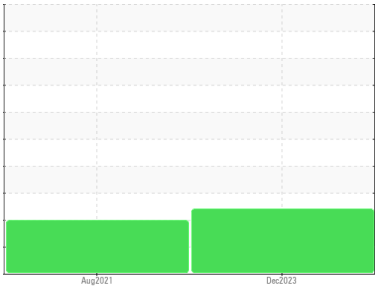
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
429018-908
Component
Diesel Engine
Fluid
CHEVRON DELO 400 XLE 15W40 (--- GAL)

DIAGNOSIS

Recommendation
The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. No other corrective action is recommended at this time.

Wear
Aluminum ppm levels are abnormal. Piston wear is indicated.

Contamination
Light fuel dilution occurring. No other contaminants were detected in the oil.

Fluid Condition
Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0096098**	GFL0018611	---
Sample Date		Client Info		**29 Dec 2023**	17 Aug 2021	---
Machine Age	hrs	Client Info		**28258**	25760	---
Oil Age	hrs	Client Info		**700**	605	---
Oil Changed		Client Info		**Changed**	Changed	---
Sample Status				**ABNORMAL**	ABNORMAL	---

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**42**	35	---
Chromium	ppm	ASTM D5185m	>20	**4**	3	---
Nickel	ppm	ASTM D5185m	>4	**<1**	<1	---
Titanium	ppm	ASTM D5185m		**13**	13	---
Silver	ppm	ASTM D5185m	>3	**0**	0	---
Aluminum	ppm	ASTM D5185m	>20	▲ **89**	▲ 45	---
Lead	ppm	ASTM D5185m	>40	**1**	0	---
Copper	ppm	ASTM D5185m	>330	**3**	1	---
Tin	ppm	ASTM D5185m	>15	**2**	0	---
Antimony	ppm	ASTM D5185m		**---**	0	---
Vanadium	ppm	ASTM D5185m		**<1**	0	---
Cadmium	ppm	ASTM D5185m		**0**	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		▲ **58**	65	---
Barium	ppm	ASTM D5185m		**<1**	<1	---
Molybdenum	ppm	ASTM D5185m		▲ **39**	43	---
Manganese	ppm	ASTM D5185m		**2**	<1	---
Magnesium	ppm	ASTM D5185m		**617**	684	---
Calcium	ppm	ASTM D5185m		**1414**	1496	---
Phosphorus	ppm	ASTM D5185m	760	**642**	692	---
Zinc	ppm	ASTM D5185m	830	**763**	747	---
Sulfur	ppm	ASTM D5185m	2770	**2841**	2597	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**17**	7	---
Sodium	ppm	ASTM D5185m		**6**	4	---
Potassium	ppm	ASTM D5185m	>20	**<1**	4	---
Fuel	%	ASTM D3524	>5	▲ **4.6**	▲ 5.4	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.9**	0.7	---
Nitration	Abs/cm	*ASTM D7624	>20	**12.3**	11.2	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.4**	20.3	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.3**	14.5	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	**7.4**	6.7	---

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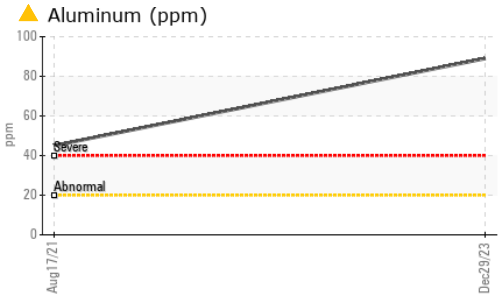
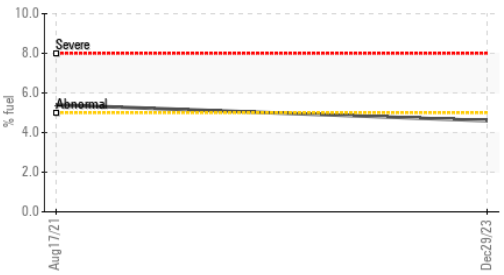
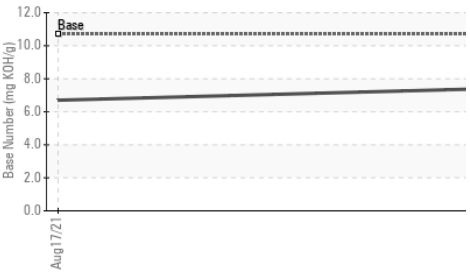
Aluminum (ppm)



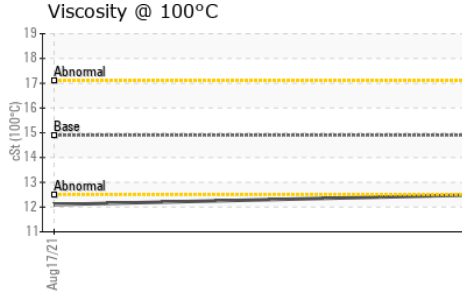
Fuel Dilution



Base Number



Viscosity @ 100°C

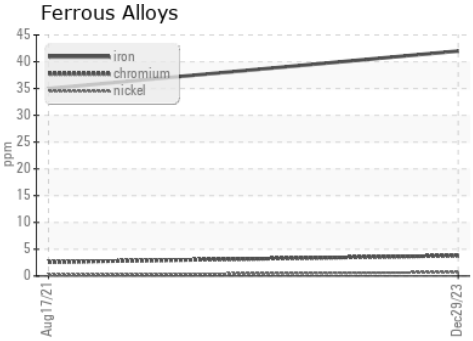


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	---
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	---
Silt	scalar	*Visual	NONE	**NONE**	NONE	---
Debris	scalar	*Visual	NONE	**NONE**	NONE	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	---
Appearance	scalar	*Visual	NORML	**NORML**	NORML	---
Odor	scalar	*Visual	NORML	**NORML**	NORML	---
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	---
Free Water	scalar	*Visual		**NEG**	NEG	---

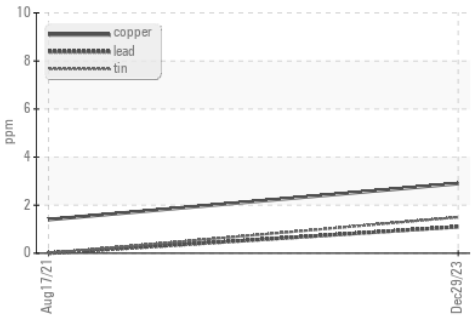
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	**12.5**	▲ 12.1	---

GRAPHS

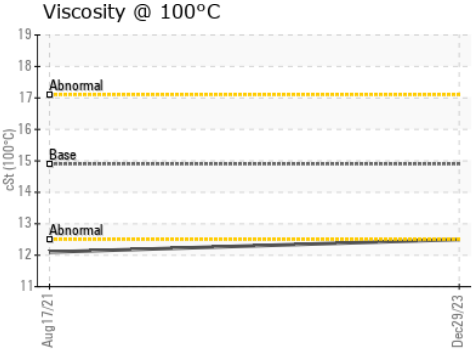
Ferrous Alloys



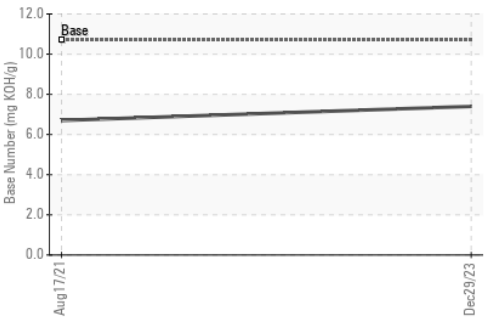
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0096098 **Recieved** : 04 Jan 2024
Lab Number : 06050639 **Diagnosed** : 05 Jan 2024
Unique Number : 10816588 **Diagnostician** : Wes Davis
Test Package : FLEET (Additional Tests: PercentFuel)

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)

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Report Id: GFL629 [WUSCAR] 06050639 (Generated: 01/08/2024 10:34:05) Rev: 1

Submitted By: Mitch Hershberger