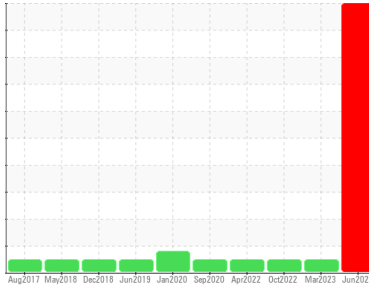




PROBLEM SUMMARY

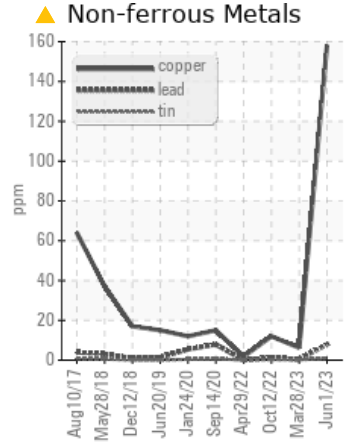
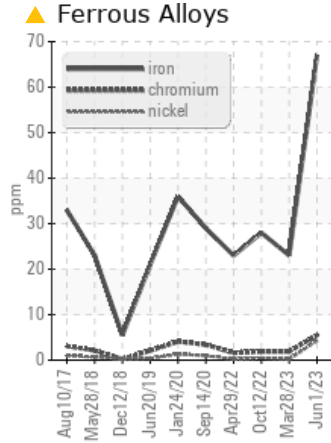
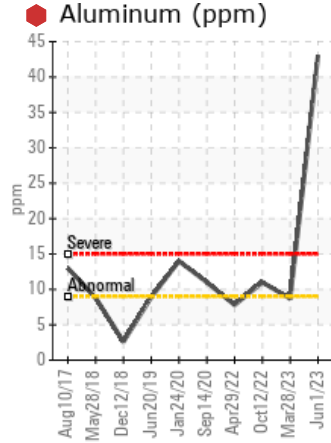
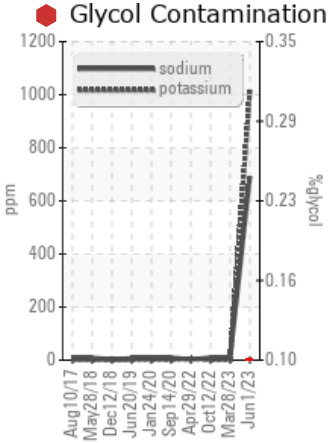
Sample Rating Trend

GLYCOL



Area
[412318]
 Machine Id
9171
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY



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. (Customer Sample Comment: 412318)

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>50	▲ 67	23	28
Chromium	ppm	ASTM D5185m	>4	▲ 6	2	2
Nickel	ppm	ASTM D5185m	>2	▲ 4	<1	<1
Aluminum	ppm	ASTM D5185m	>9	● 43	9	11
Copper	ppm	ASTM D5185m	>35	▲ 158	6	12
Sodium	ppm	ASTM D5185m		▲ 690	8	10
Potassium	ppm	ASTM D5185m	>20	▲ 1014	1	<1
Glycol	%	*ASTM D2982		● 0.10	---	---

Customer Id: GFL865
 Sample No.: GFL0083500
 Lab Number: 05872873
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Check Glycol Access	---	---	?	We advise that you check for the source of the coolant leak.

HISTORICAL DIAGNOSIS

28 Mar 2023 Diag: Angela Borella

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report



12 Oct 2022 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report



29 Apr 2022 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report





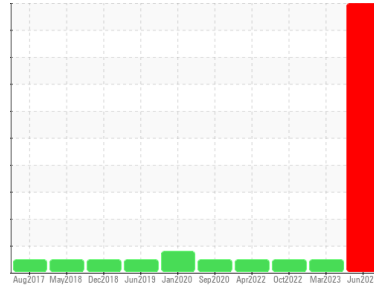
OIL ANALYSIS REPORT

Sample Rating Trend

GLYCOL



Area
[412318]
 Machine Id
9171
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)



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. (Customer Sample Comment: 412318)

Wear

The copper level is abnormal. Piston, ring and cylinder wear is indicated. Valve wear is indicated. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core).

Contamination

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

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		GFL0083500	GFL0074181	GFL0060160
Sample Date	Client Info		01 Jun 2023	28 Mar 2023	12 Oct 2022
Machine Age	hrs	Client Info	15576	15001	14782
Oil Age	hrs	Client Info	15576	15001	0
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			SEVERE	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	▲ 67	23	28
Chromium	ppm	ASTM D5185m >4	▲ 6	2	2
Nickel	ppm	ASTM D5185m >2	▲ 4	<1	<1
Titanium	ppm	ASTM D5185m	<1	0	<1
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >9	◆ 43	9	11
Lead	ppm	ASTM D5185m >30	8	<1	1
Copper	ppm	ASTM D5185m >35	▲ 158	6	12
Tin	ppm	ASTM D5185m >4	<1	<1	<1
Antimony	ppm	ASTM D5185m	---	---	<1
Vanadium	ppm	ASTM D5185m	<1	0	0
Beryllium	ppm	ASTM D5185m	---	---	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 50	2	20	5
Barium	ppm	ASTM D5185m 5	0	0	0
Molybdenum	ppm	ASTM D5185m 50	259	49	55
Manganese	ppm	ASTM D5185m 0	2	<1	<1
Magnesium	ppm	ASTM D5185m 560	544	511	534
Calcium	ppm	ASTM D5185m 1510	1658	1510	1584
Phosphorus	ppm	ASTM D5185m 780	615	741	688
Zinc	ppm	ASTM D5185m 870	932	946	856
Sulfur	ppm	ASTM D5185m 2040	2985	2528	2010
Lithium	ppm	ASTM D5185m	---	---	<1

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >+100	21	5	5
Sodium	ppm	ASTM D5185m	▲ 690	8	10
Potassium	ppm	ASTM D5185m >20	▲ 1014	1	<1
Glycol	%	*ASTM D2982	◆ 0.10	---	---

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0.1	0
Nitration	Abs/cm	*ASTM D7624 >20	12.4	9.1	10.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	24.6	19.5	23.9

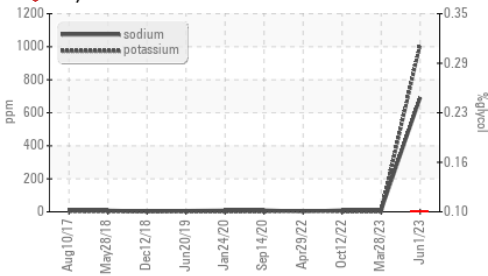
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	19.7	16.3	19.0
Base Number (BN)	mg KOH/g	ASTM D2896 10.2	6.3	7.5	---

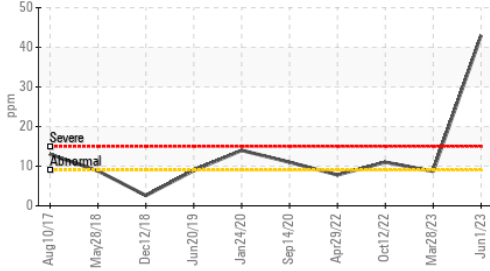


OIL ANALYSIS REPORT

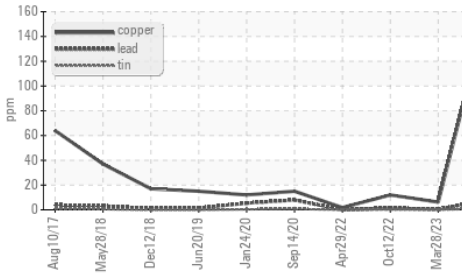
Glycol Contamination



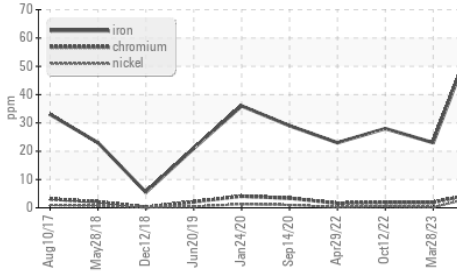
Aluminum (ppm)



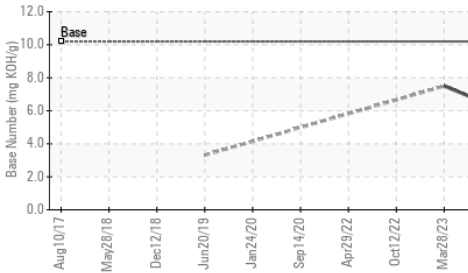
Non-ferrous Metals



Ferrous Alloys



Base Number

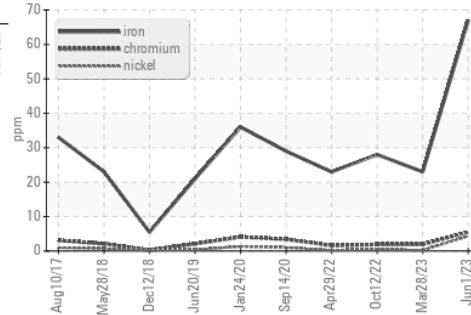


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

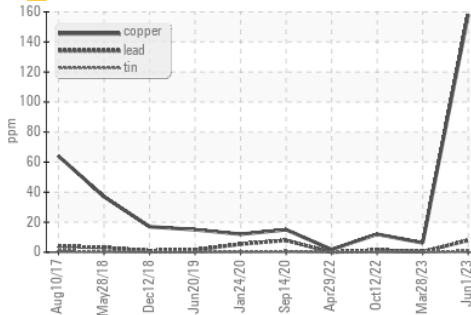
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	15.0	14.5

GRAPHS

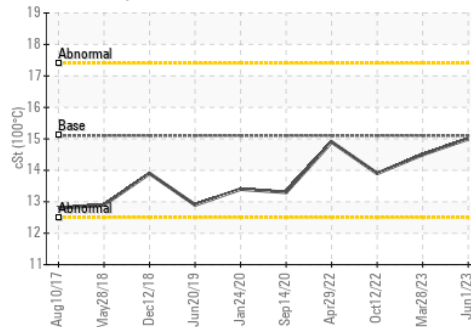
Ferrous Alloys



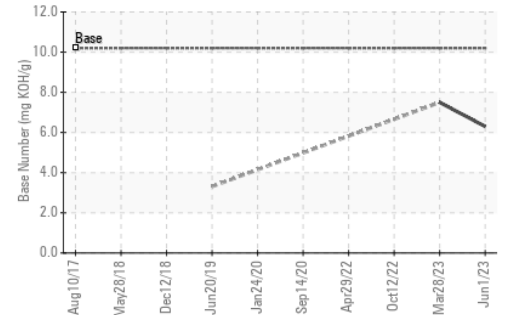
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0083500 **Received** : 14 Jun 2023
Lab Number : 05872873 **Diagnosed** : 16 Jun 2023
Unique Number : 10512657 **Diagnostician** : Jonathan Hester
Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 865 - East Mount Hauling
 7213 East Mount Houston Road
 Houston, TX
 US 77050
 Contact: Saul Castillo
 saul.castillo@gflenv.com

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)

T:
F: