



WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
(P1024571)
Machine Id
521033
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0084812	GFL0085333	---
Sample Date		Client Info		04 Mar 2024	04 Oct 2023	---
Machine Age	mls	Client Info		677465	0	---
Oil Age	mls	Client Info		0	0	---
Filter Age	mls	Client Info		0	0	---
Oil Changed		Client Info		Changed	Not Changd	---
Filter Changed		Client Info		Changed	Not Changd	---
Sample Status				ABNORMAL	ABNORMAL	---

WEAR

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	▲ 84	69	---
Chromium	ppm	ASTM D5185m	>5	▲ 8	7	---
Nickel	ppm	ASTM D5185m	>2	1	1	---
Titanium	ppm	ASTM D5185m		<1	<1	---
Silver	ppm	ASTM D5185m	>3	0	<1	---
Aluminum	ppm	ASTM D5185m	>30	● 20	● 17	---
Lead	ppm	ASTM D5185m	>30	<1	0	---
Copper	ppm	ASTM D5185m	>150	18	13	---
Tin	ppm	ASTM D5185m	>5	2	2	---
Vanadium	ppm	ASTM D5185m		<1	<1	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

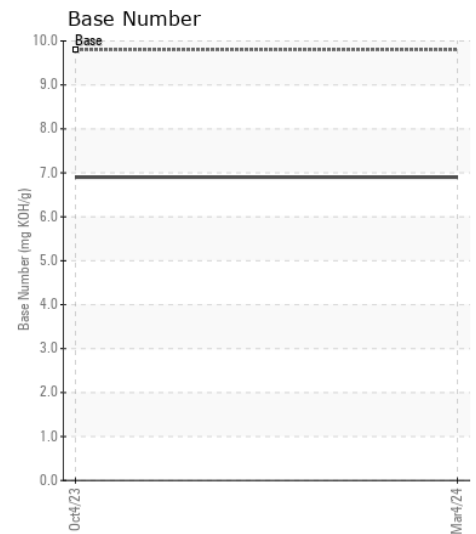
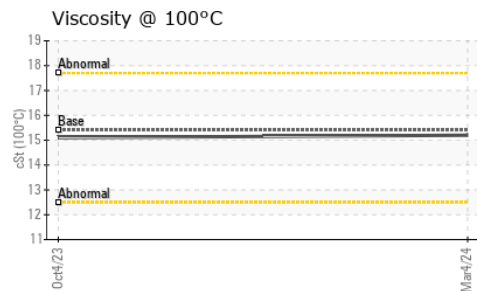
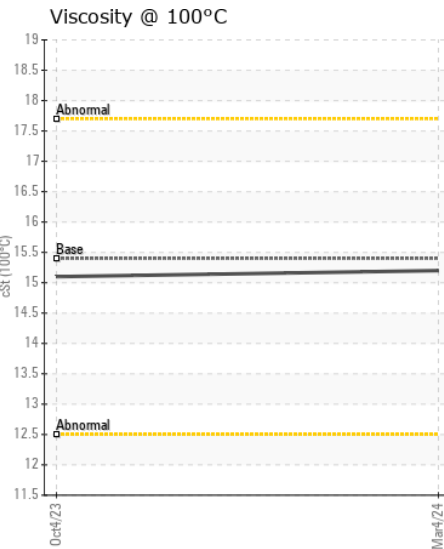
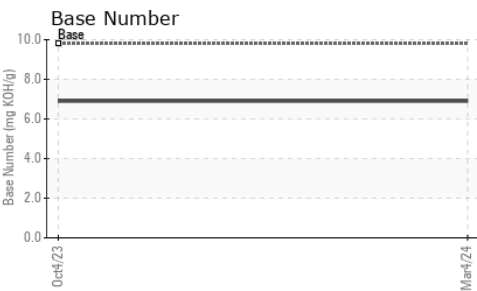
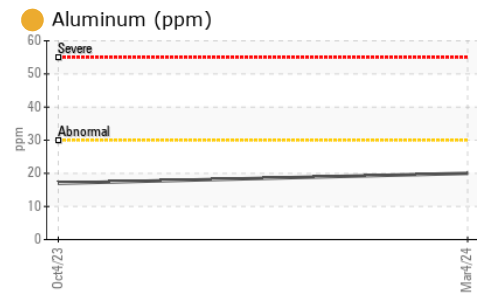
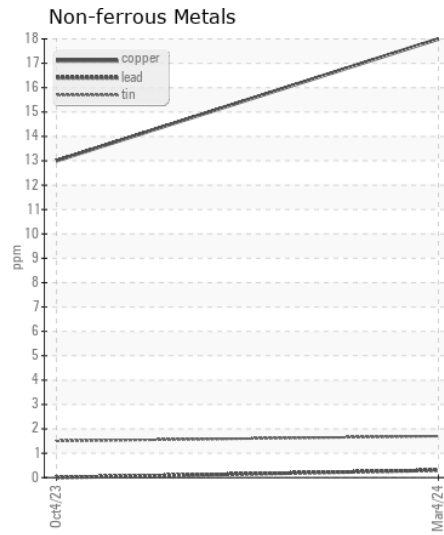
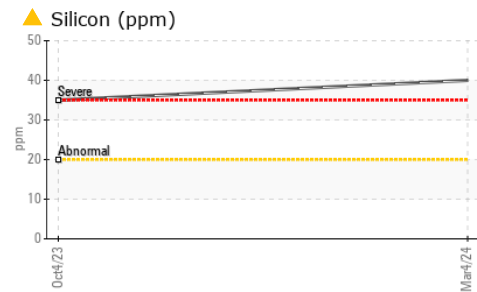
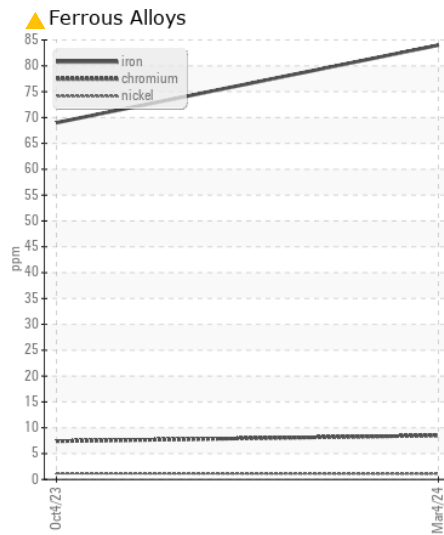
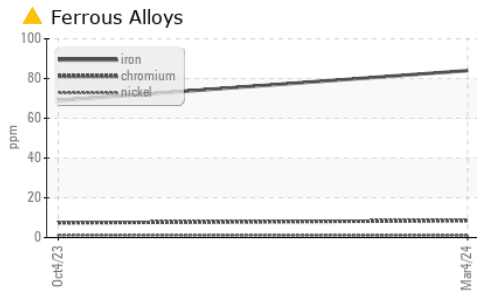
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>20	▲ 40	▲ 35	---
Potassium	ppm	ASTM D5185m	>20	7	7	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.7	0.7	---
Nitration	Abs/cm	*ASTM D7624	>20	12.0	11.6	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.2	25.8	---
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	---

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.

Sodium	ppm	ASTM D5185m		8	7	---
Boron	ppm	ASTM D5185m	0	6	9	---
Barium	ppm	ASTM D5185m	0	0	0	---
Molybdenum	ppm	ASTM D5185m	60	64	58	---
Manganese	ppm	ASTM D5185m	0	2	1	---
Magnesium	ppm	ASTM D5185m	1010	1020	1013	---
Calcium	ppm	ASTM D5185m	1070	1436	1454	---
Phosphorus	ppm	ASTM D5185m	1150	1179	1051	---
Zinc	ppm	ASTM D5185m	1270	1416	1383	---
Sulfur	ppm	ASTM D5185m	2060	3150	2913	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.6	23.9	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	6.9	6.9	---
Visc @ 100°C	cSt	ASTM D445	15.4	15.2	15.1	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0084812
Lab Number : 06125507
Unique Number : 10939658
Test Package : FLEET

Received : 21 Mar 2024
Tested : 22 Mar 2024
Diagnosed : 25 Mar 2024 - Don Baldrige

GFL Environmental - 959A - Urbana HC
 4808 cunningham Rd
 Urbana, IL
 US 61802

Contact: Kristine Tryon
 Ktryon@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: