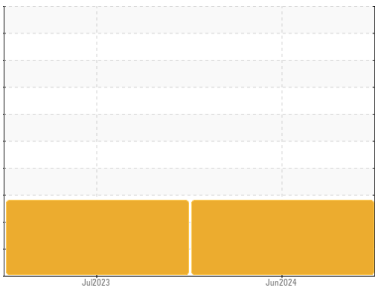
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Machine Id
FREIGHTLINER 48
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 advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. 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 amount of solids and carbon present in the oil. There is a moderate amount of fuel present in the oil.

Fluid Condition
The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0117386**	PCA0102659	---
Sample Date		Client Info		**28 Jun 2024**	18 Jul 2023	---
Machine Age	mls	Client Info		**884315**	771549	---
Oil Age	mls	Client Info		**25000**	28946	---
Oil Changed		Client Info		**Changed**	Changed	---
Sample Status				**ABNORMAL**	ABNORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	---
Glycol		WC Method		**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	**53**	32	---
Chromium	ppm	ASTM D5185m	>5	**2**	2	---
Nickel	ppm	ASTM D5185m	>2	**<1**	0	---
Titanium	ppm	ASTM D5185m		**0**	0	---
Silver	ppm	ASTM D5185m	>3	**0**	0	---
Aluminum	ppm	ASTM D5185m	>30	**1**	<1	---
Lead	ppm	ASTM D5185m	>30	**7**	7	---
Copper	ppm	ASTM D5185m	>150	**1**	1	---
Tin	ppm	ASTM D5185m	>5	**<1**	<1	---
Vanadium	ppm	ASTM D5185m		**0**	<1	---
Cadmium	ppm	ASTM D5185m		**<1**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**35**	<1	---
Barium	ppm	ASTM D5185m	0	**0**	0	---
Molybdenum	ppm	ASTM D5185m	60	**64**	55	---
Manganese	ppm	ASTM D5185m	0	**1**	<1	---
Magnesium	ppm	ASTM D5185m	1010	**683**	869	---
Calcium	ppm	ASTM D5185m	1070	**992**	1094	---
Phosphorus	ppm	ASTM D5185m	1150	**794**	880	---
Zinc	ppm	ASTM D5185m	1270	**848**	1096	---
Sulfur	ppm	ASTM D5185m	2060	**2427**	2991	---

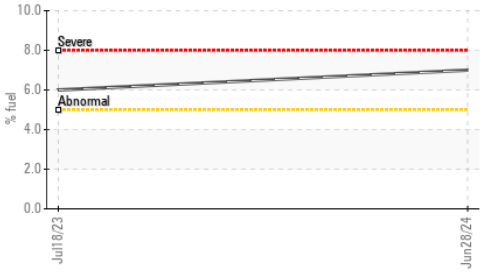
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**7**	5	---
Sodium	ppm	ASTM D5185m		**4**	3	---
Potassium	ppm	ASTM D5185m	>20	**2**	0	---
Fuel	%	ASTM D3524	>5	▲ **7.0**	▲ 6.0	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	▲ **5.1**	▲ 4.2	---
Nitration	Abs/cm	*ASTM D7624	>20	**12.0**	12.1	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**30.1**	29.8	---

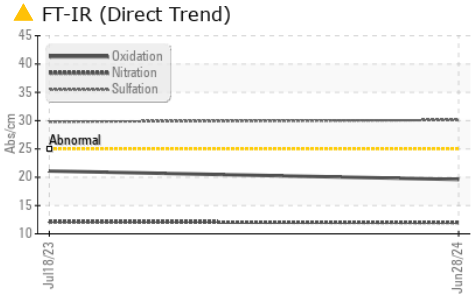
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**19.6**	21.1	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ **0.0**	▲ 2.2	---

OIL ANALYSIS REPORT

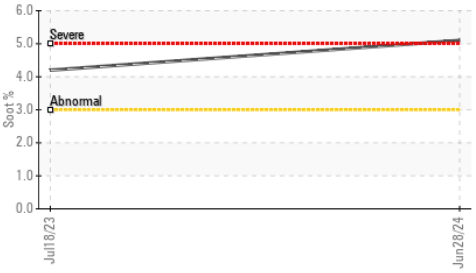
Fuel Dilution



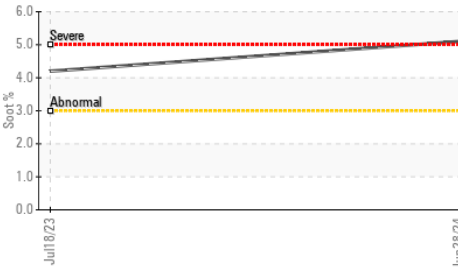
FT-IR (Direct Trend)



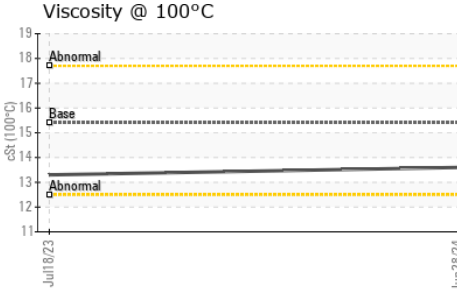
Soot %



Soot %



Viscosity @ 100°C

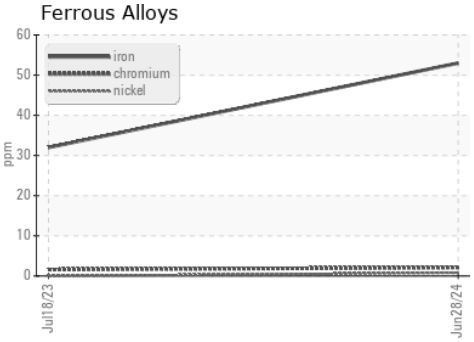


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt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

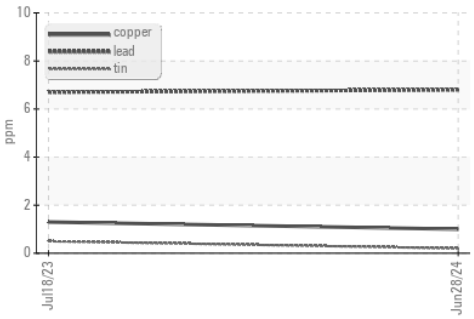
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**13.6**	13.3	---

GRAPHS

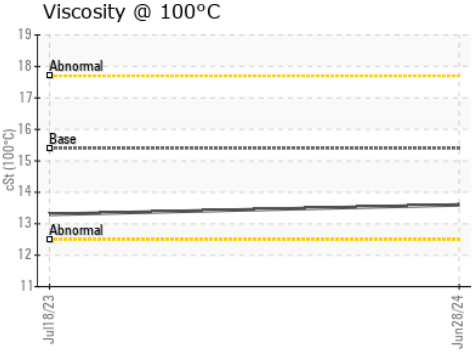
Ferrous Alloys



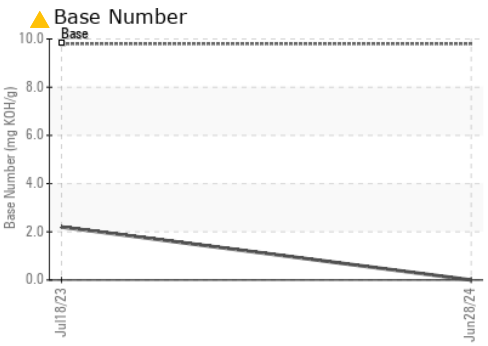
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0117386
Lab Number : 06239983
Unique Number : 11128817
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 18 Jul 2024
Tested : 19 Jul 2024
Diagnosed : 19 Jul 2024 - 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)

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

Report Id: ATRPIN [WUSCAR] 06239983 (Generated: 07/21/2024 10:56:59) Rev: 1

Submitted By: Vlad Melnichuk