



WEAR	SEVERE
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Machine Id
11245M
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (2 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. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0104544	GFL0041831	---
Sample Date		Client Info		11 Jan 2024	19 Jan 2022	---
Machine Age	hrs	Client Info		2996	2996	---
Oil Age	hrs	Client Info		600	0	---
Filter Age	hrs	Client Info		600	0	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				SEVERE	SEVERE	---

WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>51	364	7	---
Chromium	ppm	ASTM D5185m	>11	9	<1	---
Nickel	ppm	ASTM D5185m	>5	7	<1	---
Titanium	ppm	ASTM D5185m		<1	<1	---
Silver	ppm	ASTM D5185m	>3	0	<1	---
Aluminum	ppm	ASTM D5185m	>31	34	4	---
Lead	ppm	ASTM D5185m	>26	4	<1	---
Copper	ppm	ASTM D5185m	>26	22	<1	---
Tin	ppm	ASTM D5185m	>4	3	<1	---
Vanadium	ppm	ASTM D5185m		<1	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

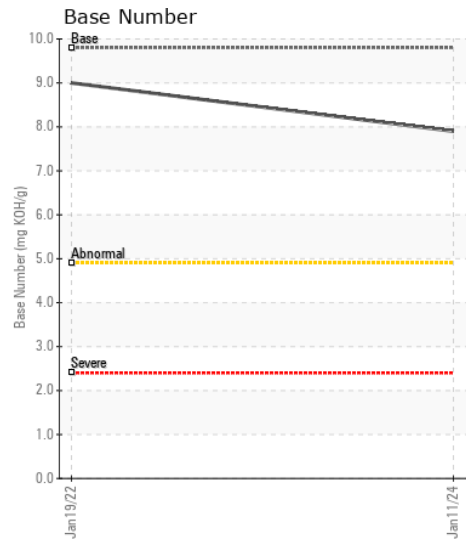
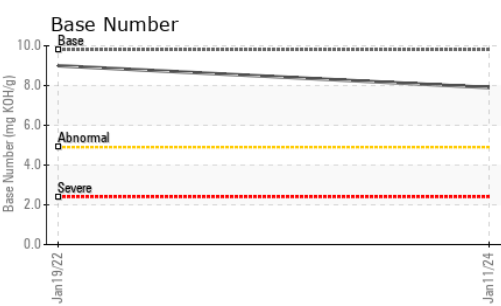
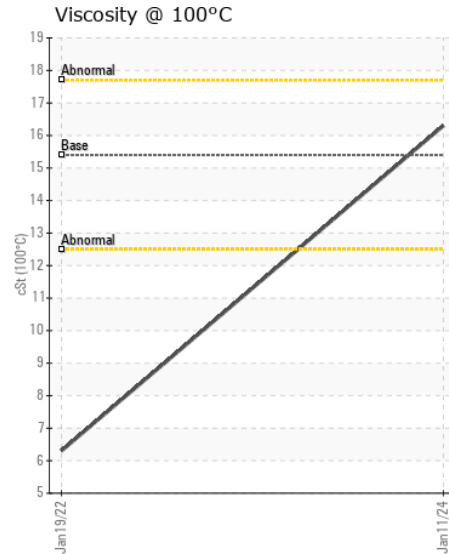
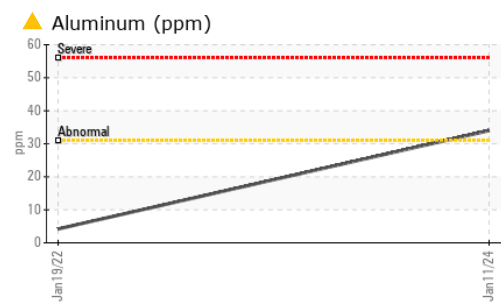
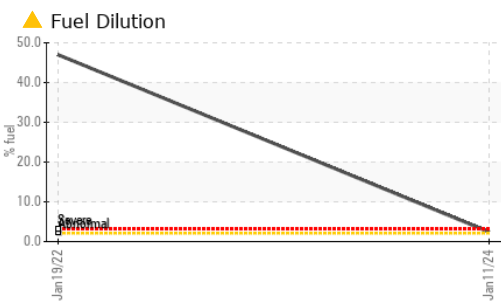
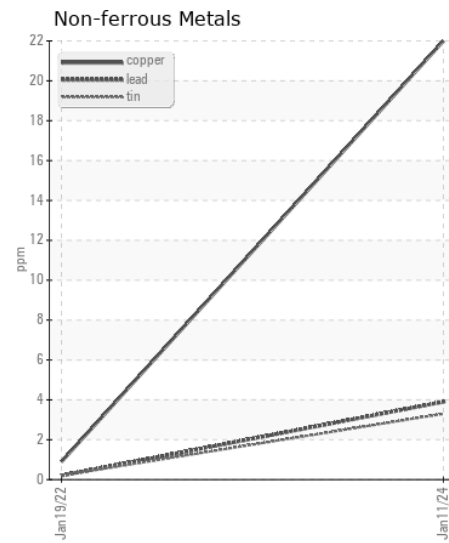
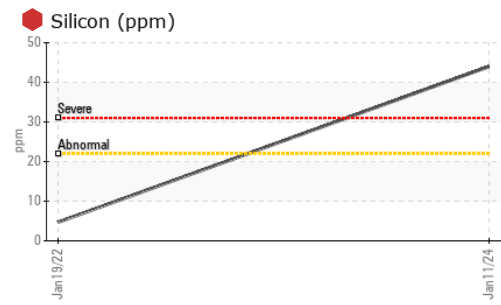
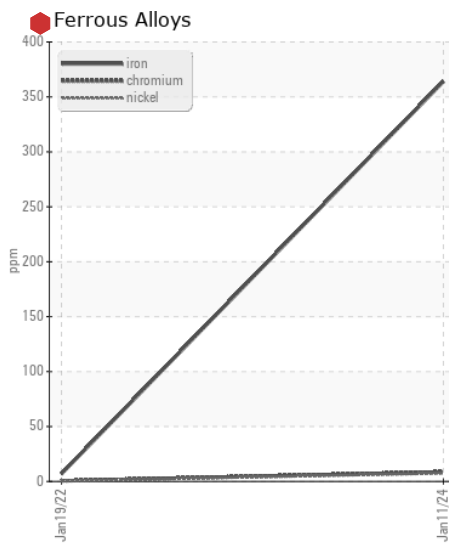
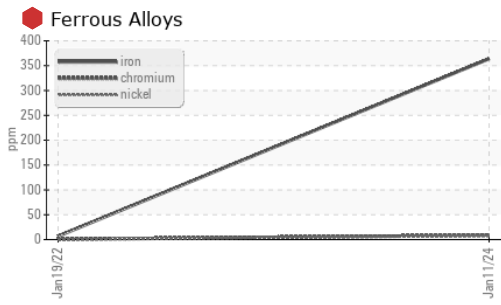
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Light fuel dilution occurring.

Silicon	ppm	ASTM D5185m	>22	44	5	---
Potassium	ppm	ASTM D5185m	>20	3	<1	---
Fuel	%	ASTM D3524	>2.1	2.4	47.0	---
Water		WC Method	>0.21	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.5	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	15.0	8.7	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	31.3	17.3	---
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	>0.21	NEG	NEG	---

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.

Sodium	ppm	ASTM D5185m	>31	2	0	---
Boron	ppm	ASTM D5185m	0	50	10	---
Barium	ppm	ASTM D5185m	0	0	<1	---
Molybdenum	ppm	ASTM D5185m	60	65	38	---
Manganese	ppm	ASTM D5185m	0	4	<1	---
Magnesium	ppm	ASTM D5185m	1010	937	564	---
Calcium	ppm	ASTM D5185m	1070	1690	636	---
Phosphorus	ppm	ASTM D5185m	1150	1368	585	---
Zinc	ppm	ASTM D5185m	1270	1591	764	---
Sulfur	ppm	ASTM D5185m	2060	3290	1801	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	34.5	13.0	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.9	9	---
Visc @ 100°C	cSt	ASTM D445	15.4	16.3	6.3	---



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0104544 **Received** : 16 Jan 2024
Lab Number : 06060765 **Diagnosed** : 18 Jan 2024
Unique Number : 10832147 **Diagnostician** : Don Baldrige
Test Package : FLEET (Additional Tests: PercentFuel)

GFL Environmental - 461 - Smith Hauling
 3239 W. M 28
 Brimley, MI
 US 49715
 Contact: Jim Smith
 jim.smith@gflenv.com
 T: (906)635-3380
 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)