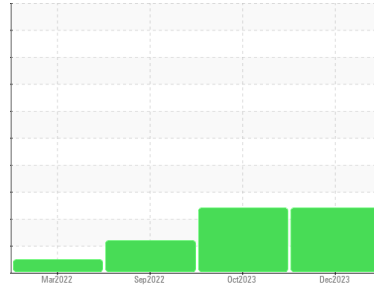




# OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id  
**428068-402225.1**

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. 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>GFL0077271</b>	GFL0093609	GFL0048364
Sample Date	Client Info	<b>20 Dec 2023</b>	11 Oct 2023	13 Sep 2022
Machine Age	hrs	<b>18167</b>	17873	16618
Oil Age	hrs	<b>344</b>	135	591
Oil Changed	Client Info	<b>Not Chngd</b>	N/A	Changed
Sample Status		<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<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 >100	<b>48</b>	32	28
Chromium	ppm ASTM D5185m >20	<b>3</b>	2	2
Nickel	ppm ASTM D5185m >4	<b>&lt;1</b>	<1	<1
Titanium	ppm ASTM D5185m	<b>&lt;1</b>	<1	<1
Silver	ppm ASTM D5185m >3	<b>0</b>	0	<1
Aluminum	ppm ASTM D5185m >20	<b>5</b>	5	5
Lead	ppm ASTM D5185m >40	<b>2</b>	4	2
Copper	ppm ASTM D5185m >330	<b>4</b>	2	1
Tin	ppm ASTM D5185m >15	<b>&lt;1</b>	<1	<1
Antimony	ppm ASTM D5185m	<b>---</b>	---	---
Vanadium	ppm ASTM D5185m	<b>&lt;1</b>	<1	<1
Cadmium	ppm ASTM D5185m	<b>&lt;1</b>	0	<1

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<b>4</b>	3	9
Barium	ppm ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185m 60	<b>75</b>	80	77
Manganese	ppm ASTM D5185m 0	<b>&lt;1</b>	<1	<1
Magnesium	ppm ASTM D5185m 1010	<b>1030</b>	1105	983
Calcium	ppm ASTM D5185m 1070	<b>1142</b>	1205	1174
Phosphorus	ppm ASTM D5185m 1150	<b>1138</b>	1140	1078
Zinc	ppm ASTM D5185m 1270	<b>1369</b>	1535	1357
Sulfur	ppm ASTM D5185m 2060	<b>3173</b>	3474	3037

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	<b>12</b>	11	6
Sodium	ppm ASTM D5185m	<b>▲ 195</b>	▲ 206	▲ 310
Potassium	ppm ASTM D5185m >20	<b>▲ 55</b>	▲ 50	18
Glycol	% *ASTM D2982	<b>NEG</b>	NEG	NEG

## INFRA-RED

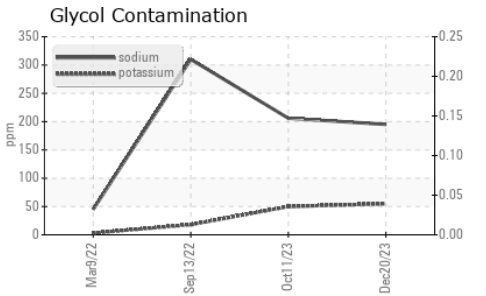
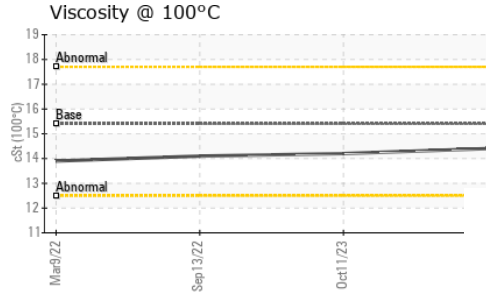
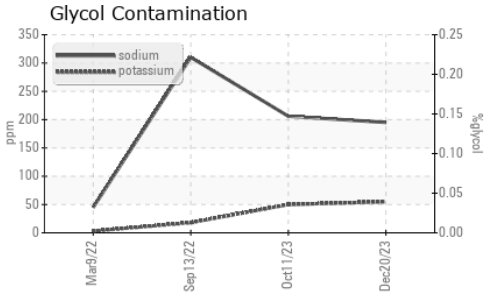
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	<b>0.4</b>	0.4	0.2
Nitration	Abs/cm *ASTM D7624 >20	<b>9.7</b>	9.3	10.2
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>22.4</b>	21.9	21.0

## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>18.9</b>	18.6	17.9
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>6.8</b>	6.2	8.6



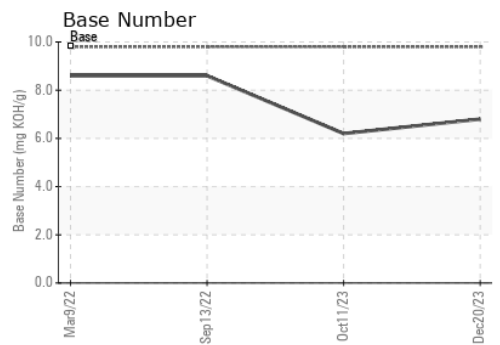
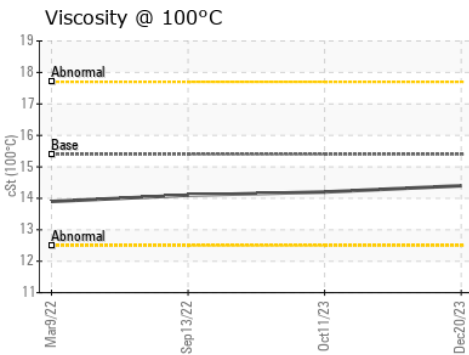
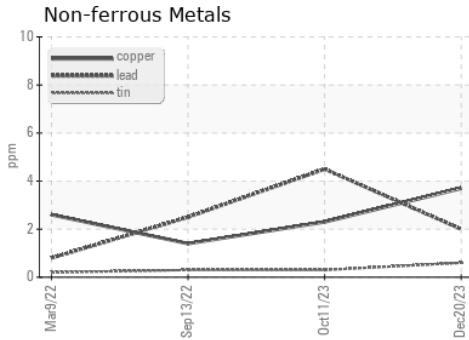
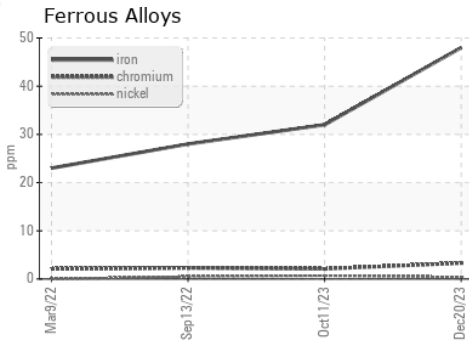
# OIL ANALYSIS REPORT



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	<b>14.4</b>	14.2	14.1

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0077271 **Received** : 21 Dec 2023  
**Lab Number** : **06041870** **Diagnosed** : 26 Dec 2023  
**Unique Number** : 10802478 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: Glycol )

**GFL Environmental - 891 - Oklahoma City Hauling**  
 1001 South Rockwell  
 Oklahoma City, OK  
 US 73128  
 Contact: Andy Smith  
 andrew.smith@gflenv.com  
 T: (405)306-1651  
 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)