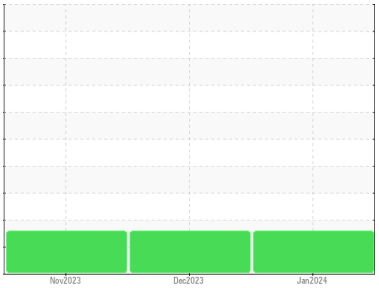
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

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

DIAGNOSIS

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.

Wear
Metal levels are typical for a new component breaking in.

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

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		**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
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
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
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
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

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	▲ **65**	▲ 79	▲ 79
Sodium	ppm	ASTM D5185m		**2**	4	2
Potassium	ppm	ASTM D5185m	>20	**5**	4	4
Fuel	%	ASTM D3524	>5	**<1.0**	<1.0	0.4

INFRA-RED		method	limit/base	current	history1	history2
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

FLUID DEGRADATION		method	limit/base	current	history1	history2
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

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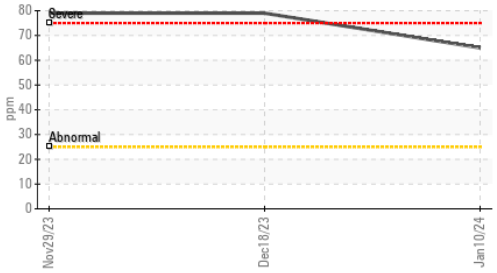
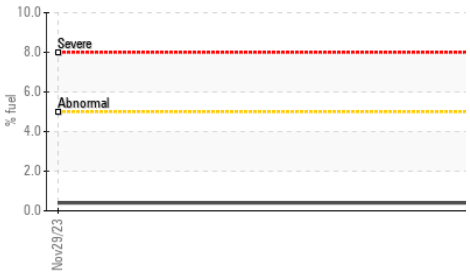
Silicon (ppm)

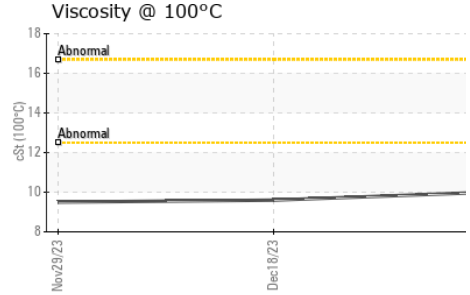


Fuel Dilution

Fuel Dilution



Viscosity @ 100°C

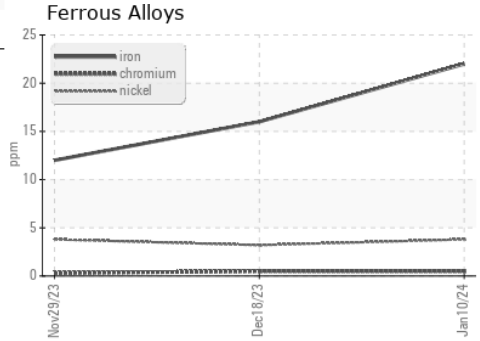


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

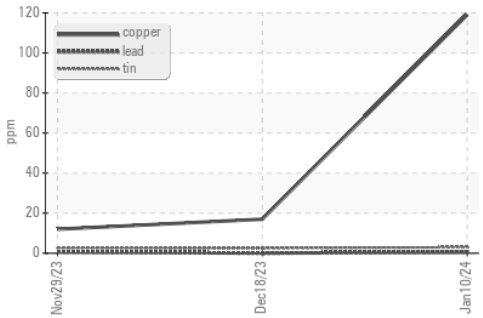
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**10.0**	9.6	9.5

GRAPHS

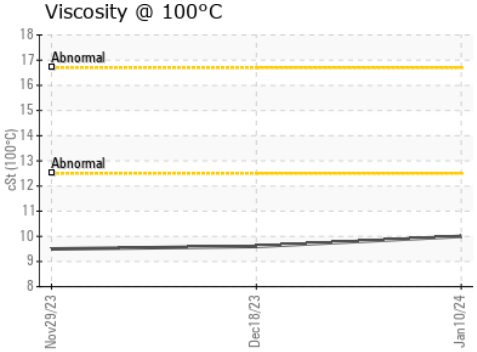
Ferrous Alloys



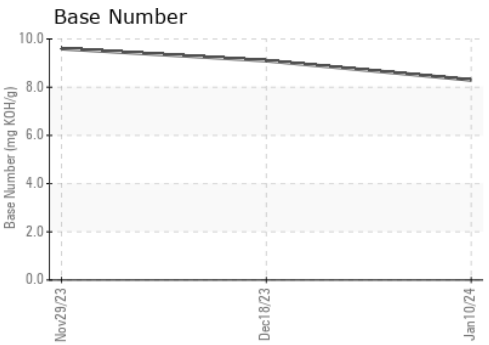
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

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)

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

Report Id: GFL814 [WUSCAR] 06063412 (Generated: 01/19/2024 14:30:01) Rev: 1

Submitted By: Nicole Walls