

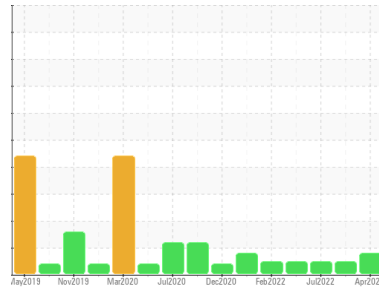


OIL ANALYSIS REPORT



Machine Id
425058-402291
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation
 Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
 Exhaust valve wear is indicated.

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 acceptable for the time in service.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0102243	GFL0087901	GFL0048666
Sample Date	Client Info	07 Apr 2024	24 Jul 2023	07 Jul 2022
Machine Age	hrs	0	20839	377607
Oil Age	hrs	600	600	0
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	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	26	21	7
Chromium	ppm ASTM D5185m >20	<1	<1	<1
Nickel	ppm ASTM D5185m >5	▲ 10	2	<1
Titanium	ppm ASTM D5185m >2	0	0	0
Silver	ppm ASTM D5185m >2	0	0	<1
Aluminum	ppm ASTM D5185m >20	3	5	2
Lead	ppm ASTM D5185m >40	1	1	<1
Copper	ppm ASTM D5185m >330	48	41	2
Tin	ppm ASTM D5185m >15	<1	1	1
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	0	<1	2
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	59	64	61
Manganese	ppm ASTM D5185m 0	<1	<1	<1
Magnesium	ppm ASTM D5185m 1010	1006	1070	992
Calcium	ppm ASTM D5185m 1070	1084	1119	1175
Phosphorus	ppm ASTM D5185m 1150	1019	1031	1032
Zinc	ppm ASTM D5185m 1270	1256	1380	1284
Sulfur	ppm ASTM D5185m 2060	2946	3020	3451

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	6	8	4
Sodium	ppm ASTM D5185m	5	16	6
Potassium	ppm ASTM D5185m >20	2	12	0

INFRA-RED

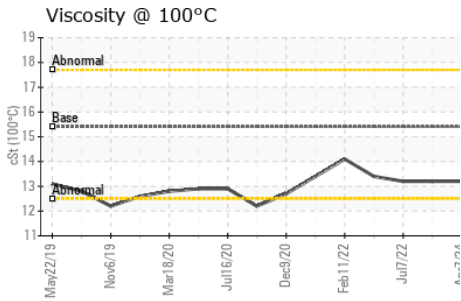
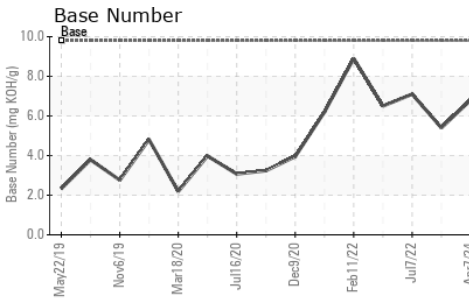
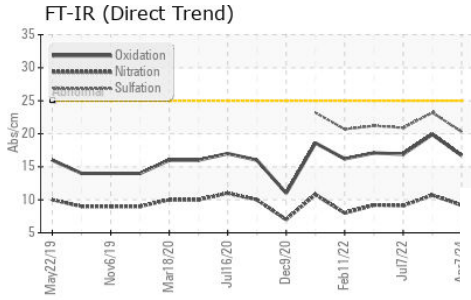
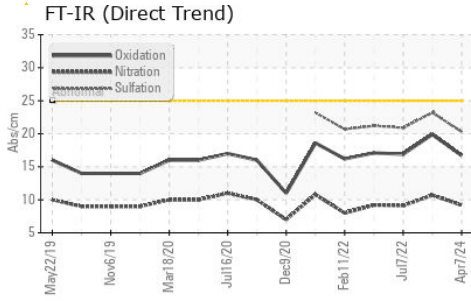
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	0.6	1.2	0.5
Nitration	Abs/cm *ASTM D7624 >20	9.2	10.7	9.1
Sulfation	Abs/.1mm *ASTM D7415 >30	20.3	23.2	20.9

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	16.7	19.9	16.9
Base Number (BN)	mg KOH/g ASTM D2896 9.8	6.8	5.4	7.1



OIL ANALYSIS REPORT

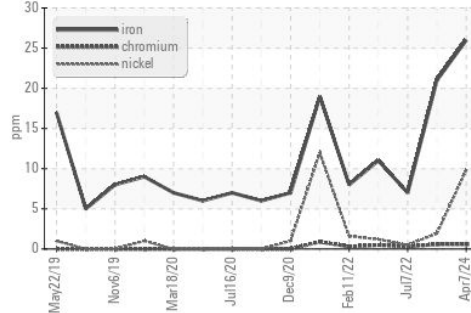


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

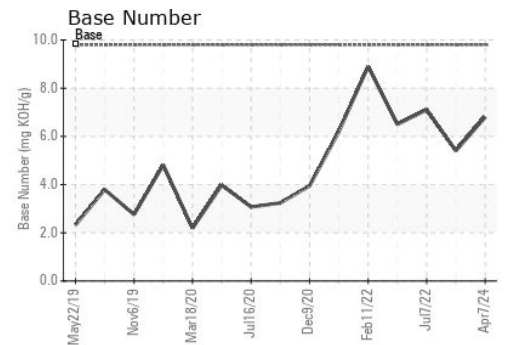
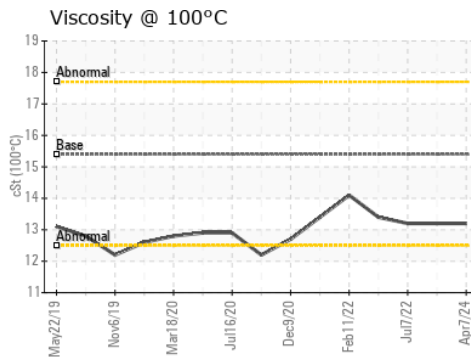
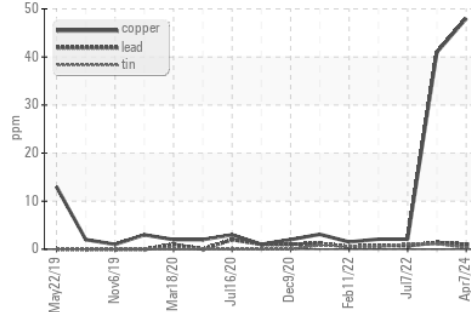
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	13.2

GRAPHS

▲ Ferrous Alloys



Non-ferrous Metals



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0102243

Lab Number : 06140854

Unique Number : 10965662

Test Package : FLEET

Received : 08 Apr 2024

Tested : 08 Apr 2024

Diagnosed : 10 Apr 2024 - Sean Felton

GFL Environmental - 859 - Bay City

700 Avenue F

Bay City, TX

US 77414

Contact: JONATHON BROWN

jonathon.brown@gflenv.com

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)