CONST

WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
LIEBHERR 31249
Component
Diesel Engine
Fluid
LIEBHERR MOTOROIL 10W-40 LOW ASH (--- QTS)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

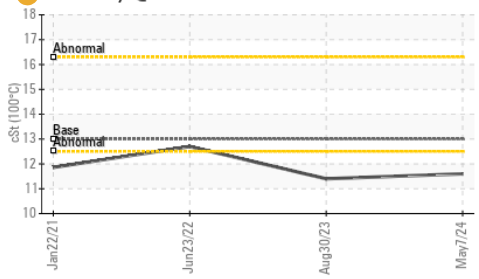
Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil.

FLUID CONDITION

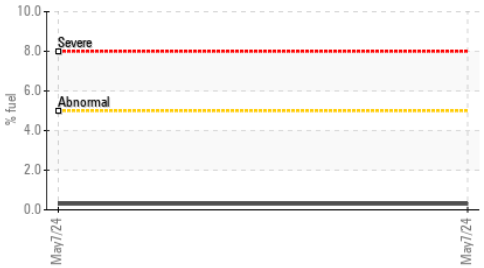
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0905161	WC0716245	WC0689324
Sample Date		Client Info		07 May 2024	30 Aug 2023	23 Jun 2022
Machine Age	hrs	Client Info		3966	3075	2402
Oil Age	hrs	Client Info		1500	500	500
Filter Age	hrs	Client Info		1500	500	500
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	19	19	23
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	4	3
Lead	ppm	ASTM D5185m	>40	0	1	<1
Copper	ppm	ASTM D5185m	>330	5	9	5
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	6	7	6
Potassium	ppm	ASTM D5185m	>20	<1	3	<1
Fuel	%	ASTM D3524	>5	0.3	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	10.0	9.9	11.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	21.7	23.5
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	LIGHT
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		4	5	1
Boron	ppm	ASTM D5185m	169	57	37	51
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	2	1	0	<1
Manganese	ppm	ASTM D5185m	<1	2	1	<1
Magnesium	ppm	ASTM D5185m	724	770	743	187
Calcium	ppm	ASTM D5185m	1323	1397	1458	2236
Phosphorus	ppm	ASTM D5185m	678	781	716	673
Zinc	ppm	ASTM D5185m	776	888	823	839
Sulfur	ppm	ASTM D5185m	2859	3405	3117	2197
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.5	17.4	22.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.28	5.6	5.6	9.6
Visc @ 100°C	cSt	ASTM D445	13.0	11.6	11.4	12.7

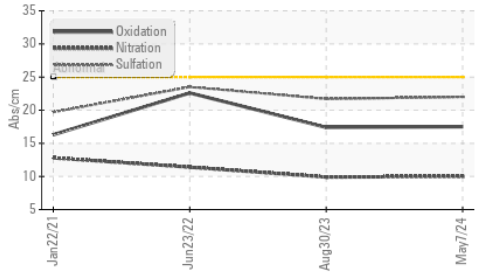
Viscosity @ 100°C



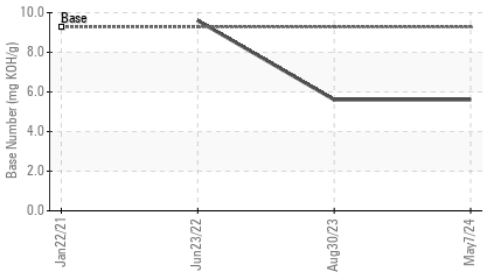
Fuel Dilution



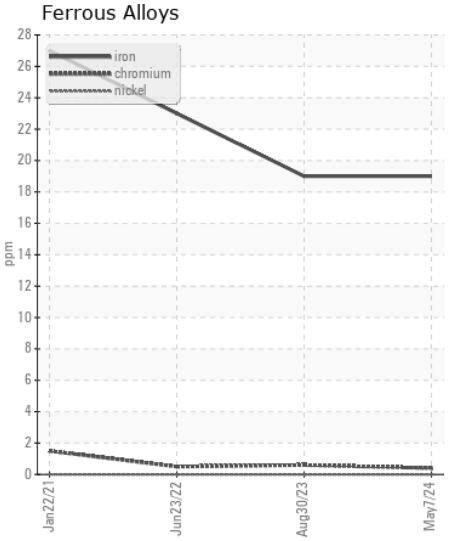
FT-IR (Direct Trend)



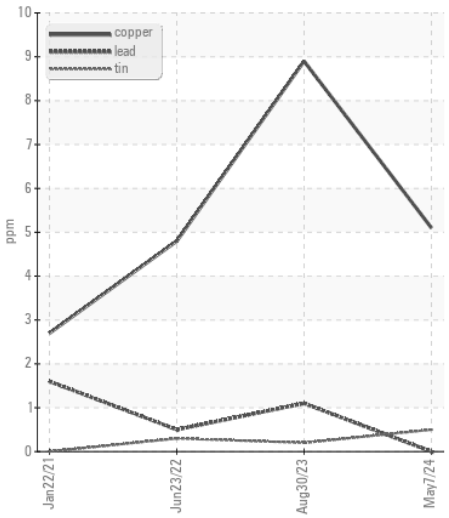
Base Number



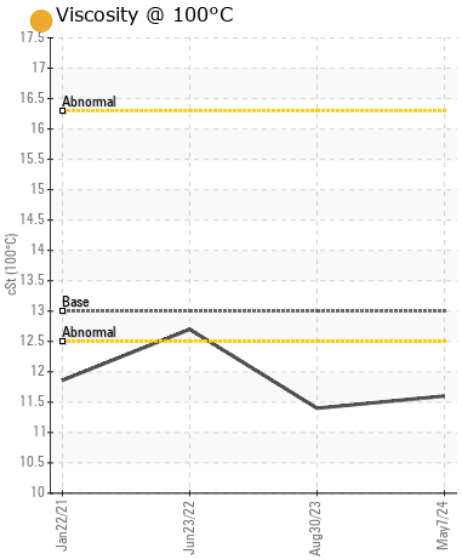
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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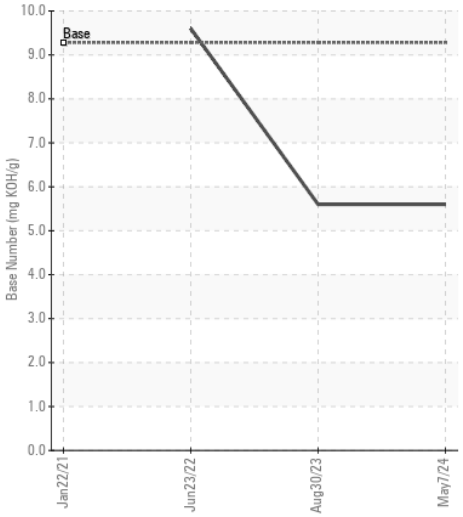

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0905161
Lab Number : 06176754
Unique Number : 11022807
Test Package : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)

Received : 13 May 2024
Tested : 15 May 2024
Diagnosed : 15 May 2024 - Sean Felton

SULLIVAN EASTERN INC-LIEBHERR
2860 C SLATER RD
MORRISVILLE, NC
US 27560
Contact: CHRIS CALTON

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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