



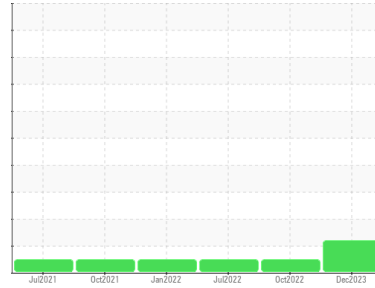
# OIL ANALYSIS REPORT

Sample Rating Trend

GLYCOL



Machine Id  
**590M**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**



## DIAGNOSIS

### Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter 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

Sodium and/or potassium levels are high.

### Fluid Condition

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		<b>GFL0105799</b>	GFL0057281	GFL0055117
Sample Date	Client Info		<b>22 Dec 2023</b>	14 Oct 2022	08 Jul 2022
Machine Age	hrs	Client Info	<b>12185</b>	9526	8870
Oil Age	hrs	Client Info	<b>9526</b>	656	7756
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>ABNORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>90	<b>19</b>	22	18
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	6	3
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	2	2
Tin	ppm	ASTM D5185m	>15	<b>0</b>	<1	<1
Antimony	ppm	ASTM D5185m		<b>---</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	0	<b>8</b>	2	4
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	60	<b>76</b>	59	63
Manganese	ppm	ASTM D5185m	0	<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	1010	<b>849</b>	913	931
Calcium	ppm	ASTM D5185m	1070	<b>981</b>	1074	1127
Phosphorus	ppm	ASTM D5185m	1150	<b>885</b>	947	1008
Zinc	ppm	ASTM D5185m	1270	<b>1095</b>	1193	1260
Sulfur	ppm	ASTM D5185m	2060	<b>3138</b>	3351	3409

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>25	<b>13</b>	4	9
Sodium	ppm	ASTM D5185m		<b>597</b>	0	6
Potassium	ppm	ASTM D5185m	>20	<b>6</b>	14	3
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG

## INFRA-RED

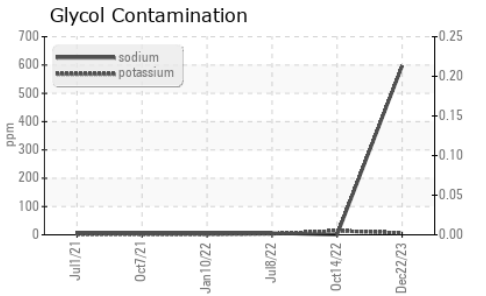
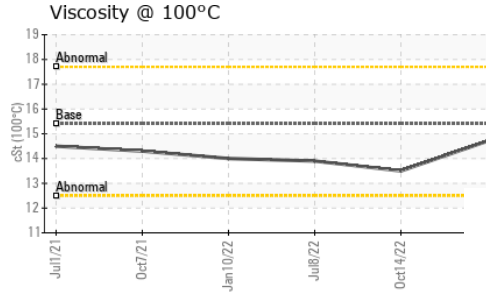
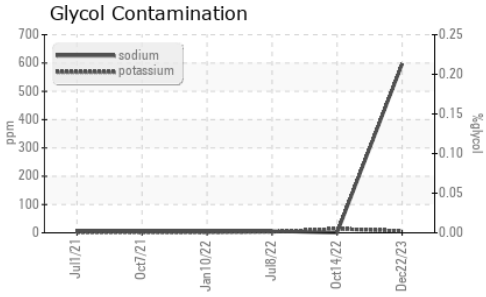
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>6	<b>1</b>	0.8	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.7</b>	12.2	9.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.5</b>	23.6	21.2

## FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.2</b>	20.1	17.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>10.3</b>	7.0	9.2



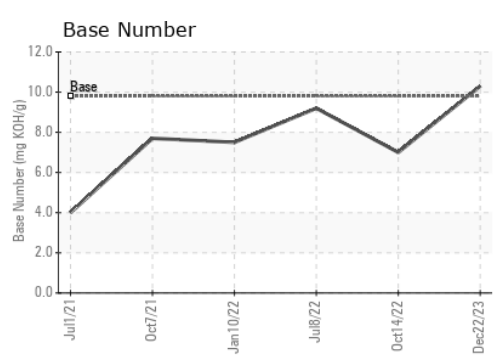
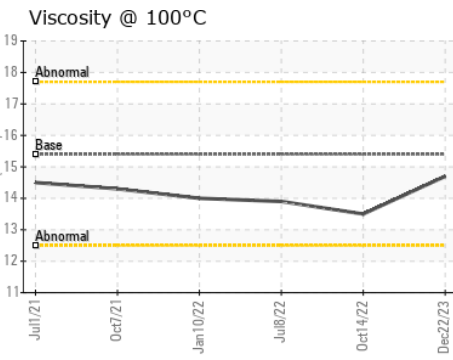
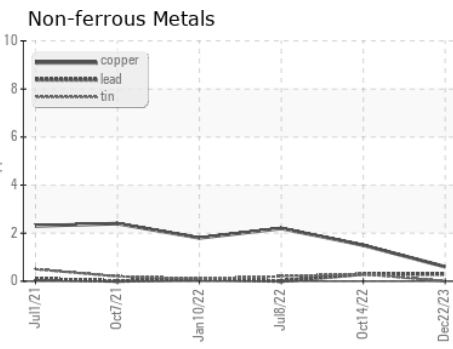
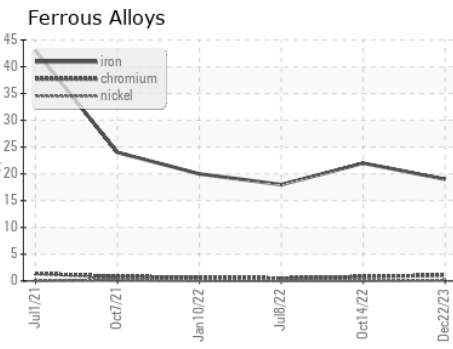
# OIL ANALYSIS REPORT



VISUAL	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	14.7	13.5

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0105799 **Received** : 27 Dec 2023  
**Lab Number** : 06045855 **Diagnosed** : 29 Dec 2023  
**Unique Number** : 10806463 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: Glycol )

**GFL Environmental - 415 - Michigan East**  
 6200 Elmridge  
 Sterling Heights, MI  
 US 48313  
 Contact: Frank Wolak  
 fwolak@gflenv.com  
 T: (586)825-9514  
 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)