



# OIL ANALYSIS REPORT

Sample Rating Trend

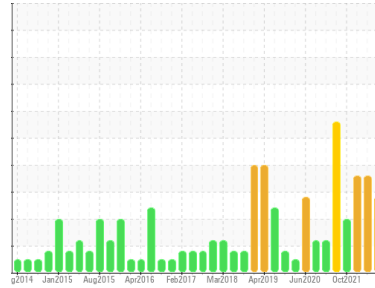
GLYCOL



Machine Id  
**10193**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (21 QTS)**



## DIAGNOSIS

### Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

### Wear

Piston and cylinder wear is indicated.

### Contamination

Fuel content negligible. Sodium and/or potassium levels are high.

### 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>GFL0068123</b>	GFL0048557	GFL0040694
Sample Date	Client Info	<b>02 Nov 2023</b>	11 Apr 2022	28 Feb 2022
Machine Age	hrs	<b>20772</b>	20760	20757
Oil Age	hrs	<b>600</b>	414	278
Oil Changed	Client Info	<b>Changed</b>	Changed	Not Changed
Sample Status		<b>ABNORMAL</b>	SEVERE	SEVERE

## CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.2	<b>NEG</b>	NEG	NEG

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >90	<b>▲ 201</b>	30	28
Chromium	ppm ASTM D5185m >20	<b>1</b>	2	2
Nickel	ppm ASTM D5185m >2	<b>1</b>	0	0
Titanium	ppm ASTM D5185m >2	<b>&lt;1</b>	<1	<1
Silver	ppm ASTM D5185m >2	<b>0</b>	0	0
Aluminum	ppm ASTM D5185m >20	<b>▲ 38</b>	7	7
Lead	ppm ASTM D5185m >40	<b>1</b>	<1	<1
Copper	ppm ASTM D5185m >330	<b>33</b>	1	1
Tin	ppm ASTM D5185m >15	<b>1</b>	<1	<1
Antimony	ppm ASTM D5185m	<b>---</b>	---	0
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>5</b>	10	9
Barium	ppm ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm ASTM D5185m 60	<b>57</b>	54	54
Manganese	ppm ASTM D5185m 0	<b>2</b>	<1	<1
Magnesium	ppm ASTM D5185m 1010	<b>830</b>	701	733
Calcium	ppm ASTM D5185m 1070	<b>1334</b>	1243	1284
Phosphorus	ppm ASTM D5185m 1150	<b>1076</b>	984	949
Zinc	ppm ASTM D5185m 1270	<b>1301</b>	1160	1178
Sulfur	ppm ASTM D5185m 2060	<b>3422</b>	2539	2489

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	<b>9</b>	6	6
Sodium	ppm ASTM D5185m	<b>▲ 270</b>	▲ 231	▲ 217
Potassium	ppm ASTM D5185m >20	<b>12</b>	3	2
Fuel	% ASTM D3524 >3.0	<b>1.7</b>	14.3	15.4
Glycol	% *ASTM D2982	<b>NEG</b>	NEG	NEG

## INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >6	<b>0.3</b>	1.3	1.3
Nitration	Abs/cm *ASTM D7624 >20	<b>7.9</b>	14.0	13.1
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>19.7</b>	27.9	27.7

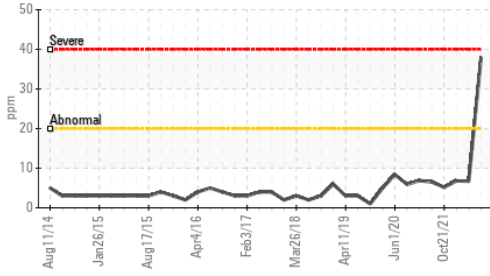
## FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>16.3</b>	29.5	29.8
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>10.3</b>	8.0	7.7

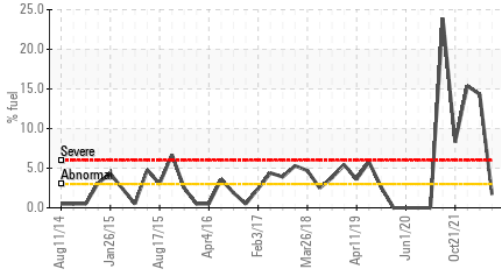


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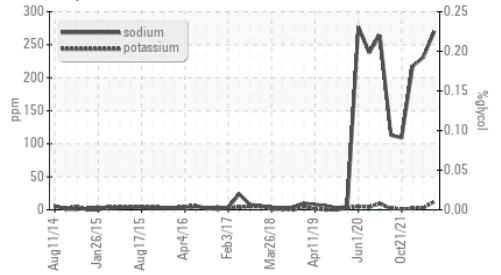
### Aluminum (ppm)



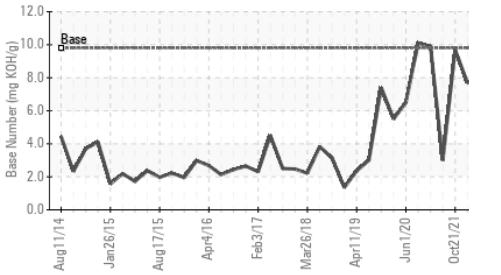
### Fuel Dilution



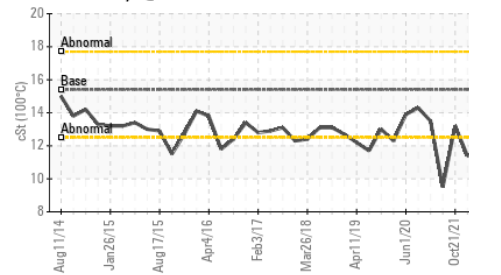
### Glycol Contamination



### Base Number



### Viscosity @ 100°C



### VISUAL

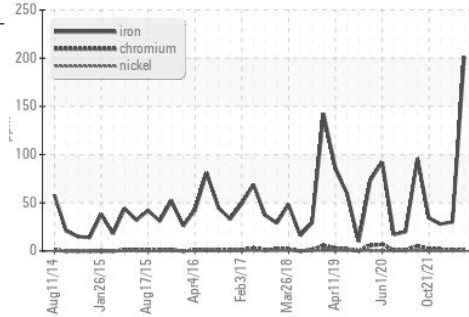
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

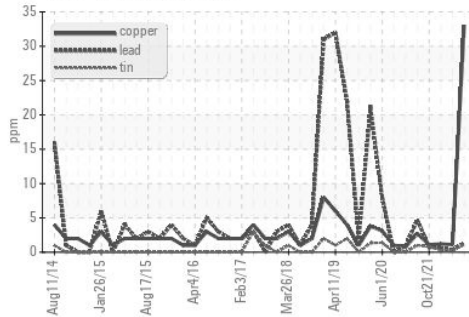
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.4	11.6

### GRAPHS

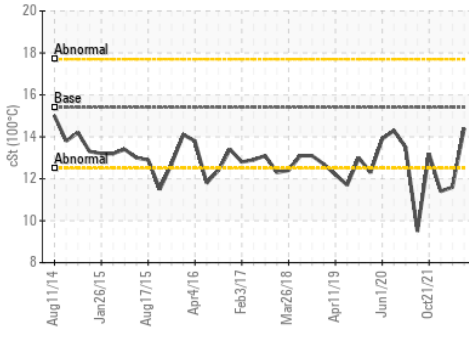
### Ferrous Alloys



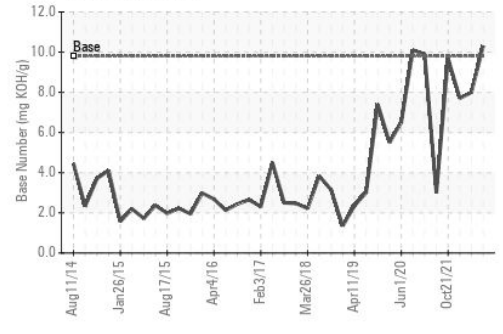
### Non-ferrous Metals



### Viscosity @ 100°C



### Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0068123 **Received** : 24 Jan 2024  
**Lab Number** : 06069953 **Diagnosed** : 26 Jan 2024  
**Unique Number** : 10846630 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: Glycol, PercentFuel )

**GFL Environmental - 028 - Weldon**  
 2211 US Highway 301  
 Halifax, NC  
 US 27839  
 Contact: TRAVIS PORCH  
 tporch@gflenv.com  
 T: (252)532-3344  
 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)