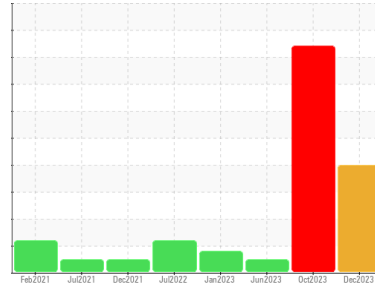




# OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Area  
**(H904568)**

Machine Id  
**1355**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (10 GAL)**

## 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. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

Sodium and/or potassium levels are high. Light fuel dilution occurring.

### Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>GFL0106945</b>	GFL0098804	GFL0073255
Sample Date	Client Info		<b>14 Dec 2023</b>	20 Oct 2023	07 Jun 2023
Machine Age	hrs	Client Info	<b>20466</b>	20396	20169
Oil Age	hrs	Client Info	<b>301</b>	231	300
Oil Changed	Client Info		<b>Changed</b>	Not Changd	Not Changd
Sample Status			<b>ABNORMAL</b>	SEVERE	NORMAL

## 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 >150	<b>23</b>	17	3
Chromium	ppm	ASTM D5185m >15	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m >4	<b>1</b>	<1	<1
Titanium	ppm	ASTM D5185m	<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m >3	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m >15	<b>5</b>	5	1
Lead	ppm	ASTM D5185m >70	<b>5</b>	2	1
Copper	ppm	ASTM D5185m >175	<b>2</b>	2	<1
Tin	ppm	ASTM D5185m >5	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	<1

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>40</b>	50	4
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 60	<b>133</b>	117	60
Manganese	ppm	ASTM D5185m 0	<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m 1010	<b>1269</b>	904	999
Calcium	ppm	ASTM D5185m 1070	<b>1365</b>	1058	1120
Phosphorus	ppm	ASTM D5185m 1150	<b>1321</b>	1028	1037
Zinc	ppm	ASTM D5185m 1270	<b>1664</b>	1208	1327
Sulfur	ppm	ASTM D5185m 2060	<b>4253</b>	3342	3932

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>▲ 27</b>	23	4
Sodium	ppm	ASTM D5185m	<b>● 1627</b>	● 1828	81
Potassium	ppm	ASTM D5185m >20	<b>12</b>	13	4
Fuel	%	ASTM D3524 >3.0	<b>▲ 3.2</b>	▲ 3.1	<1.0
Glycol	%	*ASTM D2982	<b>NEG</b>	▲ 0.12	NEG

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	<b>9.6</b>	8.8	5.0
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>18.5</b>	18.4	17.8

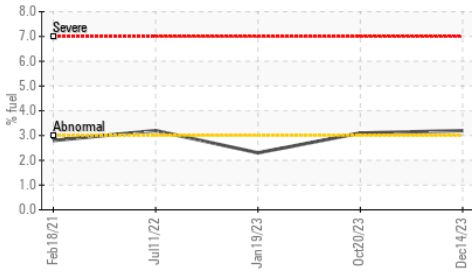
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>14.1</b>	13.8	13.3
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	<b>14.2</b>	14.8	10.0

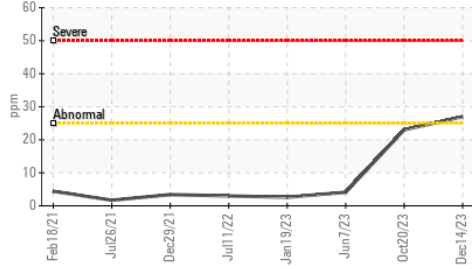


# OIL ANALYSIS REPORT

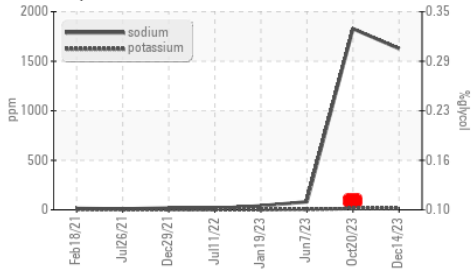
## Fuel Dilution



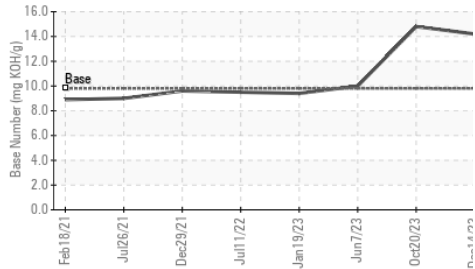
## Silicon (ppm)



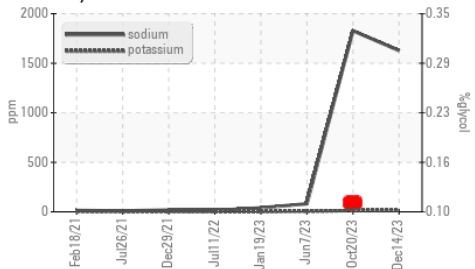
## Glycol Contamination



## Base Number



## Glycol Contamination

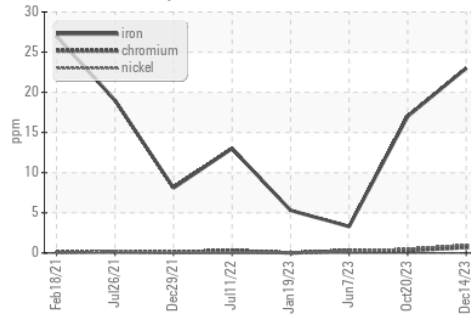


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

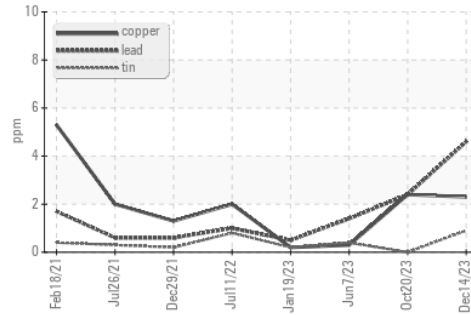
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 11.8	▲ 12.1

## GRAPHS

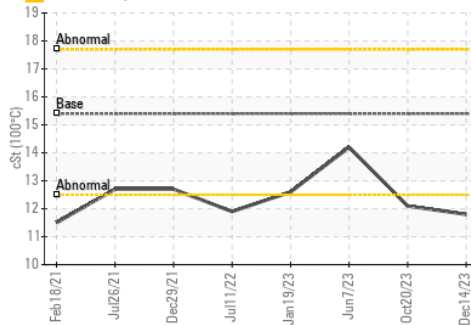
### Ferrous Alloys



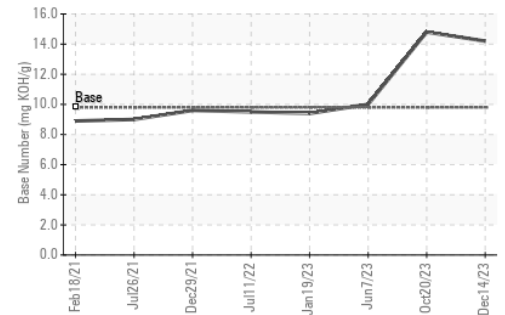
### Non-ferrous Metals



### Viscosity @ 100°C



### Base Number



Certificate L2367

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

Sample No. : GFL0106945

Lab Number : 06104098

Unique Number : 10902328

Test Package : FLEET ( Additional Tests: PercentFuel )

Received : 29 Feb 2024

Tested : 04 Mar 2024

Diagnosed : 04 Mar 2024 - Jonathan Hester

GFL Environmental - 097 - Knoxville Hauling

1901 Sutherland Ave

Knoxville, TN

US 37921

Contact: Doug Weeden

dweeden@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)