



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
814023
 Component
Diesel Engine
 Fluid
{not provided} (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0090963	GFL0103013	GFL0103032
Sample Date		Client Info		10 Jan 2024	18 Dec 2023	29 Nov 2023
Machine Age	hrs	Client Info		424	258	141
Oil Age	hrs	Client Info		166	117	141
Filter Age	hrs	Client Info		0	117	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>100	22	16	12
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	4	3	4
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	1	<1	0
Aluminum	ppm	ASTM D5185m	>20	5	6	4
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	119	17	12
Tin	ppm	ASTM D5185m	>15	3	2	3
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

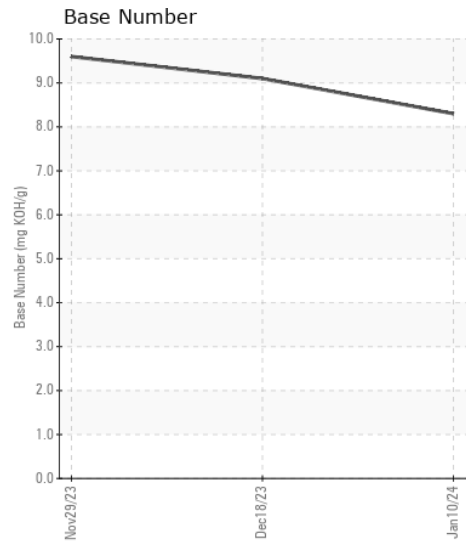
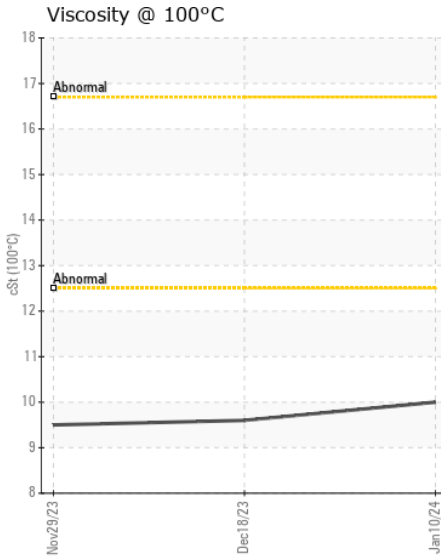
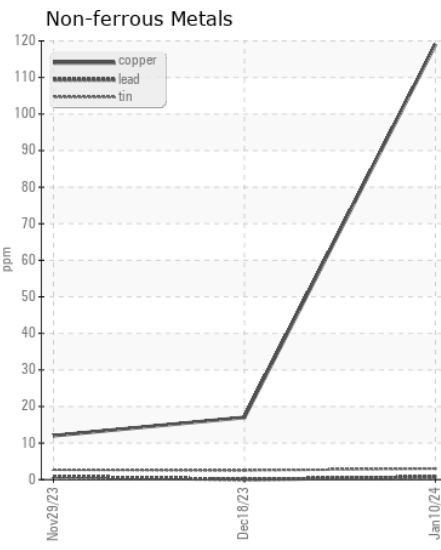
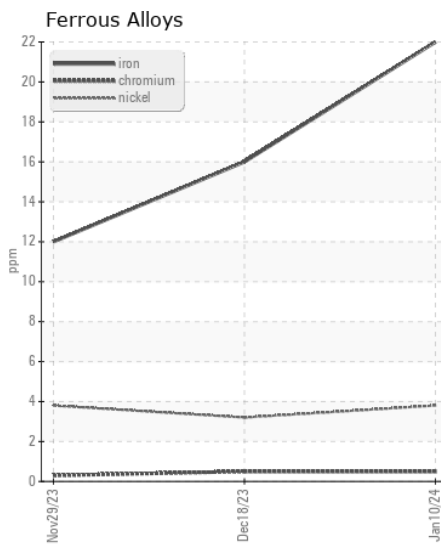
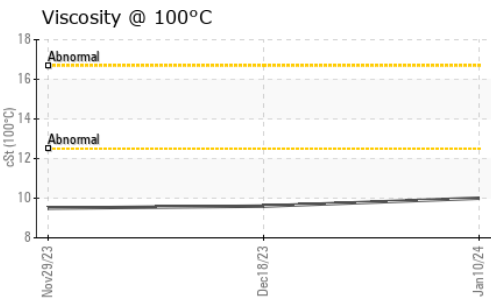
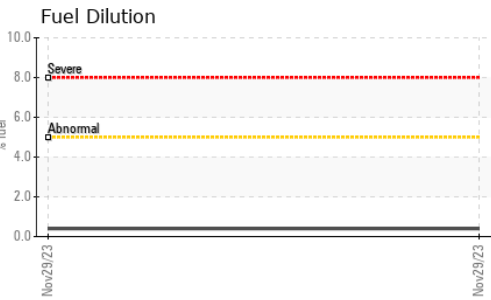
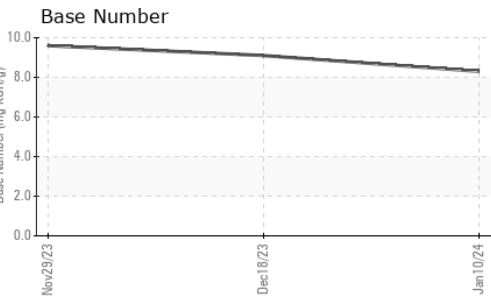
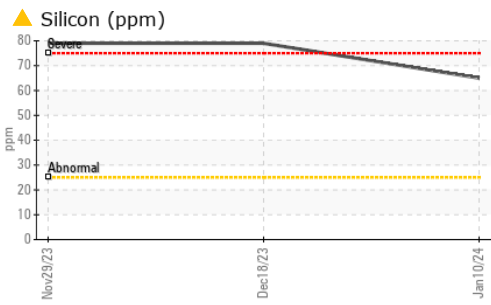
Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>25	▲ 65	▲ 79	▲ 79
Potassium	ppm	ASTM D5185m	>20	5	4	4
Fuel	%	ASTM D3524	>5	<1.0	<1.0	0.4
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	8.7	7.5	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.6	25.9	25.8
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 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		2	4	2
Boron	ppm	ASTM D5185m		267	353	374
Barium	ppm	ASTM D5185m		0	<1	<1
Molybdenum	ppm	ASTM D5185m		102	119	103
Manganese	ppm	ASTM D5185m		4	4	3
Magnesium	ppm	ASTM D5185m		630	701	648
Calcium	ppm	ASTM D5185m		1420	1391	1371
Phosphorus	ppm	ASTM D5185m		736	721	644
Zinc	ppm	ASTM D5185m		853	836	766
Sulfur	ppm	ASTM D5185m		2418	2399	1963
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.3	21.1	20.5
Base Number (BN)	mg KOH/g	ASTM D2896		8.3	9.1	9.6
Visc @ 100°C	cSt	ASTM D445		10.0	9.6	9.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0090963 **Received** : 17 Jan 2024
Lab Number : 06063412 **Diagnosed** : 19 Jan 2024
Unique Number : 10834794 **Diagnostician** : Don Baldrige
Test Package : FLEET (Additional Tests: FuelDilution)

GFL Environmental - 814 - Little Rock Hauling
 4005 Hwy 161 N.
 Little Rock, AR
 US 72117
 Contact: Brad Manager

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: