FLEET LUBE 360 OIL DIAGNOSTICS

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
528011-940
Component
Diesel Engine
Fluid
CHEVRON DELO 400 XLE 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

WEAR

Aluminum ppm levels are abnormal. Piston wear is indicated.

CONTAMINATION

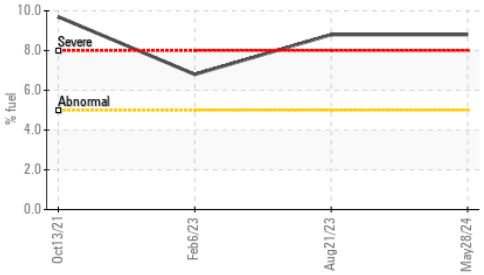
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

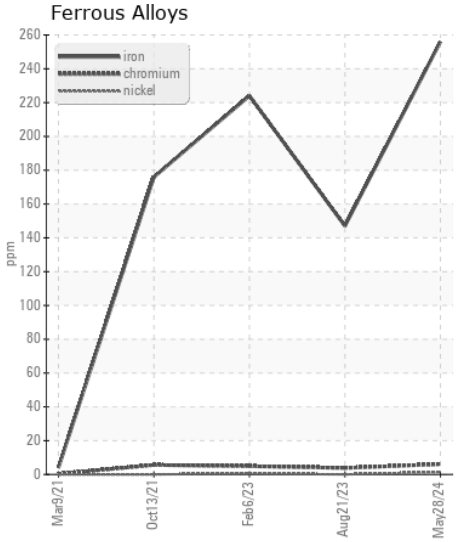
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**GFL0110941**	GFL0084514	GFL0064731
Sample Date		Client Info		**28 May 2024**	21 Aug 2023	06 Feb 2023
Machine Age	hrs	Client Info		**5594**	4933	4316
Oil Age	hrs	Client Info		**661**	617	1156
Filter Age	hrs	Client Info		**661**	617	1156
Oil Changed		Client Info		**Changed**	Changed	Changed
Filter Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	SEVERE	ABNORMAL
Iron	ppm	ASTM D5185m	>100	**256**	147	▲ 224
Chromium	ppm	ASTM D5185m	>20	**6**	4	5
Nickel	ppm	ASTM D5185m	>4	**2**	0	<1
Titanium	ppm	ASTM D5185m		**11**	13	5
Silver	ppm	ASTM D5185m	>3	**2**	<1	1
Aluminum	ppm	ASTM D5185m	>20	▲ **147**	▲ 99	▲ 102
Lead	ppm	ASTM D5185m	>40	**8**	5	5
Copper	ppm	ASTM D5185m	>330	**7**	4	4
Tin	ppm	ASTM D5185m	>15	**1**	<1	1
Vanadium	ppm	ASTM D5185m		**<1**	0	<1
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	**22**	20	17
Potassium	ppm	ASTM D5185m	>20	**5**	4	<1
Fuel	%	ASTM D3524	>5	▲ **8.8**	▲ 8.8	▲ 6.8
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG
Soot %	%	*ASTM D7844	>3	**0.7**	0.6	0.6
Nitration	Abs/cm	*ASTM D7624	>20	**11.0**	11.1	11.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.9**	21.8	22.1
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
Sodium	ppm	ASTM D5185m		**15**	7	10
Boron	ppm	ASTM D5185m		**70**	67	92
Barium	ppm	ASTM D5185m		**<1**	2	<1
Molybdenum	ppm	ASTM D5185m		**64**	47	85
Manganese	ppm	ASTM D5185m		**5**	3	3
Magnesium	ppm	ASTM D5185m		**609**	650	555
Calcium	ppm	ASTM D5185m		**1459**	1580	1392
Phosphorus	ppm	ASTM D5185m	760	**852**	725	614
Zinc	ppm	ASTM D5185m	830	**922**	856	763
Sulfur	ppm	ASTM D5185m	2770	**3211**	3165	2799
Oxidation	Abs/.1mm	*ASTM D7414	>25	**19.7**	17.2	17.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	**6.2**	6.7	7.7
Visc @ 100°C	cSt	ASTM D445	14.9	▲ **11.4**	▲ 11.7	▲ 11.5

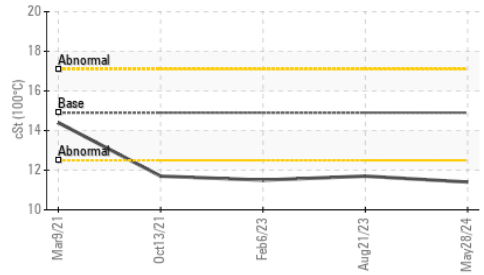
Fuel Dilution



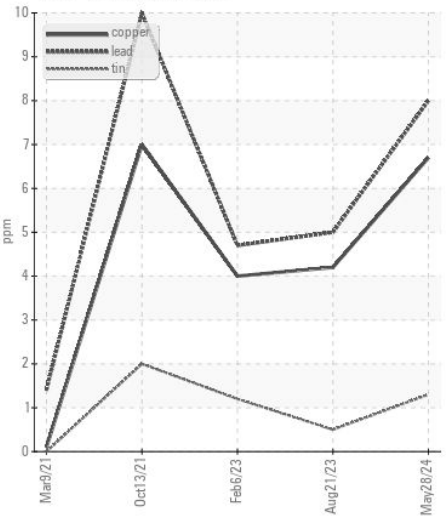
Ferrous Alloys



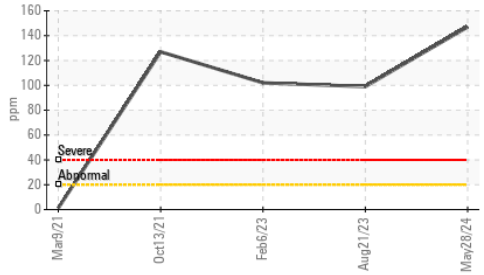
Viscosity @ 100°C



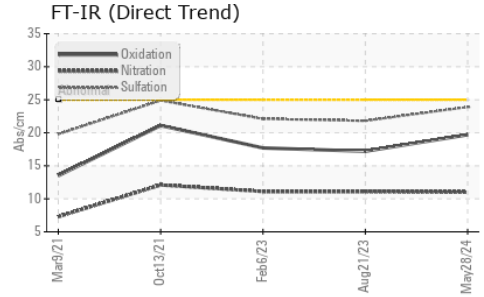
Non-ferrous Metals



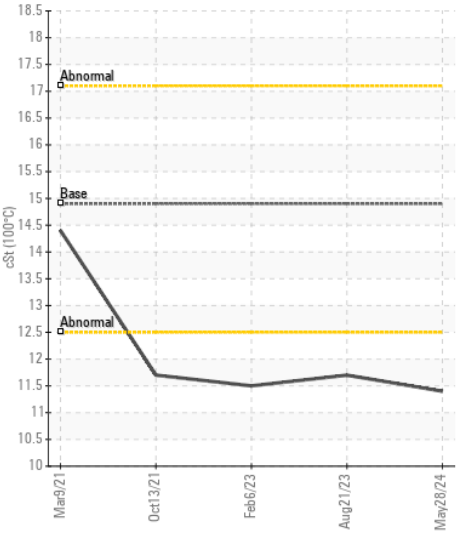
Aluminum (ppm)



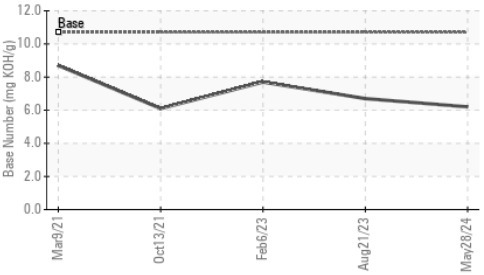
FT-IR (Direct Trend)



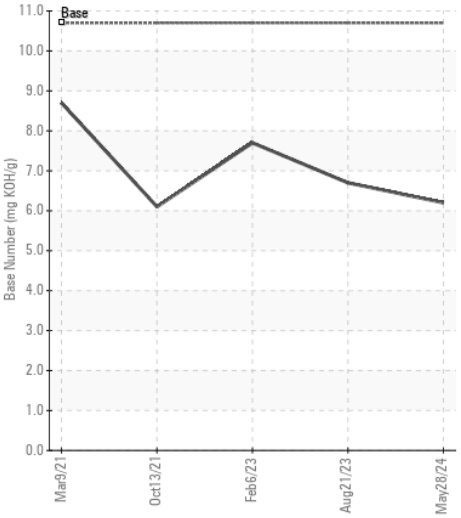
Viscosity @ 100°C



Base Number



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0110941
Lab Number : 06196313
Unique Number : 11058436
Test Package : FLEET (Additional Tests: PercentFuel)

Received : 31 May 2024
Tested : 04 Jun 2024
Diagnosed : 04 Jun 2024 - Wes Davis

GFL Environmental - 629 - Northern A1
3947 US 131 N
Kalkaska, MI
US 49646-8428
Contact: MITCH HERSHBERGER
T: (231)624-0848
F:

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)