



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
L114
 Component
Diesel Engine
 Fluid
SHELL 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0916572	WC0803503	---
Sample Date		Client Info		19 Apr 2024	26 Apr 2023	---
Machine Age	hrs	Client Info		9747	9010	---
Oil Age	hrs	Client Info		180	278	---
Filter Age	hrs	Client Info		180	278	---
Oil Changed		Client Info		N/A	Changed	---
Filter Changed		Client Info		N/A	Changed	---
Sample Status				NORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	13	10	---
Chromium	ppm	ASTM D5185m	>20	<1	<1	---
Nickel	ppm	ASTM D5185m	>4	0	<1	---
Titanium	ppm	ASTM D5185m		69	<1	---
Silver	ppm	ASTM D5185m	>3	<1	0	---
Aluminum	ppm	ASTM D5185m	>20	3	<1	---
Lead	ppm	ASTM D5185m	>40	<1	1	---
Copper	ppm	ASTM D5185m	>330	7	112	---
Tin	ppm	ASTM D5185m	>15	0	<1	---
Vanadium	ppm	ASTM D5185m		<1	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

There is no indication of any contamination in the oil.

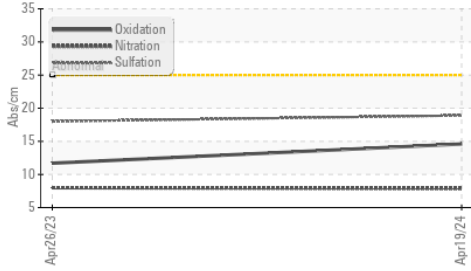
Silicon	ppm	ASTM D5185m	>25	10	5	---
Potassium	ppm	ASTM D5185m	>20	2	3	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.2	0.2	---
Nitration	Abs/cm	*ASTM D7624	>20	7.9	8.0	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.9	18.0	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

FLUID CONDITION

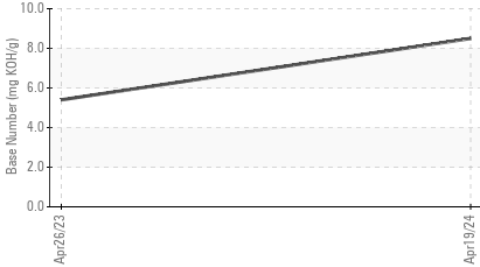
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>150	2	<1	---
Boron	ppm	ASTM D5185m		134	36	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		16	12	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m		554	253	---
Calcium	ppm	ASTM D5185m		1808	2076	---
Phosphorus	ppm	ASTM D5185m		1072	921	---
Zinc	ppm	ASTM D5185m		1277	1159	---
Sulfur	ppm	ASTM D5185m		4447	3738	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	11.7	---
Base Number (BN)	mg KOH/g	ASTM D2896		8.5	5.4	---
Visc @ 100°C	cSt	ASTM D445		14.7	14.5	---

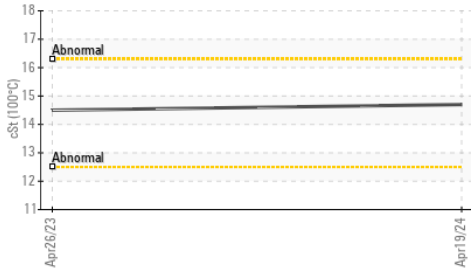
FT-IR (Direct Trend)



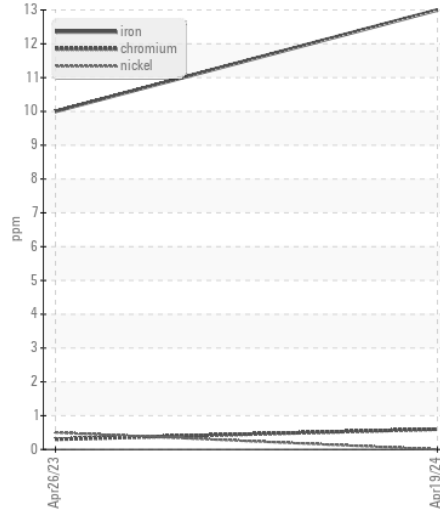
Base Number



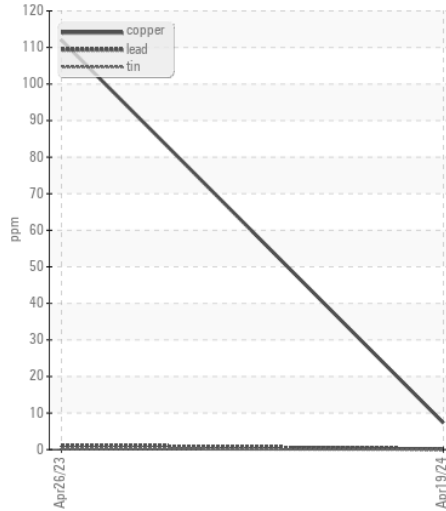
Viscosity @ 100°C



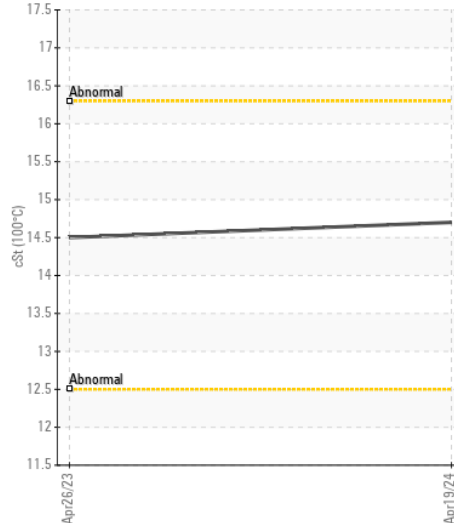
Ferrous Alloys



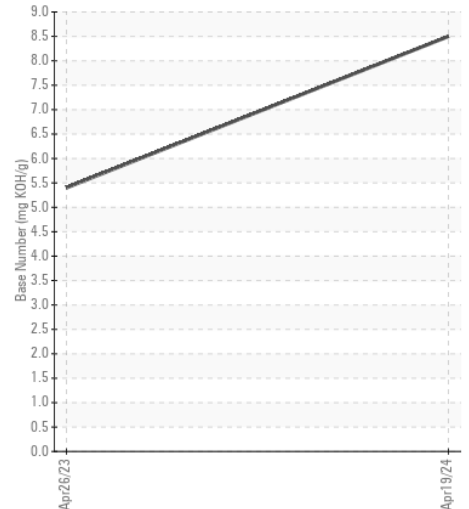
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0916572 **Received** : 29 May 2024
Lab Number : 06193503 **Tested** : 30 May 2024
Unique Number : 11050255 **Diagnosed** : 30 May 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

METRO METALS NORTHWEST INC
 2202 EAST RIVER ST
 TACOMA, WA
 US 98421

Contact: MICHELE MARTINEZ
 mmartinez@metrometalswa.com

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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