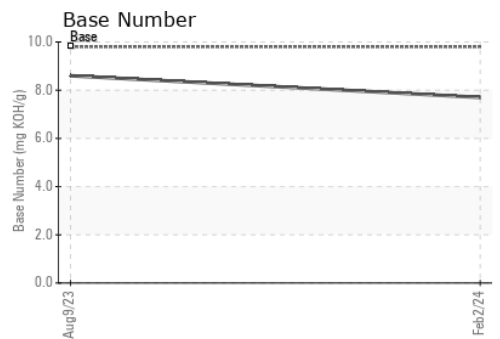
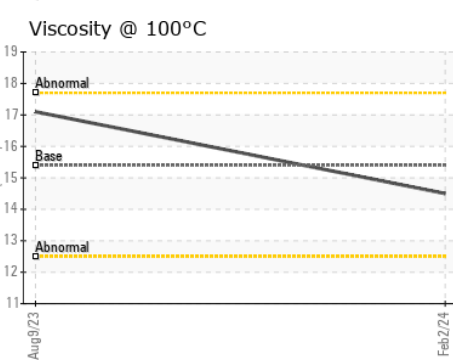
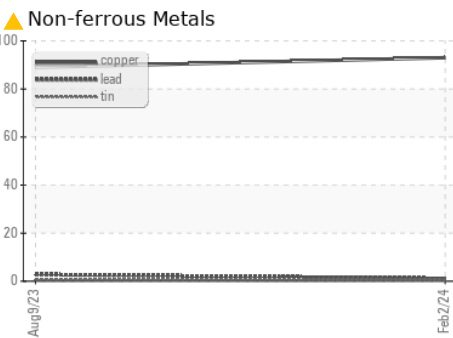
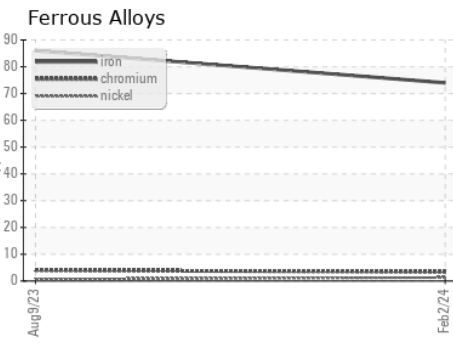
# OIL ANALYSIS REPORT



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	14.5	17.1

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0067038      **Received** : 09 Feb 2024  
**Lab Number** : 06085231      **Tested** : 13 Feb 2024  
**Unique Number** : 10872676      **Diagnosed** : 13 Feb 2024 - Jonathan Hester  
**Test Package** : FLEET

**GFL Environmental - 916 - Greenbay HC**  
 1799 County Trunk PP  
 DePere, WI  
 US 54115  
 Contact: Travis Runge  
 travis.runge@gflenv.com  
 T: (920)351-2341  
 F:

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)