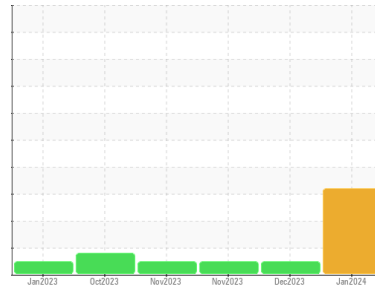




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
912014

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation

Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

▲ Wear

Valve wear is indicated.

▲ Contamination

Sodium and/or potassium levels are high. Test for glycol is negative.

▲ 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	GFL0108792	GFL0105737	GFL0089131
Sample Date	Client Info	02 Jan 2024	18 Dec 2023	24 Nov 2023
Machine Age	hrs	4909	4806	4646
Oil Age	hrs	4806	4646	4614
Oil Changed	Client Info	Changed	Changed	Not Changed
Sample Status		ABNORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	0.6
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >110	31	2	19
Chromium	ppm ASTM D5185m >4	2	<1	<1
Nickel	ppm ASTM D5185m >2	▲ 8	0	4
Titanium	ppm ASTM D5185m	<1	0	0
Silver	ppm ASTM D5185m >2	0	0	<1
Aluminum	ppm ASTM D5185m >25	1	<1	2
Lead	ppm ASTM D5185m >45	<1	<1	0
Copper	ppm ASTM D5185m >85	3	0	40
Tin	ppm ASTM D5185m >4	2	0	1
Vanadium	ppm ASTM D5185m	<1	<1	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	4	1	82
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	65	56	68
Manganese	ppm ASTM D5185m 0	<1	0	1
Magnesium	ppm ASTM D5185m 1010	955	868	826
Calcium	ppm ASTM D5185m 1070	1101	943	1110
Phosphorus	ppm ASTM D5185m 1150	1001	911	958
Zinc	ppm ASTM D5185m 1270	1228	1115	1101
Sulfur	ppm ASTM D5185m 2060	2557	2911	2683

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >30	6	6	21
Sodium	ppm ASTM D5185m	▲ 107	0	4
Potassium	ppm ASTM D5185m >20	▲ 17	0	3
Glycol	% *ASTM D2982	NEG	NEG	NEG

INFRA-RED

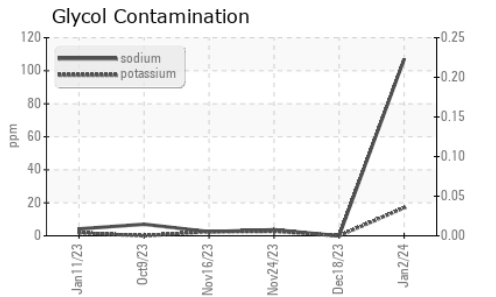
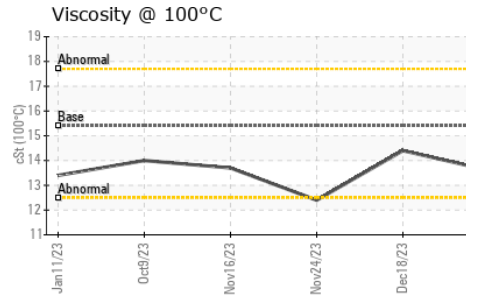
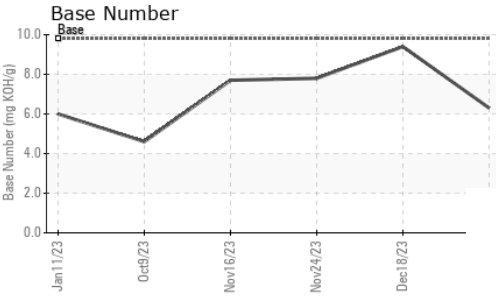
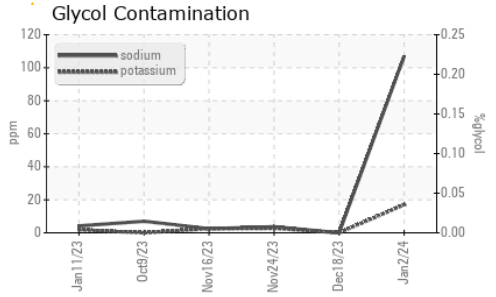
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.9	0.1	0.5
Nitration	Abs/cm *ASTM D7624 >20	9.4	4.9	7.7
Sulfation	Abs/.1mm *ASTM D7415 >30	20.8	17.6	21.4

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	17.3	13.2	16.9
Base Number (BN)	mg KOH/g ASTM D2896 9.8	6.3	9.4	7.8



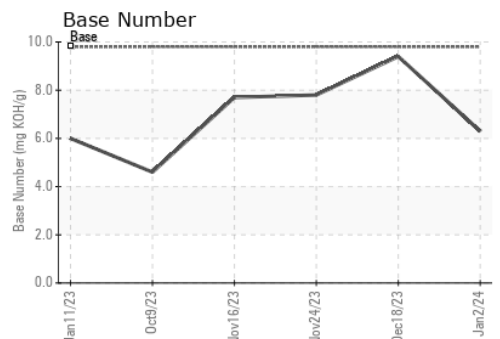
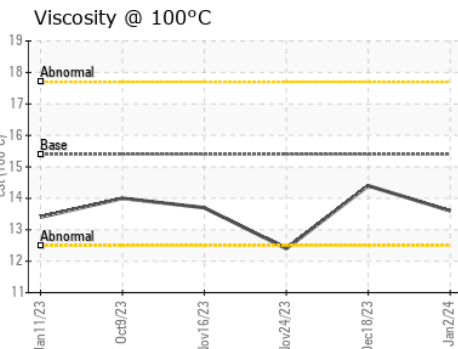
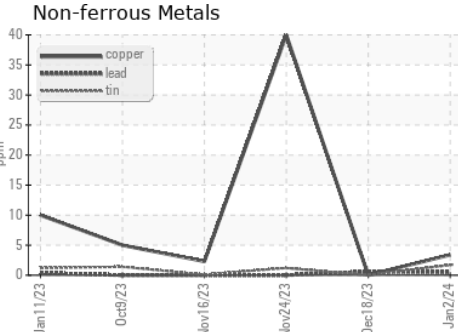
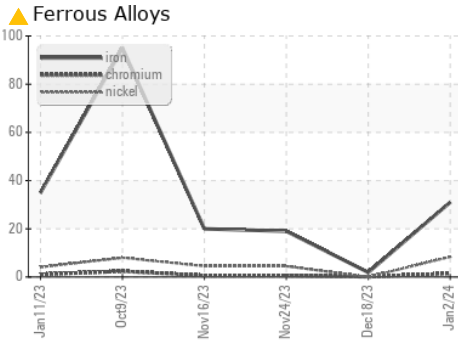
OIL ANALYSIS REPORT



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	14.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0108792 **Received** : 04 Jan 2024
Lab Number : 06050584 **Diagnosed** : 05 Jan 2024
Unique Number : 10816533 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

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

Certificate L2367
 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)