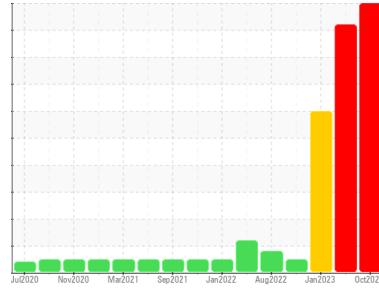


OIL ANALYSIS REPORT

Sample Rating Trend

GLYCOL



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

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	PCA0104594	PCA0083139	PCA0071959	
Sample Date	Client Info	11 Oct 2023	02 Mar 2023	16 Jan 2023	
Machine Age	mls	Client Info	66500	66500	66500
Oil Age	mls	Client Info	4933	4933	11433
Oil Changed	Client Info	N/A	N/A	N/A	
Sample Status		SEVERE	SEVERE	ABNORMAL	

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >120	19	6	28
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >5	<1	0	<1
Titanium	ppm	ASTM D5185m >2	<1	<1	0
Silver	ppm	ASTM D5185m >2	<1	<1	<1
Aluminum	ppm	ASTM D5185m >20	2	<1	<1
Lead	ppm	ASTM D5185m >40	8	6	24
Copper	ppm	ASTM D5185m >330	395	101	149
Tin	ppm	ASTM D5185m >15	1	<1	<1
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	<1	<1	<1

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 0	7	20	4
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	71	59	62
Manganese	ppm	ASTM D5185m 0	<1	1	<1
Magnesium	ppm	ASTM D5185m 1010	752	770	869
Calcium	ppm	ASTM D5185m 1070	946	930	910
Phosphorus	ppm	ASTM D5185m 1150	890	861	914
Zinc	ppm	ASTM D5185m 1270	1078	1095	1123
Sulfur	ppm	ASTM D5185m 2060	2961	2995	3091

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	7	9	4
Sodium	ppm	ASTM D5185m	568	474	174
Potassium	ppm	ASTM D5185m >20	409	293	144
Fuel	%	ASTM D3524 >3.0	7.0	4.8	6.3
Glycol	%	*ASTM D2982	0.10	0.10	0.06

INFRA-RED

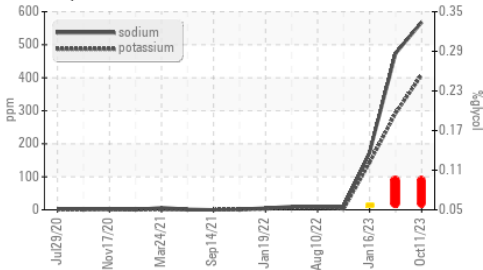
method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >4	1.9	0.2	1.3
Nitration	Abs/cm	*ASTM D7624 >20	11.6	8.0	9.7
Sulfation	Abs/1mm	*ASTM D7415 >30	22.7	17.1	21.4

FLUID DEGRADATION

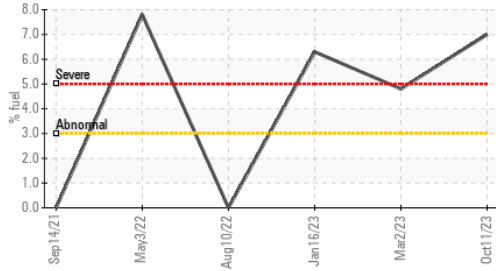
method	limit/base	current	history1	history2	
Oxidation	Abs/1mm	*ASTM D7414 >25	16.9	13.5	16.1
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	10.20	11.38	9.32

OIL ANALYSIS REPORT

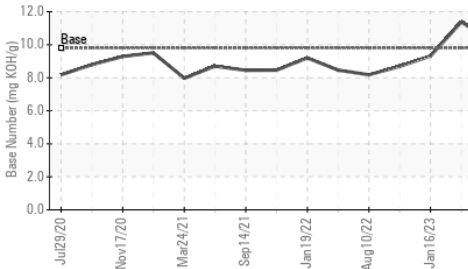
Glycol Contamination



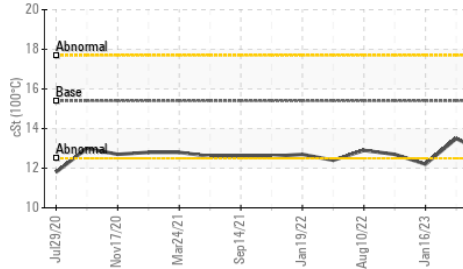
Fuel Dilution



Base Number



Viscosity @ 100°C



VISUAL

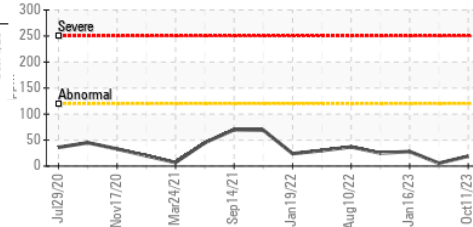
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

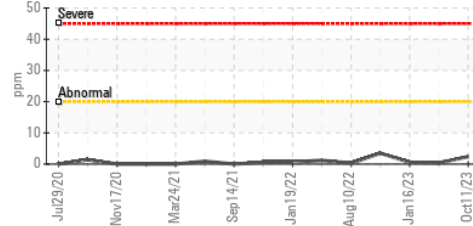
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.7	13.5

GRAPHS

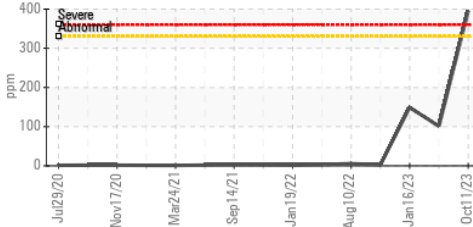
Iron (ppm)



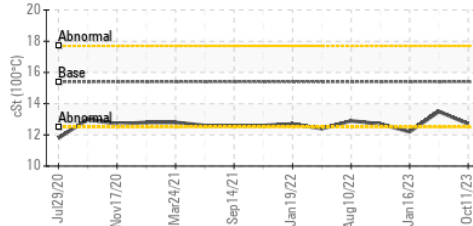
Aluminum (ppm)



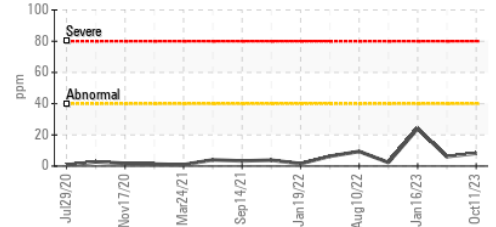
Copper (ppm)



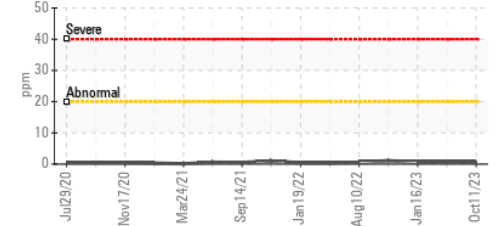
Viscosity @ 100°C



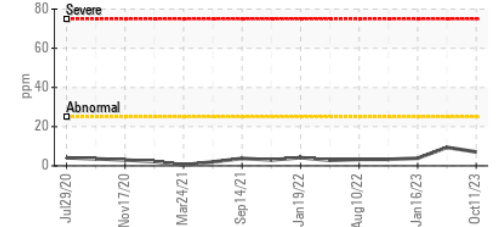
Lead (ppm)



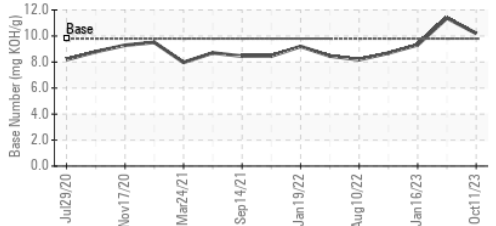
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0104594 **Received** : 13 Oct 2023
Lab Number : 05978432 **Diagnosed** : 18 Oct 2023
Unique Number : 10695727 **Diagnostician** : Wes Davis
Test Package : MOB 2 (Additional Tests: FUELDILUTION, PercentFuel)

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

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)