OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend

WEAR

Machine Id
739251
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- GAL)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
Cylinder, crank, or cam shaft wear is indicated.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0119426**	---	---
Sample Date		Client Info		**06 Apr 2024**	---	---
Machine Age	mls	Client Info		**201254**	---	---
Oil Age	mls	Client Info		**73943**	---	---
Oil Changed		Client Info		**Changed**	---	---
Sample Status				**ABNORMAL**	---	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>5	**<1.0**	---	---
Water		WC Method	>0.2	**NEG**	---	---
Glycol		WC Method		**NEG**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	▲ **181**	---	---
Chromium	ppm	ASTM D5185m	>20	**7**	---	---
Nickel	ppm	ASTM D5185m	>4	**2**	---	---
Titanium	ppm	ASTM D5185m		**1**	---	---
Silver	ppm	ASTM D5185m	>3	**<1**	---	---
Aluminum	ppm	ASTM D5185m	>20	**10**	---	---
Lead	ppm	ASTM D5185m	>40	**10**	---	---
Copper	ppm	ASTM D5185m	>330	**3**	---	---
Tin	ppm	ASTM D5185m	>15	**3**	---	---
Vanadium	ppm	ASTM D5185m		**<1**	---	---
Cadmium	ppm	ASTM D5185m		**0**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	**2**	---	---
Barium	ppm	ASTM D5185m	0	**0**	---	---
Molybdenum	ppm	ASTM D5185m	50	**68**	---	---
Manganese	ppm	ASTM D5185m	0	**2**	---	---
Magnesium	ppm	ASTM D5185m	950	**1062**	---	---
Calcium	ppm	ASTM D5185m	1050	**1211**	---	---
Phosphorus	ppm	ASTM D5185m	995	**1073**	---	---
Zinc	ppm	ASTM D5185m	1180	**1383**	---	---
Sulfur	ppm	ASTM D5185m	2600	**2773**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**19**	---	---
Sodium	ppm	ASTM D5185m		**2**	---	---
Potassium	ppm	ASTM D5185m	>20	**21**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.9**	---	---
Nitration	Abs/cm	*ASTM D7624	>20	**18.9**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**31.2**	---	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**42.5**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		**3.8**	---	---

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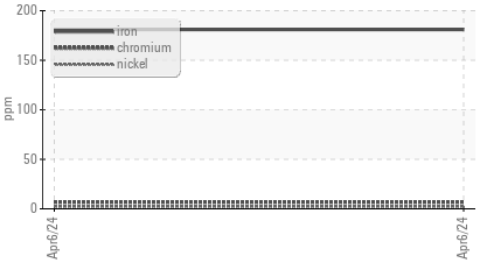
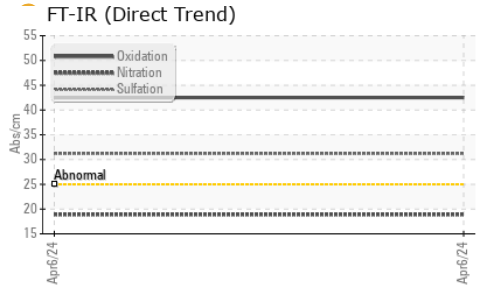
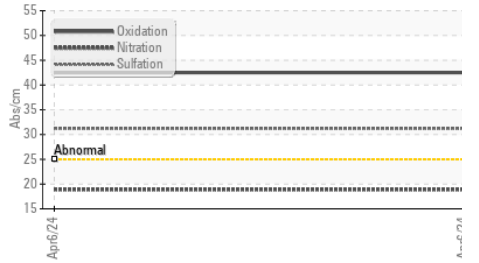
Ferrous Alloys



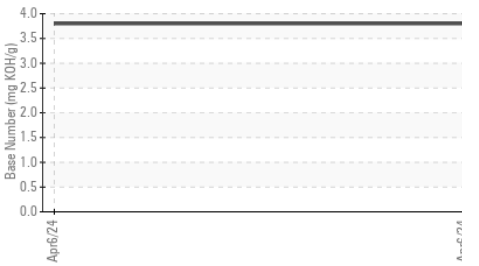
FT-IR (Direct Trend)



FT-IR (Direct Trend)



Base Number

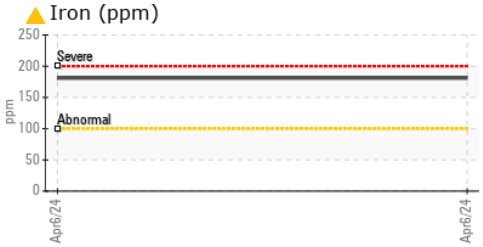


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar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

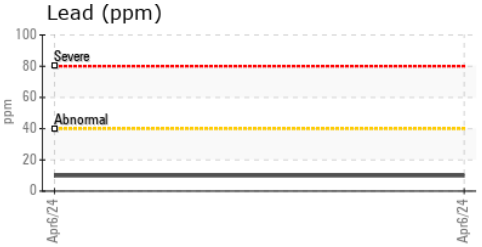
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	**15.4**	---	---

GRAPHS

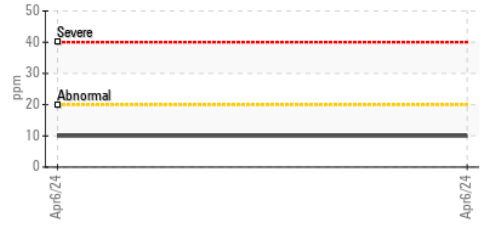
Iron (ppm)



Lead (ppm)

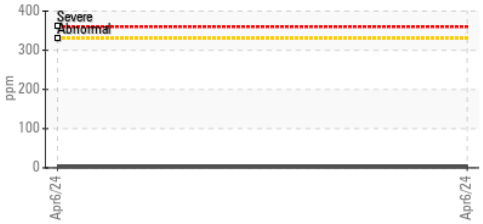


Aluminum (ppm)

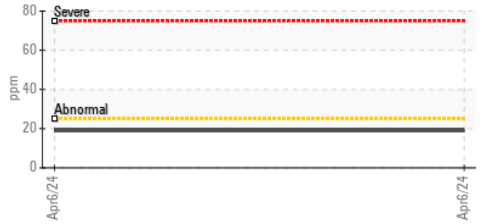


Chromium (ppm)

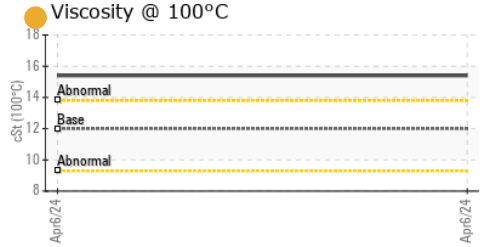
Copper (ppm)



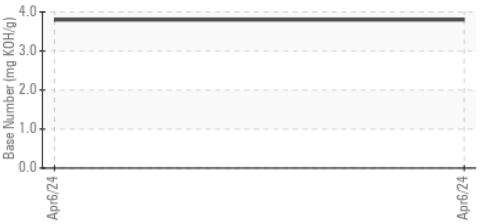
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0119426
Lab Number : 06188689
Unique Number : 11045441
Test Package : MOB 1 (Additional Tests: TBN)

Received : 23 May 2024
Tested : 24 May 2024
Diagnosed : 28 May 2024 - Sean Felton

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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LANCASTER, PA
US 17601
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rroberts@millertransgroup.com
T: (717)945-6205
F: (717)945-5818

Report Id: MILLAN [WUSCAR] 06188689 (Generated: 05/28/2024 12:05:36) Rev: 2

Contact/Location: RON ROBERTS - MILLAN