



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
L116
 Component
Diesel Engine
 Fluid
SHELL 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0810971	---	---
Sample Date		Client Info		15 Jun 2023	---	---
Machine Age	hrs	Client Info		4035	---	---
Oil Age	hrs	Client Info		222	---	---
Filter Age	hrs	Client Info		222	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				NORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	39	---	---
Chromium	ppm	ASTM D5185m	>20	4	---	---
Nickel	ppm	ASTM D5185m	>4	0	---	---
Titanium	ppm	ASTM D5185m		18	---	---
Silver	ppm	ASTM D5185m	>3	0	---	---
Aluminum	ppm	ASTM D5185m	>20	5	---	---
Lead	ppm	ASTM D5185m	>40	2	---	---
Copper	ppm	ASTM D5185m	>330	12	---	---
Tin	ppm	ASTM D5185m	>15	0	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

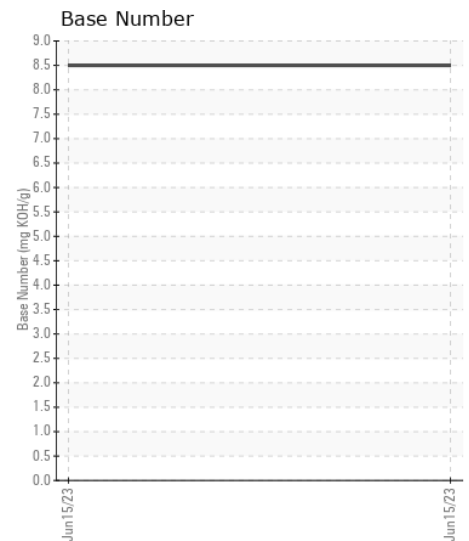
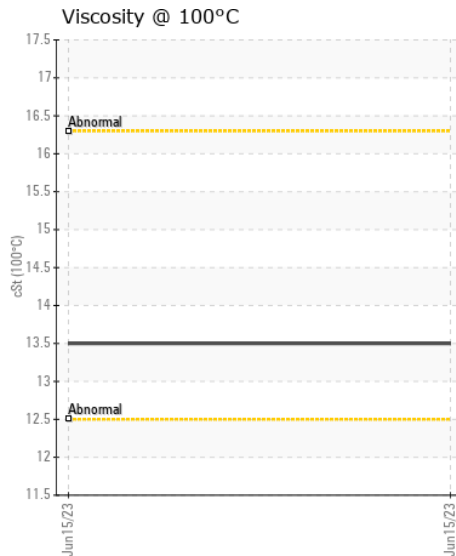
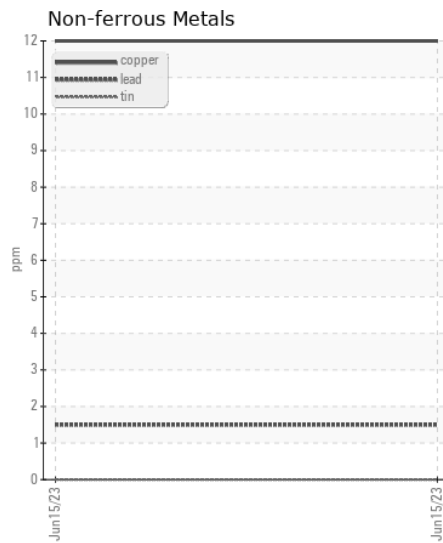
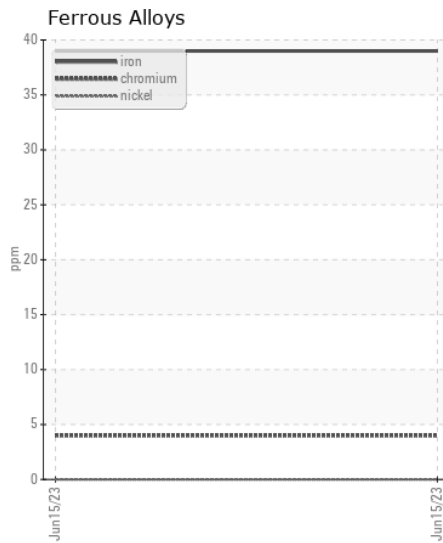
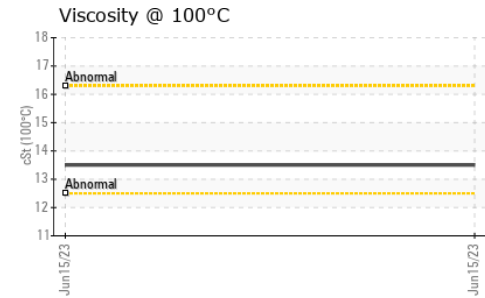
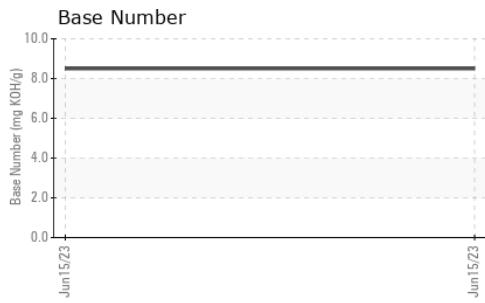
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	9	---	---
Potassium	ppm	ASTM D5185m	>20	<1	---	---
Fuel		WC Method	>5	<1.0	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.6	---	---
Nitration	Abs/cm	*ASTM D7624	>20	7.7	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.9	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m	>150	4	---	---
Boron	ppm	ASTM D5185m		35	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		29	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m		401	---	---
Calcium	ppm	ASTM D5185m		2033	---	---
Phosphorus	ppm	ASTM D5185m		1010	---	---
Zinc	ppm	ASTM D5185m		1214	---	---
Sulfur	ppm	ASTM D5185m		4211	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.7	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		8.5	---	---
Visc @ 100°C	cSt	ASTM D445		13.5	---	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0810971 **Received** : 23 Jun 2023
Lab Number : 05881806 **Tested** : 23 Jun 2023
Unique Number : 10532289 **Diagnosed** : 27 Jun 2023 - Angela Borella
Test Package : CONST (Additional Tests: TBN)

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

Contact: MICHELE MARTINEZ
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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)

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