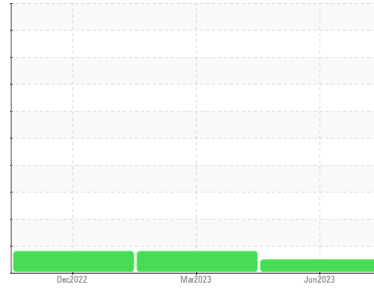




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
511022
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

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	history 1	history 2
Sample Number	Client Info		GFL0015802	GFL0067610	GFL0067621
Sample Date	Client Info		28 Jun 2023	13 Mar 2023	27 Dec 2022
Machine Age	hrs	Client Info	2259	1891	1615
Oil Age	hrs	Client Info	1891	598	0
Oil Changed	Client Info		N/A	Changed	N/A
Sample Status			NORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history 1	history 2
Fuel	WC Method	>3.0	<1.0	<1.0	<1.0
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m >120	17	39	40
Chromium	ppm	ASTM D5185m >20	2	1	1
Nickel	ppm	ASTM D5185m >5	6	▲ 17	▲ 18
Titanium	ppm	ASTM D5185m >2	2	0	0
Silver	ppm	ASTM D5185m >2	2	<1	0
Aluminum	ppm	ASTM D5185m >20	4	7	7
Lead	ppm	ASTM D5185m >40	6	<1	3
Copper	ppm	ASTM D5185m >330	41	109	151
Tin	ppm	ASTM D5185m >15	3	3	4
Vanadium	ppm	ASTM D5185m	1	0	0
Cadmium	ppm	ASTM D5185m	2	0	0

ADDITIVES

	method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m 0	2	3	71
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	59	57	64
Manganese	ppm	ASTM D5185m 0	3	2	2
Magnesium	ppm	ASTM D5185m 1010	978	850	901
Calcium	ppm	ASTM D5185m 1070	1149	1125	1237
Phosphorus	ppm	ASTM D5185m 1150	980	810	929
Zinc	ppm	ASTM D5185m 1270	1250	1028	1194
Sulfur	ppm	ASTM D5185m 2060	3305	2394	2736

CONTAMINANTS

	method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m >25	8	9	20
Sodium	ppm	ASTM D5185m	4	3	<1
Potassium	ppm	ASTM D5185m >20	11	20	22

INFRA-RED

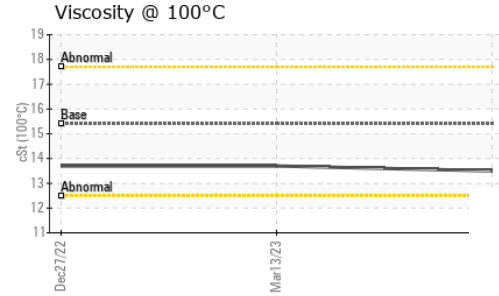
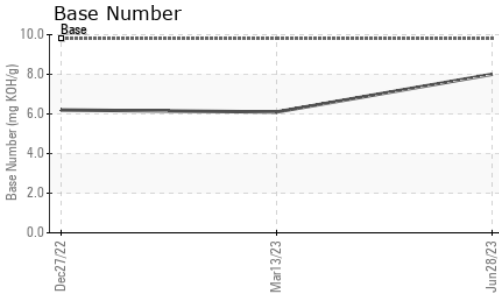
	method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844 >4	0.5	0.7	0.6
Nitration	Abs/cm	*ASTM D7624 >20	8.7	11.2	11.1
Sulfation	Abs/.1mm	*ASTM D7415 >30	20.4	22.3	22.2

FLUID DEGRADATION

	method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414 >25	16.0	18.1	18.6
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	8.0	6.1	6.2



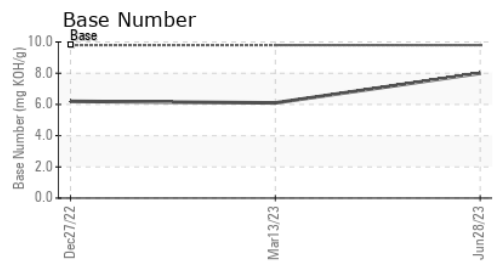
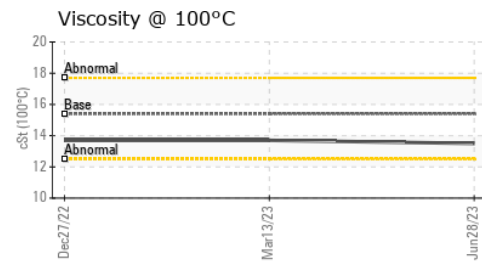
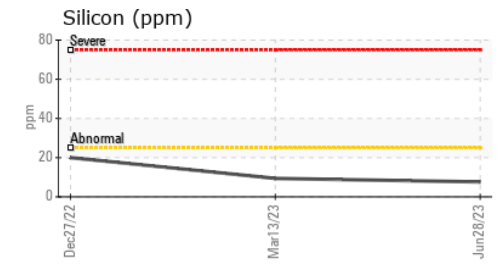
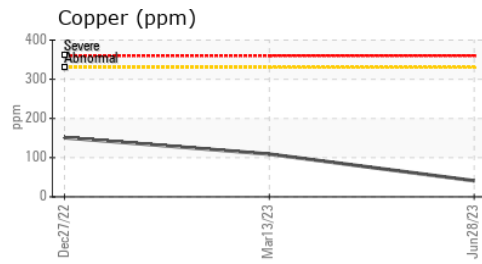
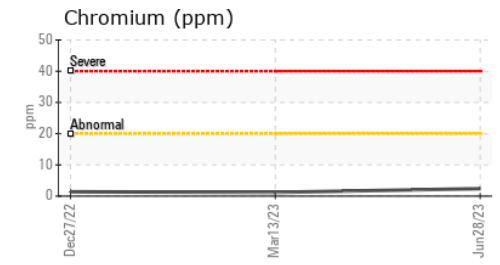
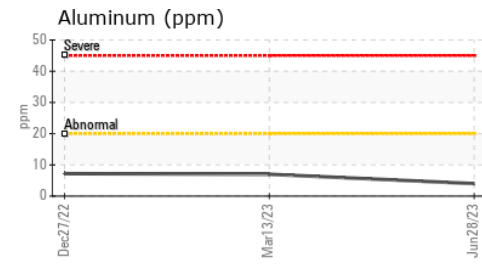
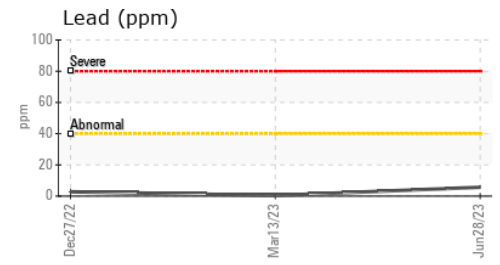
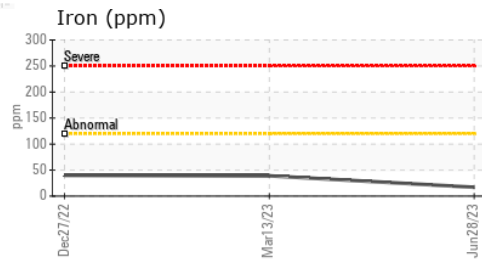
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history 1	history 2
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	history 1	history 2
Visc @ 100°C	cSt	ASTM D445	15.4	13.5	13.7

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0015802 **Received** : 03 Jul 2023
Lab Number : 05888901 **Diagnosed** : 05 Jul 2023
Unique Number : 10539384 **Diagnostician** : Don Baldrige
Test Package : MOB 2

GFL Environmental - 463 - Cheboygan
 501 N. Western Ave
 Cheboygan, MI
 US 49721
 Contact: Chris Gee
 cgee@gflenv.com
 T: (231)597-8553
 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)