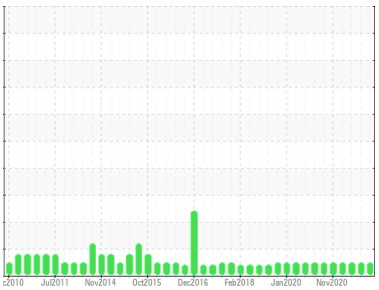
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
GFL029
Machine Id
MACK 3390
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (56 QTS)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

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

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0033183**	GFL0023967	GFL0019882
Sample Date		Client Info		**29 Sep 2021**	13 Jul 2021	17 Mar 2021
Machine Age	hrs	Client Info		**19545**	0	19244
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Not Changd**	Changed	Not Changd
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	**<1.0**	<1.0	<1.0
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	>120	**9**	16	4
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>5	**2**	<1	0
Titanium	ppm	ASTM D5185m	>2	**<1**	0	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**4**	4	3
Lead	ppm	ASTM D5185m	>40	**0**	<1	<1
Copper	ppm	ASTM D5185m	>330	**2**	4	2
Tin	ppm	ASTM D5185m	>15	**0**	<1	0
Antimony	ppm	ASTM D5185m		**0**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**8**	9	5
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**50**	56	62
Manganese	ppm	ASTM D5185m	0	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	1010	**850**	877	1034
Calcium	ppm	ASTM D5185m	1070	**1054**	1020	1123
Phosphorus	ppm	ASTM D5185m	1150	**903**	983	916
Zinc	ppm	ASTM D5185m	1270	**1052**	1119	1207
Sulfur	ppm	ASTM D5185m	2060	**4356**	2638	2550

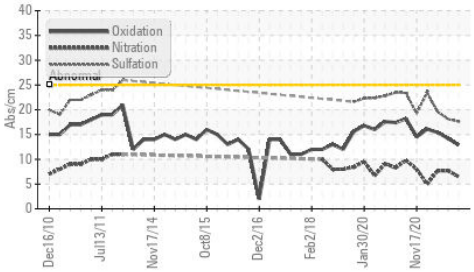
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**6**	3	3
Sodium	ppm	ASTM D5185m		**4**	5	2
Potassium	ppm	ASTM D5185m	>20	**7**	0	6

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**0.4**	0.5	0.5
Nitration	Abs/cm	*ASTM D7624	>20	**6.5**	7.7	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	**17.6**	18.1	19.6

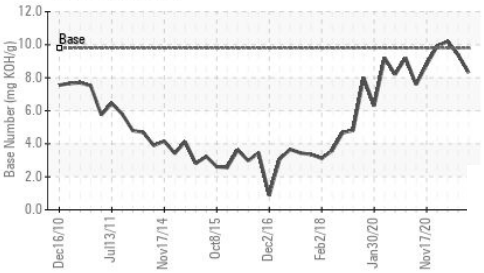
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**12.9**	14.2	15.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**8.3**	9.4	10.2

OIL ANALYSIS REPORT

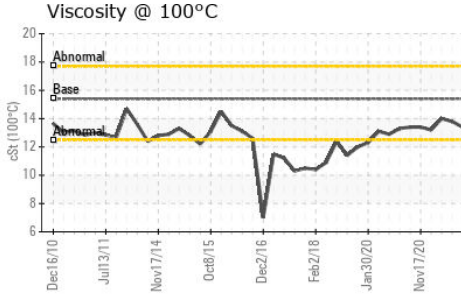
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

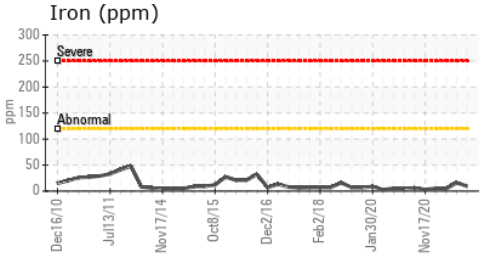


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

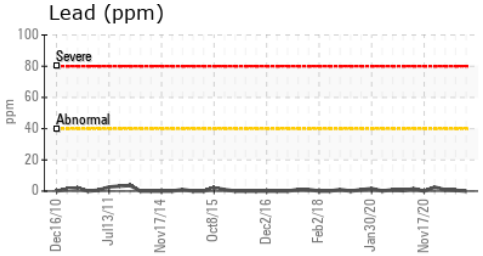
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	**13.4**	13.8	14.0

GRAPHS

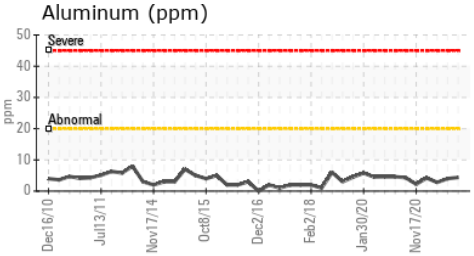
Iron (ppm)



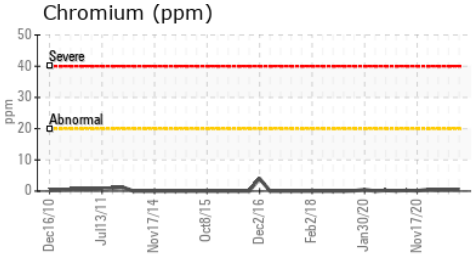
Lead (ppm)



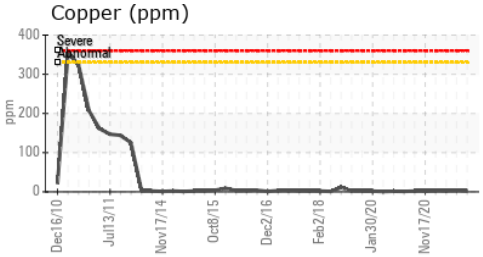
Aluminum (ppm)



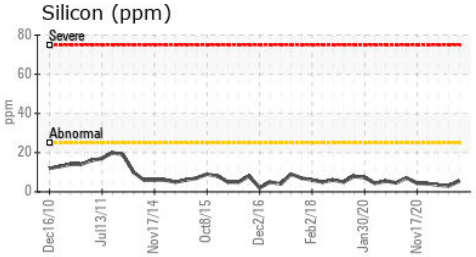
Chromium (ppm)



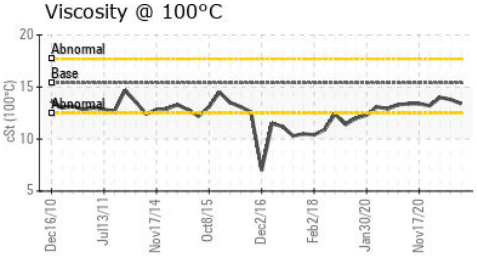
Copper (ppm)



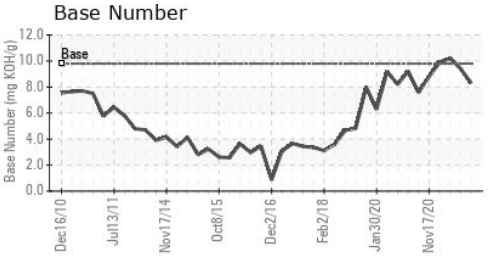
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0033183
Lab Number : 05367378
Unique Number : 9686484
Test Package : MOB1+

Received : 06 Oct 2021
Tested : 07 Oct 2021
Diagnosed : 07 Oct 2021 - Wes Davis

GFL Environmental - 9999 - Moved No Longer Used Units

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US
Contact:

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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