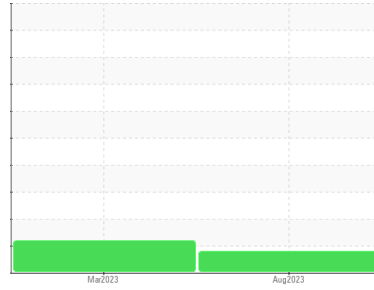




PROBLEM SUMMARY

Sample Rating Trend



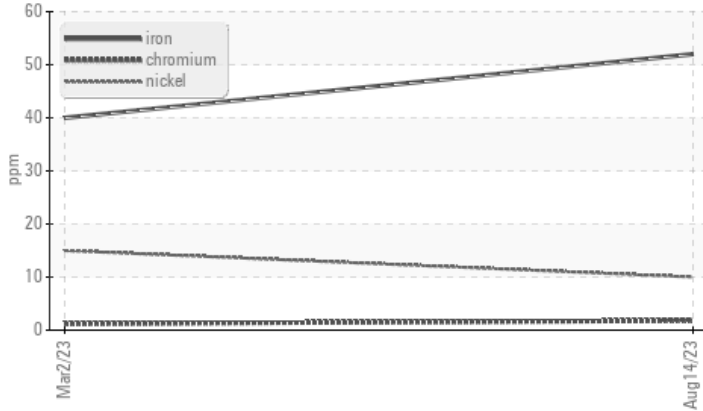
WEAR



Machine Id
913022
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Ferrous Alloys



RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status	ABNORMAL	ABNORMAL	---		
Nickel	ppm	ASTM D5185m >4	▲ 10	▲ 15	---

Customer Id: GFL947
 Sample No.: GFL0082537
 Lab Number: 05931376
 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.

HISTORICAL DIAGNOSIS

02 Mar 2023 Diag: Jonathan Hester

WEAR



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. The nickel level is abnormal. All other metal levels are typical for a new component breaking in. Fuel content negligible. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

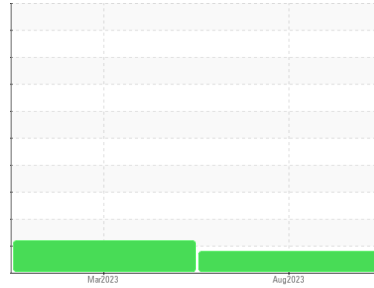
view report





OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
913022

Component
Diesel Engine

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

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

The nickel level has decreased, but is still abnormal.

Contamination

There is no indication of any contamination in the oil.

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			GFL0082537	GFL0064255	---
Sample Date	Client Info			14 Aug 2023	02 Mar 2023	---
Machine Age	hrs	Client Info		1818	638	---
Oil Age	hrs	Client Info		610	638	---
Oil Changed	Client Info			Changed	Changed	---
Sample Status				ABNORMAL	ABNORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<1.0	0.5	---
Glycol	WC Method			NEG	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	52	40	---
Chromium	ppm	ASTM D5185m	>20	2	1	---
Nickel	ppm	ASTM D5185m	>4	▲ 10	▲ 15	---
Titanium	ppm	ASTM D5185m		0	<1	---
Silver	ppm	ASTM D5185m	>3	0	0	---
Aluminum	ppm	ASTM D5185m	>20	2	5	---
Lead	ppm	ASTM D5185m	>40	<1	<1	---
Copper	ppm	ASTM D5185m	>330	69	165	---
Tin	ppm	ASTM D5185m	>15	3	4	---
Vanadium	ppm	ASTM D5185m		<1	0	---
Cadmium	ppm	ASTM D5185m		0	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	6	220	---
Barium	ppm	ASTM D5185m	0	0	0	---
Molybdenum	ppm	ASTM D5185m	60	70	112	---
Manganese	ppm	ASTM D5185m	0	2	6	---
Magnesium	ppm	ASTM D5185m	1010	1063	634	---
Calcium	ppm	ASTM D5185m	1070	1202	1349	---
Phosphorus	ppm	ASTM D5185m	1150	998	651	---
Zinc	ppm	ASTM D5185m	1270	1292	785	---
Sulfur	ppm	ASTM D5185m	2060	2545	2038	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	14	73	---
Sodium	ppm	ASTM D5185m		7	0	---
Potassium	ppm	ASTM D5185m	>20	0	8	---

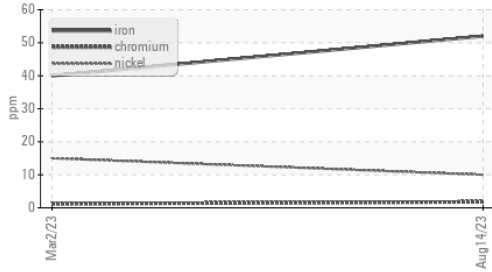
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	1.1	0.5	---
Nitration	Abs/cm	*ASTM D7624	>20	10.9	10.2	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.5	24.4	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	20.4	22.3	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	5.6	7.8	---

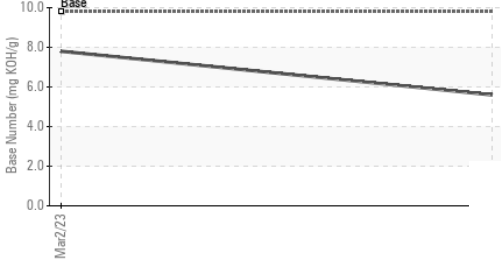


OIL ANALYSIS REPORT

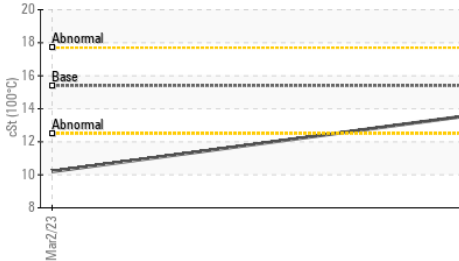
▲ Ferrous Alloys



Base Number



Viscosity @ 100°C

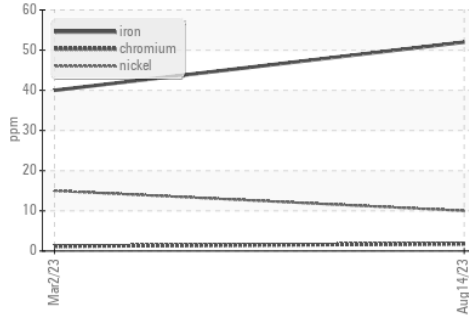


PARAMETER	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---
Free Water	scalar	*Visual		NEG	---

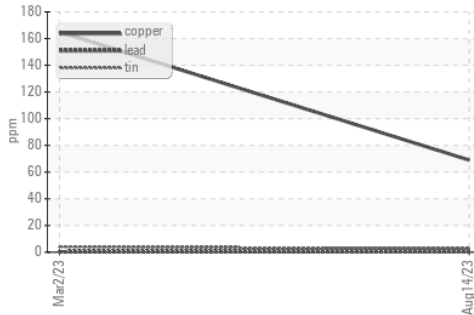
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	▲ 10.2

GRAPHS

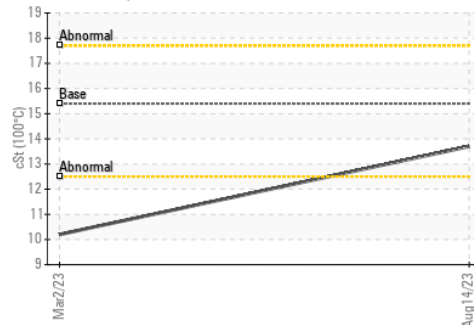
▲ Ferrous Alloys



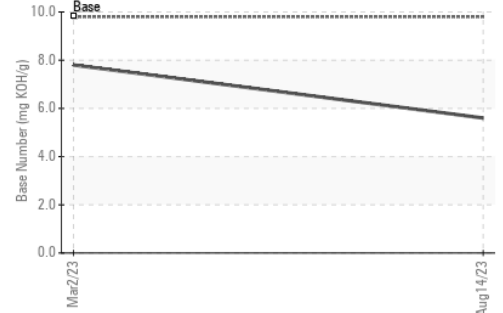
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0082537
 Lab Number : 05931376
 Unique Number : 10616647
 Test Package : FLEET

Received : 22 Aug 2023
 Diagnosed : 24 Aug 2023
 Diagnostician : Jonathan Hester

GFL Environmental - 947 - WB Horicon HC
 N7296 County Rd V
 Horicon, WI
 US 53032
 Contact: Tim Kieffer
 tim.kieffer@gflenv.com
 T: (608)219-0288
 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)