



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



Machine Id  
**412008**  
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>GFL0091913</b>	GFL0091881	GFL0112775
Sample Date		Client Info		<b>09 Jul 2024</b>	02 Jul 2024	02 Apr 2024
Machine Age	hrs	Client Info		<b>4038</b>	4016	3483
Oil Age	hrs	Client Info		<b>3505</b>	3483	2981
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Chngd</b>	N/A	Changed
Filter Changed		Client Info		<b>Not Chngd</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	<b>4</b>	11	8
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	1
Nickel	ppm	ASTM D5185m	>5	<b>1</b>	▲ 11	3
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	1	2
Lead	ppm	ASTM D5185m	>40	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>330	<b>&lt;1</b>	2	2
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	0	1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<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.

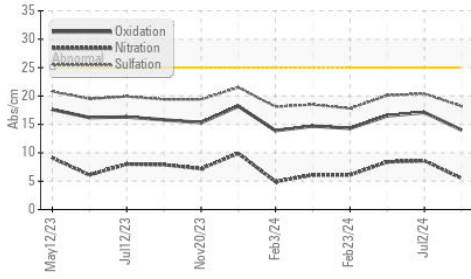
Silicon	ppm	ASTM D5185m	>25	<b>4</b>	6	6
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	1	2
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>4	<b>0.1</b>	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.5</b>	8.6	8.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.2</b>	20.4	20.1
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**

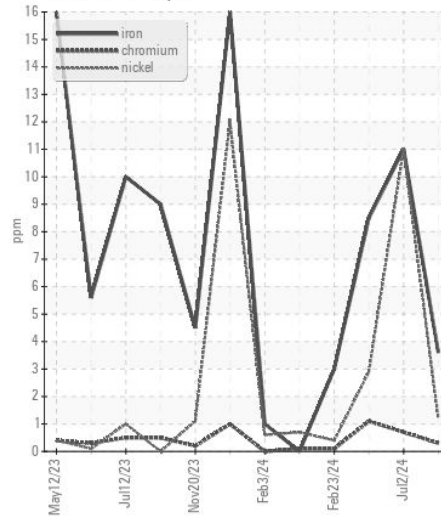
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	4	5
Boron	ppm	ASTM D5185m	0	<b>1</b>	2	<1
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	60	<b>57</b>	57	59
Manganese	ppm	ASTM D5185m	0	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	1010	<b>935</b>	965	973
Calcium	ppm	ASTM D5185m	1070	<b>1046</b>	1136	1061
Phosphorus	ppm	ASTM D5185m	1150	<b>1062</b>	1007	1064
Zinc	ppm	ASTM D5185m	1270	<b>1231</b>	1238	1248
Sulfur	ppm	ASTM D5185m	2060	<b>3093</b>	3310	3043
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.0</b>	17.1	16.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	<b>8.9</b>	6.8	7.2
Visc @ 100°C	cSt	ASTM D445	15.4	<b>14.4</b>	14.1	14.1

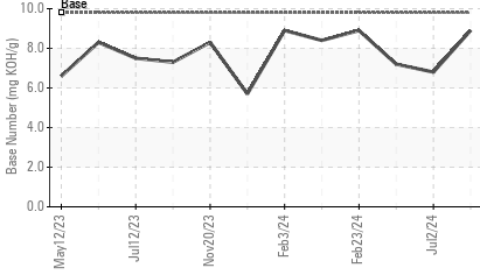
**FT-IR (Direct Trend)**



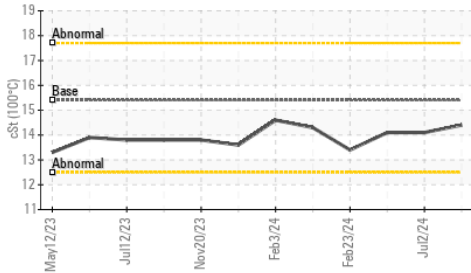
**Ferrous Alloys**



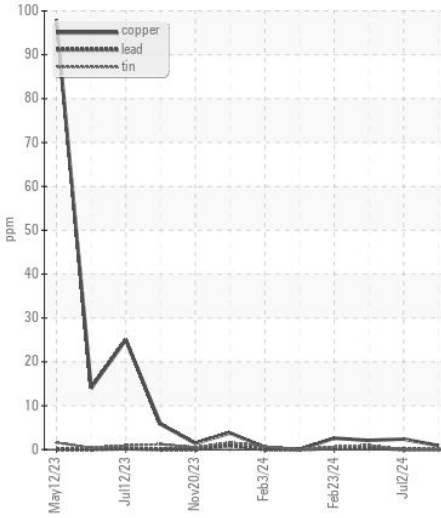
**Base Number**



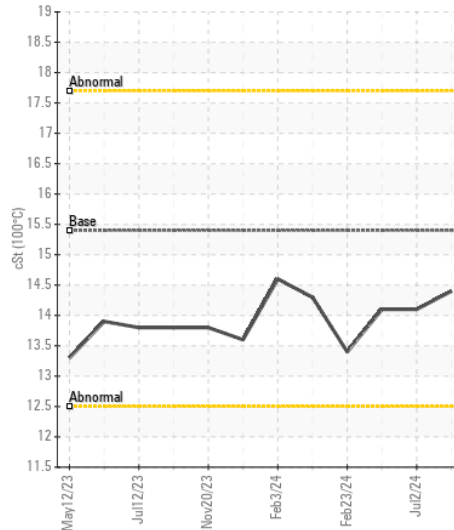
**Viscosity @ 100°C**



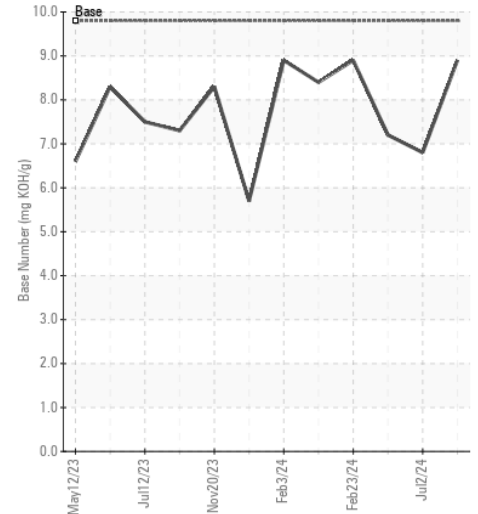
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0091913  
**Lab Number** : 06238744  
**Unique Number** : 11127578  
**Test Package** : FLEET  
**Received** : 16 Jul 2024  
**Tested** : 17 Jul 2024  
**Diagnosed** : 17 Jul 2024 - Wes Davis

**GFL Environmental - 654 - Richmond Hauling**  
 11800 Lewis Road  
 Chester, VA  
 US 23831  
 Contact: Jimmy Mayes  
 jmayes@gflenv.com

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)