

Machine Id  
**FREIGHTLINER 11181**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA 10W40 (21 LTR)**

### RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

### WEAR

All component wear rates are normal.

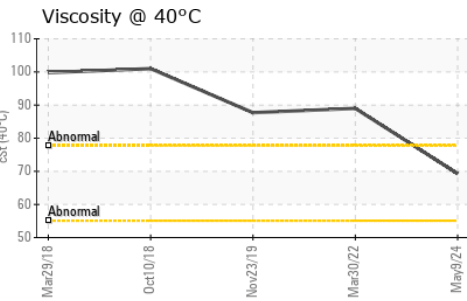
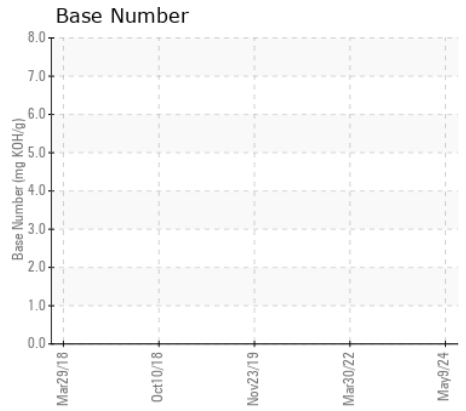
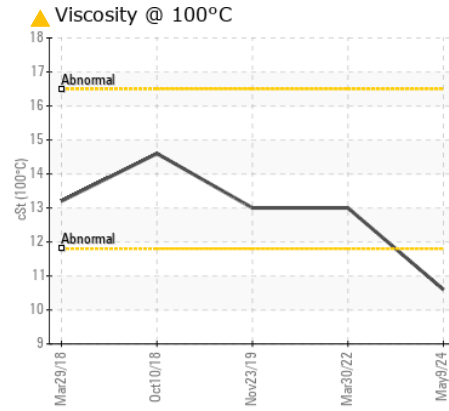
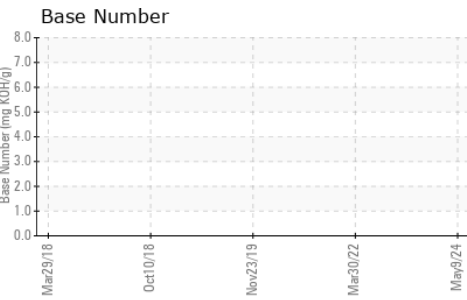
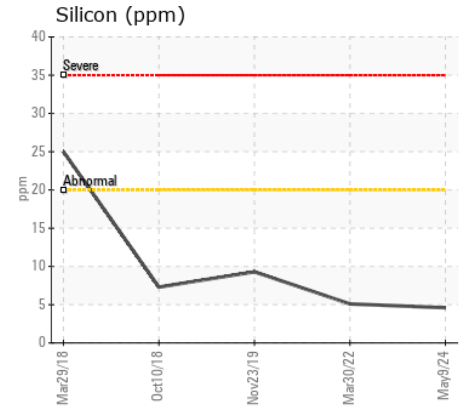
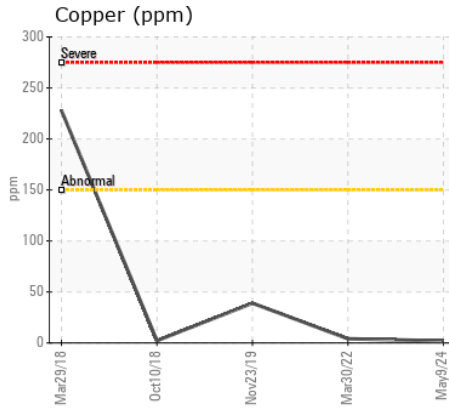
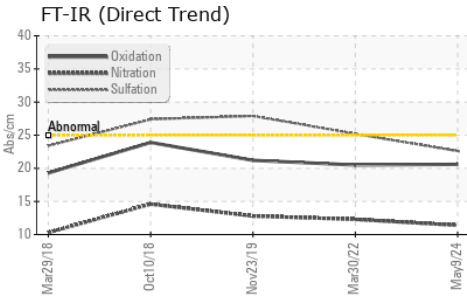
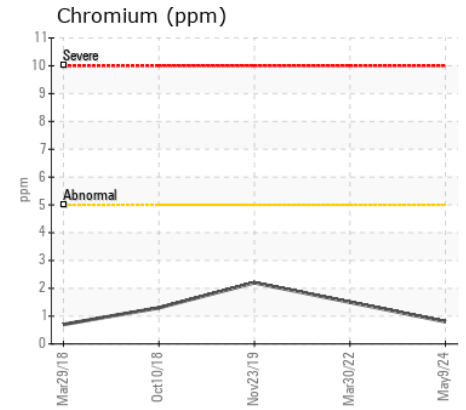
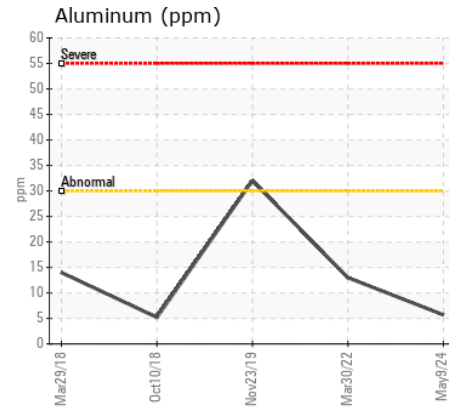
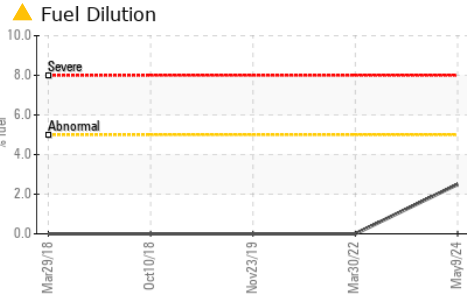
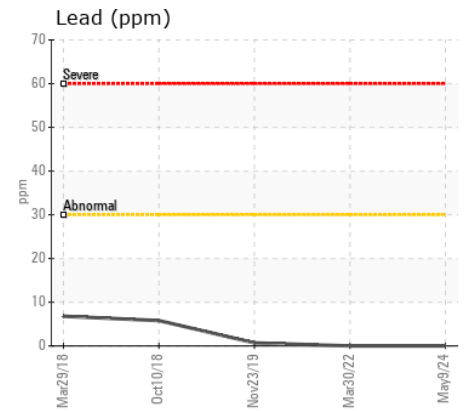
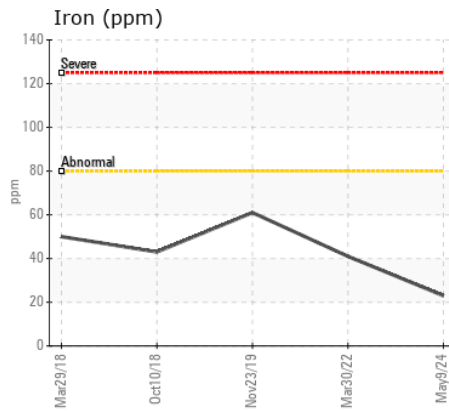
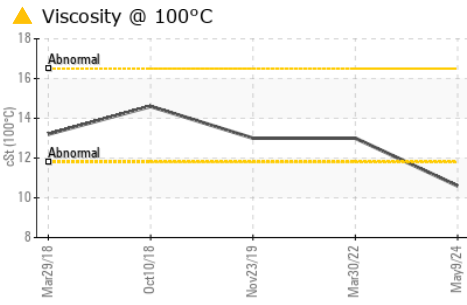
### CONTAMINATION

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. Light fuel dilution occurring.

### FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>PC0069550</b>	PC	PC406468
Sample Date		Client Info		<b>09 May 2024</b>	30 Mar 2022	23 Nov 2019
Machine Age	hrs	Client Info		<b>0</b>	5934	72236
Oil Age	hrs	Client Info		<b>600</b>	620	0
Filter Age	hrs	Client Info		<b>600</b>	620	0
Oil Changed		Client Info		<b>Changed</b>	Changed	N/A
Filter Changed		Client Info		<b>Changed</b>	Changed	N/A
Sample Status				<b>ABNORMAL</b>	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185(m)	>80	<b>23</b>	41	61
Chromium	ppm	ASTM D5185(m)	>5	<b>&lt;1</b>	2	2
Nickel	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Silver	ppm	ASTM D5185(m)	>3	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185(m)	>30	<b>6</b>	13	▲ 32
Lead	ppm	ASTM D5185(m)	>30	<b>0</b>	0	<1
Copper	ppm	ASTM D5185(m)	>150	<b>2</b>	4	39
Tin	ppm	ASTM D5185(m)	>5	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Silicon	ppm	ASTM D5185(m)	>20	<b>5</b>	5	9
Potassium	ppm	ASTM D5185(m)	>20	<b>7</b>	20	▲ 81
Fuel	%	ASTM D7593*	>5	▲ <b>2.5</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	0.0
Soot %	%	ASTM D7844*	>3	<b>0.6</b>	1	0.9
Nitration	Abs/cm	ASTM D7624*	>20	<b>11.4</b>	12.3	12.8
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>22.6</b>	25.2	27.9
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG
Sodium	ppm	ASTM D5185(m)	>20	<b>2</b>	2	2
Boron	ppm	ASTM D5185(m)		<b>&lt;1</b>	1	1
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185(m)		<b>62</b>	61	65
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185(m)		<b>986</b>	1031	1019
Calcium	ppm	ASTM D5185(m)		<b>1037</b>	1122	1119
Phosphorus	ppm	ASTM D5185(m)		<b>1015</b>	1066	945
Zinc	ppm	ASTM D5185(m)		<b>1214</b>	1270	1255
Sulfur	ppm	ASTM D5185(m)		<b>2460</b>	2536	2274
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>20.6</b>	20.5	21.2
Base Number (BN)	mg KOH/g	ASTM D2896*		<b>7.63</b>	---	---
Visc @ 40°C	cSt	ASTM D7279(m)		<b>69.3</b>	89	87.7
Visc @ 100°C	cSt	ASTM D7279(m)		▲ <b>10.6</b>	13.0	13.0
Viscosity Index (VI)	Scale	ASTM D2270*		<b>140</b>	145	147



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0069550 **Received** : 14 May 2024  
**Lab Number** : 02635262 **Tested** : 15 May 2024  
**Unique Number** : 5776415 **Diagnosed** : 15 May 2024 - Kevin Marson  
**Test Package** : MOB 2 ( Additional Tests: FuelDilution, KV40, PercentFuel, VI )

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.

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