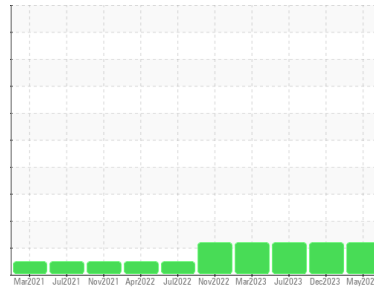




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
529018-1212

Component
Diesel Engine

Fluid
CHEVRON DELO 400 XLE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for possible 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

All component wear rates are normal.

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	GFL0110934	GFL0096099	GFL0084525
Sample Date	Client Info	07 May 2024	28 Dec 2023	13 Jul 2023
Machine Age	hrs	11031	10489	9652
Oil Age	hrs	542	837	592
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	<1.0	<1.0
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	23	43	39
Chromium	ppm ASTM D5185m >20	<1	2	2
Nickel	ppm ASTM D5185m >4	0	0	<1
Titanium	ppm ASTM D5185m	14	12	16
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >20	5	9	5
Lead	ppm ASTM D5185m >40	1	7	10
Copper	ppm ASTM D5185m >330	0	1	<1
Tin	ppm ASTM D5185m >15	<1	2	<1
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	72	48	60
Barium	ppm ASTM D5185m	0	<1	0
Molybdenum	ppm ASTM D5185m	63	87	71
Manganese	ppm ASTM D5185m	<1	<1	<1
Magnesium	ppm ASTM D5185m	731	697	777
Calcium	ppm ASTM D5185m	1535	1599	1749
Phosphorus	ppm ASTM D5185m 760	752	795	802
Zinc	ppm ASTM D5185m 830	855	918	941
Sulfur	ppm ASTM D5185m 2770	3476	3081	3486

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	7	8	13
Sodium	ppm ASTM D5185m	▲ 173	▲ 326	▲ 179
Potassium	ppm ASTM D5185m >20	17	24	17
Glycol	% *ASTM D2982	NEG	NEG	NEG

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.5	0.8	0.9
Nitration	Abs/cm *ASTM D7624 >20	11.7	12.9	12.1
Sulfation	Abs/.1mm *ASTM D7415 >30	23.4	26.6	25.5

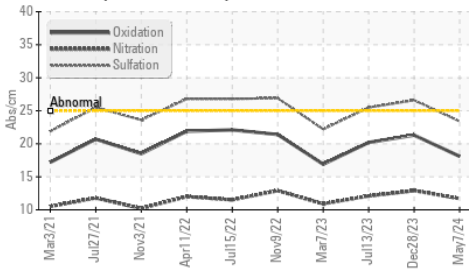
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	18.1	21.3	20.2
Base Number (BN)	mg KOH/g ASTM D2896 10.7	6.1	5.8	6.7

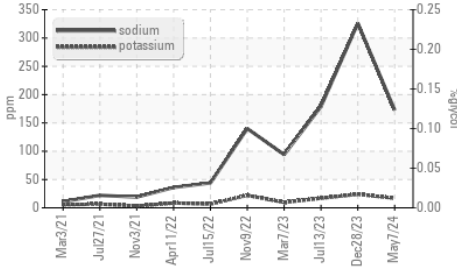


OIL ANALYSIS REPORT

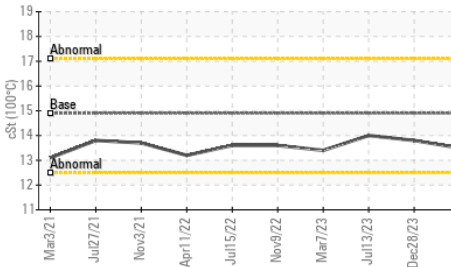
FT-IR (Direct Trend)



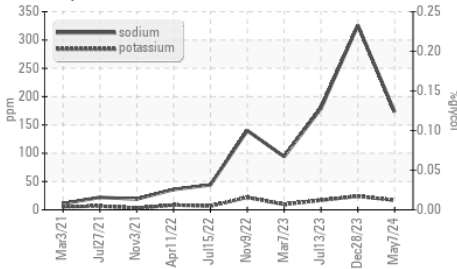
Glycol Contamination



Viscosity @ 100°C



Glycol Contamination

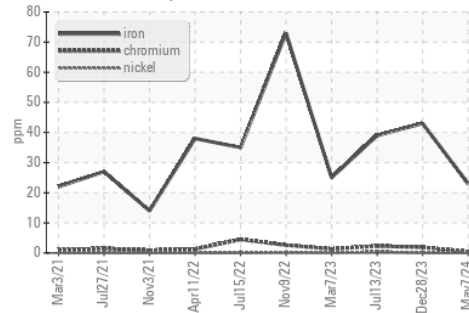


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

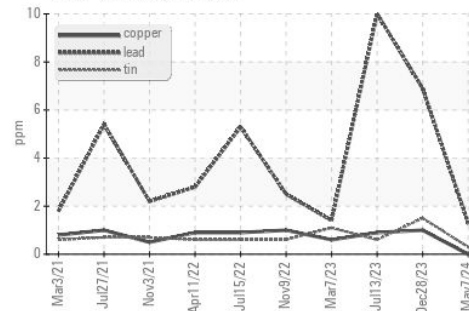
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	13.5	13.8

GRAPHS

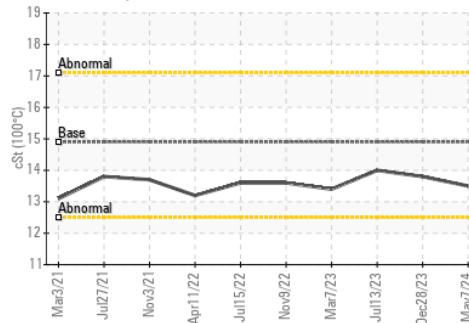
Ferrous Alloys



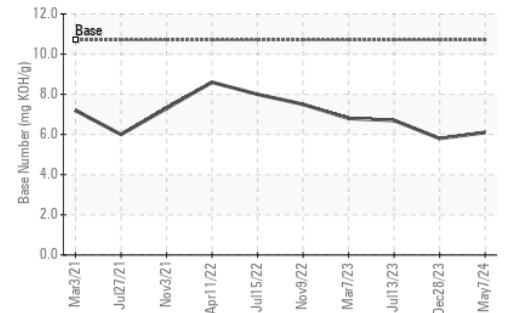
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0110934

Lab Number : 06175181

Unique Number : 11021234

Test Package : FLEET (Additional Tests: Glycol)

Received : 10 May 2024

Tested : 15 May 2024

Diagnosed : 15 May 2024 - Sean Felton

GFL Environmental - 629 - Northern A1

3947 US 131 N

Kalkaska, MI

US 49646-8428

Contact: MITCH HERSHBERGER

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: (231)624-0848

F: