



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



Machine Id  
**4596M**  
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>GFL0122527</b>	GFL0108719	GFL0089118
Sample Date		Client Info		<b>28 May 2024</b>	02 Jan 2024	20 Nov 2023
Machine Age	hrs	Client Info		<b>18385</b>	17846	17566
Oil Age	hrs	Client Info		<b>17846</b>	17566	17155
Filter Age	hrs	Client Info		<b>0</b>	17566	17155
Oil Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Filter Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>90	<b>23</b>	45	17
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	2	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	6	2
Lead	ppm	ASTM D5185m	>40	<b>0</b>	5	0
Copper	ppm	ASTM D5185m	>330	<b>40</b>	▲ 383	<1
Tin	ppm	ASTM D5185m	>15	<b>0</b>	2	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

There is no indication of any contamination in the oil.

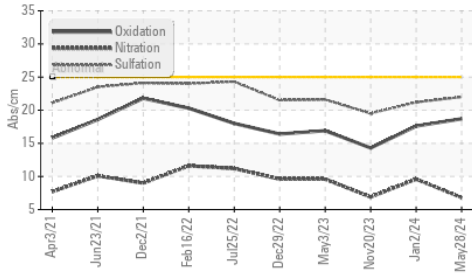
Silicon	ppm	ASTM D5185m	>25	<b>18</b>	20	5
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	4	<1
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>6	<b>0.3</b>	0.7	0.7
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.8</b>	9.6	6.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.0</b>	21.2	19.5
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**

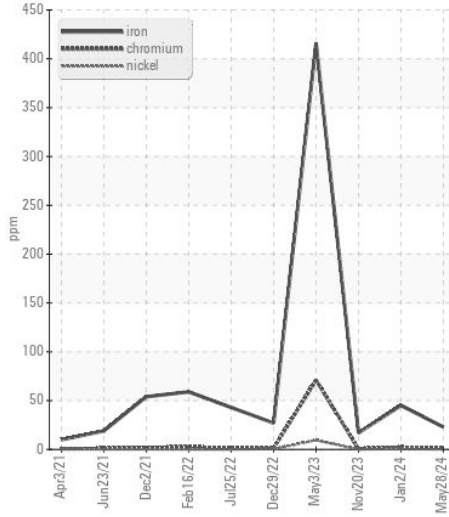
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>6</b>	26	5
Boron	ppm	ASTM D5185m	0	<b>56</b>	41	<1
Barium	ppm	ASTM D5185m	0	<b>0</b>	11	0
Molybdenum	ppm	ASTM D5185m	60	<b>40</b>	34	61
Manganese	ppm	ASTM D5185m	0	<b>&lt;1</b>	4	<1
Magnesium	ppm	ASTM D5185m	1010	<b>565</b>	414	1055
Calcium	ppm	ASTM D5185m	1070	<b>1528</b>	1764	1158
Phosphorus	ppm	ASTM D5185m	1150	<b>914</b>	1009	949
Zinc	ppm	ASTM D5185m	1270	<b>1094</b>	1202	1317
Sulfur	ppm	ASTM D5185m	2060	<b>3072</b>	2977	3290
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.7</b>	17.6	14.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>9.4</b>	7.2	9.0
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.3</b>	13.7	14.2

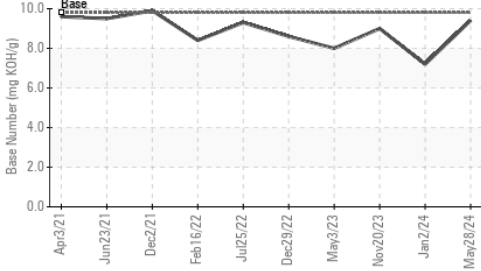
**FT-IR (Direct Trend)**



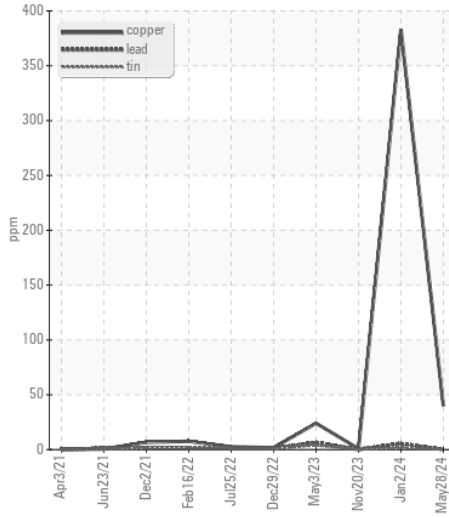
**Ferrous Alloys**



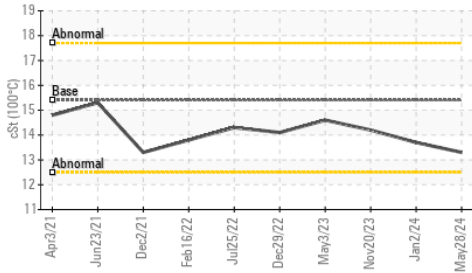
**Base Number**



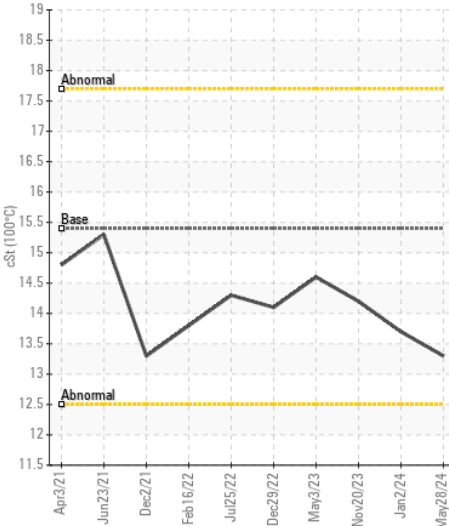
**Non-ferrous Metals**



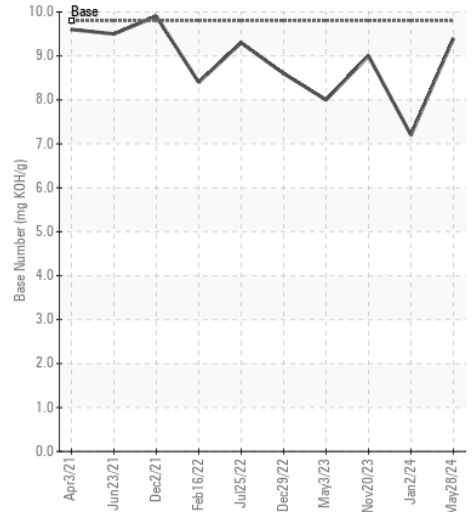
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

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

**Sample No.** : GFL0122527

**Lab Number** : 06195200

**Unique Number** : 11057323

**Test Package** : FLEET

**Received** : 30 May 2024

**Tested** : 31 May 2024

**Diagnosed** : 31 May 2024 - Angela Borella

**GFL Environmental - 415 - Michigan East**

6200 Elmridge

Sterling Heights, MI

US 48313

Contact: Frank Wolak

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T: (586)825-9514

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)