

Machine Id  
**STERLING 427154**  
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 the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0122260</b>	---	---
Sample Date		Client Info		<b>29 May 2024</b>	---	---
Machine Age	hrs	Client Info		<b>27141</b>	---	---
Oil Age	hrs	Client Info		<b>309</b>	---	---
Filter Age	hrs	Client Info		<b>309</b>	---	---
Oil Changed		Client Info		<b>Changed</b>	---	---
Filter Changed		Client Info		<b>Changed</b>	---	---
Sample Status				<b>SEVERE</b>	---	---

**WEAR**

Iron ppm levels are severe. PQ levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. The high ferrous density (PQ) index indicates that abnormal wear is occurring.

Test	UOM	Method	Limit/Abn	Current	History1	History2
PQ		ASTM D8184*		<b>▲ 133</b>	---	---
Iron	ppm	ASTM D5185(m)	>100	<b>▲ 295</b>	---	---
Chromium	ppm	ASTM D5185(m)	>20	<b>1</b>	---	---
Nickel	ppm	ASTM D5185(m)	>4	<b>0</b>	---	---
Titanium	ppm	ASTM D5185(m)		<b>1</b>	---	---
Silver	ppm	ASTM D5185(m)	>3	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185(m)	>20	<b>17</b>	---	---
Lead	ppm	ASTM D5185(m)	>40	<b>0</b>	---	---
Copper	ppm	ASTM D5185(m)	>330	<b>3</b>	---	---
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	---	---
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	---	---
White Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	---	---

**CONTAMINATION**

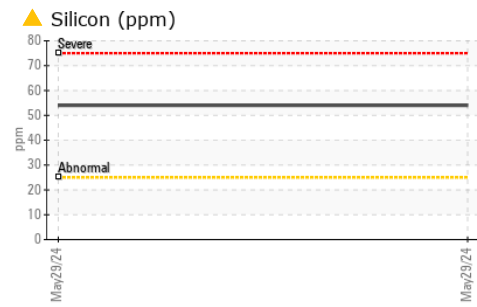
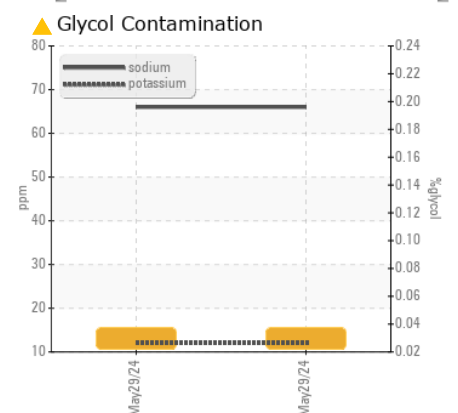
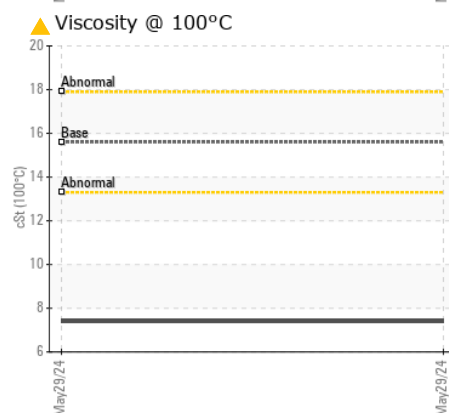
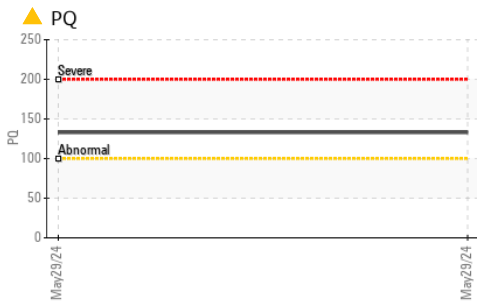
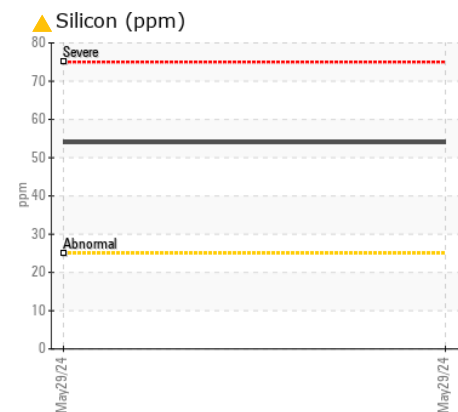
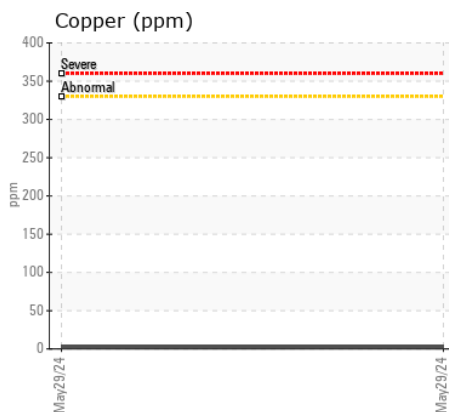
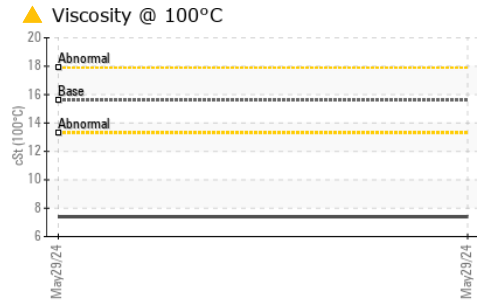
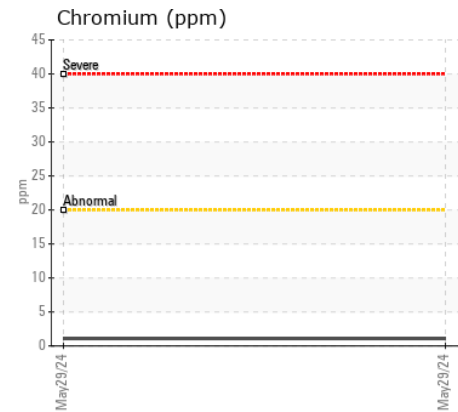
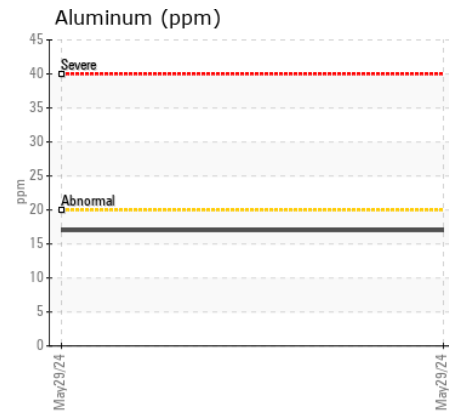
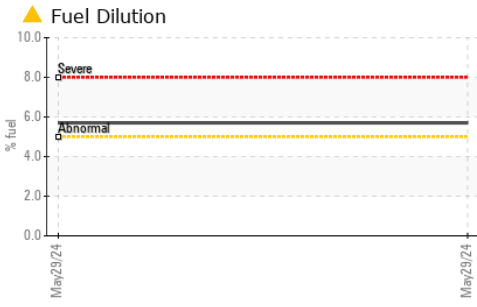
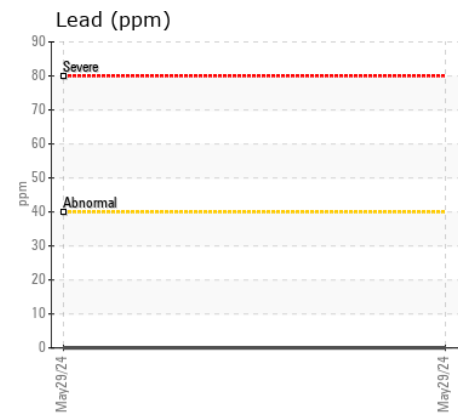
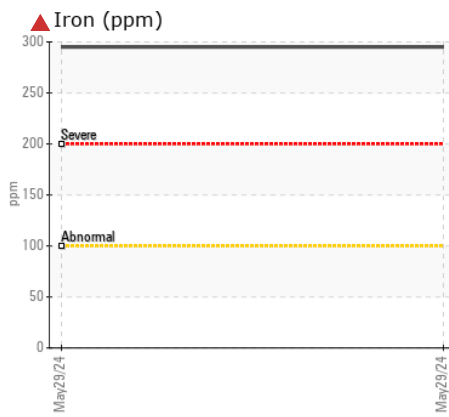
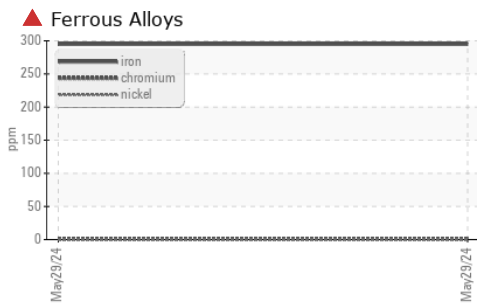
Test for glycol is positive. There is a moderate amount of fuel present in the oil. There is a light concentration of glycol present in the oil. There is a moderate concentration of water present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185(m)	>25	<b>▲ 54</b>	---	---
Potassium	ppm	ASTM D5185(m)	>20	<b>▲ 12</b>	---	---
Fuel	%	ASTM D7593*	>5	<b>▲ 5.7</b>	---	---
Water	%	ASTM D6304*	>0.2	<b>NEG</b>	---	---
Glycol	%	ASTM D7922*		<b>▲ 0.037</b>	---	---
Soot %	%	ASTM D7844*	>3	<b>0</b>	---	---
Nitration	Abs/cm	ASTM D7624*	>20	<b>5.5</b>	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>24.0</b>	---	---
Silt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Debris	scalar	Visual*	NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	---	---
Appearance	scalar	Visual*	NORML	<b>NORML</b>	---	---
Odor	scalar	Visual*	NORML	<b>NORML</b>	---	---
Emulsified Water	scalar	Visual*	>0.2	<b>▲ 1%</b>	---	---

**FLUID CONDITION**

Fuel is present in the oil and is lowering the viscosity. The white residue present in the sample is oil additive precipitate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		<b>● 66</b>	---	---
Boron	ppm	ASTM D5185(m)	0	<b>10</b>	---	---
Barium	ppm	ASTM D5185(m)	0	<b>38</b>	---	---
Molybdenum	ppm	ASTM D5185(m)	60	<b>50</b>	---	---
Manganese	ppm	ASTM D5185(m)	0	<b>3</b>	---	---
Magnesium	ppm	ASTM D5185(m)	1010	<b>809</b>	---	---
Calcium	ppm	ASTM D5185(m)	1070	<b>908</b>	---	---
Phosphorus	ppm	ASTM D5185(m)	1150	<b>959</b>	---	---
Zinc	ppm	ASTM D5185(m)	1270	<b>996</b>	---	---
Sulfur	ppm	ASTM D5185(m)	2060	<b>3515</b>	---	---
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>23.0</b>	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	<b>▲ 7.4</b>	---	---



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 987 - Charlottetown**  
**Sample No.** : GFL0122260 **Received** : 06 Jun 2024 7 Superior Crescent  
**Lab Number** : 02640170 **Tested** : 07 Jun 2024 Charlottetown, PE  
**Unique Number** : 5789332 **Diagnosed** : 07 Jun 2024 - Kevin Marson CA C1A 7N5  
**Test Package** : MOB 1 ( Additional Tests: Bottom, FuelDilution, Glycol, KF, PercentFuel, PQ, Viscosity) **Contact:** Vicki Metcalfe  
 To discuss this sample report, contact Customer Service at 1-800-268-2131. vmetcalfe@gflenv.com  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (782)377-5918  
 Validity of results and interpretation are based on the sample and information as supplied. F: (506)453-9490