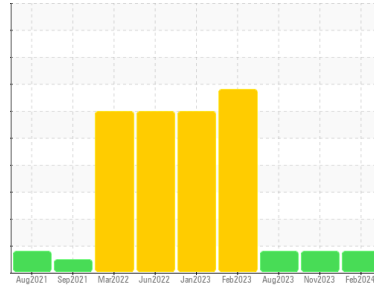




# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Machine Id  
**420023-402284**

Component  
**Diesel Engine**

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

## DIAGNOSIS

### ▲ Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

### ▲ Wear

The aluminum level is abnormal. All other 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 acceptable for the time in service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>GFL0109227</b>	GFL0098288	GFL0079282
Sample Date	Client Info		<b>13 Feb 2024</b>	22 Nov 2023	10 Aug 2023
Machine Age	hrs	Client Info	<b>24686</b>	24575	24180
Oil Age	hrs	Client Info	<b>600</b>	24180	869
Oil Changed	Client Info		<b>Changed</b>	N/A	Changed
Sample Status			<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<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

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >110	<b>66</b>	46	45
Chromium	ppm	ASTM D5185m >4	<b>3</b>	2	2
Nickel	ppm	ASTM D5185m >2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >25	<b>▲ 54</b>	▲ 48	▲ 60
Lead	ppm	ASTM D5185m >45	<b>0</b>	1	0
Copper	ppm	ASTM D5185m >85	<b>2</b>	3	0
Tin	ppm	ASTM D5185m >4	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	<1	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>0</b>	0	1
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 60	<b>53</b>	55	67
Manganese	ppm	ASTM D5185m 0	<b>1</b>	1	0
Magnesium	ppm	ASTM D5185m 1010	<b>881</b>	897	1054
Calcium	ppm	ASTM D5185m 1070	<b>960</b>	986	1149
Phosphorus	ppm	ASTM D5185m 1150	<b>949</b>	994	1127
Zinc	ppm	ASTM D5185m 1270	<b>1130</b>	1180	1478
Sulfur	ppm	ASTM D5185m 2060	<b>2729</b>	2808	4557

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >30	<b>19</b>	14	12
Sodium	ppm	ASTM D5185m	<b>4</b>	3	0
Potassium	ppm	ASTM D5185m >20	<b>0</b>	0	0

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>0.9</b>	0.8	1
Nitration	Abs/cm	*ASTM D7624 >20	<b>7.7</b>	7.4	7.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>18.4</b>	18.9	19.0

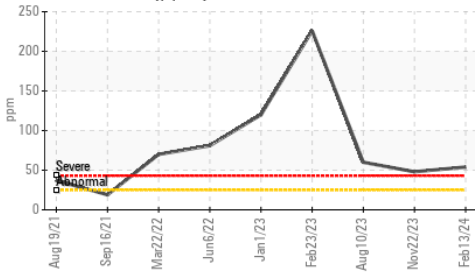
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>13.7</b>	14.0	13.9
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>7.9</b>	8.3	8.6

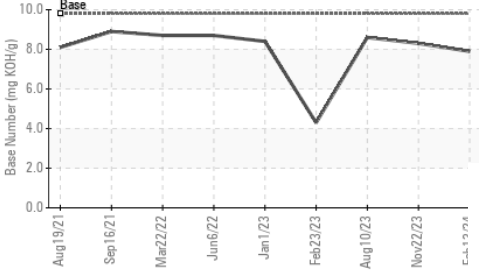


# OIL ANALYSIS REPORT

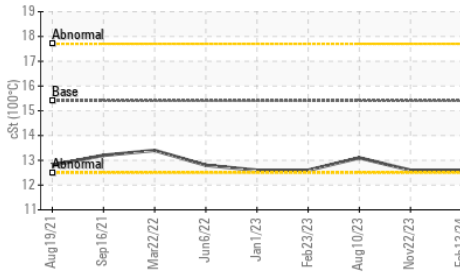
▲ Aluminum (ppm)



Base Number



Viscosity @ 100°C

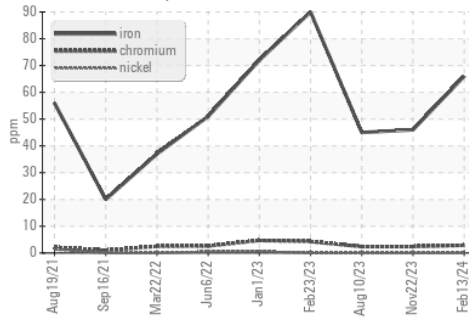


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

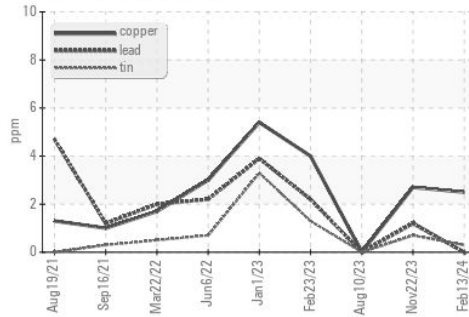
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.6	13.1

## GRAPHS

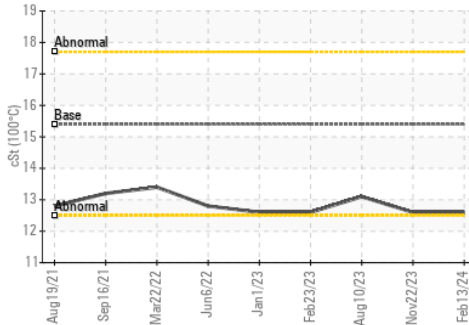
Ferrous Alloys



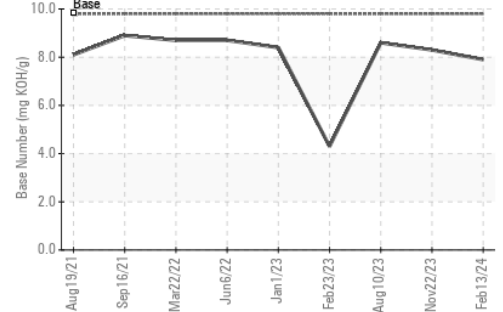
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : GFL0109227  
 Lab Number : 06092888  
 Unique Number : 10885741  
 Test Package : FLEET

GFL Environmental - 822 - Springfield Hauling  
 2120 West Bennett Street  
 Springfield, MO  
 US 65807  
 Contact: Dennis Moore  
 dennis.moore@gflenv.com  
 T: (417)403-3641  
 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)