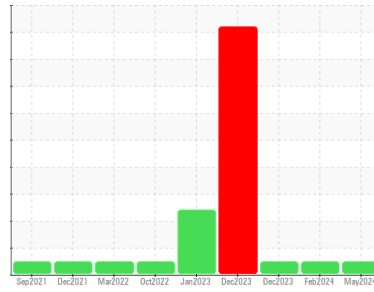




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**4511M**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### 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.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>GFL0122531</b>	GFL0108922	GFL0105679
Sample Date	Client Info		<b>28 May 2024</b>	13 Feb 2024	26 Dec 2023
Machine Age	hrs	Client Info	<b>3578</b>	23667	2855
Oil Age	hrs	Client Info	<b>23667</b>	600	23280
Oil Changed	Client Info		<b>Not Changed</b>	Changed	Changed
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<b>&lt;1.0</b>	<1.0	0.2
Water	WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >90	<b>19</b>	51	6
Chromium	ppm	ASTM D5185m >20	<b>&lt;1</b>	2	0
Nickel	ppm	ASTM D5185m >2	<b>0</b>	<1	<1
Titanium	ppm	ASTM D5185m >2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>2</b>	6	5
Lead	ppm	ASTM D5185m >40	<b>0</b>	1	0
Copper	ppm	ASTM D5185m >330	<b>2</b>	2	<1
Tin	ppm	ASTM D5185m >15	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>&lt;1</b>	2	<1
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 60	<b>59</b>	65	55
Manganese	ppm	ASTM D5185m 0	<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185m 1010	<b>959</b>	1096	949
Calcium	ppm	ASTM D5185m 1070	<b>1053</b>	1161	1105
Phosphorus	ppm	ASTM D5185m 1150	<b>1062</b>	1160	1056
Zinc	ppm	ASTM D5185m 1270	<b>1259</b>	1426	1227
Sulfur	ppm	ASTM D5185m 2060	<b>3391</b>	3222	3088

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>3</b>	7	3
Sodium	ppm	ASTM D5185m	<b>4</b>	10	1
Potassium	ppm	ASTM D5185m >20	<b>0</b>	<1	0

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	<b>1</b>	1.8	0.2
Nitration	Abs/cm	*ASTM D7624 >20	<b>8.7</b>	12.4	5.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>20.8</b>	25.1	18.2

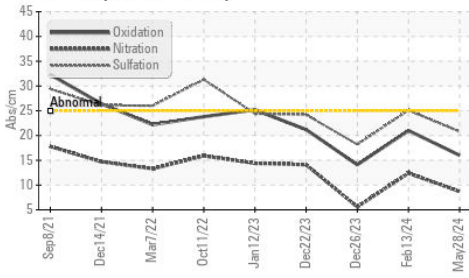
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>16.0</b>	21.0	14.1
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>8.5</b>	7.7	8.6

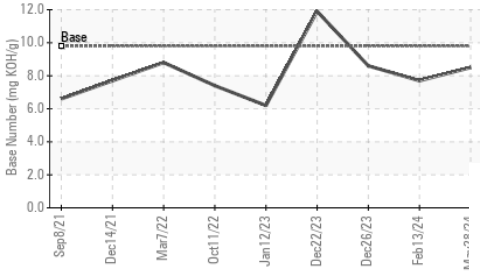


# OIL ANALYSIS REPORT

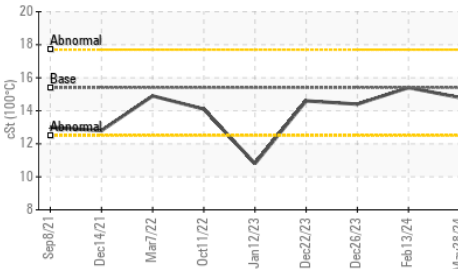
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C



## VISUAL

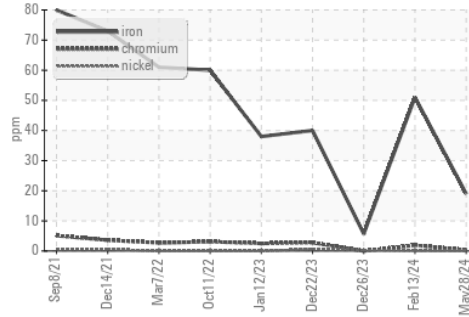
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

## FLUID PROPERTIES

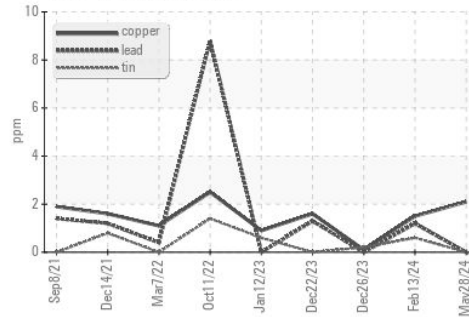
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.8	15.4

## GRAPHS

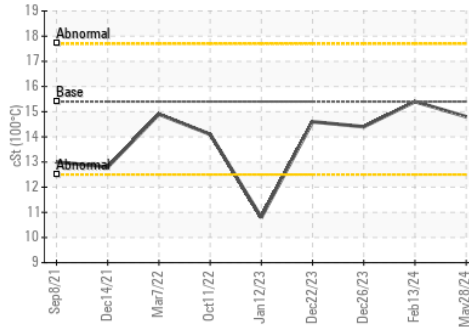
Ferrous Alloys



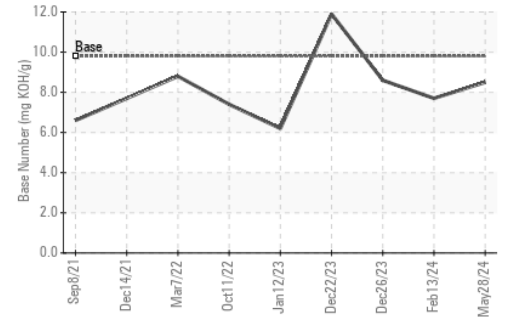
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : GFL0122531  
 Lab Number : 06195192  
 Unique Number : 11057315  
 Test Package : FLEET

Received : 30 May 2024  
 Tested : 31 May 2024  
 Diagnosed : 31 May 2024 - Wes Davis

GFL Environmental - 415 - Michigan East  
 6200 Elmridge  
 Sterling Heights, MI  
 US 48313  
 Contact: Frank Wolak  
 fwolak@gflenv.com  
 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)