



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



Machine Id  
**420094 - SW4022**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor. ( Customer Sample Comment: Engine )

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>GFL0128757</b>	GFL0105449	GFL0105459
Sample Date		Client Info		<b>10 Jul 2024</b>	03 Apr 2024	24 Jan 2024
Machine Age	mls	Client Info		<b>134054</b>	134054	124354
Oil Age	mls	Client Info		<b>134054</b>	134054	124354
Filter Age	mls	Client Info		<b>134054</b>	0	0
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>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	<b>2</b>	3	2
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<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>3</b>	2	1
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	2	<1
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	3	<1
Tin	ppm	ASTM D5185m	>15	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
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.

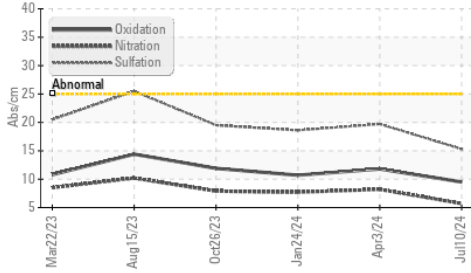
Silicon	ppm	ASTM D5185m	>25	<b>5</b>	7	7
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	3	2
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>4	<b>0.1</b>	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.7</b>	8.2	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>15.3</b>	19.7	18.6
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**

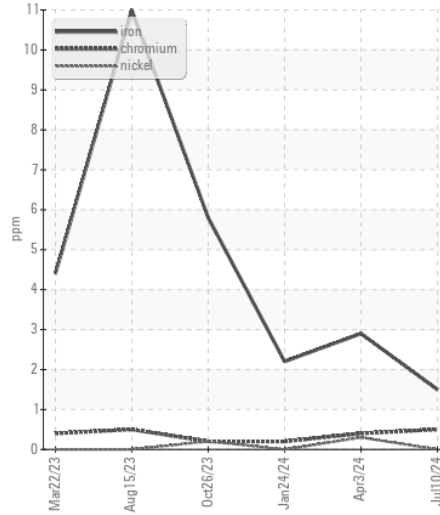
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>1</b>	5	2
Boron	ppm	ASTM D5185m	0	<b>0</b>	0	0
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	60	<b>45</b>	61	49
Manganese	ppm	ASTM D5185m	0	<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m	1010	<b>30</b>	6	4
Calcium	ppm	ASTM D5185m	1070	<b>2420</b>	2728	2266
Phosphorus	ppm	ASTM D5185m	1150	<b>825</b>	1120	1033
Zinc	ppm	ASTM D5185m	1270	<b>1117</b>	1308	1183
Sulfur	ppm	ASTM D5185m	2060	<b>2488</b>	3362	3044
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.5</b>	11.8	10.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>8.0</b>	5.9	6.2
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.2</b>	12.7	12.9

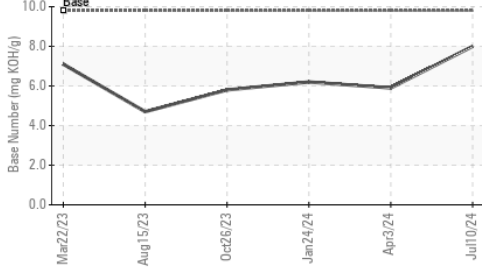
**FT-IR (Direct Trend)**



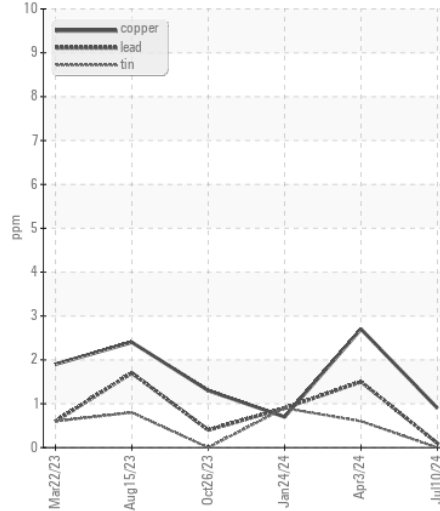
**Ferrous Alloys**



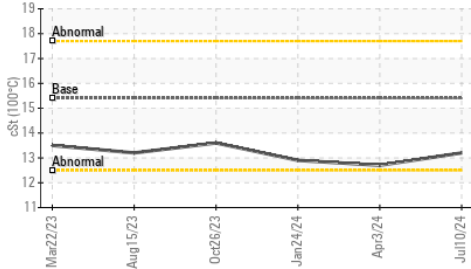
**Base Number**



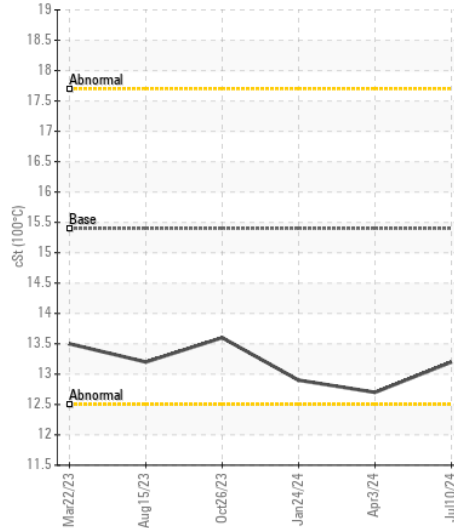
**Non-ferrous Metals**



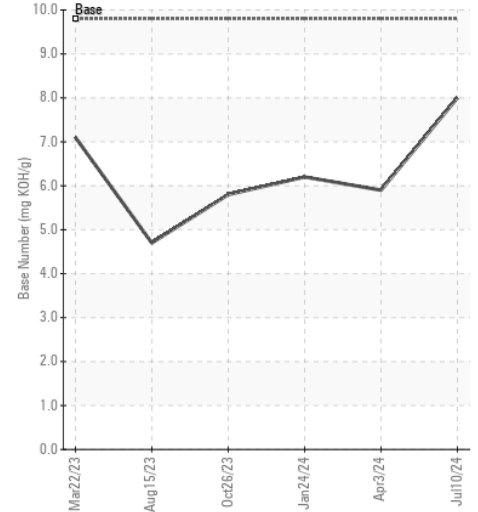
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

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

**Sample No.** : GFL0128757

**Lab Number** : 06237616

**Unique Number** : 11126450

**Test Package** : FLEET

**Received** : 16 Jul 2024

**Tested** : 17 Jul 2024

**Diagnosed** : 18 Jul 2024 - Don Baldrige

**GFL Environmental - 983 - Sugar Land Hauling**

16011 West Belfort Street

Sugar Land, TX

US 77498

Contact: Adrian Martinez

adrianmartinez@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)