



WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
2515
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (11 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0072135	GFL0072033	GFL0072183
Sample Date		Client Info		12 Mar 2024	12 Dec 2023	17 Oct 2023
Machine Age	hrs	Client Info		28181	624096	613346
Oil Age	hrs	Client Info		600	0	0
Filter Age	hrs	Client Info		600	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core).

Iron	ppm	ASTM D5185m	>165	23	12	5
Chromium	ppm	ASTM D5185m	>5	<1	<1	0
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	2
Lead	ppm	ASTM D5185m	>150	4	8	4
Copper	ppm	ASTM D5185m	>90	▲ 144	▲ 80	11
Tin	ppm	ASTM D5185m	>5	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

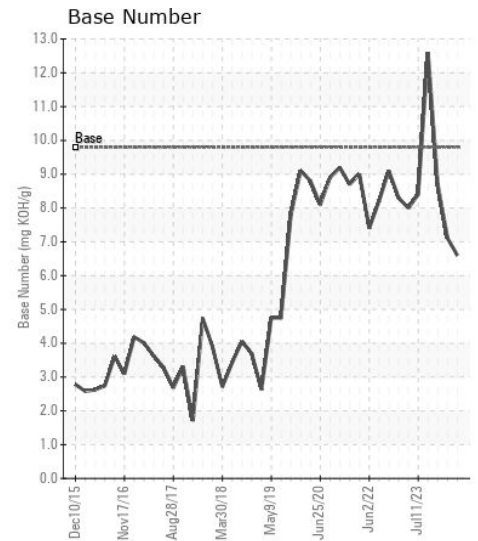
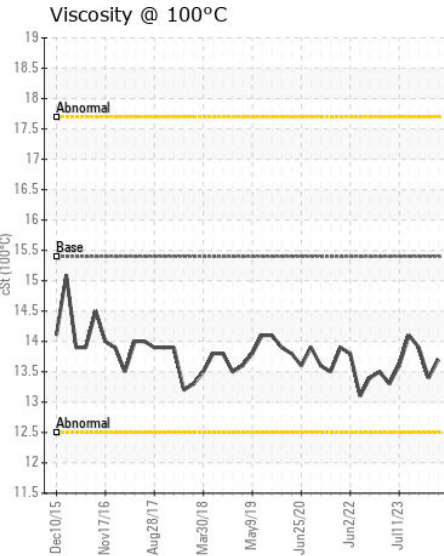
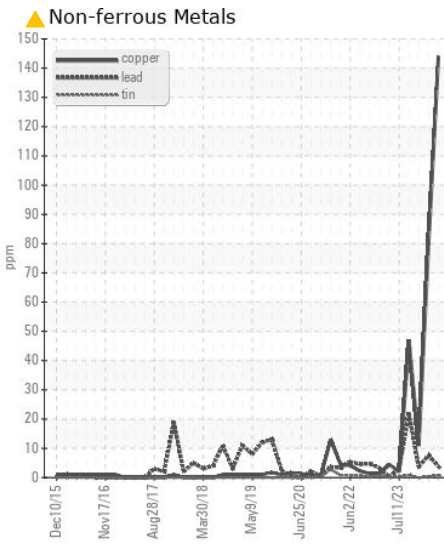
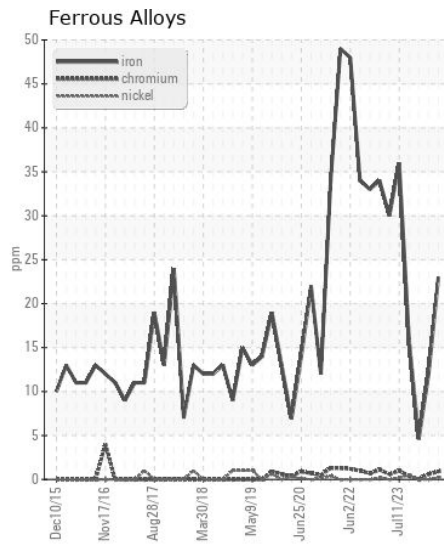
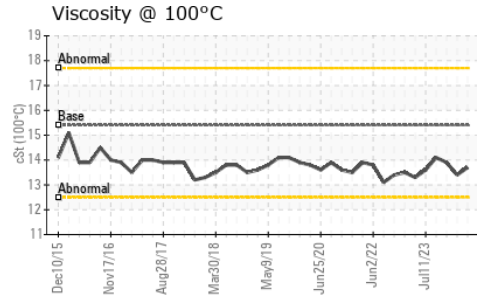
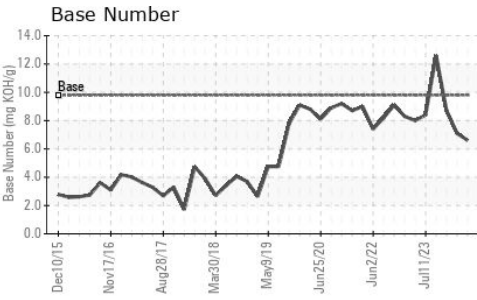
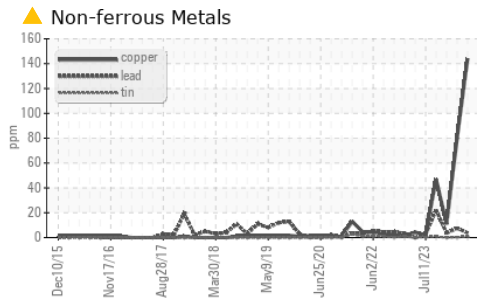
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>35	8	12	9
Potassium	ppm	ASTM D5185m	>20	3	2	4
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
Soot %	%	*ASTM D7844	>7.5	0.7	0.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	10.8	10.1	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.6	21.7	17.9
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

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.

Sodium	ppm	ASTM D5185m		64	▲ 264	▲ 197
Boron	ppm	ASTM D5185m	0	3	7	10
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	67	70	67
Manganese	ppm	ASTM D5185m	0	<1	0	0
Magnesium	ppm	ASTM D5185m	1010	989	956	976
Calcium	ppm	ASTM D5185m	1070	1138	1055	1121
Phosphorus	ppm	ASTM D5185m	1150	1063	894	1025
Zinc	ppm	ASTM D5185m	1270	1323	1254	1279
Sulfur	ppm	ASTM D5185m	2060	2814	2770	3161
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.8	18.1	13.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.6	7.1	8.7
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	13.4	13.9



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0072135
Lab Number : 06122231
Unique Number : 10936382
Test Package : FLEET

Received : 19 Mar 2024
Tested : 20 Mar 2024
Diagnosed : 21 Mar 2024 - Jonathan Hester

GFL Environmental - 094 - Cedartown
 2097 Buchanan Highway
 Cedartown, GA
 US 30125
 Contact: WILLIAM FOSTER
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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)