



Machine Id  
**727023-591**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON HP 15W40 (--- GAL)**

**RECOMMENDATION**

We advise that you check for the source of the coolant leak. We advise that you check all areas where dirt can enter the system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. ( Customer Sample Comment: Services completed )

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0116243</b>	GFL0100046	GFL0062185
Sample Date		Client Info		<b>09 May 2024</b>	27 Nov 2023	26 Jun 2023
Machine Age	hrs	Client Info		<b>18962</b>	18043	17022
Oil Age	hrs	Client Info		<b>467</b>	137	99
Filter Age	hrs	Client Info		<b>467</b>	137	99
Oil Changed		Client Info		<b>Changed</b>	Not Changd	N/A
Filter Changed		Client Info		<b>Changed</b>	Not Changd	N/A
Sample Status				<b>SEVERE</b>	NORMAL	SEVERE

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>87</b>	7	12
Chromium	ppm	ASTM D5185m	>20	<b>4</b>	0	<1
Nickel	ppm	ASTM D5185m	>4	<b>1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>10</b>	2	2
Lead	ppm	ASTM D5185m	>40	<b>1</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>26</b>	0	9
Tin	ppm	ASTM D5185m	>15	<b>2</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

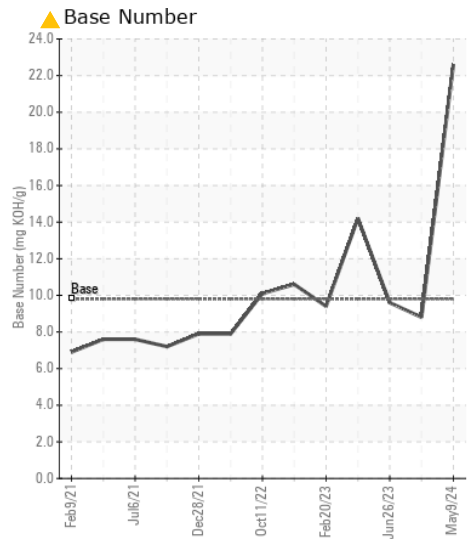
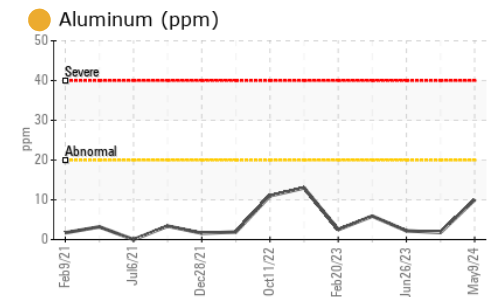
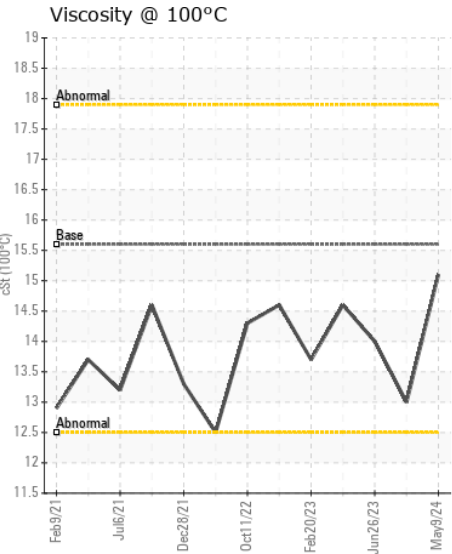
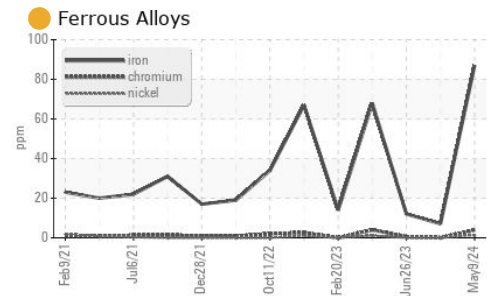
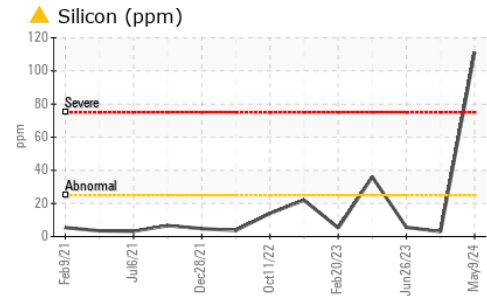
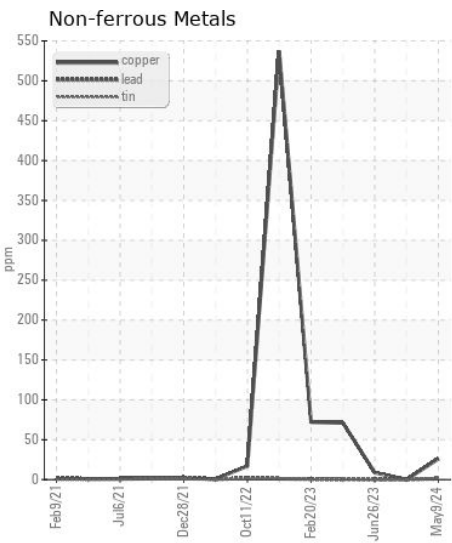
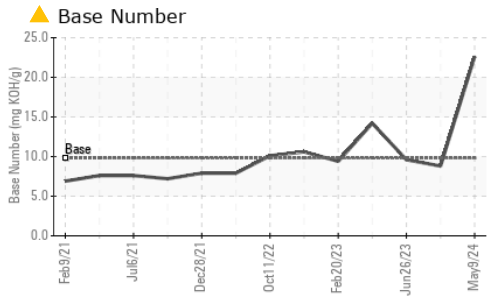
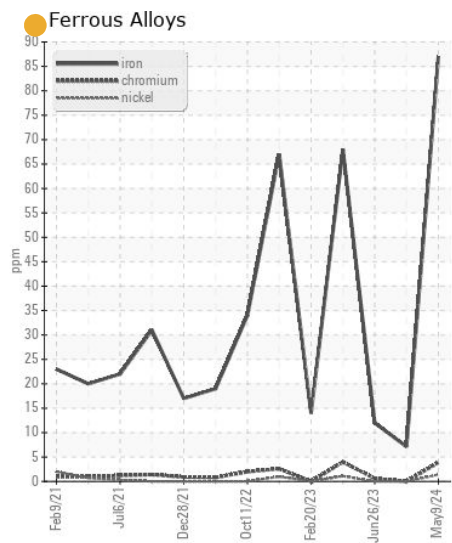
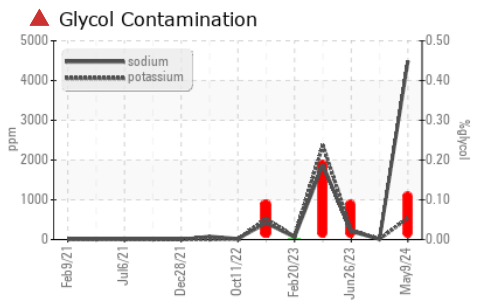
Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>25	<b>111</b>	3	6
Potassium	ppm	ASTM D5185m	>20	<b>539</b>	12	239
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	%	*ASTM D2982		<b>0.12</b>	NEG	0.10
Soot %	%	*ASTM D7844	>3	<b>0.7</b>	0.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>16.9</b>	5.8	6.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>25.0</b>	17.6	19.0
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

The BN result is higher than normal. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		<b>4486</b>	11	203
Boron	ppm	ASTM D5185m		<b>279</b>	11	18
Barium	ppm	ASTM D5185m		<b>1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>224</b>	69	74
Manganese	ppm	ASTM D5185m		<b>2</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>826</b>	1002	919
Calcium	ppm	ASTM D5185m		<b>1057</b>	1206	1142
Phosphorus	ppm	ASTM D5185m		<b>940</b>	1155	1020
Zinc	ppm	ASTM D5185m		<b>1176</b>	1435	1255
Sulfur	ppm	ASTM D5185m		<b>3231</b>	3551	3778
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.0</b>	12.7	14.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>22.6</b>	8.8	9.6
Visc @ 100°C	cSt	ASTM D445	15.6	<b>15.1</b>	13.0	14.0



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0116243  
**Lab Number** : 06178156  
**Unique Number** : 11029482  
**Test Package** : FLEET ( Additional Tests: Glycol )

**GFL Environmental - 626 - Cadillac Hauling**  
 1501 Ron Wilson St  
 Cadillac, MI  
 US 49601

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)

Contact: GARY BREWER  
 gbrewerjr@gflenv.com  
 T:  
 F: