



# PROBLEM SUMMARY

Sample Rating Trend

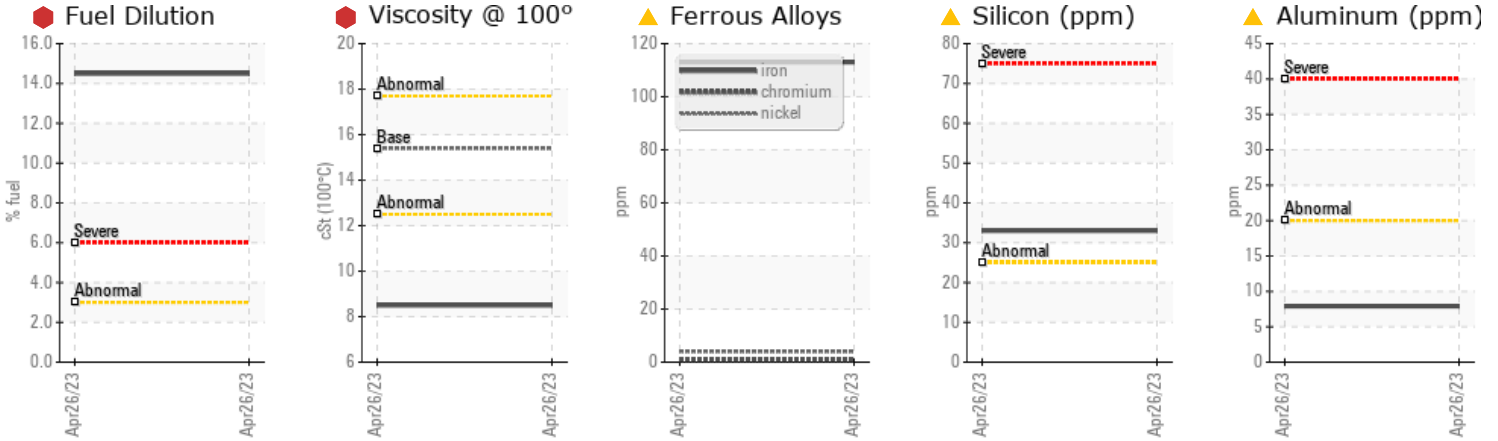


FUEL



Machine Id  
**728M**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We advise that you check the fuel injection system. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status	SEVERE	---	---
Iron ppm ASTM D5185m >90	▲ 113	---	---
Nickel ppm ASTM D5185m >2	▲ 4	---	---
Silver ppm ASTM D5185m >2	▲ 7	---	---
Aluminum ppm ASTM D5185m >20	▲ 8	---	---
Silicon ppm ASTM D5185m >25	▲ 33	---	---
Fuel % ASTM D3524 >3.0	● 14.5	---	---
Visc @ 100°C cSt ASTM D445 15.4	● 8.5	---	---

Customer Id: GFL418  
Sample No.: GFL0069864  
Lab Number: 05984431  
Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Angela Borella +1 800-237-1369  
[angela.borella@wearcheckusa.com](mailto:angela.borella@wearcheckusa.com)

To change component or sample information:  
Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Dirt Access	---	---	?	We advise that you check the air filter, air induction system, and any areas where dirt may enter the component.
Check Fuel/injector System	---	---	?	We advise that you check the fuel injection system.

## HISTORICAL DIAGNOSIS



# OIL ANALYSIS REPORT

Sample Rating Trend

FUEL



Machine Id  
**728M**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**



## DIAGNOSIS

### Recommendation

We advise that you check the fuel injection system. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

### Wear

Silver and iron and nickel ppm levels are abnormal. Aluminum ppm levels are noted. Cylinder, crank, or cam shaft wear is indicated. Exhaust valve wear is indicated.

### Contamination

There is a high amount of fuel present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Tests confirm the presence of fuel in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>GFL0069864</b>	---	---
Sample Date	Client Info	<b>26 Apr 2023</b>	---	---
Machine Age	hrs Client Info	<b>20413</b>	---	---
Oil Age	hrs Client Info	<b>600</b>	---	---
Oil Changed	Client Info	<b>Changed</b>	---	---
Sample Status		<b>SEVERE</b>	---	---

## CONTAMINATION

method	limit/base	current	history1	history2
Glycol	WC Method	<b>NEG</b>	---	---

## WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >90	<b>▲ 113</b>	---	---
Chromium	ppm ASTM D5185m >20	<b>1</b>	---	---
Nickel	ppm ASTM D5185m >2	<b>▲ 4</b>	---	---
Titanium	ppm ASTM D5185m >2	<b>&lt;1</b>	---	---
Silver	ppm ASTM D5185m >2	<b>▲ 7</b>	---	---
Aluminum	ppm ASTM D5185m >20	<b>▲ 8</b>	---	---
Lead	ppm ASTM D5185m >40	<b>1</b>	---	---
Copper	ppm ASTM D5185m >330	<b>12</b>	---	---
Tin	ppm ASTM D5185m >15	<b>&lt;1</b>	---	---
Vanadium	ppm ASTM D5185m	<b>&lt;1</b>	---	---
Cadmium	ppm ASTM D5185m	<b>2</b>	---	---

## ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<b>33</b>	---	---
Barium	ppm ASTM D5185m 0	<b>3</b>	---	---
Molybdenum	ppm ASTM D5185m 60	<b>22</b>	---	---
Manganese	ppm ASTM D5185m 0	<b>2</b>	---	---
Magnesium	ppm ASTM D5185m 1010	<b>252</b>	---	---
Calcium	ppm ASTM D5185m 1070	<b>386</b>	---	---
Phosphorus	ppm ASTM D5185m 1150	<b>592</b>	---	---
Zinc	ppm ASTM D5185m 1270	<b>486</b>	---	---
Sulfur	ppm ASTM D5185m 2060	<b>7155</b>	---	---

## CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	<b>▲ 33</b>	---	---
Sodium	ppm ASTM D5185m	<b>44</b>	---	---
Potassium	ppm ASTM D5185m >20	<b>39</b>	---	---
Fuel	% ASTM D3524 >3.0	<b>◆ 14.5</b>	---	---

## INFRA-RED

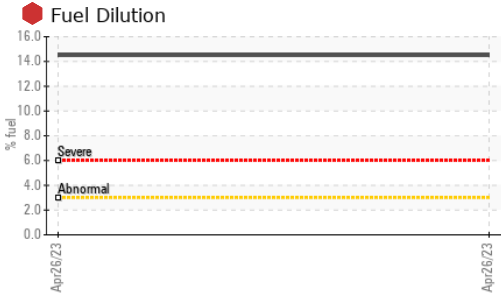
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >6	<b>0.3</b>	---	---
Nitration	Abs/cm *ASTM D7624 >20	<b>5.6</b>	---	---
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>25.2</b>	---	---

## FLUID DEGRADATION

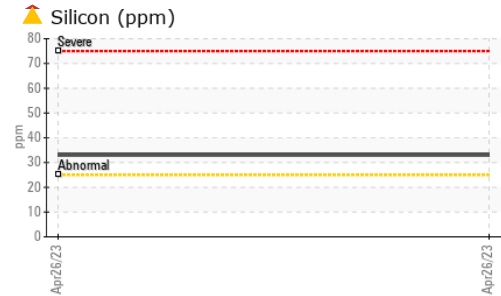
method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>22.4</b>	---	---
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>7.1</b>	---	---



# OIL ANALYSIS REPORT

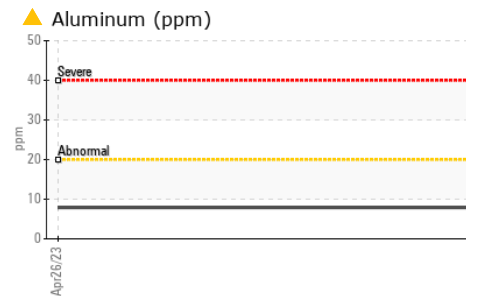
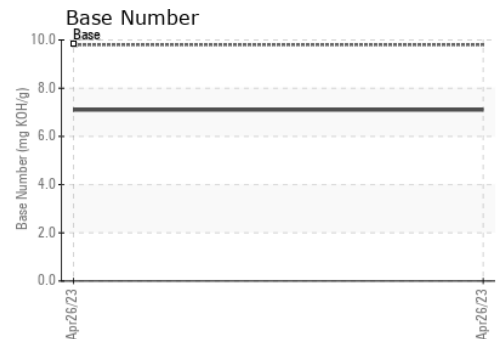
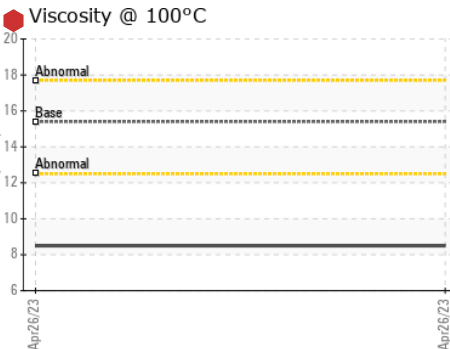
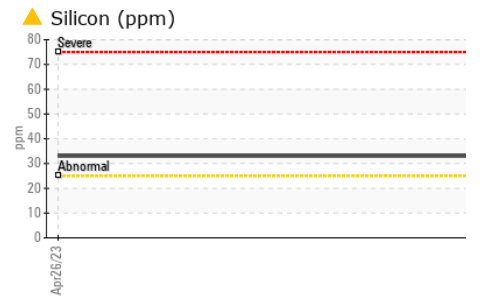
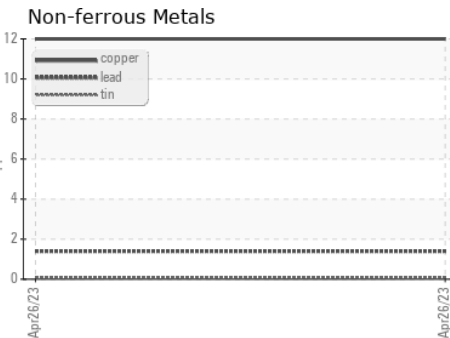
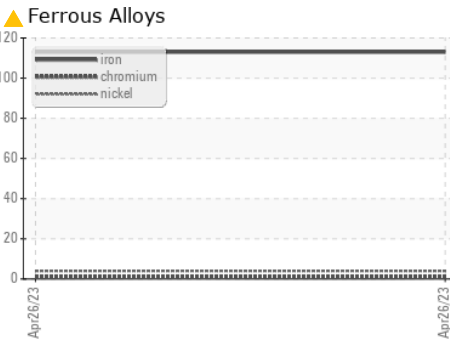
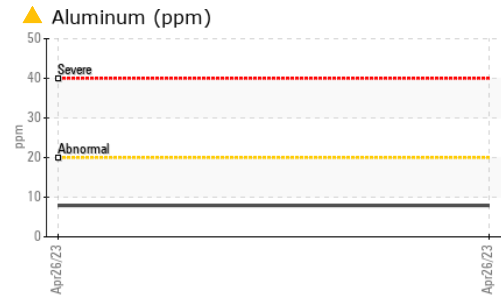


VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Precipitate	scalar	*Visual	NONE	NONE	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE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



FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.4	8.5	---	---

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0069864 **Received** : 20 Oct 2023  
**Lab Number** : 05984431 **Diagnosed** : 23 Oct 2023  
**Unique Number** : 10701726 **Diagnostician** : Angela Borella  
**Test Package** : FLEET ( Additional Tests: FuelDilution, PercentFuel )

**GFL Environmental - 418 - Metro/MI East**  
 22001 Hoover Dr  
 Warren, MI  
 US 48089  
 Contact: JIM HESS  
 jhess@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)

T:  
F: