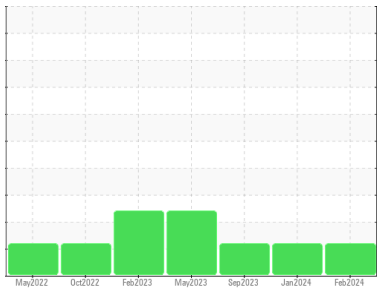
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Area
G.LOPES CONSTRUCTION INC./ON-ROAD
Machine Id
PU309
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0109851**	PCA0109651	PCA0104692
Sample Date		Client Info		**14 Feb 2024**	09 Jan 2024	20 Sep 2023
Machine Age	mls	Client Info		**32500**	31852	26000
Oil Age	mls	Client Info		**5648**	10852	11000
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

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	>100	**8**	14	21
Chromium	ppm	ASTM D5185m	>20	**<1**	2	2
Nickel	ppm	ASTM D5185m	>4	**0**	2	0
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>20	**2**	3	1
Lead	ppm	ASTM D5185m	>40	**0**	<1	0
Copper	ppm	ASTM D5185m	>330	**1**	2	2
Tin	ppm	ASTM D5185m	>15	**0**	0	0
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**4**	0	13
Barium	ppm	ASTM D5185m	0	**10**	0	0
Molybdenum	ppm	ASTM D5185m	60	**57**	54	71
Manganese	ppm	ASTM D5185m	0	**0**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**882**	881	399
Calcium	ppm	ASTM D5185m	1070	**1017**	1005	1761
Phosphorus	ppm	ASTM D5185m	1150	**1021**	964	913
Zinc	ppm	ASTM D5185m	1270	**1154**	1222	1147
Sulfur	ppm	ASTM D5185m	2060	**3255**	3070	3998

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**5**	5	6
Sodium	ppm	ASTM D5185m		**0**	0	3
Potassium	ppm	ASTM D5185m	>20	**2**	0	3
Fuel	%	ASTM D3524	>5	▲ **6.4**	▲ 7.9	▲ 7.4

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.2**	0.3	0.4
Nitration	Abs/cm	*ASTM D7624	>20	**7.1**	9.9	10.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**18.2**	20.1	21.7

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.2**	19.3	20.3
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**9.24**	9.29	4.16

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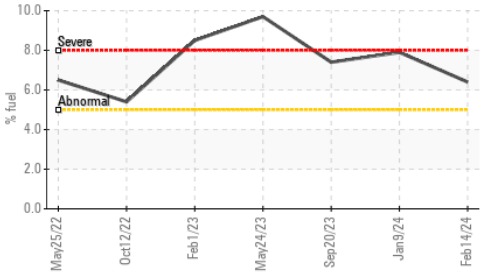
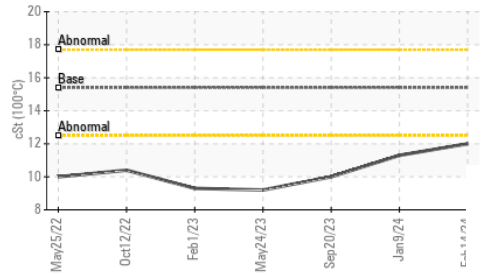
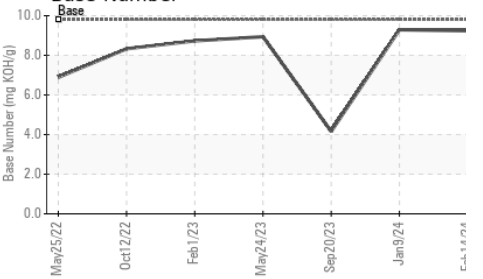
Fuel Dilution



Viscosity @ 100°C



Base Number

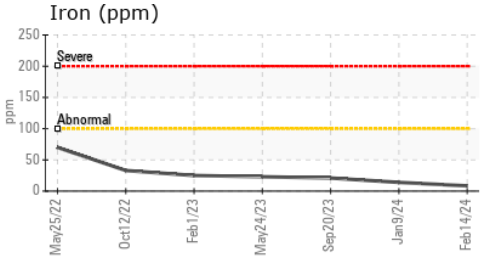


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

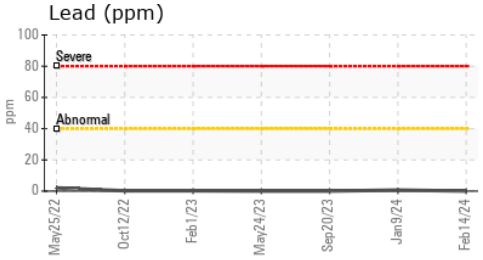
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **12.0**	▲ 11.3	▲ 10.0

GRAPHS

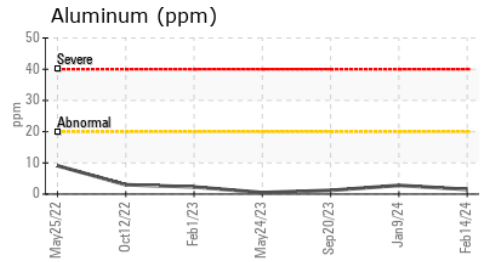
Iron (ppm)



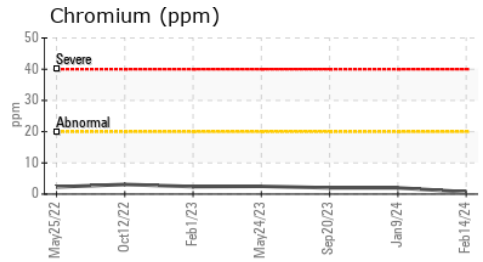
Lead (ppm)



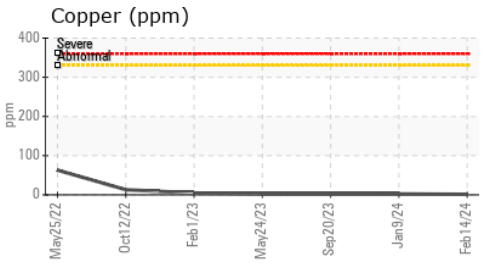
Aluminum (ppm)



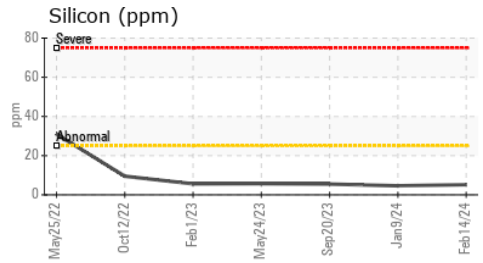
Chromium (ppm)



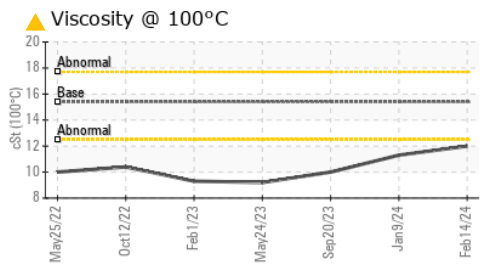
Copper (ppm)



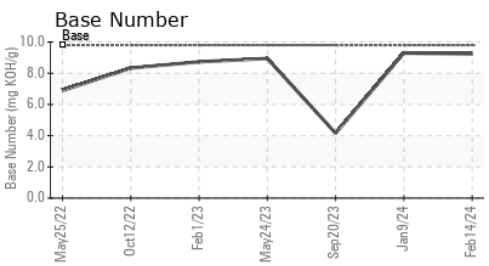
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0109851 **Received** : 19 Feb 2024
Lab Number : 06093184 **Tested** : 20 Feb 2024
Unique Number : 10886037 **Diagnosed** : 20 Feb 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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Report Id: GLOTAU [WUSCAR] 06093184 (Generated: 02/20/2024 16:49:58) Rev: 1

Submitted By: MATT MANOLI