FLEET LUBE 360 OIL DIAGNOSTICS

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
722011-1169
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (24 QTS)

RECOMMENDATION

We advise that you check the fuel injection system. We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

WEAR

Cylinder, crank, or cam shaft wear is indicated.

CONTAMINATION

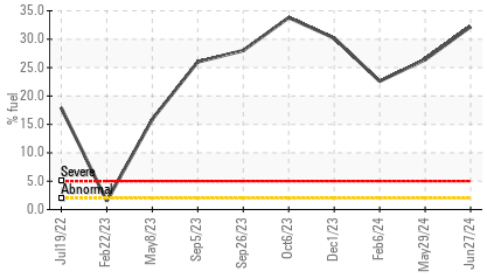
There is a high amount of fuel present in the oil. There is an abnormal amount of solids and carbon present in the oil.

FLUID CONDITION

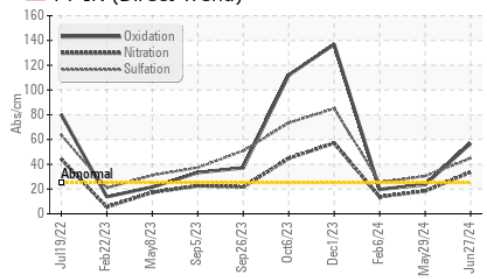
Fuel is present in the oil and is lowering the viscosity. The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0120902	GFL0103061	GFL0110358
Sample Date		Client Info		27 Jun 2024	29 May 2024	06 Feb 2024
Machine Age	hrs	Client Info		12858	12775	12522
Oil Age	hrs	Client Info		580	198	631
Filter Age	hrs	Client Info		580	198	631
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changd	Changed
Sample Status				SEVERE	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>100	▲ 198	▲ 125	72
Chromium	ppm	ASTM D5185m	>20	4	2	2
Nickel	ppm	ASTM D5185m	>4	3	1	1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	7	5	7
Lead	ppm	ASTM D5185m	>40	6	1	1
Copper	ppm	ASTM D5185m	>330	5	3	8
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	6	0	4
Potassium	ppm	ASTM D5185m	>20	2	0	1
Fuel	%	ASTM D3524	>2.0	▲ 32.2	▲ 26.4	▲ 22.6
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	▲ 7.9	▲ 4.6	2.8
Nitration	Abs/cm	*ASTM D7624	>20	33.7	18.3	13.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	44.8	30.4	25.5
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
Sodium	ppm	ASTM D5185m		0	1	2
Boron	ppm	ASTM D5185m	0	4	0	4
Barium	ppm	ASTM D5185m	0	<1	0	0
Molybdenum	ppm	ASTM D5185m	60	56	51	53
Manganese	ppm	ASTM D5185m	0	1	<1	<1
Magnesium	ppm	ASTM D5185m	1010	641	662	744
Calcium	ppm	ASTM D5185m	1070	781	793	838
Phosphorus	ppm	ASTM D5185m	1150	719	759	817
Zinc	ppm	ASTM D5185m	1270	863	868	962
Sulfur	ppm	ASTM D5185m	2060	1864	2337	2400
Oxidation	Abs/.1mm	*ASTM D7414	>25	56.9	23.6	19.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	▲ 0.0	6.5	8.4
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 10.3	▲ 10.4	▲ 9.8

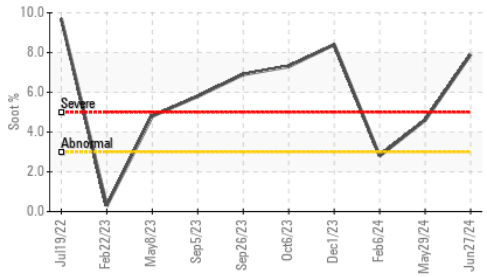
Fuel Dilution



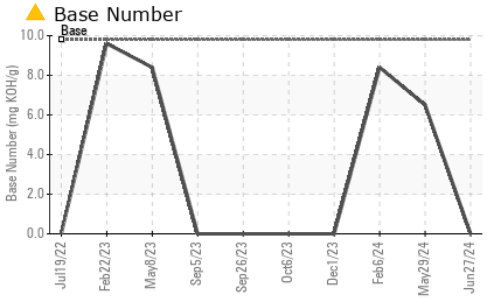
FT-IR (Direct Trend)



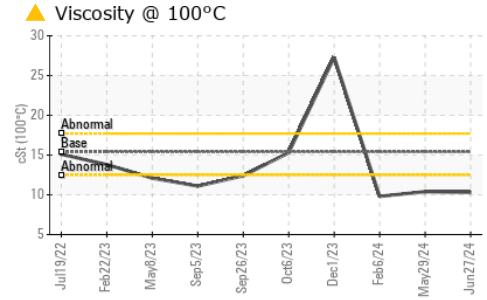
Soot %



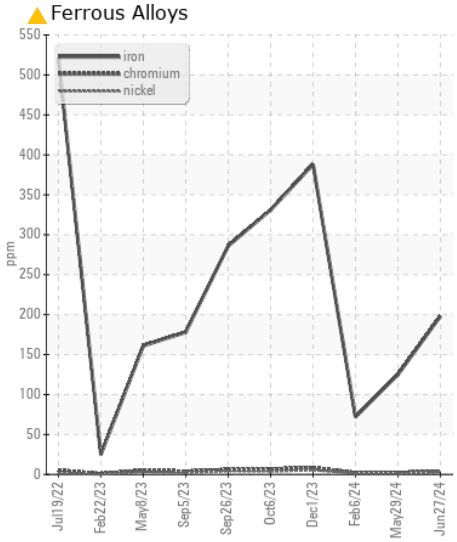
Base Number



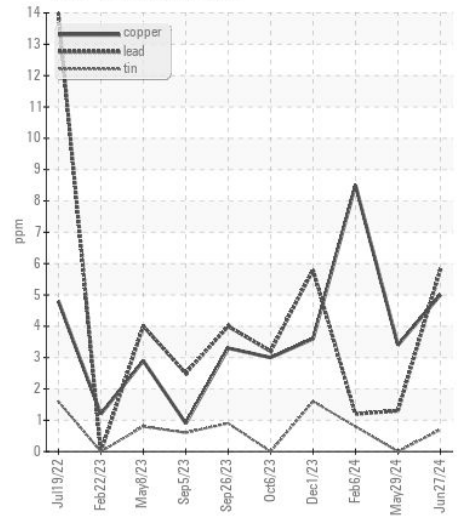
Viscosity @ 100°C



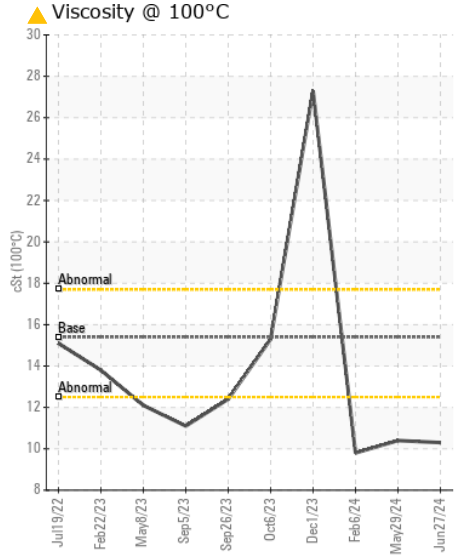
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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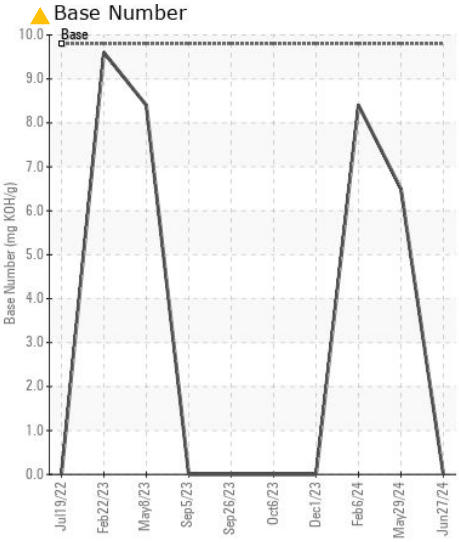

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0120902
Lab Number : 06226031
Unique Number : 11109524
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 02 Jul 2024
Tested : 03 Jul 2024
Diagnosed : 05 Jul 2024 - Jonathan Hester

GFL Environmental - 622 - Traverse City Hauling
160 Hughes Dr
Traverse City, MI
US 49686
Contact: GARY BREWER

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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