



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
(BB50040)
Machine Id
0527m
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 30 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0116047	GFL0116019	GFL0092888
Sample Date		Client Info		12 Jun 2024	03 Jun 2024	19 Feb 2024
Machine Age	mls	Client Info		170463	170463	0
Oil Age	mls	Client Info		170463	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	26	34	10
Chromium	ppm	ASTM D5185m	>20	1	2	1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	2	3
Lead	ppm	ASTM D5185m	>40	2	4	1
Copper	ppm	ASTM D5185m	>330	1	2	1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

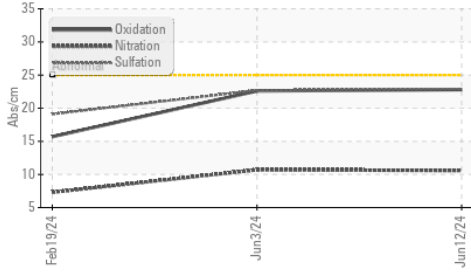
Silicon	ppm	ASTM D5185m	>25	5	6	5
Potassium	ppm	ASTM D5185m	>20	<1	<1	2
Fuel		WC Method	>5	<1.0	<1.0	1.3
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.3	0.1
Nitration	Abs/cm	*ASTM D7624	>20	10.6	10.7	7.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.9	22.7	19.1
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

FLUID CONDITION

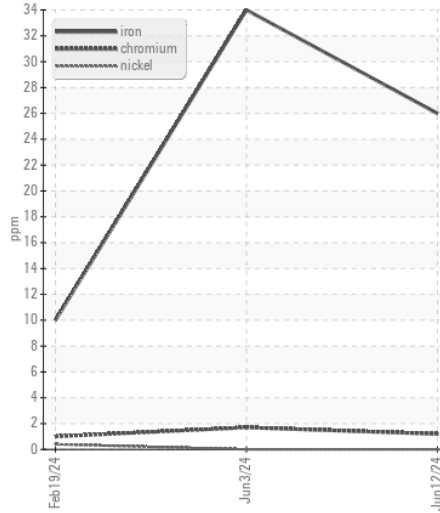
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	2	4	2
Boron	ppm	ASTM D5185m	250	7	5	10
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	58	62	63
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	450	926	973	897
Calcium	ppm	ASTM D5185m	3000	1056	1125	1027
Phosphorus	ppm	ASTM D5185m	1150	1041	1046	1018
Zinc	ppm	ASTM D5185m	1350	1235	1262	1193
Sulfur	ppm	ASTM D5185m	4250	3244	3240	3071
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.8	22.6	15.7
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.9	7.9	7.6
Visc @ 100°C	cSt	ASTM D445	10.9	12.5	12.6	11.9

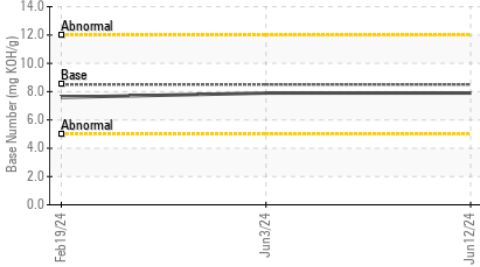
FT-IR (Direct Trend)



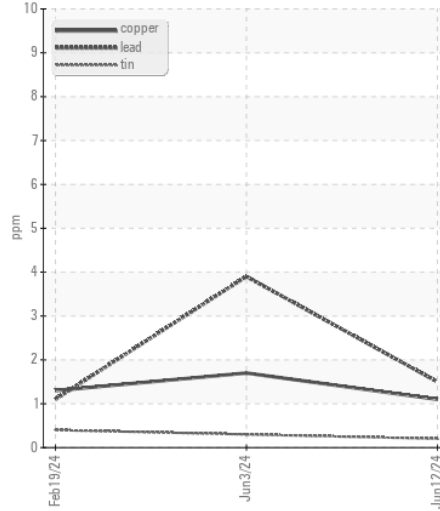
Ferrous Alloys



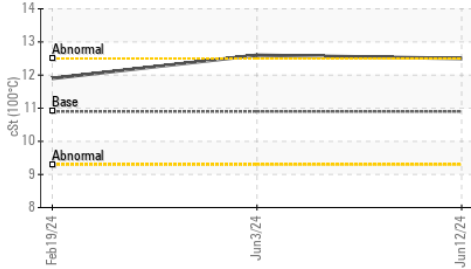
Base Number



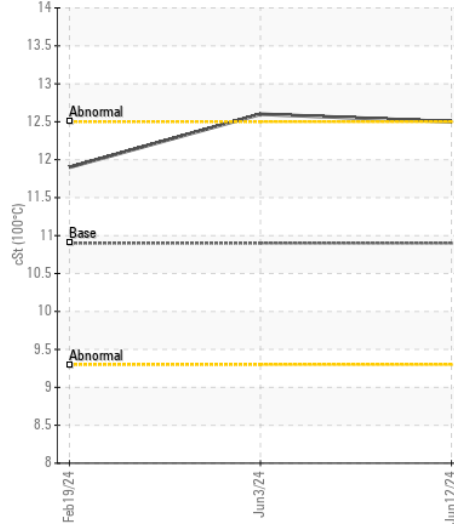
Non-ferrous Metals



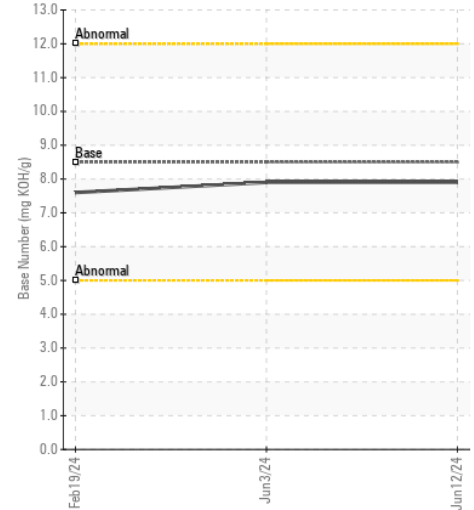
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0116047
Lab Number : 06211259
Unique Number : 11084123
Test Package : FLEET

Received : 17 Jun 2024
Tested : 18 Jun 2024
Diagnosed : 18 Jun 2024 - Wes Davis

GFL Environmental - 641 - Alpena
 1241 KING SETTLEMENT RD
 ALPENA, MI
 US 49707

Contact: DYLAN TOLAN
 dylan.tolan@gflenv.com

T: (989)854-7203

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)