



# PROBLEM SUMMARY

Sample Rating Trend

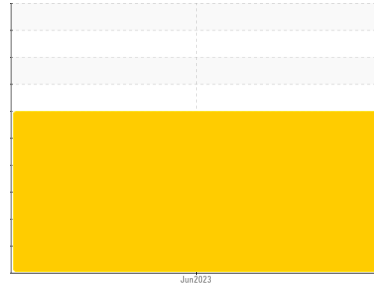
SOOT



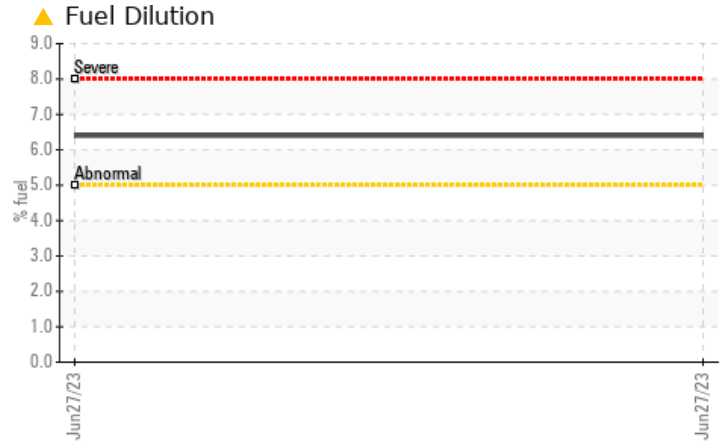
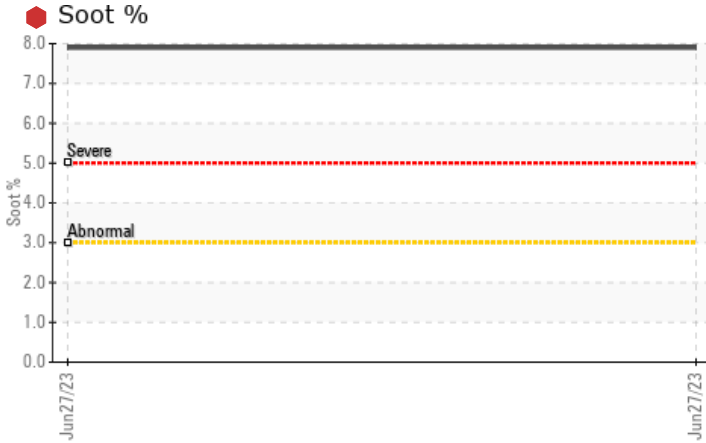
Machine Id  
**FREIGHTLINER 29**

Component  
**Diesel Engine**

Fluid  
**PETRO CANADA DURON SHP 15W40 (13 LTR)**



## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

We advise that you check the engine tuning and timing. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	---	---
Fuel	%	ASTM D3524	>5	▲ 6.4	---	---
Soot %	%	*ASTM D7844	>3	◆ 7.9	---	---
Nitration	Abs/cm	*ASTM D7624	>20	▲ 55.5	---	---
Sulfation	Abs./1mm	*ASTM D7415	>30	▲ 76.2	---	---
Oxidation	Abs./1mm	*ASTM D7414	>25	▲ 127.4	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ -5.7	---	---

Customer Id: ATRPIN  
 Sample No.: PCA0100624  
 Lab Number: 05889879  
 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)

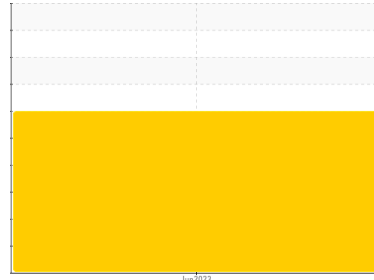
## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.
Check Combustion	---	---	?	We advise that you check for faulty combustion, plugged air filters, or aftercoolers.

## HISTORICAL DIAGNOSIS



Machine Id  
**FREIGHTLINER 29**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (13 LTR)**



## DIAGNOSIS

**Recommendation**  
 We advise that you check the engine tuning and timing. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

**Wear**  
 All component wear rates are normal.

**Contamination**  
 There is an abnormal level of nitration indicated. There is an abnormal level of sulfation indicated. There is a moderate amount of fuel present in the oil. There is an abnormal amount of solids and carbon present in the oil. Tests confirm the presence of fuel in the oil.

**Fluid Condition**  
 A small degree of oil oxidation was indicated. The oil is no longer serviceable.

## SAMPLE INFORMATION

method	limit/base	current	history 1	history 2
Sample Number	Client Info	<b>PCA0100624</b>	---	---
Sample Date	Client Info	<b>27 Jun 2023</b>	---	---
Machine Age	mls Client Info	<b>509925</b>	---	---
Oil Age	mls Client Info	<b>29207</b>	---	---
Oil Changed	Client Info	<b>Changed</b>	---	---
Sample Status		<b>SEVERE</b>	---	---

## CONTAMINATION

method	limit/base	current	history 1	history 2
Glycol	WC Method	<b>NEG</b>	---	---

## WEAR METALS

method	limit/base	current	history 1	history 2
Iron	ppm ASTM D5185m >80	<b>50</b>	---	---
Chromium	ppm ASTM D5185m >5	<b>3</b>	---	---
Nickel	ppm ASTM D5185m >2	<b>&lt;1</b>	---	---
Titanium	ppm ASTM D5185m	<b>0</b>	---	---
Silver	ppm ASTM D5185m >3	<b>0</b>	---	---
Aluminum	ppm ASTM D5185m >30	<b>4</b>	---	---
Lead	ppm ASTM D5185m >30	<b>12</b>	---	---
Copper	ppm ASTM D5185m >150	<b>1</b>	---	---
Tin	ppm ASTM D5185m >5	<b>1</b>	---	---
Vanadium	ppm ASTM D5185m	<b>0</b>	---	---
Cadmium	ppm ASTM D5185m	<b>0</b>	---	---

## ADDITIVES

method	limit/base	current	history 1	history 2
Boron	ppm ASTM D5185m 0	<b>0</b>	---	---
Barium	ppm ASTM D5185m 0	<b>0</b>	---	---
Molybdenum	ppm ASTM D5185m 60	<b>54</b>	---	---
Manganese	ppm ASTM D5185m 0	<b>&lt;1</b>	---	---
Magnesium	ppm ASTM D5185m 1010	<b>818</b>	---	---
Calcium	ppm ASTM D5185m 1070	<b>1005</b>	---	---
Phosphorus	ppm ASTM D5185m 1150	<b>907</b>	---	---
Zinc	ppm ASTM D5185m 1270	<b>1079</b>	---	---
Sulfur	ppm ASTM D5185m 2060	<b>2682</b>	---	---

## CONTAMINANTS

method	limit/base	current	history 1	history 2
Silicon	ppm ASTM D5185m >20	<b>4</b>	---	---
Sodium	ppm ASTM D5185m	<b>0</b>	---	---
Potassium	ppm ASTM D5185m >20	<b>10</b>	---	---
Fuel	% ASTM D3524 >5	<b>6.4</b>	---	---

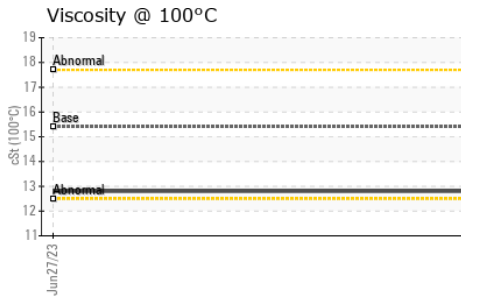
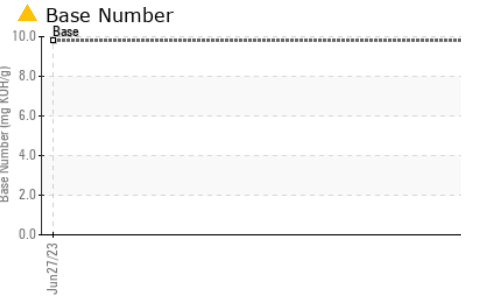
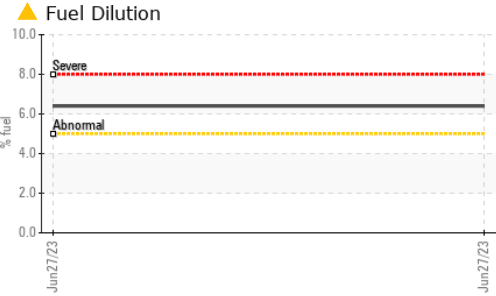
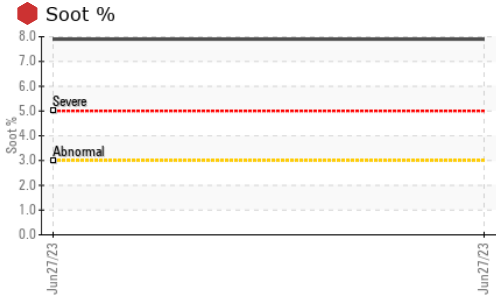
## INFRA-RED

method	limit/base	current	history 1	history 2
Soot %	% *ASTM D7844 >3	<b>7.9</b>	---	---
Nitration	Abs/cm *ASTM D7624 >20	<b>55.5</b>	---	---
Sulfation	Abs/.1mm *ASTM D7415 >30	<b>76.2</b>	---	---

## FLUID DEGRADATION

method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm *ASTM D7414 >25	<b>127.4</b>	---	---
Base Number (BN)	mg KOH/g ASTM D2896 9.8	<b>-5.7</b>	---	---

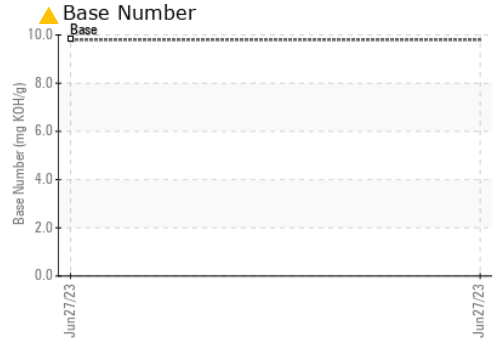
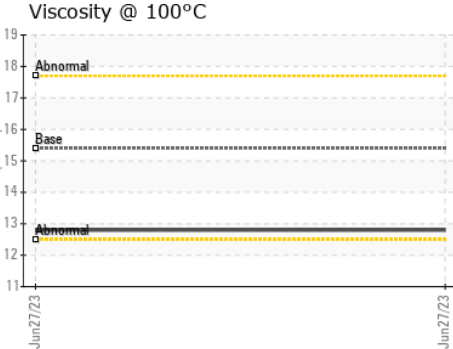
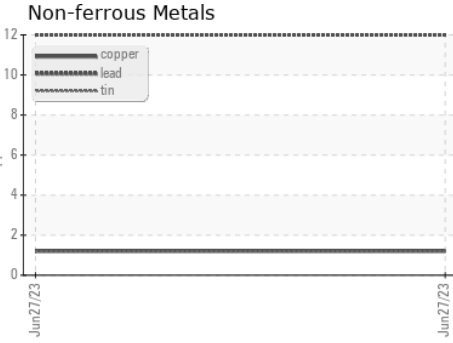
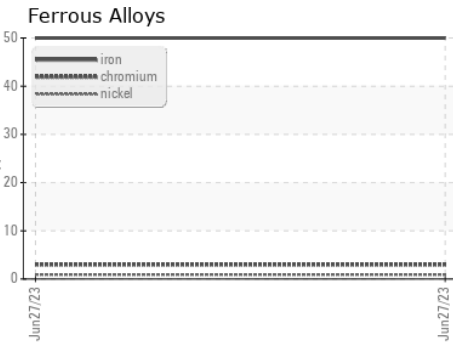
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history 1	history 2	
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	history 1	history 2	
Visc @ 100°C	cSt	ASTM D445	15.4	12.8	---	---

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0100624 **Received** : 05 Jul 2023  
**Lab Number** : 05889879 **Diagnosed** : 11 Jul 2023  
**Unique Number** : 10545689 **Diagnostician** : Angela Borella  
**Test Package** : FLEET ( Additional Tests: FUELDILUTION, PercentFuel )

**A Truck Repair**  
 9349 China Grove Church Road  
 Pineville, NC  
 US 28134  
 Contact: Vlad Melnichuk  
 shop@migway.com  
 T: (980)255-3200  
 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)