



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ATTENTION

Machine Id
714022
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0108811	GFL0105591	GFL0089099
Sample Date		Client Info		10 Jan 2024	11 Dec 2023	21 Nov 2023
Machine Age	hrs	Client Info		589	340	179
Oil Age	hrs	Client Info		340	0	179
Filter Age	hrs	Client Info		340	0	179
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changd	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>100	34	5	30
Chromium	ppm	ASTM D5185m	>20	<1	0	4
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	1	6
Lead	ppm	ASTM D5185m	>40	2	<1	0
Copper	ppm	ASTM D5185m	>330	280	23	7
Tin	ppm	ASTM D5185m	>15	1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

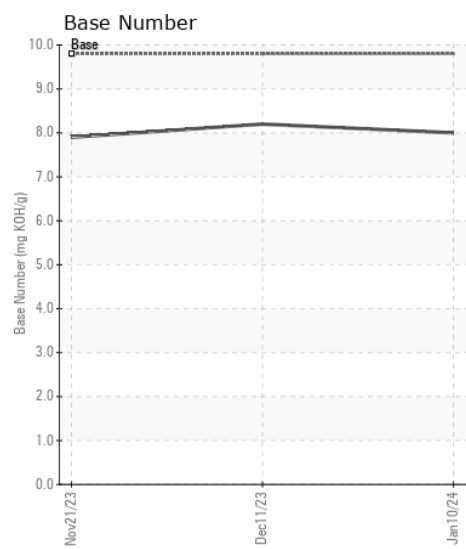
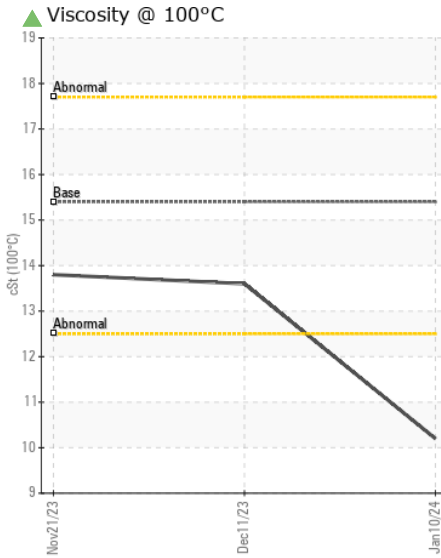
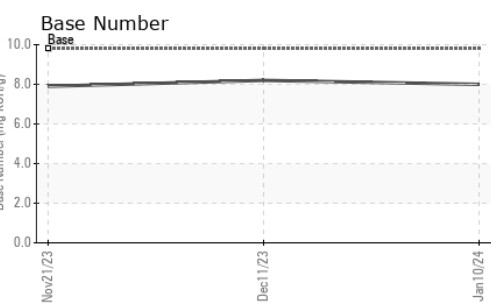
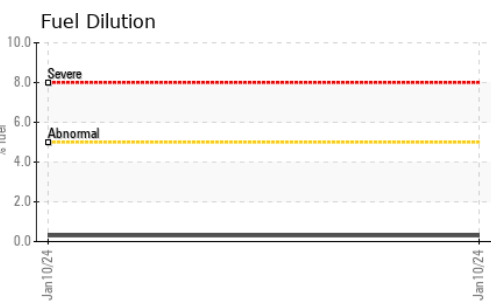
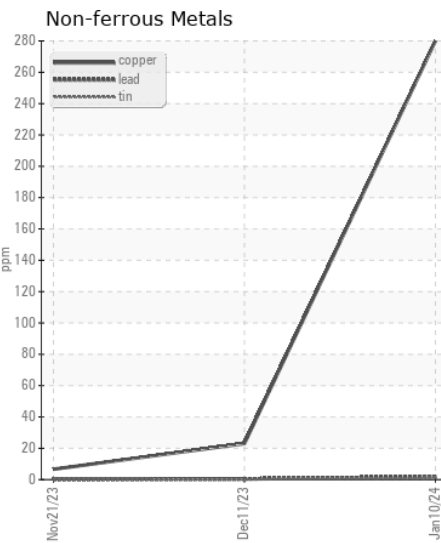
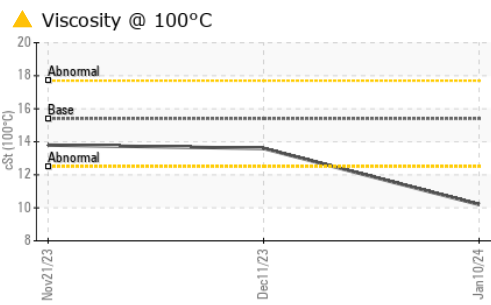
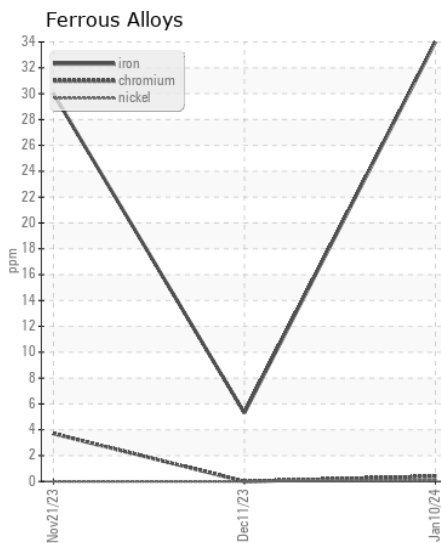
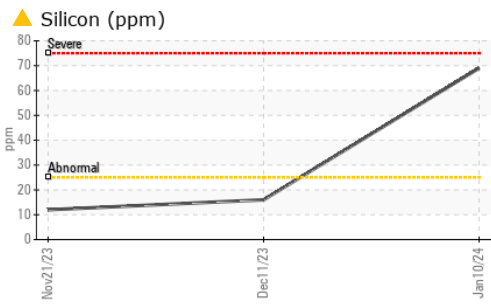
Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>25	▲ 69	16	12
Potassium	ppm	ASTM D5185m	>20	9	2	<1
Fuel	%	ASTM D3524	>5	0.3	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.1	0.4
Nitration	Abs/cm	*ASTM D7624	>20	9.1	5.2	7.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.0	18.7	19.7
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		2	0	2
Boron	ppm	ASTM D5185m	0	218	52	0
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	115	63	58
Manganese	ppm	ASTM D5185m	0	4	<1	<1
Magnesium	ppm	ASTM D5185m	1010	763	947	982
Calcium	ppm	ASTM D5185m	1070	1477	1096	1083
Phosphorus	ppm	ASTM D5185m	1150	772	1003	917
Zinc	ppm	ASTM D5185m	1270	944	1183	1333
Sulfur	ppm	ASTM D5185m	2060	2542	3075	2803
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.9	14.5	16.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.0	8.2	7.9
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 10.2	13.6	13.8



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0108811 **Received** : 12 Jan 2024
Lab Number : 06059028 **Diagnosed** : 16 Jan 2024
Unique Number : 10830410 **Diagnostician** : Don Baldrige
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

GFL Environmental - 415 - Michigan East
 6200 Elmridge
 Sterling Heights, MI
 US 48313
 Contact: Frank Wolak
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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)