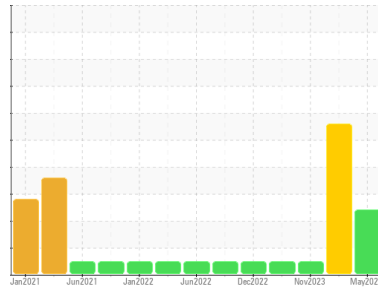




OIL ANALYSIS REPORT

Sample Rating Trend



Area
(KN5436) GFL035
 Machine Id
711005
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (40 QTS)

DIAGNOSIS

- Recommendation**
We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Resample at the next service interval to monitor.
- Wear**
All component wear rates are normal.
- Contamination**
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.
- 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	GFL0116510	GFL0102354	GFL0085164
Sample Date	Client Info	22 May 2024	01 Feb 2024	02 Nov 2023
Machine Age	hrs	0	0	0
Oil Age	hrs	600	600	600
Oil Changed	Client Info	Not Changed	Not Changd	Changed
Sample Status		ABNORMAL	SEVERE	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<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 >100	48	75	53
Chromium	ppm ASTM D5185m >20	2	2	1
Nickel	ppm ASTM D5185m >4	0	0	<1
Titanium	ppm ASTM D5185m	<1	2	<1
Silver	ppm ASTM D5185m >3	<1	0	0
Aluminum	ppm ASTM D5185m >20	16	43	5
Lead	ppm ASTM D5185m >40	9	5	6
Copper	ppm ASTM D5185m >330	7	63	144
Tin	ppm ASTM D5185m >15	2	2	1
Vanadium	ppm ASTM D5185m	<1	<1	0
Cadmium	ppm ASTM D5185m	0	0	<1

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	<1	9	6
Barium	ppm ASTM D5185m 0	0	<1	5
Molybdenum	ppm ASTM D5185m 60	66	68	68
Manganese	ppm ASTM D5185m 0	<1	2	1
Magnesium	ppm ASTM D5185m 1010	1085	880	907
Calcium	ppm ASTM D5185m 1070	1315	1138	1172
Phosphorus	ppm ASTM D5185m 1150	1172	990	1080
Zinc	ppm ASTM D5185m 1270	1389	1248	1244
Sulfur	ppm ASTM D5185m 2060	3579	2690	3029

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	30	81	12
Sodium	ppm ASTM D5185m	21	56	17
Potassium	ppm ASTM D5185m >20	6	29	13

INFRA-RED

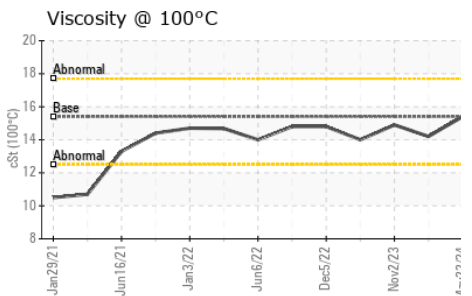
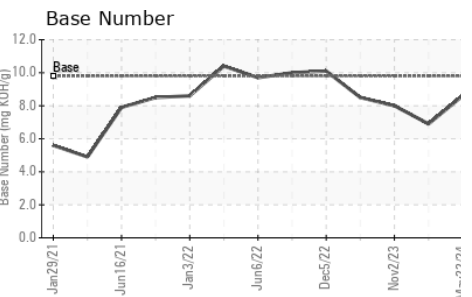
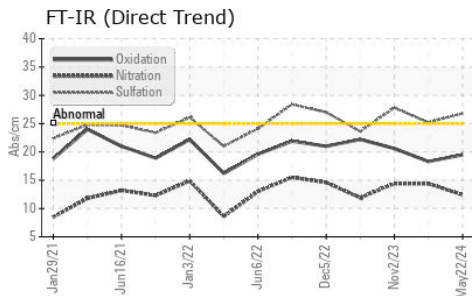
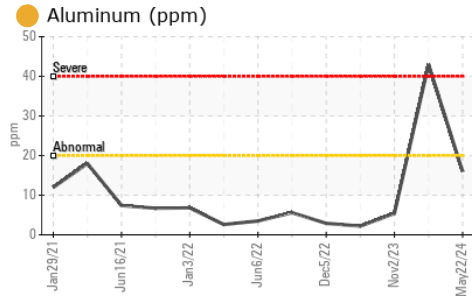
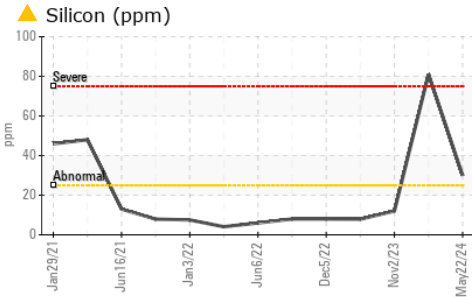
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	2.5	2.4	2.8
Nitration	Abs/cm *ASTM D7624 >20	12.4	14.4	14.4
Sulfation	Abs/.1mm *ASTM D7415 >30	26.8	25.2	27.8

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	19.5	18.3	20.6
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.6	6.9	8.0



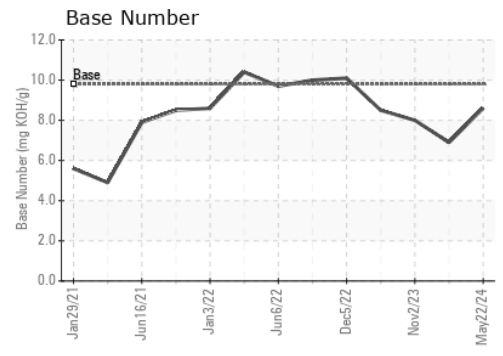
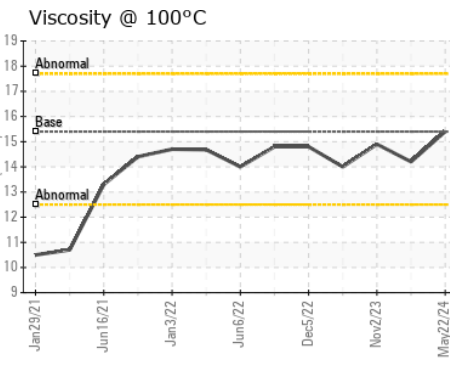
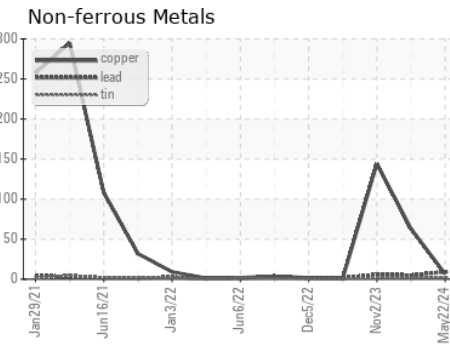
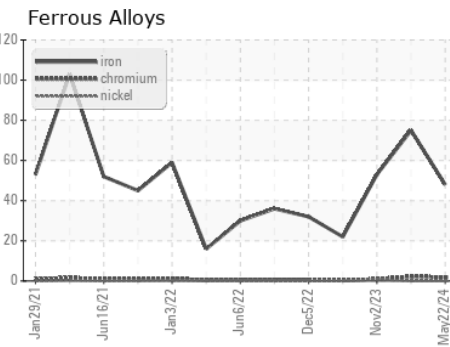
OIL ANALYSIS REPORT



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	14.2	14.9

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0116510
Lab Number : 06191450
Unique Number : 11048202
Test Package : FLEET

Received : 24 May 2024
Tested : 29 May 2024
Diagnosed : 29 May 2024 - Sean Felton

GFL Environmental - 035 - Greensboro
 1236 Elon Place
 High Point, NC
 US 27263
 Contact: JORGE COSTA
 jorge.costa@gflenv.com
 T: (336)668-3712
 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)