



Machine Id  
**420092 - SW4020**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

We advise that you check the fuel injection system. 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>GFL0112092</b>	GFL0105512	GFL0105542
Sample Date		Client Info		<b>16 Mar 2024</b>	24 Jan 2024	10 Jan 2024
Machine Age	mls	Client Info		<b>150271</b>	143203	141662
Oil Age	mls	Client Info		<b>150271</b>	143203	141662
Filter Age	mls	Client Info		<b>150271</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	N/A	Changed
Filter Changed		Client Info		<b>Changed</b>	N/A	Changed
Sample Status				<b>SEVERE</b>	SEVERE	ABNORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	<b>9</b>	3	6
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m	>20	<b>3</b>	2	<1
Lead	ppm	ASTM D5185m	>40	<b>2</b>	2	<1
Copper	ppm	ASTM D5185m	>330	<b>2</b>	0	1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

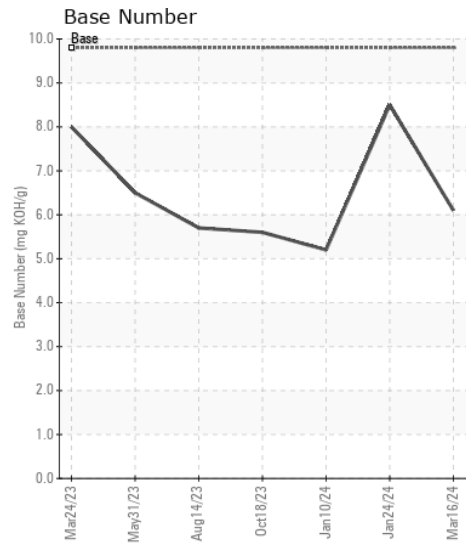
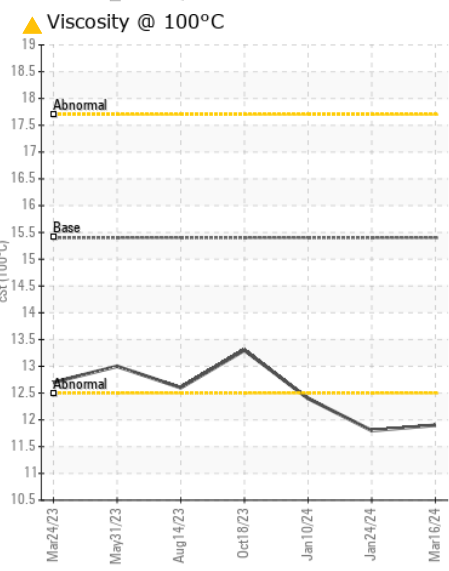
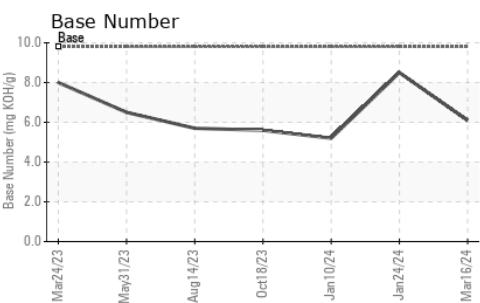
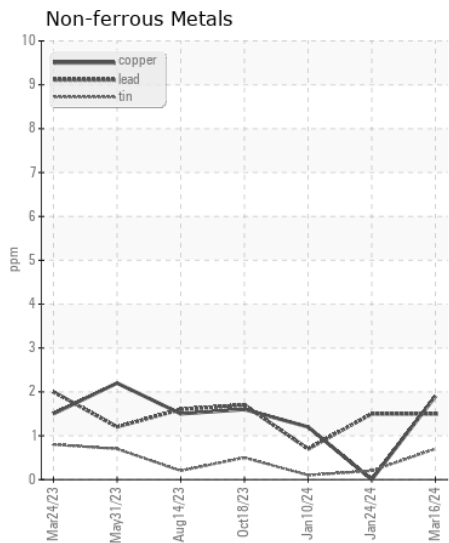
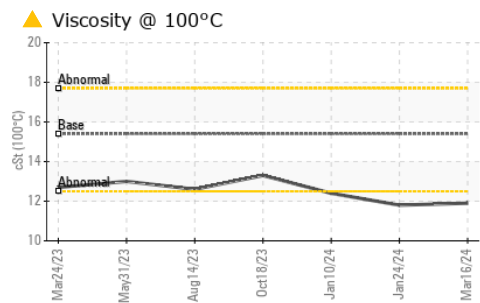
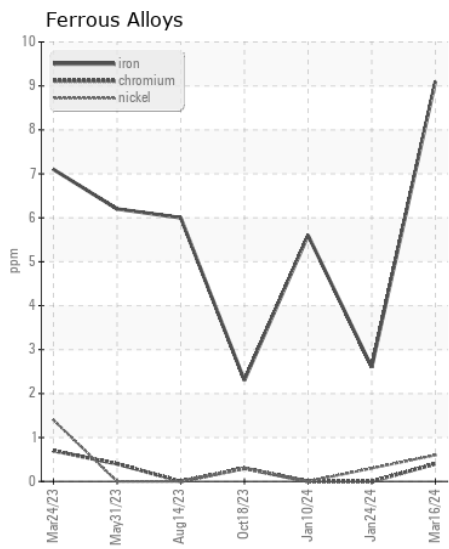
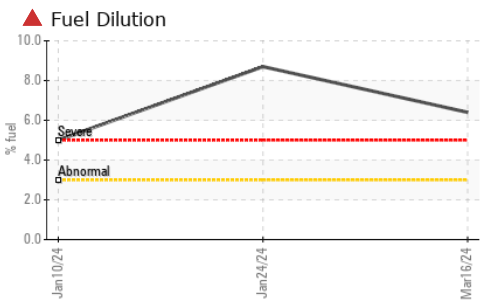
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>5</b>	4	7
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	3	0
Fuel	%	ASTM D3524	>3.0	<b>▲ 6.4</b>	▲ 8.7	▲ 5.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>4	<b>0.3</b>	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.1</b>	5.8	8.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.7</b>	15.2	20.2
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**

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		<b>0</b>	1	2
Boron	ppm	ASTM D5185m	0	<b>0</b>	0	5
Barium	ppm	ASTM D5185m	0	<b>2</b>	0	0
Molybdenum	ppm	ASTM D5185m	60	<b>58</b>	52	50
Manganese	ppm	ASTM D5185m	0	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	1010	<b>8</b>	16	5
Calcium	ppm	ASTM D5185m	1070	<b>2782</b>	2489	2392
Phosphorus	ppm	ASTM D5185m	1150	<b>1146</b>	1118	1091
Zinc	ppm	ASTM D5185m	1270	<b>1316</b>	1285	1238
Sulfur	ppm	ASTM D5185m	2060	<b>3590</b>	3135	3081
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>11.6</b>	9.2	11.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>6.1</b>	8.5	5.2
Visc @ 100°C	cSt	ASTM D445	15.4	<b>▲ 11.9</b>	▲ 11.8	▲ 12.4



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0112092 **Received** : 21 Mar 2024  
**Lab Number** : 06124780 **Tested** : 22 Mar 2024  
**Unique Number** : 10938931 **Diagnosed** : 22 Mar 2024 - Wes Davis  
**Test Package** : FLEET ( Additional Tests: PercentFuel )

**GFL Environmental - 983 - Sugar Land Hauling**  
 16011 West Belfort Street  
 Sugar Land, TX  
 US 77498  
 Contact: Adrian Martinez  
 adrianmartinez@gflenv.com  
 T:  
 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)