



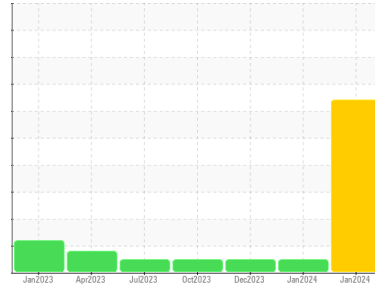
OIL ANALYSIS REPORT

Sample Rating Trend

COOL CHEMICALS



Machine Id
443001
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.

Wear

Piston, ring and cylinder wear is indicated. Bearing and/or bushing wear is indicated.

Contamination

Sodium and/or potassium levels are high.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		GFL0103274	GFL0103342	GFL0099915
Sample Date	Client Info		26 Jan 2024	08 Jan 2024	14 Dec 2023
Machine Age	hrs	Client Info	15627	15523	15388
Oil Age	hrs	Client Info	1200	0	0
Oil Changed	Client Info		Changed	Not Changd	Not Changd
Sample Status			ABNORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.1	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	▲ 77	<1	45
Chromium	ppm	ASTM D5185m >4	▲ 9	0	<1
Nickel	ppm	ASTM D5185m >2	3	0	<1
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m >3	<1	0	<1
Aluminum	ppm	ASTM D5185m >9	▲ 8	2	5
Lead	ppm	ASTM D5185m >30	▲ 14	<1	<1
Copper	ppm	ASTM D5185m >35	▲ 99	<1	13
Tin	ppm	ASTM D5185m >4	<1	<1	2
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 50	10	24	11
Barium	ppm	ASTM D5185m 5	2	0	0
Molybdenum	ppm	ASTM D5185m 50	98	45	52
Manganese	ppm	ASTM D5185m 0	2	<1	12
Magnesium	ppm	ASTM D5185m 560	551	540	753
Calcium	ppm	ASTM D5185m 1510	1614	1576	1331
Phosphorus	ppm	ASTM D5185m 780	743	834	683
Zinc	ppm	ASTM D5185m 870	1015	976	964
Sulfur	ppm	ASTM D5185m 2040	2466	2590	2317

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >+100	18	5	26
Sodium	ppm	ASTM D5185m	▲ 600	4	4
Potassium	ppm	ASTM D5185m >20	▲ 206	<1	7

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0	0.1
Nitration	Abs/cm	*ASTM D7624 >20	13.9	8.8	12.1
Sulfation	Abs/.1mm	*ASTM D7415 >30	26.5	19.2	23.1

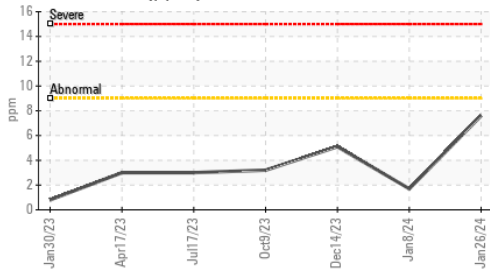
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	21.7	15.9	20.4
Base Number (BN)	mg KOH/g	ASTM D2896 10.2	3.8	6.8	4.3

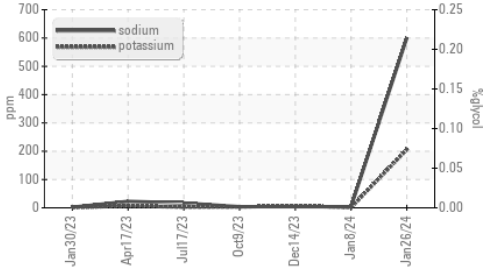


OIL ANALYSIS REPORT

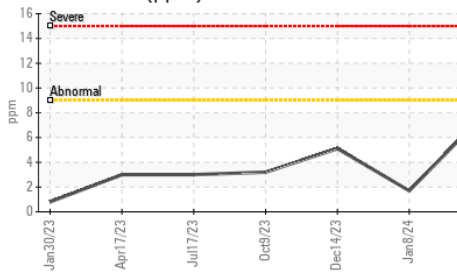
Aluminum (ppm)



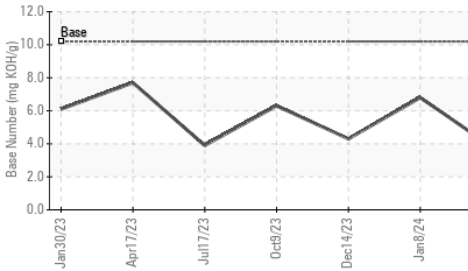
Glycol Contamination



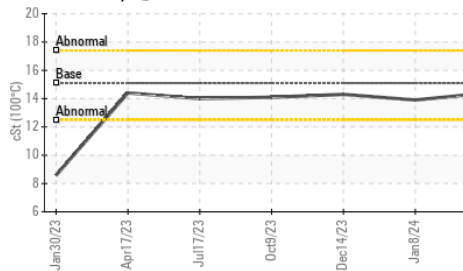
Aluminum (ppm)



Base Number



Viscosity @ 100°C

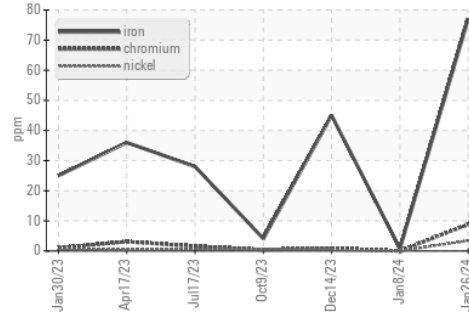


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

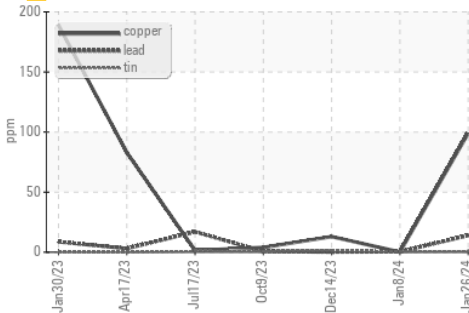
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.4	13.9

GRAPHS

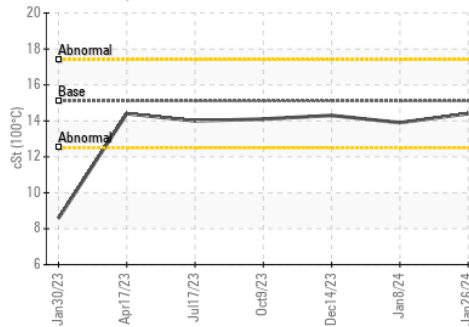
Ferrous Alloys



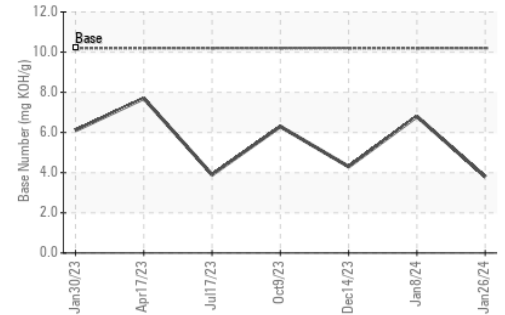
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0103274
 Lab Number : 06074415
 Unique Number : 10856506
 Test Package : FLEET (Additional Tests: Glycol)

GFL Environmental - 836 - Kansas City Hauling
 7801 East Truman Road
 Kansas City, MO
 US 64126
 Contact: Robert Hart
 rhart@gflenv.com
 T: (580)461-1509
 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)