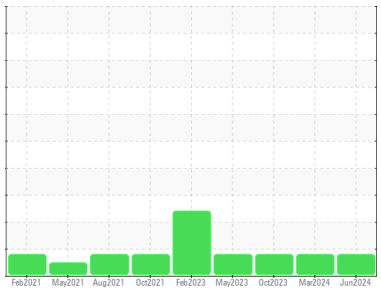
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
WL0097-1321
Component
Diesel Engine
Fluid
CHEVRON DELO 400 XLE 15W40 (--- GAL)

DIAGNOSIS

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0096264**	GFL0104662	GFL0096256
Sample Date		Client Info		**21 Jun 2024**	07 Mar 2024	19 Oct 2023
Machine Age	hrs	Client Info		**13023**	10132	11386
Oil Age	hrs	Client Info		**11386**	0	0
Oil Changed		Client Info		**Changed**	N/A	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
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**54**	33	47
Chromium	ppm	ASTM D5185m	>20	**4**	3	4
Nickel	ppm	ASTM D5185m	>2	**<1**	0	<1
Titanium	ppm	ASTM D5185m	>2	**9**	10	5
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	▲ **93**	▲ 69	▲ 66
Lead	ppm	ASTM D5185m	>40	**0**	0	0
Copper	ppm	ASTM D5185m	>330	**6**	3	11
Tin	ppm	ASTM D5185m	>15	**0**	0	<1
Vanadium	ppm	ASTM D5185m		**0**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**65**	75	52
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**57**	56	93
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**621**	691	631
Calcium	ppm	ASTM D5185m		**1436**	1508	1415
Phosphorus	ppm	ASTM D5185m	760	**633**	668	649
Zinc	ppm	ASTM D5185m	830	**903**	799	778
Sulfur	ppm	ASTM D5185m	2770	**2704**	3225	3192

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**8**	7	10
Sodium	ppm	ASTM D5185m		**29**	21	41
Potassium	ppm	ASTM D5185m	>20	**12**	8	16

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.9**	0.6	1
Nitration	Abs/cm	*ASTM D7624	>20	**12.7**	10.5	11.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**26.2**	22.2	25.8

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**22.7**	18.6	22.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	**5.9**	5.9	6.0

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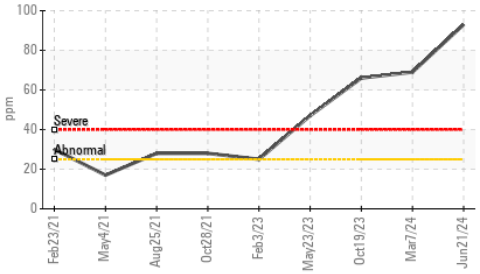
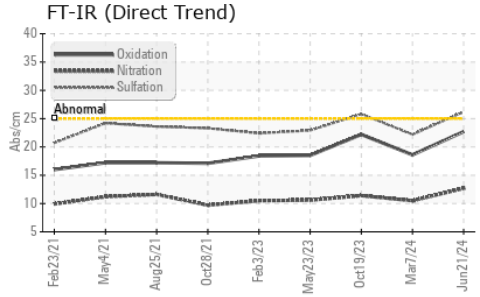
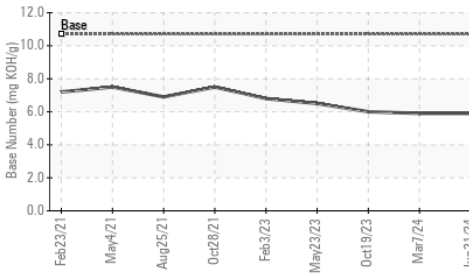
Aluminum (ppm)



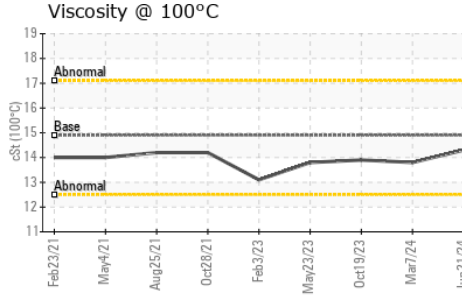
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

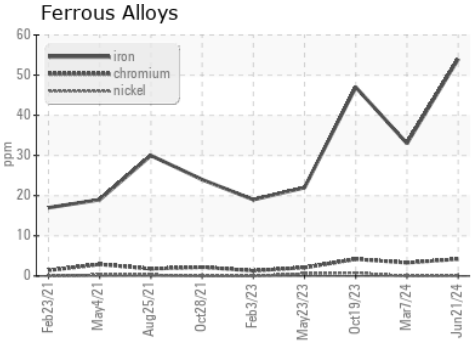


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

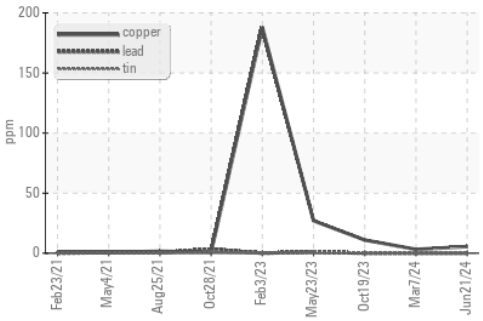
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	**14.3**	13.8	13.9

GRAPHS

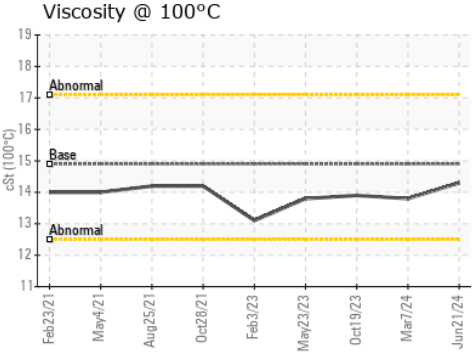
Ferrous Alloys



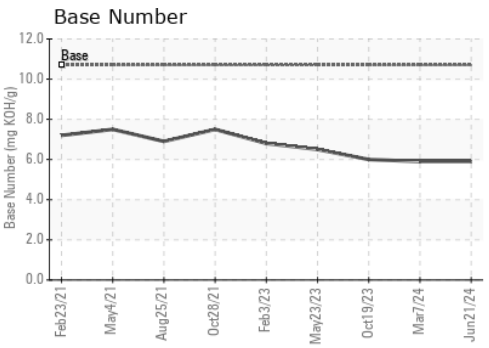
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0096264
Lab Number : 06221063
Unique Number : 11099260
Test Package : FLEET

Received : 26 Jun 2024
Tested : 27 Jun 2024
Diagnosed : 27 Jun 2024 - Don Baldridge

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 - 624 - Elmira Hauling
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Elmira, MI
US 49730
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Report Id: GFL624 [WUSCAR] 06221063 (Generated: 06/27/2024 20:21:40) Rev: 1

Submitted By: KEITH CAMPBELL