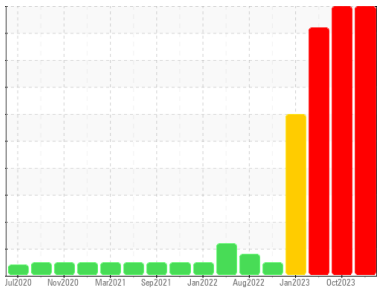
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

Area
G.LOPES CONSTRUCTION INC./On-Road
Machine Id
316
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



GLYCOL

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. We advise that you check for the source of the coolant leak. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend an early resample to monitor this condition.

Wear
Metal levels are typical for a new component breaking in.

Contamination
Test for glycol is positive. There is a high amount of fuel present in the oil. There is a high concentration of glycol 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. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0109657**	PCA0104594	PCA0083139
Sample Date		Client Info		**02 Jan 2024**	11 Oct 2023	02 Mar 2023
Machine Age	mls	Client Info		**66500**	66500	66500
Oil Age	mls	Client Info		**4933**	4933	4933
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	SEVERE	SEVERE

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	**22**	19	6
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>5	**<1**	<1	0
Titanium	ppm	ASTM D5185m	>2	**<1**	<1	<1
Silver	ppm	ASTM D5185m	>2	**<1**	<1	<1
Aluminum	ppm	ASTM D5185m	>20	**<1**	2	<1
Lead	ppm	ASTM D5185m	>40	**10**	8	6
Copper	ppm	ASTM D5185m	>330	**509**	395	101
Tin	ppm	ASTM D5185m	>15	**2**	1	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	<1	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**6**	7	20
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**87**	71	59
Manganese	ppm	ASTM D5185m	0	**<1**	<1	1
Magnesium	ppm	ASTM D5185m	1010	**616**	752	770
Calcium	ppm	ASTM D5185m	1070	**868**	946	930
Phosphorus	ppm	ASTM D5185m	1150	**841**	890	861
Zinc	ppm	ASTM D5185m	1270	**909**	1078	1095
Sulfur	ppm	ASTM D5185m	2060	**2438**	2961	2995

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**9**	7	9
Sodium	ppm	ASTM D5185m		▲ **1094**	▲ 568	▲ 474
Potassium	ppm	ASTM D5185m	>20	▲ **824**	▲ 409	▲ 293
Fuel	%	ASTM D3524	>3.0	⬢ **7.0**	⬢ 7.0	▲ 4.8
Glycol	%	*ASTM D2982		⬢ **0.12**	⬢ 0.10	⬢ 0.10

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**1.1**	1.9	0.2
Nitration	Abs/cm	*ASTM D7624	>20	**14.2**	11.6	8.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.5**	22.7	17.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.4**	16.9	13.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**10.47**	10.20	11.38

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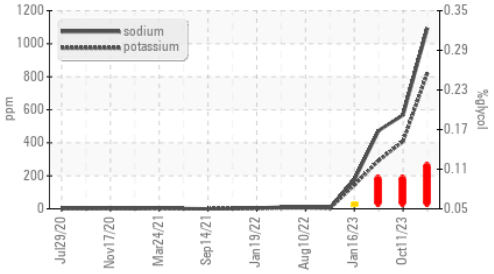
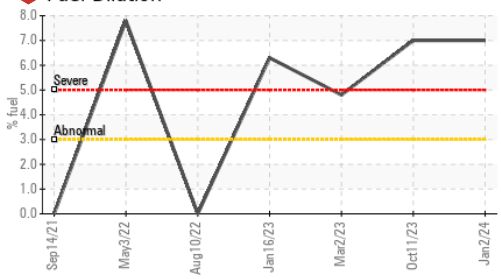
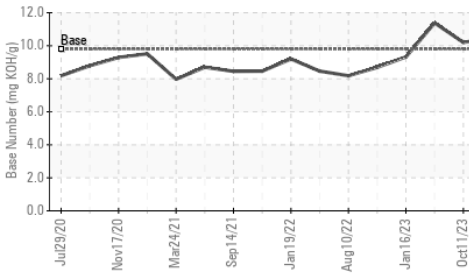
Glycol Contamination



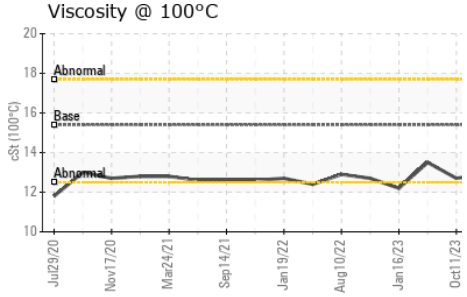
Fuel Dilution



Base Number



Viscosity @ 100°C

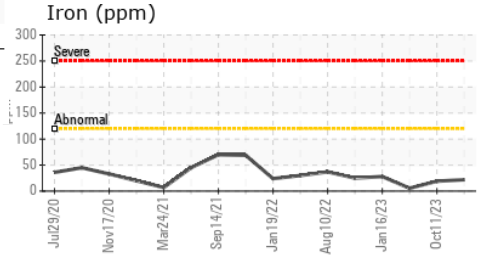


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

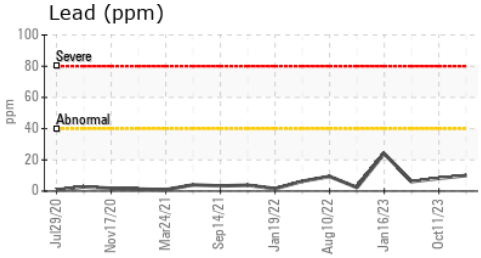
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**12.9**	12.7	13.5

GRAPHS

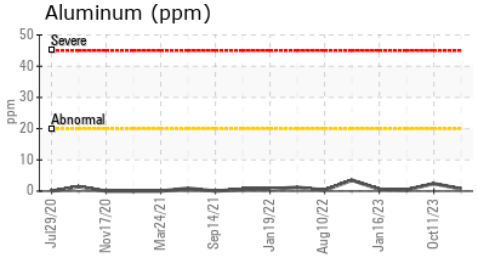
Iron (ppm)



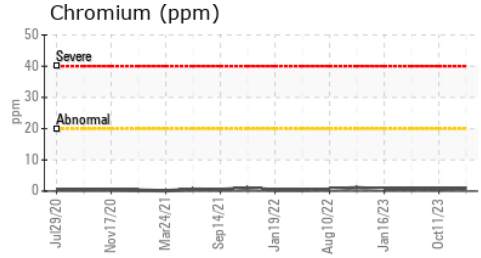
Lead (ppm)



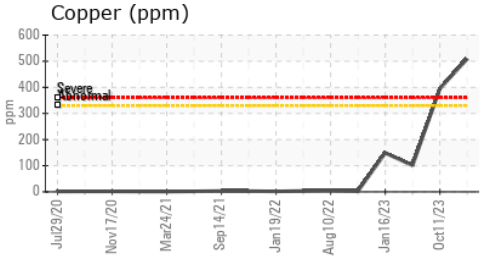
Aluminum (ppm)



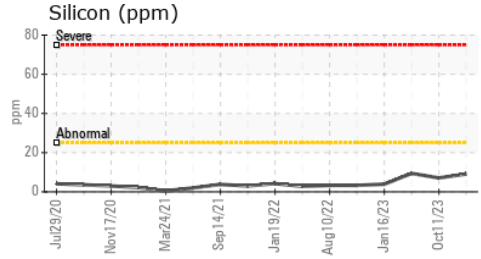
Chromium (ppm)



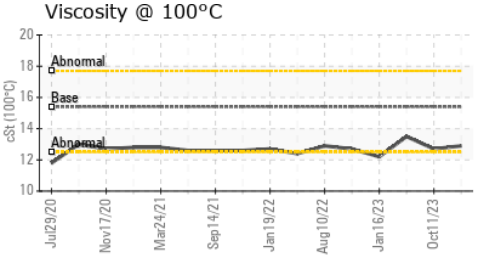
Copper (ppm)



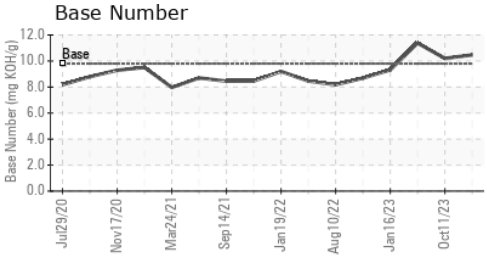
Silicon (ppm)



Viscosity @ 100°C



Base Number



ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0109657 **Recieved** : 04 Jan 2024
Lab Number : 06051090 **Diagnosed** : 08 Jan 2024
Unique Number : 10817039 **Diagnostician** : 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)

G LOPES CONSTRUCTION
565 WINTHROP ST
TAUNTON, MA
US 02780
Contact: BUTCH MCGRATH
bmcgrath@glopes.com
T:
F:

Report Id: GLOTAU [WUSCAR] 06051090 (Generated: 01/08/2024 10:30:39) Rev: 1

Submitted By: MATT MANOLI