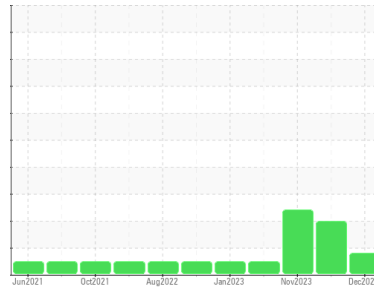




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id
4641M
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

▲ Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0105773	GFL0101487	GFL0101579
Sample Date	Client Info		16 Dec 2023	30 Nov 2023	08 Nov 2023
Machine Age	hrs	Client Info	15207	15085	14928
Oil Age	hrs	Client Info	15085	14928	13201
Oil Changed	Client Info		Changed	Not Changd	Changed
Sample Status			ABNORMAL	ABNORMAL	SEVERE

CONTAMINATION

	method	limit/base	current	history1	history2
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 >90	10	21	20
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >2	<1	<1	0
Titanium	ppm	ASTM D5185m >2	<1	0	<1
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >20	3	2	4
Lead	ppm	ASTM D5185m >40	0	0	0
Copper	ppm	ASTM D5185m >330	2	2	1
Tin	ppm	ASTM D5185m >15	<1	0	0
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<1	2	<1
Barium	ppm	ASTM D5185m 0	0	2	7
Molybdenum	ppm	ASTM D5185m 60	53	54	52
Manganese	ppm	ASTM D5185m 0	0	0	0
Magnesium	ppm	ASTM D5185m 1010	853	809	784
Calcium	ppm	ASTM D5185m 1070	972	920	896
Phosphorus	ppm	ASTM D5185m 1150	965	901	882
Zinc	ppm	ASTM D5185m 1270	1144	1085	1055
Sulfur	ppm	ASTM D5185m 2060	3327	3872	2938

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	3	6	3
Sodium	ppm	ASTM D5185m	4	▲ 97	5
Potassium	ppm	ASTM D5185m >20	4	4	9
Fuel	%	ASTM D3524 >3.0	▲ 3.6	▲ 5.3	■ 11.9

INFRA-RED

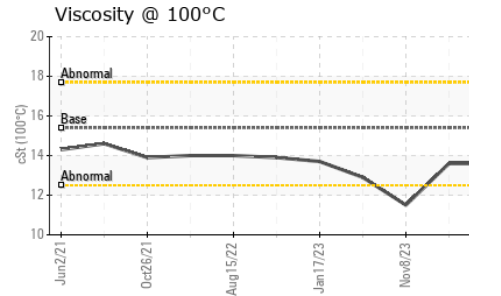
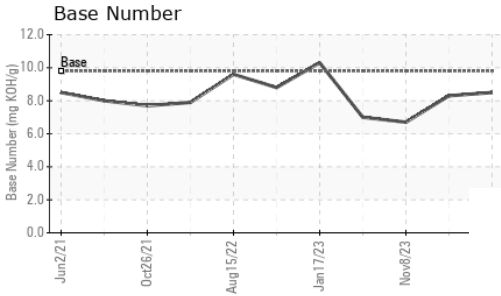
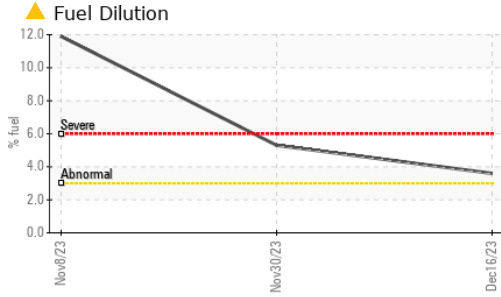
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >6	0.6	0.5	0.8
Nitration	Abs/cm	*ASTM D7624 >20	9.3	10.0	11.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	19.7	20.8	22.0

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	17.2	18.9	22.0
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	8.5	8.3	6.7



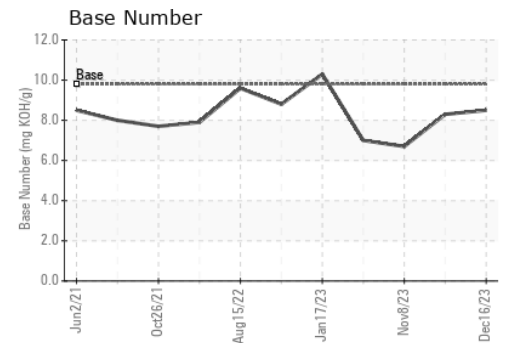
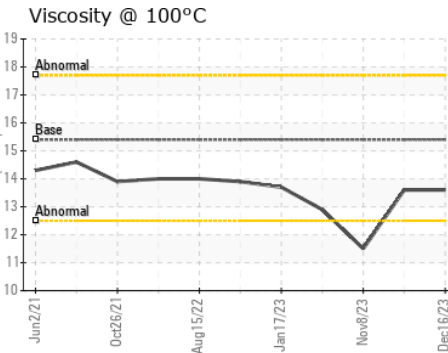
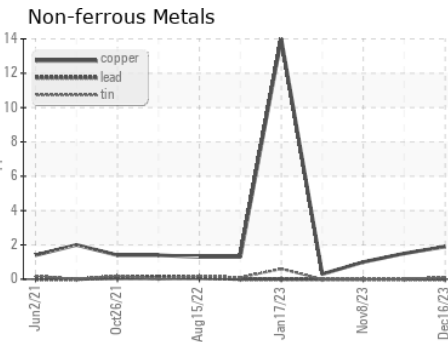
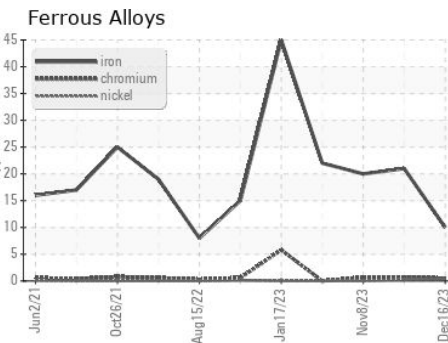
OIL ANALYSIS REPORT



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	13.6	▲ 11.5

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0105773 **Received** : 19 Dec 2023
Lab Number : 06039086 **Diagnosed** : 22 Dec 2023
Unique Number : 10794315 **Diagnostician** : Wes Davis
Test Package : FLEET (Additional Tests: PercentFuel)

GFL Environmental - 415 - Michigan East
 6200 Elmridge
 Sterling Heights, MI
 US 48313
 Contact: Frank Wolak
 fwolak@gflenv.com
 T: (586)825-9514
 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)