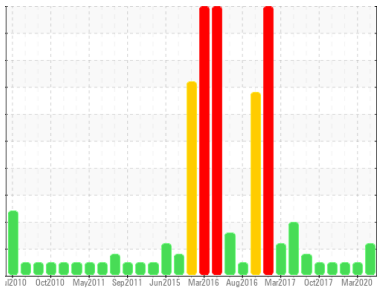
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
MACK 3385
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- QTS)

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of fuel present in the oil.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0028779**	GFL0005051	GFLI-540022
Sample Date		Client Info		**27 Nov 2022**	20 Mar 2020	10 May 2019
Machine Age	mls	Client Info		**0**	0	18557
Oil Age	mls	Client Info		**0**	0	450
Oil Changed		Client Info		**N/A**	N/A	Changed
Sample Status				**ABNORMAL**	NORMAL	NORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	**20**	6	21
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	0
Nickel	ppm	ASTM D5185m	>5	**6**	<1	2
Titanium	ppm	ASTM D5185m	>2	**<1**	<1	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**7**	3	8
Lead	ppm	ASTM D5185m	>40	**0**	0	0
Copper	ppm	ASTM D5185m	>330	**5**	<1	1
Tin	ppm	ASTM D5185m	>15	**0**	1	2
Antimony	ppm	ASTM D5185m		**---**	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	**2**	278	354
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	60	**53**	58	91
Manganese	ppm	ASTM D5185m	0	**<1**	<1	0
Magnesium	ppm	ASTM D5185m	1010	**823**	364	388
Calcium	ppm	ASTM D5185m	1070	**1030**	1198	1563
Phosphorus	ppm	ASTM D5185m	1150	**889**	940	1084
Zinc	ppm	ASTM D5185m	1270	**1080**	866	1264
Sulfur	ppm	ASTM D5185m	2060	**3141**	2924	---
Lithium	ppm	ASTM D5185m		**---**	---	0

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**19**	6	8
Sodium	ppm	ASTM D5185m		**2**	3	3
Potassium	ppm	ASTM D5185m	>20	**0**	4	4
Fuel	%	ASTM D3524	>5	▲ **4.5**	<1.0	2.9

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	**1**	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	**9.2**	6.9	8
Sulfation	Abs/.1mm	*ASTM D7415	>30	**21.8**	33.1	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.9**	34.9	14
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**9.1**	8.7	3.48

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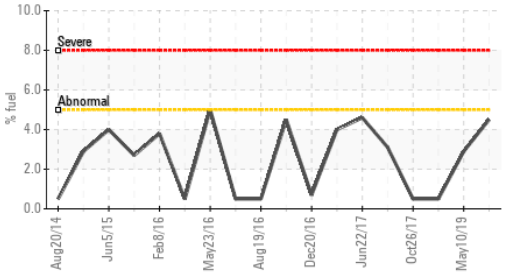
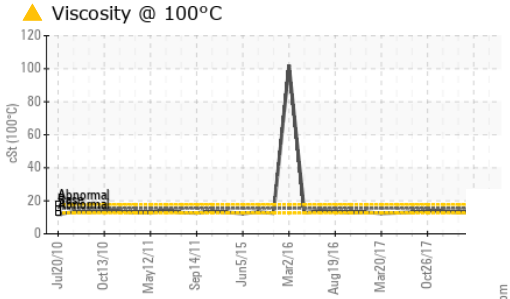
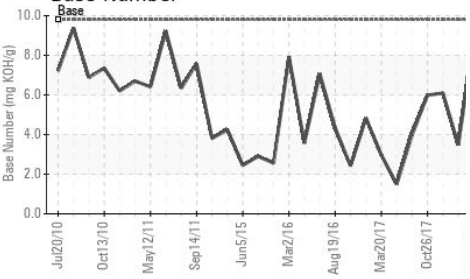
Fuel Dilution



Viscosity @ 100°C



Base Number

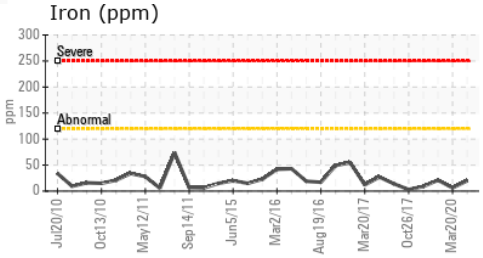


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt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

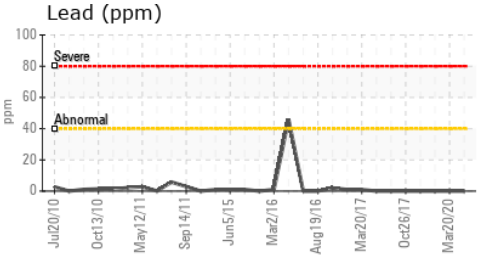
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	▲ **12.4**	13.1	13

GRAPHS

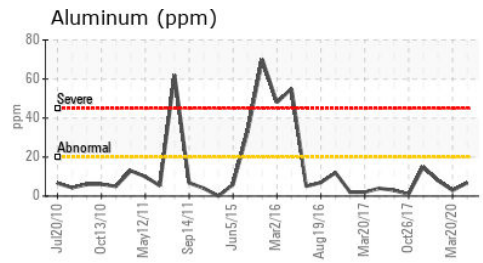
Iron (ppm)



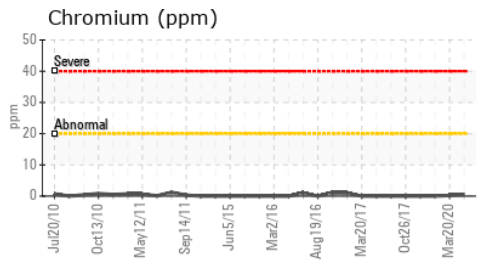
Lead (ppm)



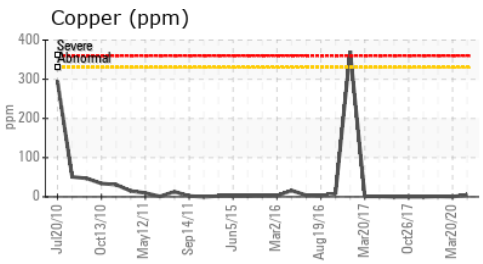
Aluminum (ppm)



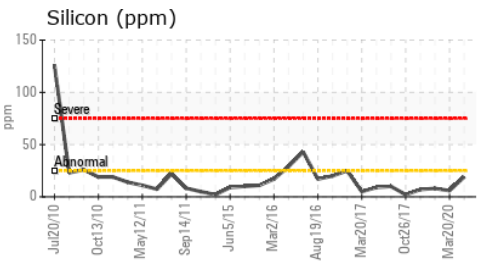
Chromium (ppm)



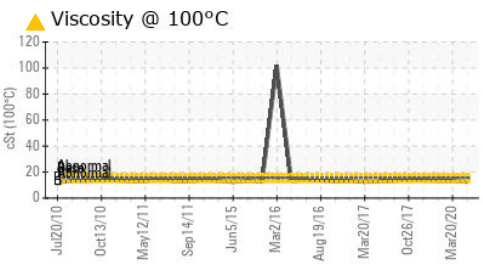
Copper (ppm)



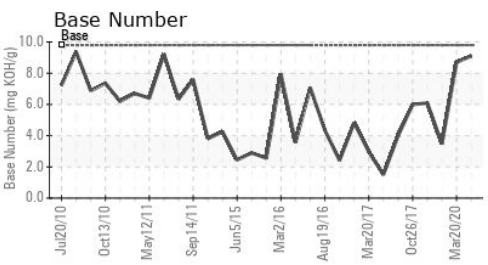
Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0028779
Lab Number : 05703387
Unique Number : 10232961
Test Package : MOB1+ (Additional Tests: FuelDilution, PercentFuel)

Received : 28 Nov 2022
Diagnosed : 30 Nov 2022
Diagnostician : Jonathan Hester

Certificate L2367

GFL Environmental - 9999 - Moved No Longer Used Units

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US
Contact:

T:
F:

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)