



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id

**Cascadia**

Component

**Diesel Engine**

Fluid

**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0118835</b>	GFL0108053	---
Sample Date		Client Info		<b>17 May 2024</b>	29 Feb 2024	---
Machine Age	hrs	Client Info		<b>11386</b>	11354	---
Oil Age	hrs	Client Info		<b>32</b>	0	---
Filter Age	hrs	Client Info		<b>0</b>	0	---
Oil Changed		Client Info		<b>Not Changd</b>	Changed	---
Filter Changed		Client Info		<b>Not Changd</b>	Changed	---
Sample Status				<b>NORMAL</b>	NORMAL	---

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	<b>10</b>	35	---
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	---
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	---
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	---
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	---
Aluminum	ppm	ASTM D5185m	>20	<b>3</b>	6	---
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	---
Copper	ppm	ASTM D5185m	>330	<b>1</b>	1	---
Tin	ppm	ASTM D5185m	>15	<b>1</b>	0	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

**CONTAMINATION**

There is no indication of any contamination in the oil.

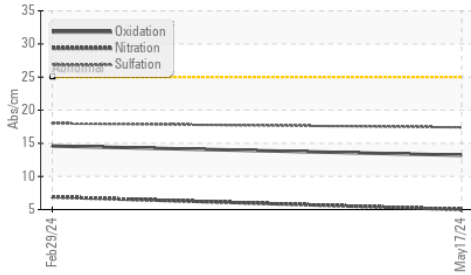
Silicon	ppm	ASTM D5185m	>25	<b>6</b>	5	---
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	0	---
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	---
Water		WC Method	>0.2	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>6	<b>0.1</b>	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.0</b>	6.9	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>17.4</b>	18.0	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	---

**FLUID CONDITION**

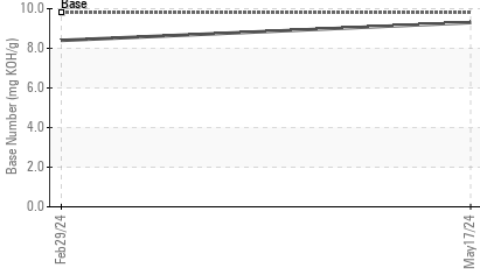
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	0	---
Boron	ppm	ASTM D5185m	0	<b>4</b>	18	---
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m	60	<b>60</b>	65	---
Manganese	ppm	ASTM D5185m	0	<b>&lt;1</b>	1	---
Magnesium	ppm	ASTM D5185m	1010	<b>931</b>	849	---
Calcium	ppm	ASTM D5185m	1070	<b>1089</b>	1071	---
Phosphorus	ppm	ASTM D5185m	1150	<b>1076</b>	945	---
Zinc	ppm	ASTM D5185m	1270	<b>1197</b>	1138	---
Sulfur	ppm	ASTM D5185m	2060	<b>3583</b>	2851	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.2</b>	14.6	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>9.3</b>	8.4	---
Visc @ 100°C	cSt	ASTM D445	15.4	<b>14.2</b>	13.7	---

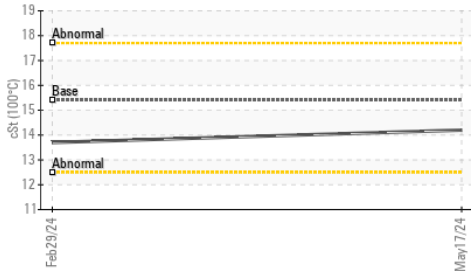
FT-IR (Direct Trend)



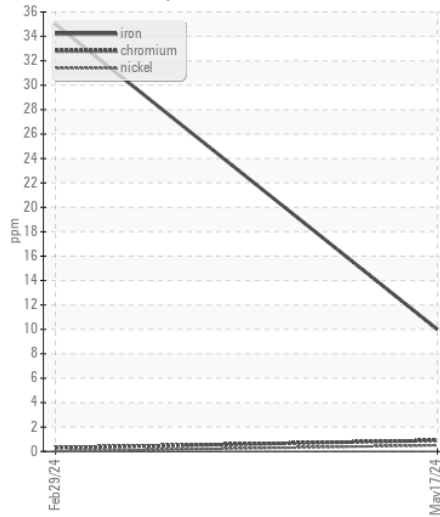
Base Number



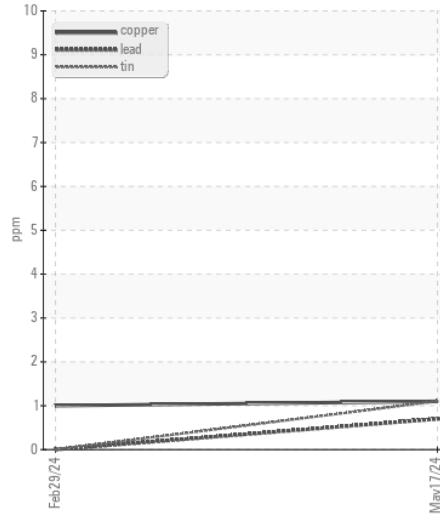
Viscosity @ 100°C



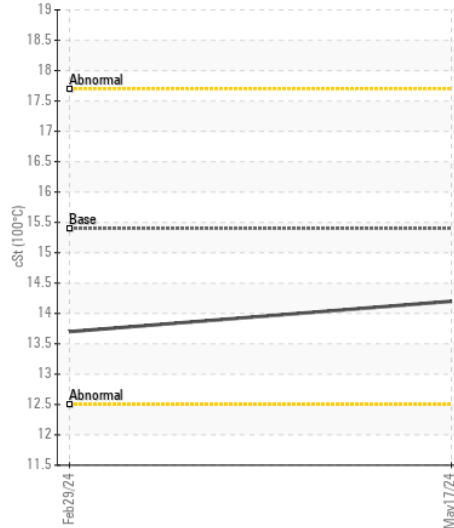
Ferrous Alloys



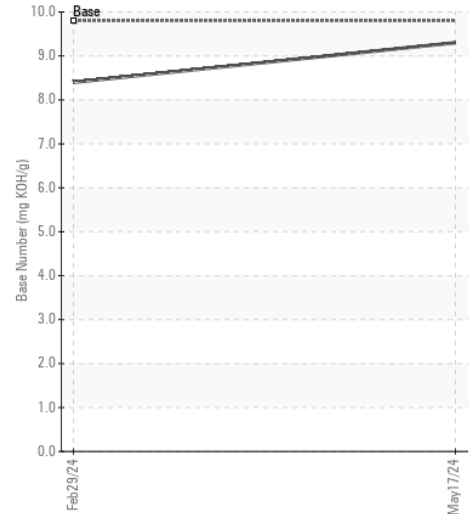
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0118835

Lab Number : 06187364

Unique Number : 11044116

Test Package : FLEET

Received : 22 May 2024

Tested : 23 May 2024

Diagnosed : 24 May 2024 - Don Baldrige

GFL Environmental - 837 - Harrison TS

22820 S State Route 291

Harrisonville, MO

US 64701

Contact: SARA PATRICK

spatrack@gflenv.com

T:

F:

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)