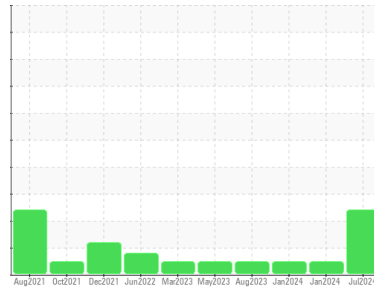




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
924026-260244

Component
Diesel Engine

Fluid
PETRO CANADA DURON GEO LD 15W40 (--- LTR)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter 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

Sodium and/or potassium levels are high.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0096022	GFL0095989	GFL0095983
Sample Date	Client Info	10 Jul 2024	16 Jan 2024	04 Jan 2024
Machine Age	hrs	2166	1808	1798
Oil Age	hrs	600	600	600
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	NORMAL	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

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	50	29	28
Chromium	ppm ASTM D5185m >20	2	2	2
Nickel	ppm ASTM D5185m >4	<1	0	0
Titanium	ppm ASTM D5185m	<1	0	0
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >20	5	3	3
Lead	ppm ASTM D5185m >40	0	<1	1
Copper	ppm ASTM D5185m >330	9	2	2
Tin	ppm ASTM D5185m >15	0	<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 50	4	9	12
Barium	ppm ASTM D5185m 5	0	0	0
Molybdenum	ppm ASTM D5185m 50	95	48	55
Manganese	ppm ASTM D5185m 0	<1	1	2
Magnesium	ppm ASTM D5185m 560	515	510	553
Calcium	ppm ASTM D5185m 1510	1460	1528	1526
Phosphorus	ppm ASTM D5185m 780	649	660	782
Zinc	ppm ASTM D5185m 870	964	884	994
Sulfur	ppm ASTM D5185m 2040	2950	2157	2455

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	15	6	6
Sodium	ppm ASTM D5185m	▲ 969	37	35
Potassium	ppm ASTM D5185m >20	▲ 39	7	4
Glycol	% *ASTM D2982	NEG	NEG	NEG

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.1	1.1	1
Nitration	Abs/cm *ASTM D7624 >20	13.6	11.1	11.1
Sulfation	Abs/.1mm *ASTM D7415 >30	25.0	22.6	22.6

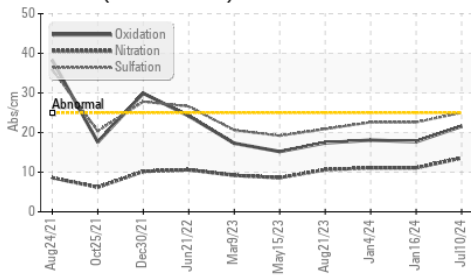
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	21.6	17.7	18.1
Base Number (BN)	mg KOH/g ASTM D2896 10.2	4.5	5.9	5.6

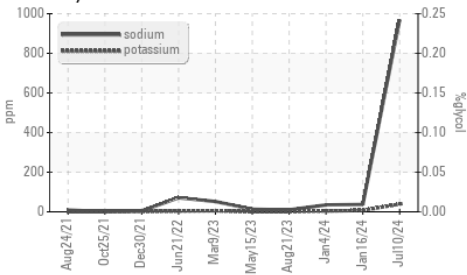


OIL ANALYSIS REPORT

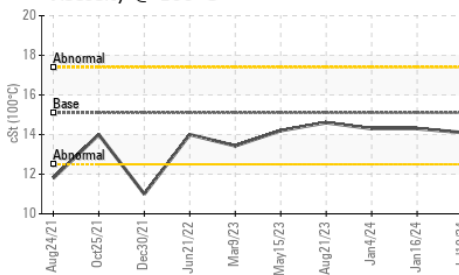
FT-IR (Direct Trend)



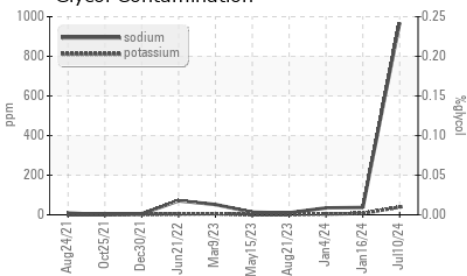
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

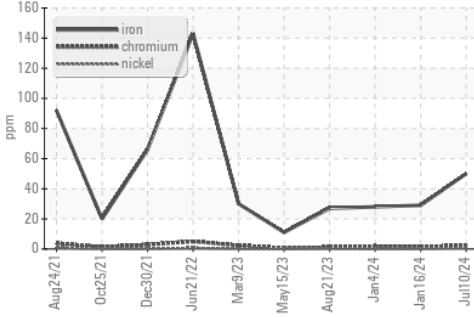


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

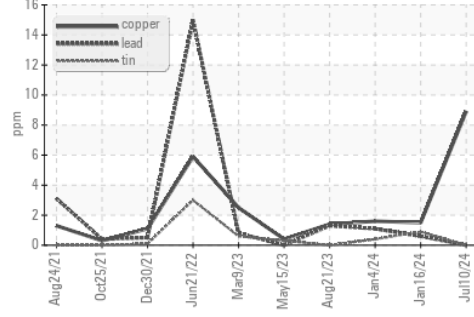
PARAMETER	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.3	14.3

GRAPHS

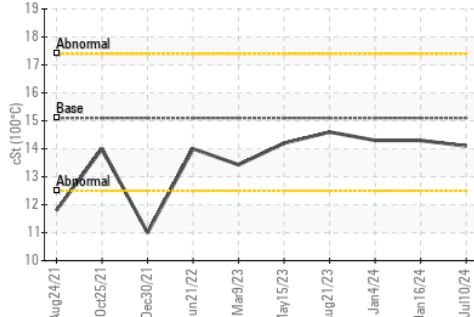
Ferrous Alloys



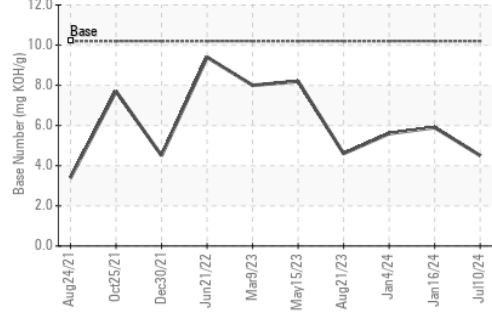
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0096022 **Received** : 11 Jul 2024
Lab Number : 06232937 **Tested** : 15 Jul 2024
Unique Number : 11116430 **Diagnosed** : 15 Jul 2024 - Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 883 - Orange City
 1378 South Volusia Ave
 Orange City, FL
 US 32763
 Contact: JEFF COOPERSMITH
 JCOOPERSMITH@GFLENV.COM
 T: (386)503-8468
 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)