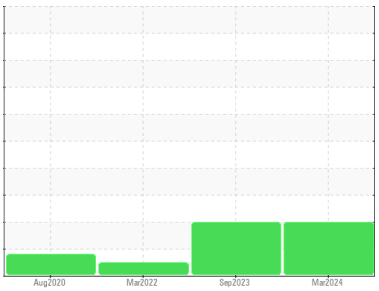
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
FORD 510
Component
Diesel Engine
Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. No other corrective action is recommended at this time.

Wear
Aluminum ppm levels are abnormal. Piston wear is indicated.

Contamination
Light fuel dilution occurring. No other contaminants were detected in the oil.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. 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		**PCA0105132**	PCA0105043	PCA0054257
Sample Date		Client Info		**04 Mar 2024**	30 Sep 2023	23 Mar 2022
Machine Age	mls	Client Info		**157660**	154306	142696
Oil Age	mls	Client Info		**20000**	7500	7500
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>150	**52**	76	18
Chromium	ppm	ASTM D5185m	>10	**1**	1	<1
Nickel	ppm	ASTM D5185m	>10	**<1**	0	0
Titanium	ppm	ASTM D5185m	>2	**<1**	0	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>15	▲ **17**	▲ 20	3
Lead	ppm	ASTM D5185m	>25	**<1**	0	0
Copper	ppm	ASTM D5185m	>45	**3**	2	<1
Tin	ppm	ASTM D5185m	>5	**<1**	0	0
Antimony	ppm	ASTM D5185m		**---**	---	---
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	1	**7**	3	8
Barium	ppm	ASTM D5185m	1	**2**	0	0
Molybdenum	ppm	ASTM D5185m	60	**65**	57	54
Manganese	ppm	ASTM D5185m	1	**1**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**931**	899	928
Calcium	ppm	ASTM D5185m	1070	**1182**	1059	1133
Phosphorus	ppm	ASTM D5185m	1150	**1090**	940	1055
Zinc	ppm	ASTM D5185m	1270	**1250**	1178	1278
Sulfur	ppm	ASTM D5185m	2060	**3382**	2946	2765

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**11**	12	11
Sodium	ppm	ASTM D5185m		**0**	4	2
Potassium	ppm	ASTM D5185m	>20	**2**	<1	<1
Fuel	%	ASTM D3524	>5	▲ **4.3**	▲ 5.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**9.0**	9.9	6.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**19.9**	20.9	19.2

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**21.2**	22.3	17.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	**10.26**	5.5	9.23

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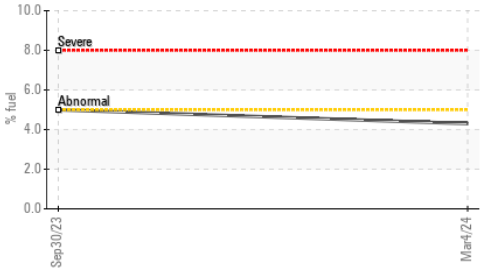
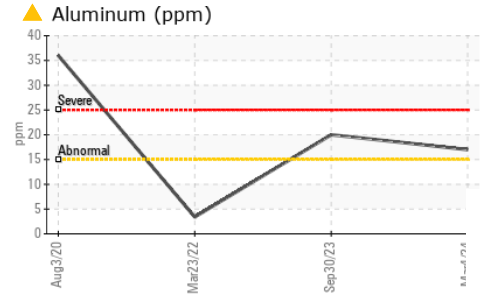
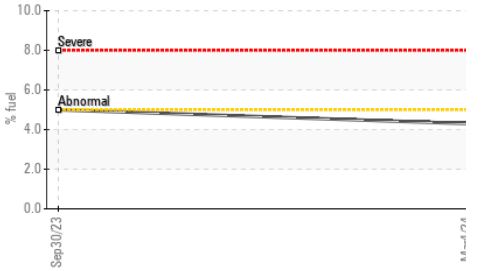
Fuel Dilution



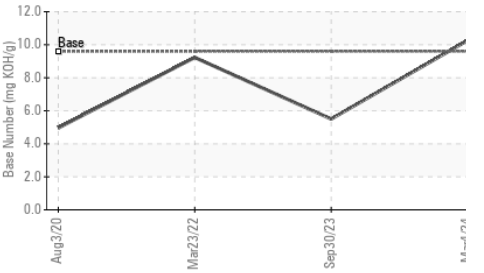
Aluminum (ppm)



Fuel Dilution



Base Number

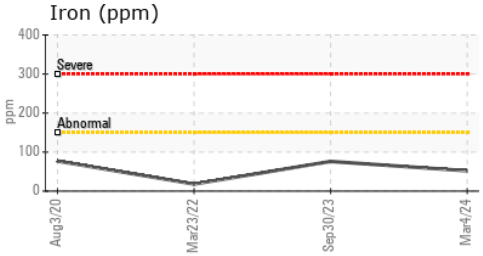


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

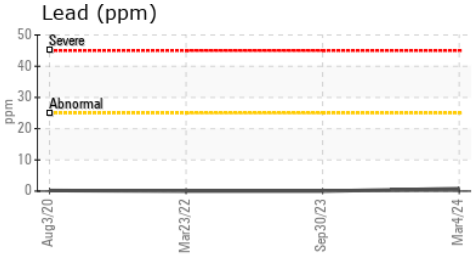
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.5	▲ **12.2**	▲ 12.1	13.48

GRAPHS

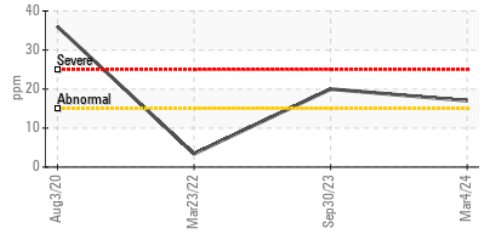
Iron (ppm)



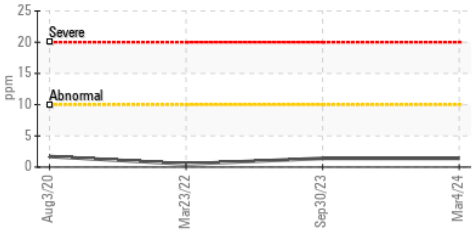
Lead (ppm)



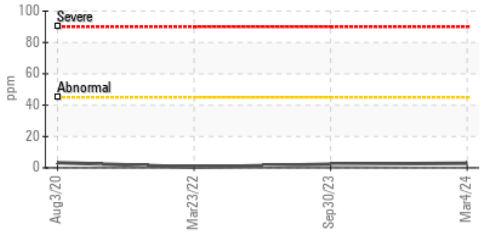
Aluminum (ppm)



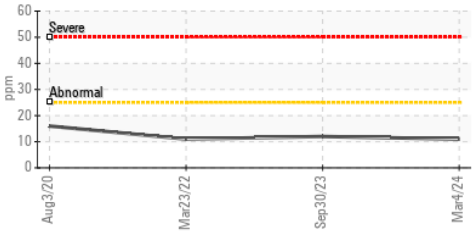
Chromium (ppm)



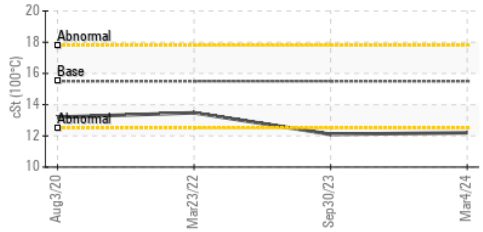
Copper (ppm)



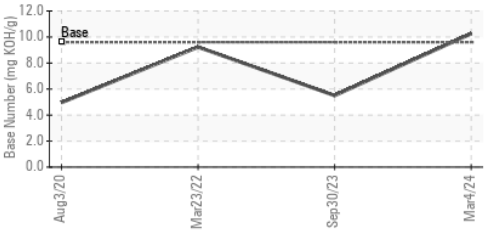
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0105132 **Received** : 25 Mar 2024
Lab Number : 06128836 **Tested** : 28 Mar 2024
Unique Number : 10942987 **Diagnosed** : 28 Mar 2024 - Wes Davis
Test Package : MOB 2 (Additional Tests: PercentFuel)

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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