



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**LIEBHERR 26243**  
Component  
**Diesel Engine**  
Fluid  
**CHEVRON 15W40 (20 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0924395</b>	WC0905388	WC0846320
Sample Date		Client Info		<b>17 May 2024</b>	07 Mar 2024	16 Nov 2023
Machine Age	hrs	Client Info		<b>14987</b>	14781	4554
Oil Age	hrs	Client Info		<b>2000</b>	1750	250
Filter Age	hrs	Client Info		<b>2000</b>	1750	250
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>5</b>	7	8
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	2
Silver	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	2	2
Lead	ppm	ASTM D5185m	>30	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185m	>125	<b>1</b>	1	2
Tin	ppm	ASTM D5185m	>5	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

There is no indication of any contamination in the oil.

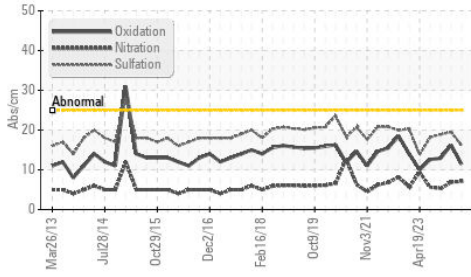
Silicon	ppm	ASTM D5185m	>60	<b>7</b>	8	7
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	8	3
Fuel		WC Method	>5	<b>&lt;1.0</b>	0.8	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.2</b>	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.1</b>	6.9	5.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.1</b>	19.5	18.9
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

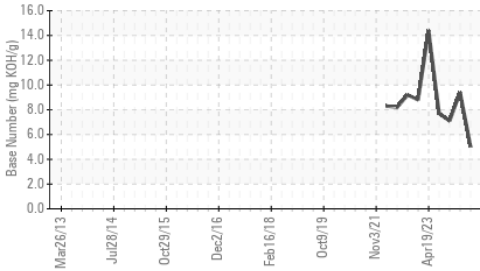
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>50	<b>2</b>	5	2
Boron	ppm	ASTM D5185m		<b>456</b>	272	450
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>81</b>	67	87
Manganese	ppm	ASTM D5185m		<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>380</b>	599	385
Calcium	ppm	ASTM D5185m		<b>1338</b>	1319	1495
Phosphorus	ppm	ASTM D5185m		<b>1059</b>	889	1096
Zinc	ppm	ASTM D5185m		<b>1157</b>	1041	1319
Sulfur	ppm	ASTM D5185m		<b>3437</b>	3014	3464
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>11.4</b>	16.2	12.9
Base Number (BN)	mg KOH/g	ASTM D2896		<b>5.0</b>	9.4	7.1
Visc @ 100°C	cSt	ASTM D445	14.4	<b>13.1</b>	12.2	12.9

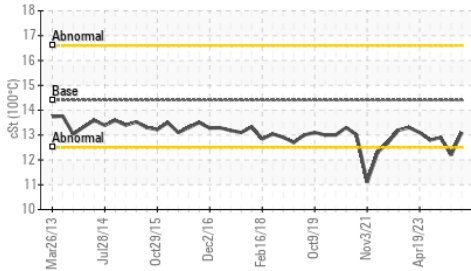
**FT-IR (Direct Trend)**



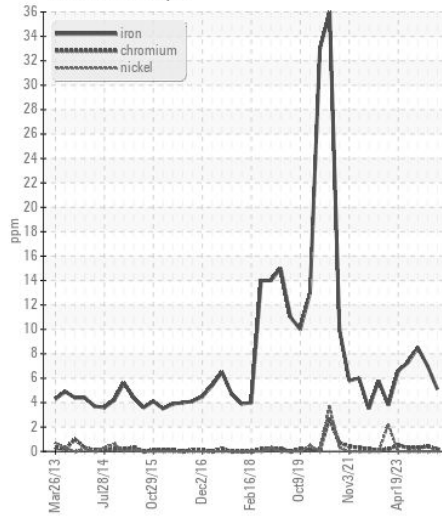
**Base Number**



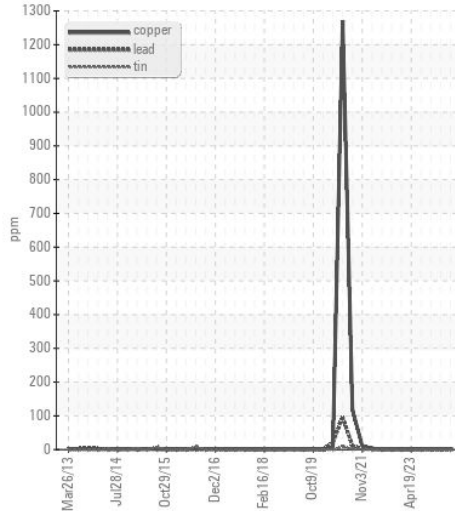
**Viscosity @ 100°C**



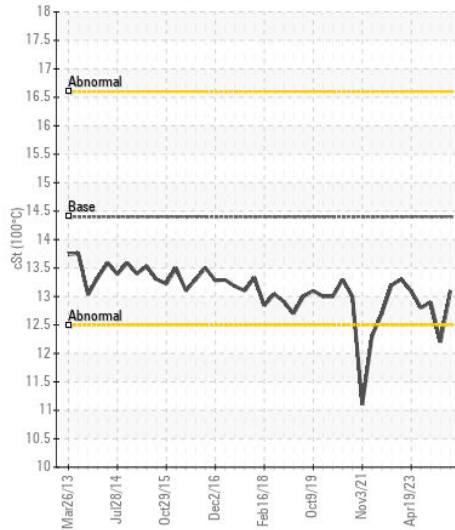
**Ferrous Alloys**



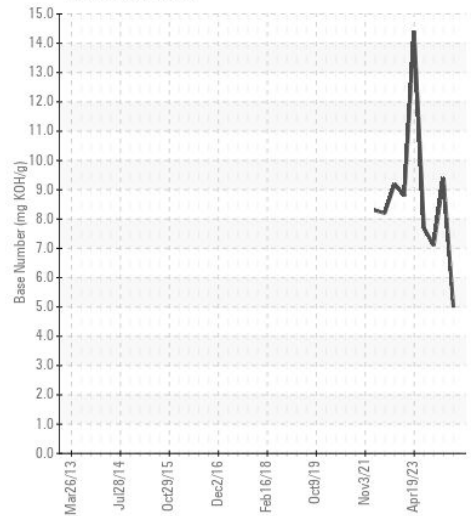
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0924395 **Received** : 21 May 2024  
**Lab Number** : 06185927 **Tested** : 22 May 2024  
**Unique Number** : 11042679 **Diagnosed** : 22 May 2024 - Wes Davis  
**Test Package** : CONST ( Additional Tests: TBN )

**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)

T:  
 F: (919)484-2136