



Machine Id  
**7804**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (40 LTR)**

**RECOMMENDATION**

We advise that you check the engine tuning and timing. Check for low coolant level. The oil 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>GFL0125798</b>	GFL0089054	GFL0082368
Sample Date		Client Info		<b>01 Jun 2024</b>	14 Aug 2023	16 May 2023
Machine Age	kms	Client Info		<b>150991</b>	34887	25830
Oil Age	kms	Client Info		<b>0</b>	0	0
Filter Age	kms	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	SEVERE	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>165	<b>76</b>	4	8
Chromium	ppm	ASTM D5185(m)	>5	<b>2</b>	<1	0
Nickel	ppm	ASTM D5185(m)	>4	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	<b>8</b>	1	2
Lead	ppm	ASTM D5185(m)	>150	<b>25</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>90	<b>11</b>	2	1
Tin	ppm	ASTM D5185(m)	>5	<b>2</b>	0	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0

**CONTAMINATION**

There is an abnormal level of nitration indicated. Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative.

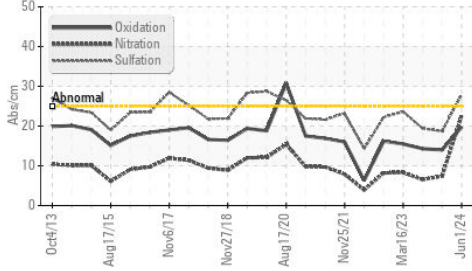
Silicon	ppm	ASTM D5185(m)	>35	<b>21</b>	8	3
Potassium	ppm	ASTM D5185(m)	>20	<b>▲ 56</b>	▲ 6	0
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	%	ASTM D7922*		<b>0.0</b>	▲ 0.327	NEG
Soot %	%	ASTM D7844*	>7.5	<b>1</b>	0.1	0.4
Nitration	Abs/cm	ASTM D7624*	>20	<b>▲ 22.5</b>	7.4	6.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>27.9</b>	18.7	19.4
Emulsified Water	scalar	Visual*	>0.2	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

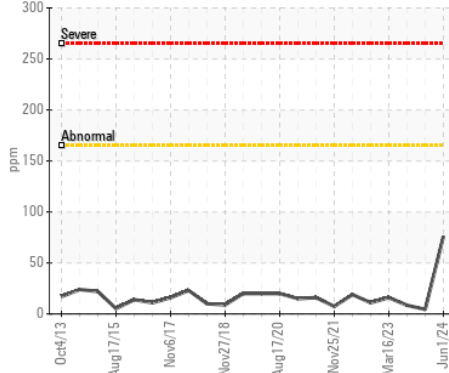
The oil is no longer serviceable due to the presence of contaminants. The condition of the oil is acceptable for the time in service (see recommendation).

Sodium	ppm	ASTM D5185(m)		<b>● 4940</b>	● 607	3
Boron	ppm	ASTM D5185(m)	0	<b>4</b>	8	3
Barium	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	60	<b>83</b>	55	60
Manganese	ppm	ASTM D5185(m)	0	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	<b>847</b>	869	945
Calcium	ppm	ASTM D5185(m)	1070	<b>917</b>	1049	1067
Phosphorus	ppm	ASTM D5185(m)	1150	<b>909</b>	1005	1071
Zinc	ppm	ASTM D5185(m)	1270	<b>1083</b>	1093	1169
Sulfur	ppm	ASTM D5185(m)	2060	<b>2398</b>	2508	2591
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>19.8</b>	14.0	14.3
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	<b>17.1</b>	14.9	13.9

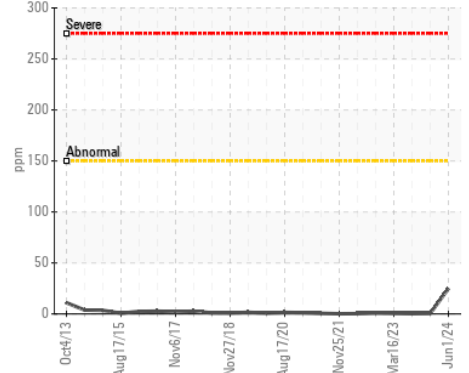
▲ FT-IR (Direct Trend)



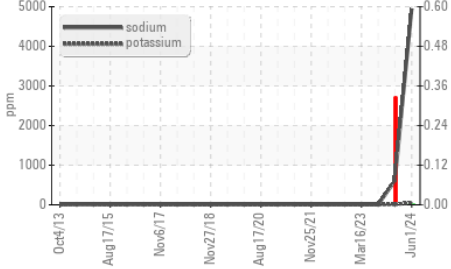
Iron (ppm)



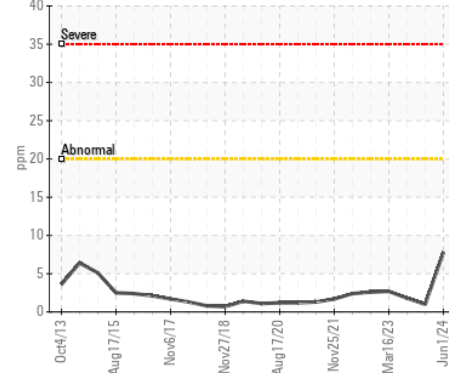
Lead (ppm)



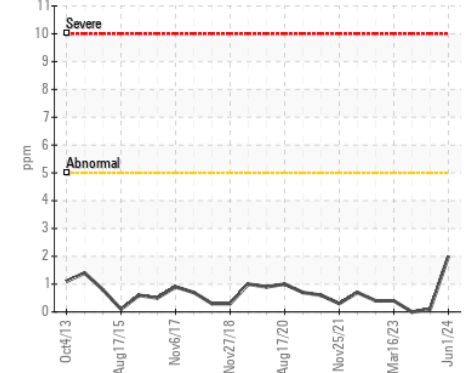
Glycol Contamination



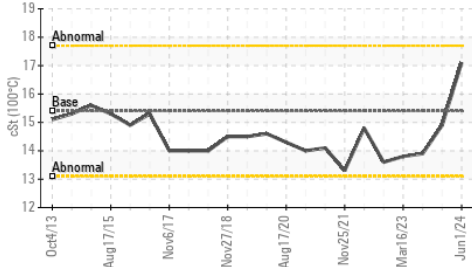
Aluminum (ppm)



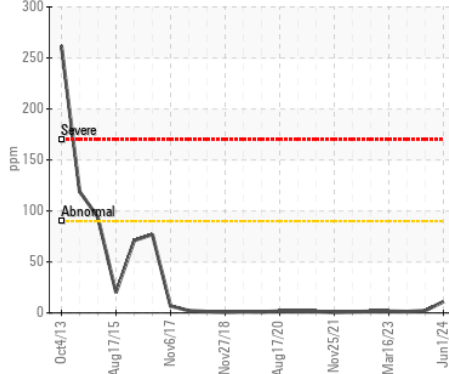
Chromium (ppm)



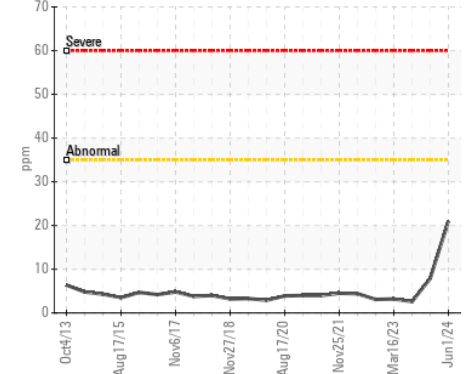
Viscosity @ 100°C



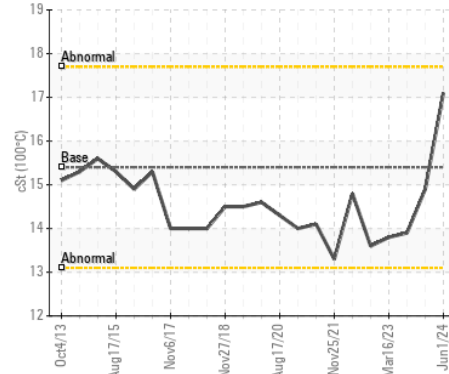
Copper (ppm)



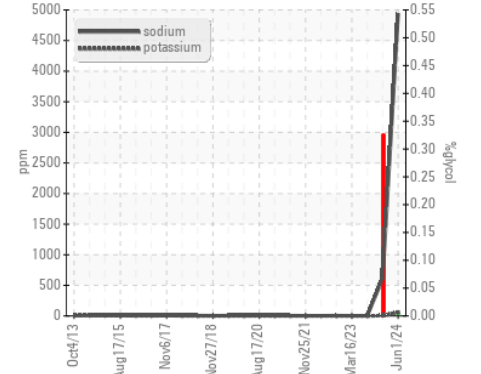
Silicon (ppm)



Viscosity @ 100°C



▲ Glycol Contamination



ISO 17025:2017  
Accredited  
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

Sample No. : GFL0125798

Lab Number : 02641576

Unique Number : 5799115

Test Package : MOB 1

Received : 13 Jun 2024

Tested : 17 Jun 2024

Diagnosed : 17 Jun 2024 - Kevin Marson

GFL Environmental - 225 - COT(D2)

20 Brydon Drive

Etobicoke, ON

CA M9W 5R6

Contact: Rick Philip

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T: (416)745-8080

F:

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.