



Machine Id  
**MACK 914014**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON HP 15W40 (--- GAL)**

### RECOMMENDATION

The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0122250</b>	---	---
Sample Date		Client Info		<b>17 Jun 2024</b>	---	---
Machine Age	hrs	Client Info		<b>1110</b>	---	---
Oil Age	hrs	Client Info		<b>551</b>	---	---
Filter Age	hrs	Client Info		<b>551</b>	---	---
Oil Changed		Client Info		<b>Changed</b>	---	---
Filter Changed		Client Info		<b>Changed</b>	---	---
Sample Status				<b>ABNORMAL</b>	---	---

### WEAR

Nickel ppm levels are abnormal. Exhaust valve wear is indicated. Component wear metal level(s) high for break in.

Iron	ppm	ASTM D5185(m)	>120	<b>78</b>	---	---
Chromium	ppm	ASTM D5185(m)	>20	<b>2</b>	---	---
Nickel	ppm	ASTM D5185(m)	>5	<b>▲ 10</b>	---	---
Titanium	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	---	---
Silver	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	---	---
Aluminum	ppm	ASTM D5185(m)	>20	<b>7</b>	---	---
Lead	ppm	ASTM D5185(m)	>40	<b>&lt;1</b>	---	---
Copper	ppm	ASTM D5185(m)	>330	<b>43</b>	---	---
Tin	ppm	ASTM D5185(m)	>15	<b>4</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

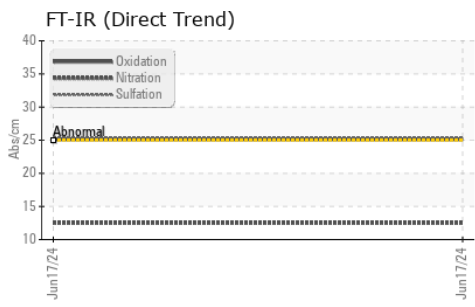
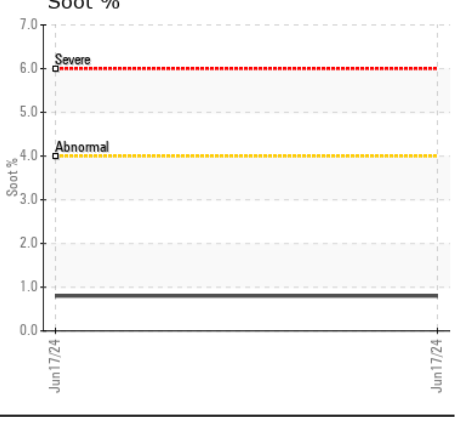
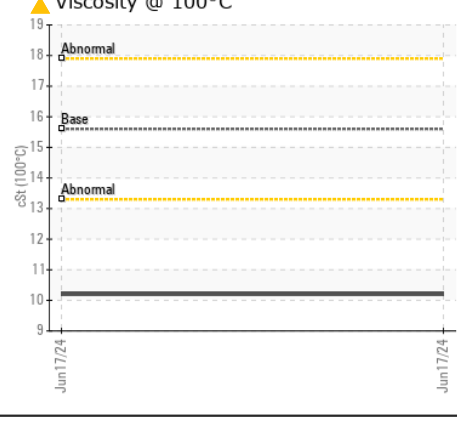
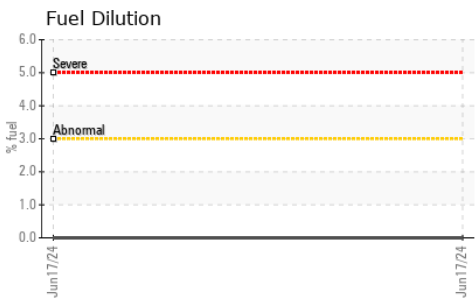
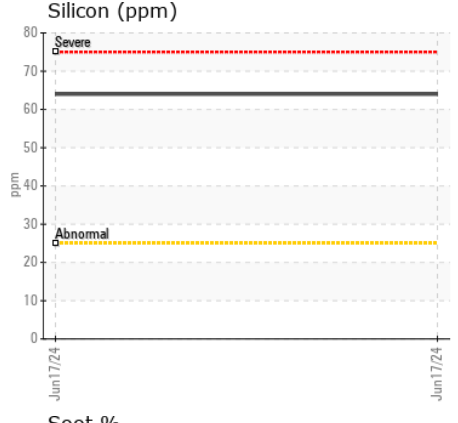
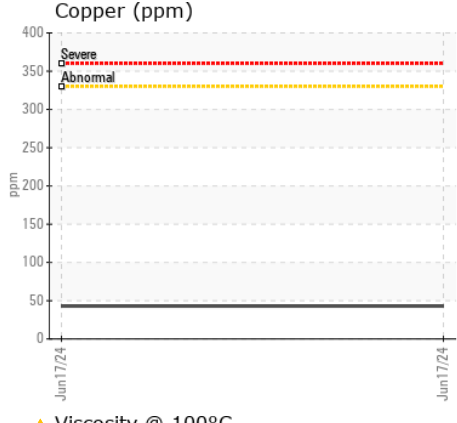
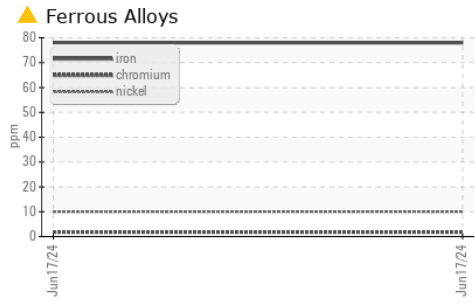
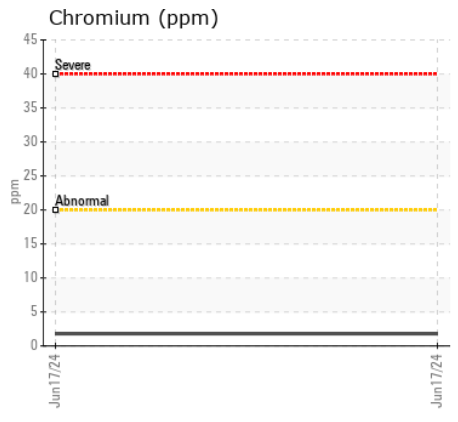
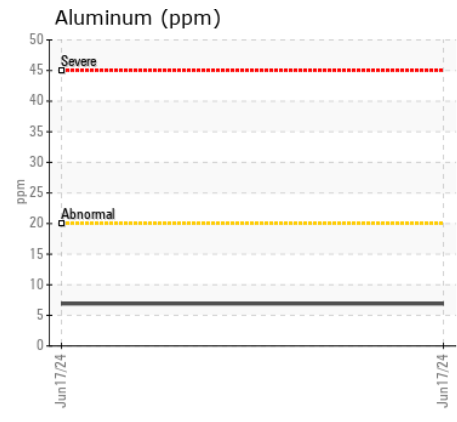
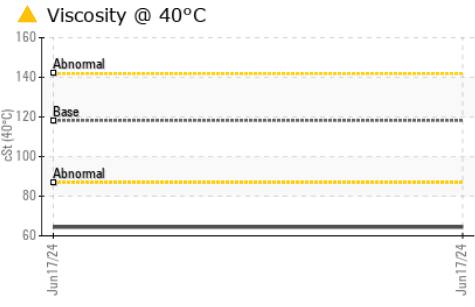
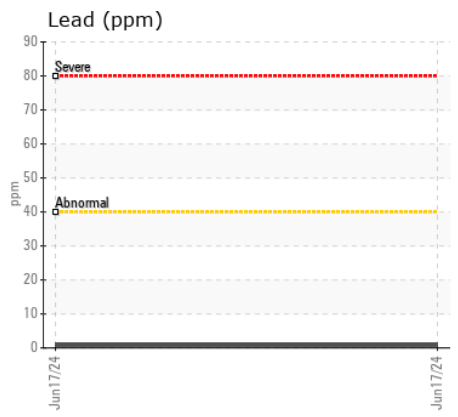
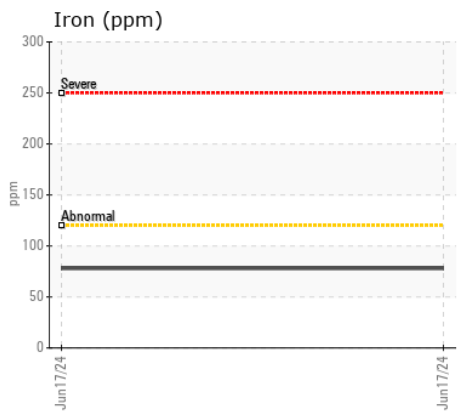
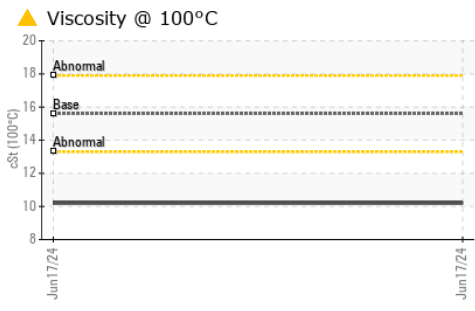
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>25	<b>64</b>	---	---
Potassium	ppm	ASTM D5185(m)	>20	<b>18</b>	---	---
Fuel	%	ASTM D7593*	>3.0	<b>0.0</b>	---	---
Water		WC Method	>0.2	<b>NEG</b>	---	---
Glycol		WC Method		<b>NEG</b>	---	---
Soot %	%	ASTM D7844*	>4	<b>0.8</b>	---	---
Nitration	Abs/cm	ASTM D7624*	>20	<b>12.5</b>	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>25.4</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>NEG</b>	---	---

### FLUID CONDITION

Viscosity of sample indicates oil is within SAE 10W30 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		<b>5</b>	---	---
Boron	ppm	ASTM D5185(m)	0	<b>54</b>	---	---
Barium	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	---	---
Molybdenum	ppm	ASTM D5185(m)	60	<b>114</b>	---	---
Manganese	ppm	ASTM D5185(m)	0	<b>5</b>	---	---
Magnesium	ppm	ASTM D5185(m)	1010	<b>684</b>	---	---
Calcium	ppm	ASTM D5185(m)	1070	<b>1331</b>	---	---
Phosphorus	ppm	ASTM D5185(m)	1150	<b>603</b>	---	---
Zinc	ppm	ASTM D5185(m)	1270	<b>766</b>	---	---
Sulfur	ppm	ASTM D5185(m)	2060	<b>1733</b>	---	---
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>25.1</b>	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	118.2	<b>▲ 64.4</b>	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	<b>▲ 10.2</b>	---	---
Viscosity Index (VI)	Scale	ASTM D2270*	139	<b>144</b>	---	---



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0122250  
**Lab Number** : 02644520  
**Unique Number** : 5802059  
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, KV40, PercentFuel, VI, Visual )

**GFL Environmental - 987 - Charlottetown**  
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Received : 28 Jun 2024  
 Tested : 02 Jul 2024  
 Diagnosed : 02 Jul 2024 - Kevin Marson  
 To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.