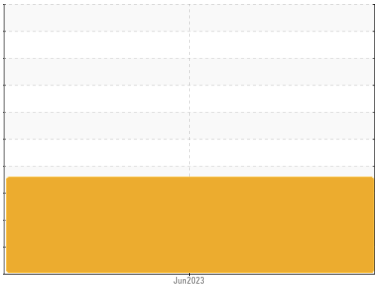
OIL DIAGNOSTICS

PROBLEM SUMMARY

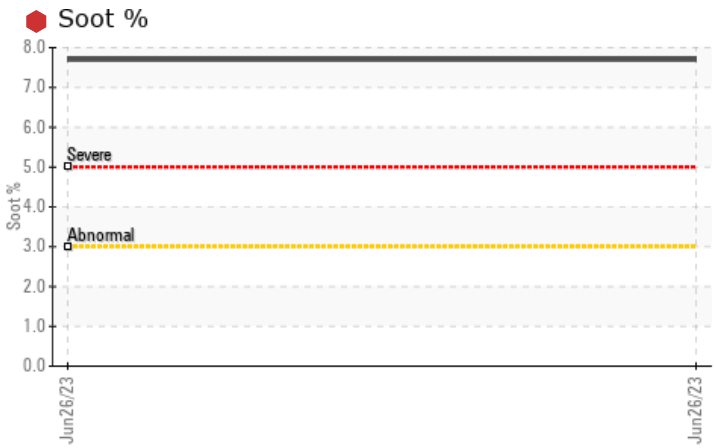
Sample Rating Trend

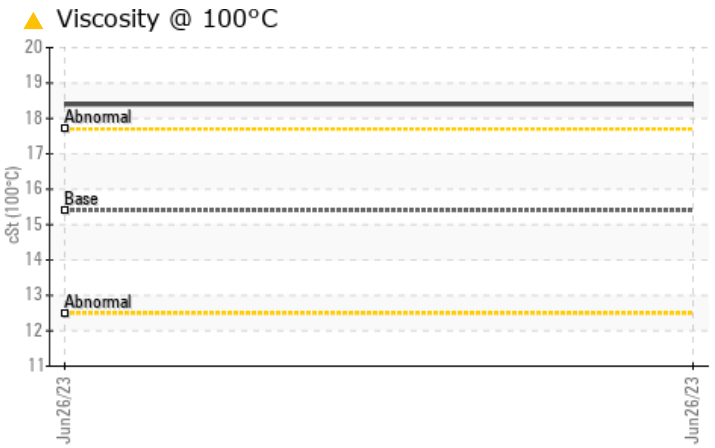


SOOT

Machine Id
FREIGHTLINER 89
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (13 LTR)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	---	---
Soot %	%	*ASTM D7844	>3	**7.7**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**0.0**	---	---
Visc @ 100°C	cSt	ASTM D445	15.4	**18.4**	---	---

Customer Id: ATRPIN
Sample No.: PCA0100623
Lab Number: 05889877
Test Package: FLEET

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

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

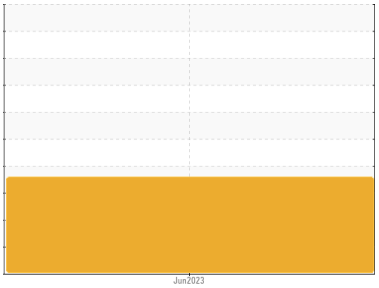
RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Combustion	---	---	?	We advise that you check for faulty combustion, plugged air filters, or aftercoolers.

HISTORICAL DIAGNOSIS

OIL ANALYSIS REPORT

Sample Rating Trend



SOOT

Machine Id
FREIGHTLINER 89
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (13 LTR)

DIAGNOSIS

Recommendation
We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is an abnormal amount of solids and carbon present in the oil.

Fluid Condition
The oil viscosity is higher than normal. The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number		Client Info		**PCA0100623**	---	---
Sample Date		Client Info		**26 Jun 2023**	---	---
Machine Age	mls	Client Info		**407220**	---	---
Oil Age	mls	Client Info		**28157**	---	---
Oil Changed		Client Info		**Changed**	---	---
Sample Status				**SEVERE**	---	---

CONTAMINATION		method	limit/base	current	history 1	history 2
Fuel		WC Method	>5	**<1.0**	---	---
Glycol		WC Method		**NEG**	---	---

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>80	**63**	---	---
Chromium	ppm	ASTM D5185m	>5	**3**	---	---
Nickel	ppm	ASTM D5185m	>2	**1**	---	---
Titanium	ppm	ASTM D5185m		**0**	---	---
Silver	ppm	ASTM D5185m	>3	**0**	---	---
Aluminum	ppm	ASTM D5185m	>30	**1**	---	---
Lead	ppm	ASTM D5185m	>30	**24**	---	---
Copper	ppm	ASTM D5185m	>150	**3**	---	---
Tin	ppm	ASTM D5185m	>5	**3**	---	---
Vanadium	ppm	ASTM D5185m		**0**	---	---
Cadmium	ppm	ASTM D5185m		**0**	---	---

ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	0	**5**	---	---
Barium	ppm	ASTM D5185m	0	**0**	---	---
Molybdenum	ppm	ASTM D5185m	60	**52**	---	---
Manganese	ppm	ASTM D5185m	0	**<1**	---	---
Magnesium	ppm	ASTM D5185m	1010	**759**	---	---
Calcium	ppm	ASTM D5185m	1070	**1122**	---	---
Phosphorus	ppm	ASTM D5185m	1150	**898**	---	---
Zinc	ppm	ASTM D5185m	1270	**1080**	---	---
Sulfur	ppm	ASTM D5185m	2060	**2611**	---	---

CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>20	**6**	---	---
Sodium	ppm	ASTM D5185m		**<1**	---	---
Potassium	ppm	ASTM D5185m	>20	**2**	---	---

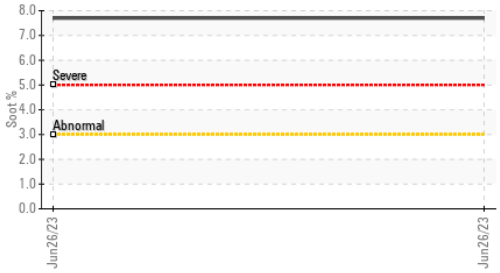
INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	>3	**7.7**	---	---
Nitration	Abs/cm	*ASTM D7624	>20	**49.1**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**74.4**	---	---

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**118.5**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**0.0**	---	---

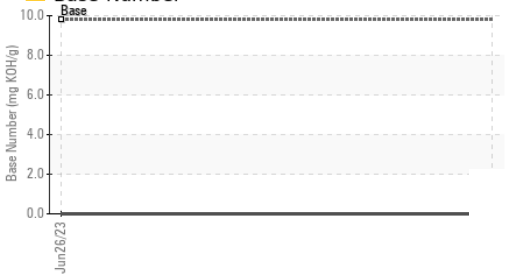
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

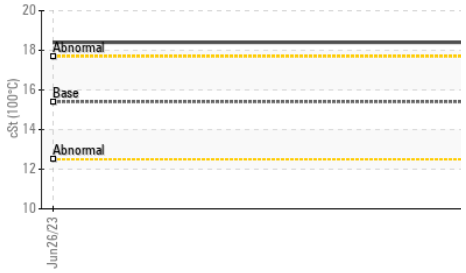
Soot %



Base Number



Viscosity @ 100°C

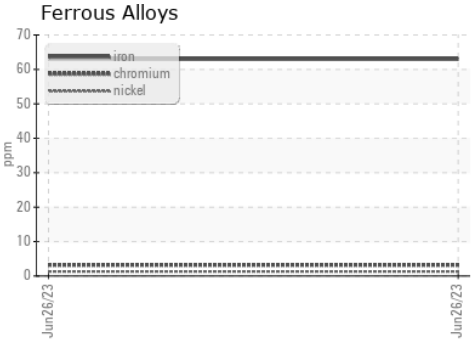


VISUAL		method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar	*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**	---	---

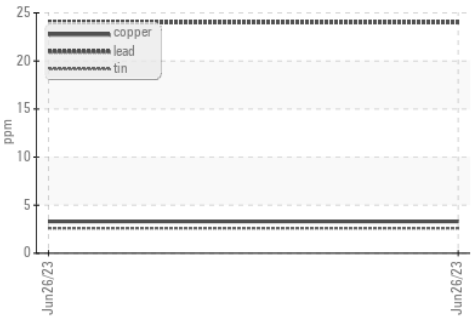
FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **18.4**	---	---

GRAPHS

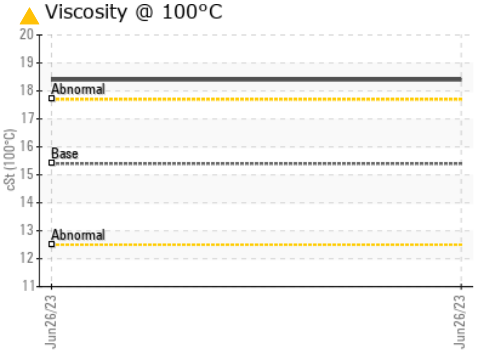
Ferrous Alloys



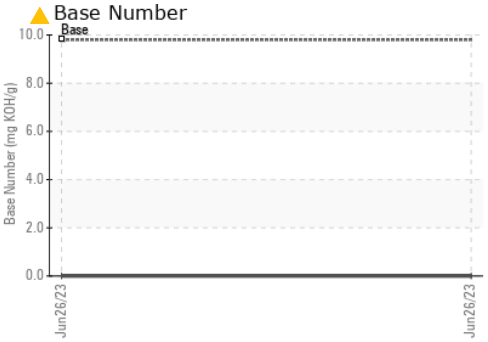
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0100623
Lab Number : 05889877
Unique Number : 10545687
Test Package : FLEET

Received : 05 Jul 2023
Diagnosed : 06 Jul 2023
Diagnostician : Don Baldridge

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)

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Pineville, NC
US 28134
Contact: Vlad Melnichuk
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Report Id: ATRPIN [WUSCAR] 05889877 (Generated: 07/07/2023 04:05:32) Rev: 1

Submitted By: Vlad Melnichuk