



Machine Id  
**426145-4623**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0103969</b>	GFL0100484	---
Sample Date		Client Info		<b>07 Feb 2024</b>	16 Nov 2023	---
Machine Age	hrs	Client Info		<b>18633</b>	18320	---
Oil Age	hrs	Client Info		<b>0</b>	18320	---
Filter Age	hrs	Client Info		<b>0</b>	0	---
Oil Changed		Client Info		<b>Changed</b>	Not Changed	---
Filter Changed		Client Info		<b>Changed</b>	Not Changed	---
Sample Status				<b>ABNORMAL</b>	NORMAL	---

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>67</b>	17	---
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	<1	---
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	---
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>20	<b>▲ 8</b>	6	---
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	<1	---
Copper	ppm	ASTM D5185m	>330	<b>111</b>	32	---
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

**CONTAMINATION**

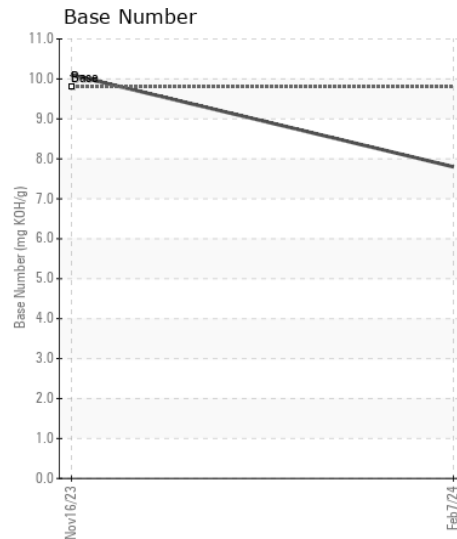
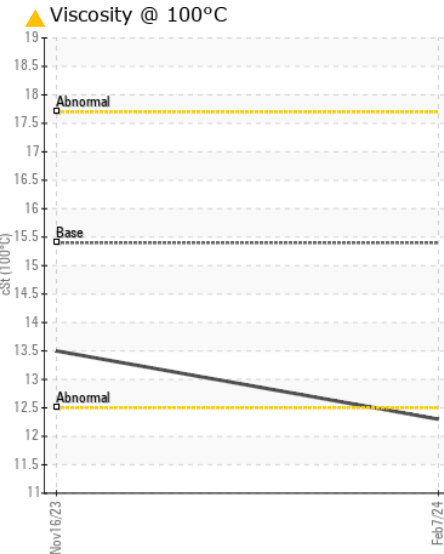
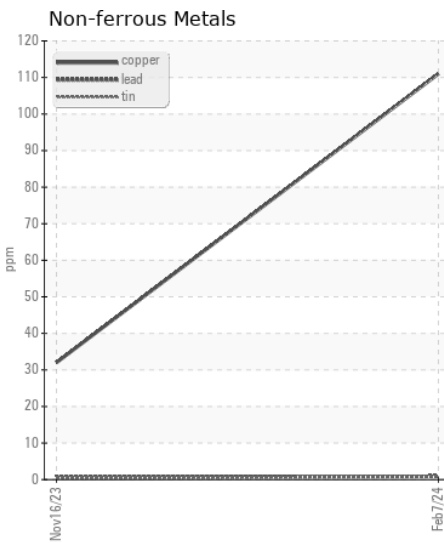
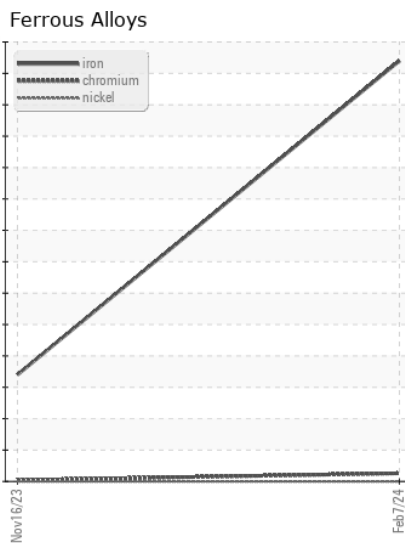
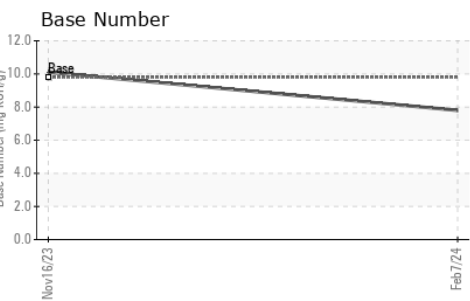
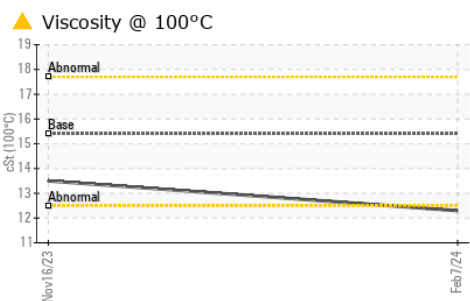
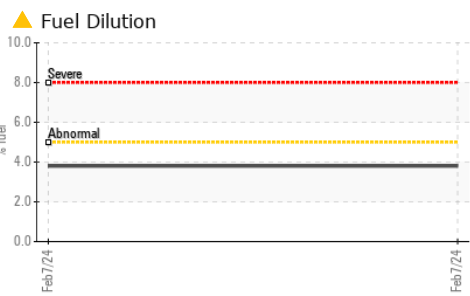
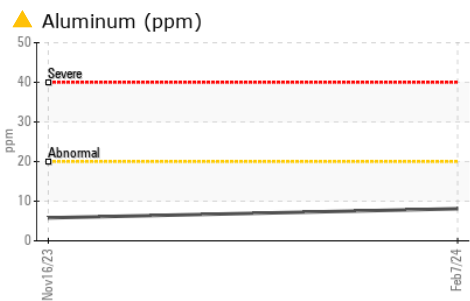
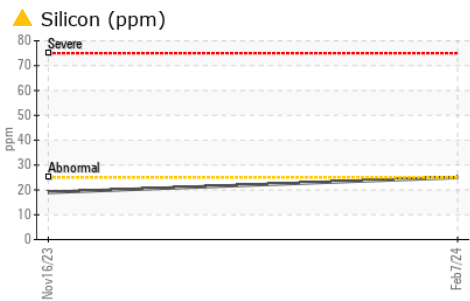
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Light fuel dilution occurring.

Silicon	ppm	ASTM D5185m	>25	<b>▲ 25</b>	19	---
Potassium	ppm	ASTM D5185m	>20	<b>22</b>	18	---
Fuel	%	ASTM D3524	>5	<b>▲ 3.8</b>	<1.0	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>3	<b>0.8</b>	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.3</b>	5.0	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>24.9</b>	22.8	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	---

**FLUID CONDITION**

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		<b>13</b>	11	---
Boron	ppm	ASTM D5185m	0	<b>234</b>	397	---
Barium	ppm	ASTM D5185m	0	<b>19</b>	2	---
Molybdenum	ppm	ASTM D5185m	60	<b>127</b>	128	---
Manganese	ppm	ASTM D5185m	0	<b>9</b>	5	---
Magnesium	ppm	ASTM D5185m	1010	<b>660</b>	723	---
Calcium	ppm	ASTM D5185m	1070	<b>1550</b>	1555	---
Phosphorus	ppm	ASTM D5185m	1150	<b>677</b>	738	---
Zinc	ppm	ASTM D5185m	1270	<b>850</b>	901	---
Sulfur	ppm	ASTM D5185m	2060	<b>2333</b>	2716	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>20.4</b>	15.9	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>7.8</b>	10.1	---
Visc @ 100°C	cSt	ASTM D445	15.4	<b>▲ 12.3</b>	13.5	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0103969 **Received** : 12 Feb 2024  
**Lab Number** : 06085604 **Tested** : 14 Feb 2024  
**Unique Number** : 10873049 **Diagnosed** : 14 Feb 2024 - Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: FuelDilution, PercentFuel )

**GFL Environmental - 865 - East Mount Hauling**  
 7213 East Mount Houston Road  
 Houston, TX  
 US 77050  
 Contact: Saul Castillo  
 saul.castillo@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)