



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
AMR-Topoka
Machine Id
112146 LIEBHERR A924C 063247-1049
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- 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		DJJ0023249	DJJ0019415	DJJ0017149
Sample Date		Client Info		02 Apr 2024	20 Jun 2023	20 Oct 2022
Machine Age	hrs	Client Info		8606	8076	0
Oil Age	hrs	Client Info		250	250	250
Filter Age	hrs	Client Info		250	250	250
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	2	6	8
Chromium	ppm	ASTM D5185m	>5	0	0	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>15	<1	<1	2
Lead	ppm	ASTM D5185m	>30	0	0	<1
Copper	ppm	ASTM D5185m	>125	<1	2	1
Tin	ppm	ASTM D5185m	>5	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
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.

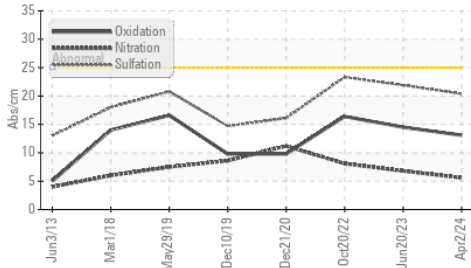
Silicon	ppm	ASTM D5185m	>60	6	8	8
Potassium	ppm	ASTM D5185m	>20	<1	2	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.9	1.1	1.3
Nitration	Abs/cm	*ASTM D7624	>20	5.6	6.8	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.4	21.9	23.3
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

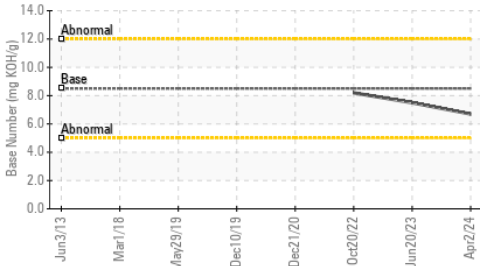
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>158	<1	2	1
Boron	ppm	ASTM D5185m	250	432	411	302
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	96	106	108
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m	450	437	467	496
Calcium	ppm	ASTM D5185m	3000	1548	1582	1446
Phosphorus	ppm	ASTM D5185m	1150	1081	941	666
Zinc	ppm	ASTM D5185m	1350	1256	1157	855
Sulfur	ppm	ASTM D5185m	4250	3995	3657	2634
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.1	14.5	16.4
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	6.7	7.5	8.2
Visc @ 100°C	cSt	ASTM D445	14.4	13.5	13.3	13.2

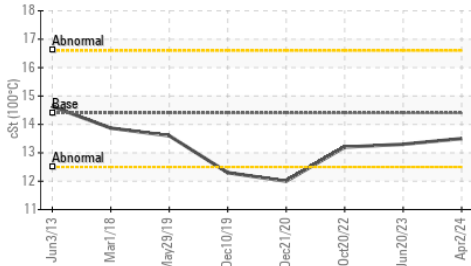
FT-IR (Direct Trend)



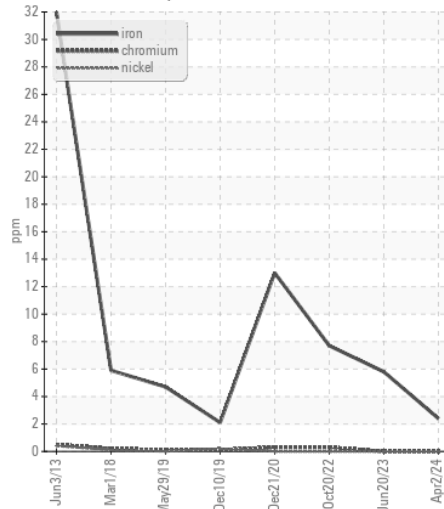
Base Number



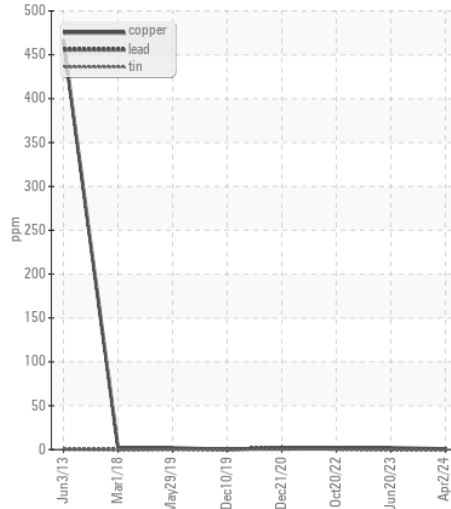
Viscosity @ 100°C



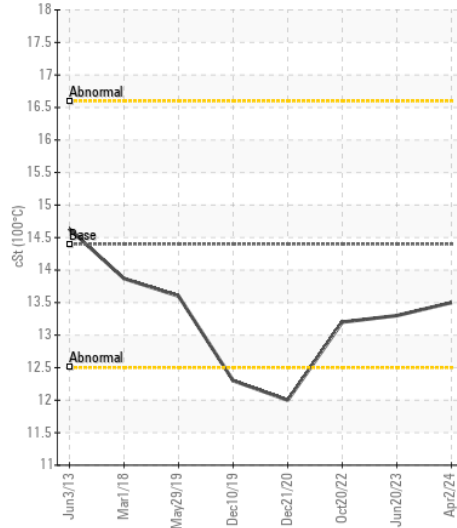
Ferrous Alloys



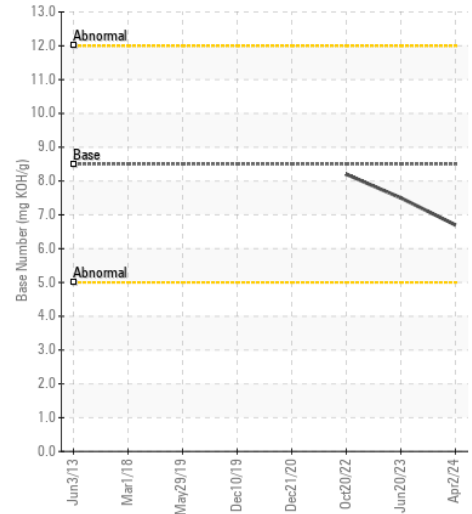
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : DJJ0023249

Lab Number : 06147022

Unique Number : 10977100

Test Package : CONST (Additional Tests: TBN)

Received : 12 Apr 2024

Tested : 15 Apr 2024

Diagnosed : 15 Apr 2024 - Wes Davis

ADVANTAGE METALS RECYCLING - TOPEKA

1628 NW GORDON ST

TOPEKA, KS

US 66608

Contact: SETH WATSON

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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)