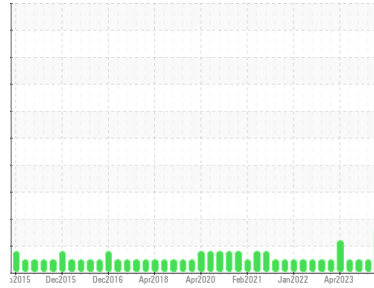




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
FREIGHTLINER 11198C

Component
Natural Gas Engine

Fluid
PETRO CANADA DURON GEO LD 15W40 (9 GAL)

DIAGNOSIS

▲ 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.

▲ Wear

The chromium level is abnormal. The lead level is 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		GFL0109587	GFL0087544	GFL0087476
Sample Date	Client Info		07 Feb 2024	14 Sep 2023	05 Sep 2023
Machine Age	hrs	Client Info	3154	2559	2517
Oil Age	hrs	Client Info	1170	575	533
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	26	12	12
Chromium	ppm	ASTM D5185m >4	▲ 8	3	3
Nickel	ppm	ASTM D5185m >2	1	<1	0
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >9	3	2	2
Lead	ppm	ASTM D5185m >30	▲ 32	2	<1
Copper	ppm	ASTM D5185m >35	32	24	25
Tin	ppm	ASTM D5185m >4	1	2	0
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	<1	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 50	2	5	5
Barium	ppm	ASTM D5185m 5	<1	44	0
Molybdenum	ppm	ASTM D5185m 50	55	50	54
Manganese	ppm	ASTM D5185m 0	1	1	<1
Magnesium	ppm	ASTM D5185m 560	576	503	572
Calcium	ppm	ASTM D5185m 1510	1687	1434	1698
Phosphorus	ppm	ASTM D5185m 780	809	613	692
Zinc	ppm	ASTM D5185m 870	993	884	972
Sulfur	ppm	ASTM D5185m 2040	2693	2396	2770

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >+100	6	7	5
Sodium	ppm	ASTM D5185m	10	8	8
Potassium	ppm	ASTM D5185m >20	6	4	1

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0.1	0
Nitration	Abs/cm	*ASTM D7624 >20	13.9	10.4	10.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	26.7	19.9	20.1

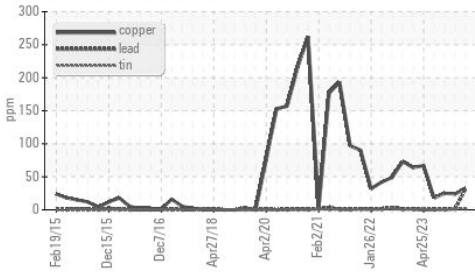
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	23.2	17.0	17.4
Base Number (BN)	mg KOH/g	ASTM D2896 10.2	2.6	4.7	4.8

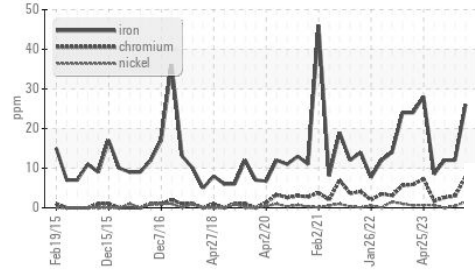


OIL ANALYSIS REPORT

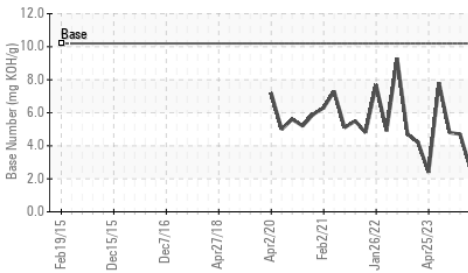
▲ Non-ferrous Metals



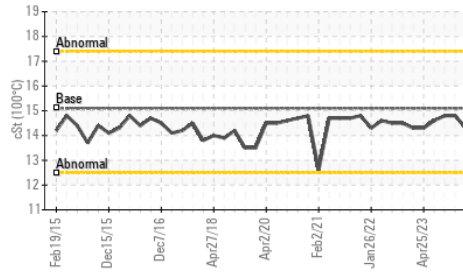
▲ Ferrous Alloys



Base Number



Viscosity @ 100°C

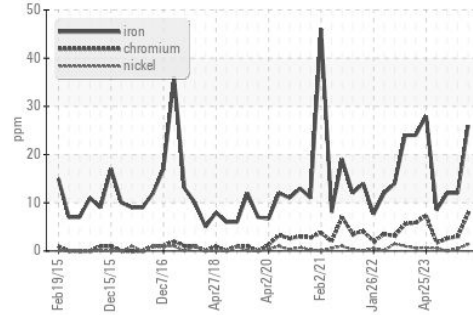


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

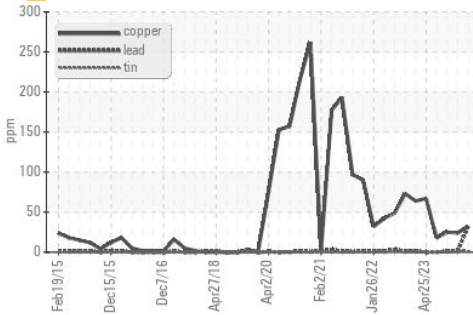
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.3	14.8

GRAPHS

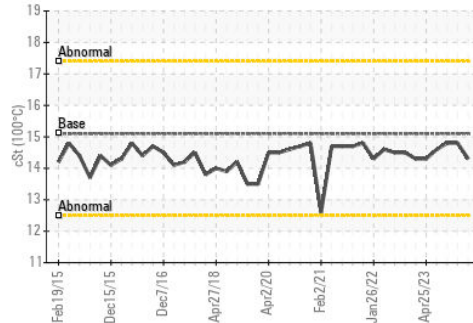
▲ Ferrous Alloys



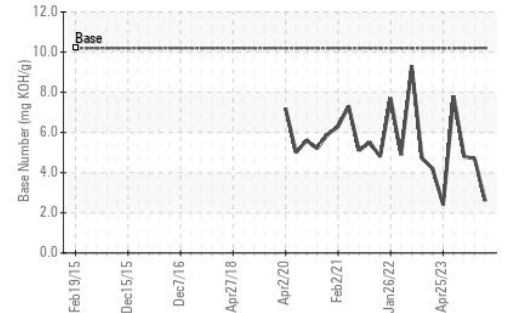
▲ Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0109587
 Lab Number : 06083348
 Unique Number : 10870793
 Test Package : FLEET

Received : 08 Feb 2024
 Tested : 08 Feb 2024
 Diagnosed : 09 Feb 2024 - Don Baldrige

GFL Environmental - 331 - Columbus
 180 Ada Moore Rd
 Columbus, NC
 US 28722

Contact: Matt Segars
 matt.segars@gflenv.com
 T: (800)207-6618
 F: (252)617-2494

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)