



Machine Id  
**376M**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

We advise that you check the fuel injection system. 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>GFL0108936</b>	GFL0105767	GFL0073888
Sample Date		Client Info		<b>12 Feb 2024</b>	13 Dec 2023	03 May 2023
Machine Age	hrs	Client Info		<b>14911</b>	14414	13210
Oil Age	hrs	Client Info		<b>14414</b>	13210	10622
Filter Age	hrs	Client Info		<b>0</b>	13210	10622
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>SEVERE</b>	SEVERE	SEVERE

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	<b>12</b>	3	14
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>1</b>	2	0
Lead	ppm	ASTM D5185m	>40	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185m	>330	<b>2</b>	1	1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

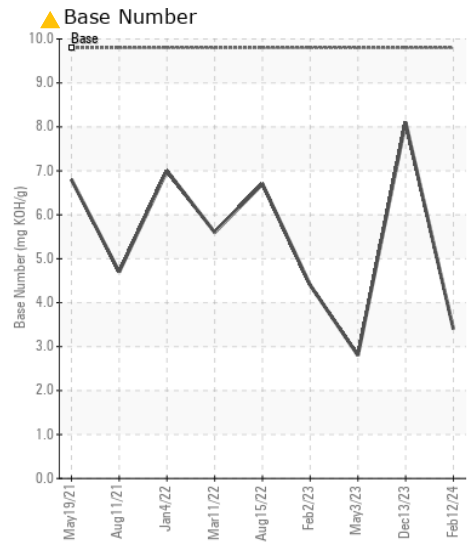
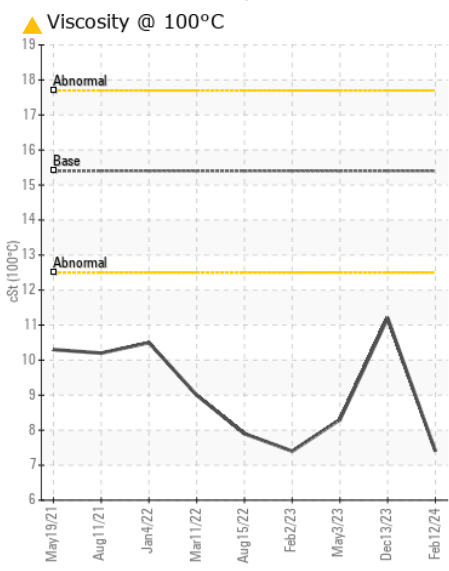
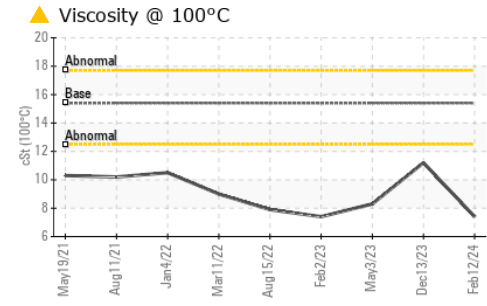
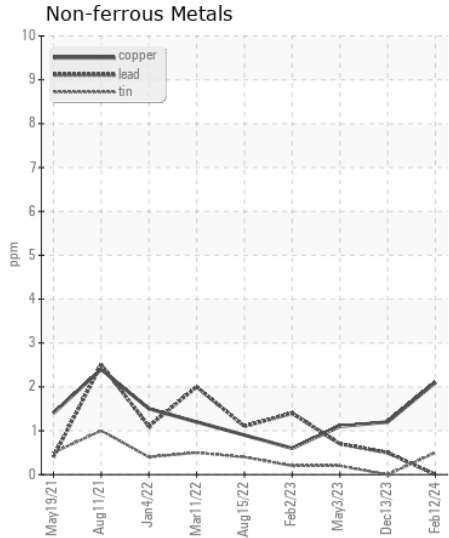
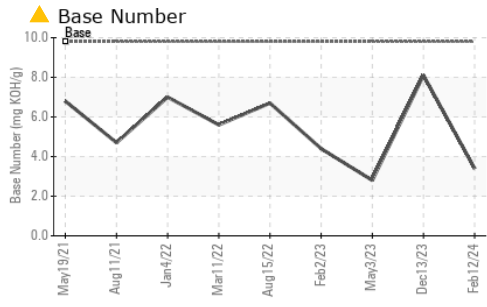
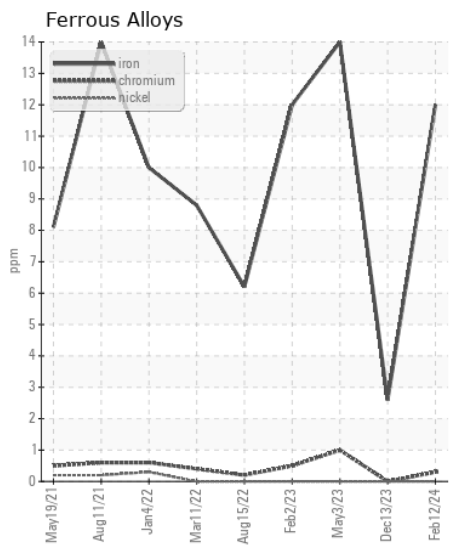
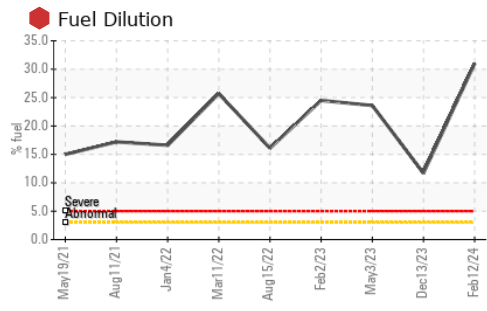
There is a high amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>3</b>	4	8
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	<1	1
Fuel	%	ASTM D3524	>3.0	<b>31.0</b>	11.7	23.6
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>4	<b>0.4</b>	0.2	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>14.5</b>	7.0	10.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.4</b>	18.0	20.7
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**

Fuel is present in the oil and is lowering the viscosity. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		<b>5</b>	1	4
Boron	ppm	ASTM D5185m	0	<b>0</b>	<1	0
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	60	<b>34</b>	47	45
Manganese	ppm	ASTM D5185m	0	<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m	1010	<b>508</b>	884	643
Calcium	ppm	ASTM D5185m	1070	<b>619</b>	1041	777
Phosphorus	ppm	ASTM D5185m	1150	<b>577</b>	971	717
Zinc	ppm	ASTM D5185m	1270	<b>636</b>	1086	883
Sulfur	ppm	ASTM D5185m	2060	<b>1452</b>	2746	1914
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>25.4</b>	14.2	21.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>3.4</b>	8.1	2.8
Visc @ 100°C	cSt	ASTM D445	15.4	<b>7.4</b>	11.2	8.3



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0108936 **Received** : 23 Feb 2024  
**Lab Number** : 06098178 **Tested** : 27 Feb 2024  
**Unique Number** : 10896408 **Diagnosed** : 27 Feb 2024 - Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: PercentFuel )

**GFL Environmental - 415 - Michigan East**  
 6200 Elmridge  
 Sterling Heights, MI  
 US 48313  
 Contact: Frank Wolak  
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 F:

Certificate L2367  
 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)