



# OIL ANALYSIS REPORT

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

Machine Id  
**CUMMINS MARC 82 MAIN**  
Component  
**Diesel Engine**  
Fluid  
**DURALENE Dura-Max 15W40 (--- QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>DC0035769</b>	DC0030045	DC0024622
Sample Date		Client Info		<b>18 Mar 2024</b>	13 Sep 2023	31 May 2023
Machine Age	mls	Client Info		<b>0</b>	0	0
Oil Age	mls	Client Info		<b>0</b>	0	0
Filter Age	mls	Client Info		<b>0</b>	0	0
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>2</b>	3	2
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>0</b>	1	0
Lead	ppm	ASTM D5185m	>40	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185m	>330	<b>1</b>	3	1
Tin	ppm	ASTM D5185m	>15	<b>0</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

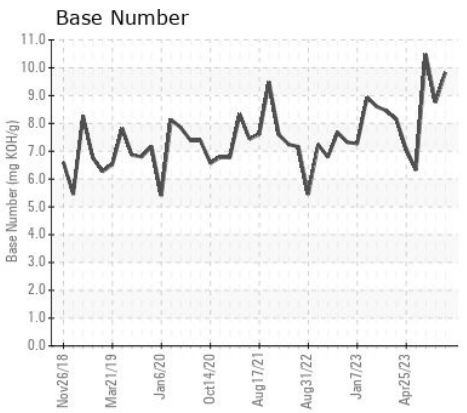
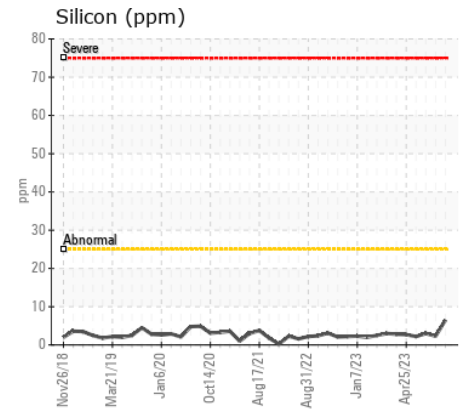
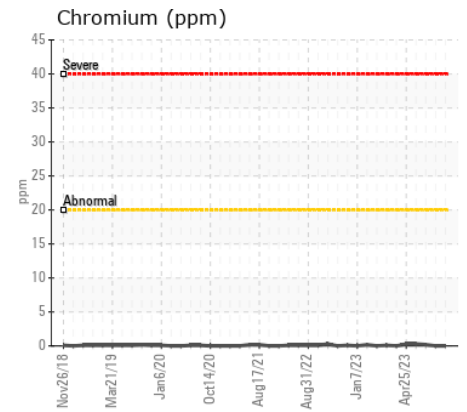
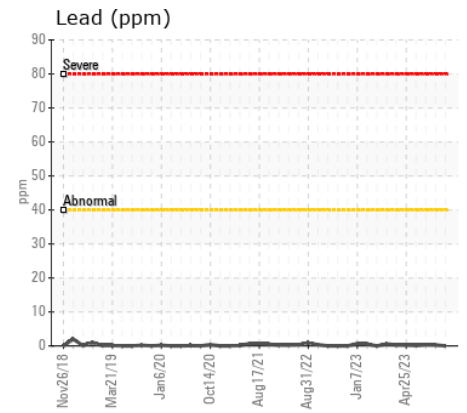
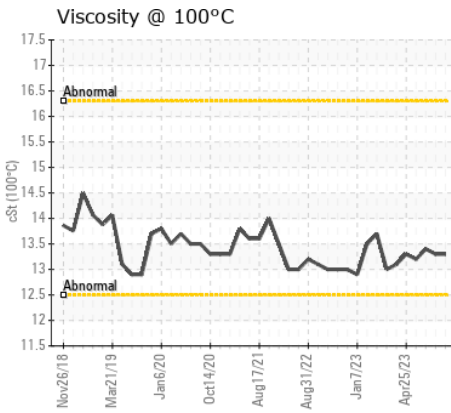
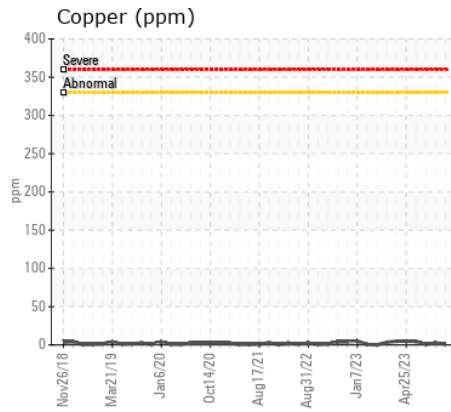
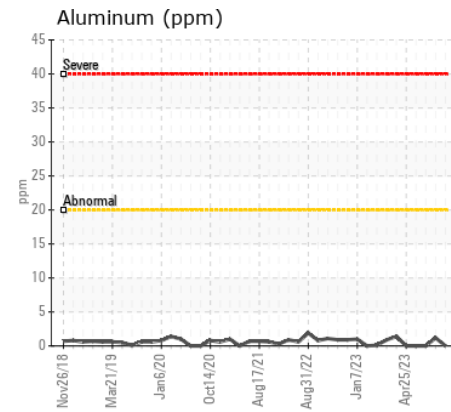
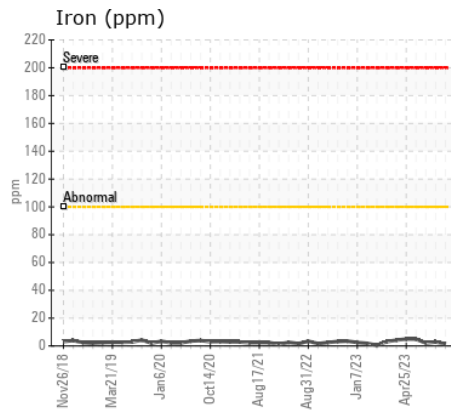
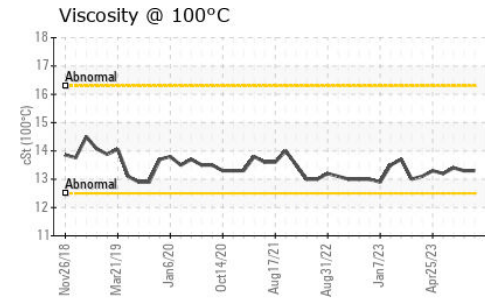
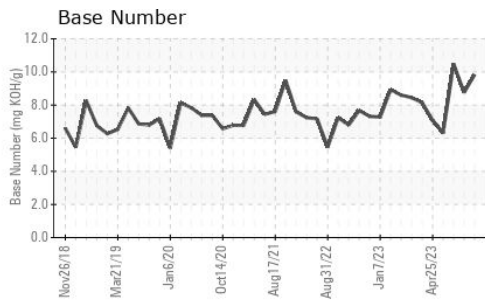
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>6</b>	2	3
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	2	1
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<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>0.1</b>	0	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.3</b>	8.5	6.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.7</b>	21.5	16.5
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		<b>2</b>	0	<1
Boron	ppm	ASTM D5185m		<b>35</b>	6	2
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>50</b>	11	3
Manganese	ppm	ASTM D5185m		<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>823</b>	154	50
Calcium	ppm	ASTM D5185m		<b>1415</b>	2281	2320
Phosphorus	ppm	ASTM D5185m		<b>841</b>	879	909
Zinc	ppm	ASTM D5185m		<b>1007</b>	1080	1122
Sulfur	ppm	ASTM D5185m		<b>3101</b>	3686	4616
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.0</b>	13.7	9.3
Base Number (BN)	mg KOH/g	ASTM D2896		<b>9.83</b>	8.76	10.48
Visc @ 100°C	cSt	ASTM D445		<b>13.3</b>	13.3	13.4



Certificate L2367

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

**Sample No.** : DC0035769

**Lab Number** : 06123888

**Unique Number** : 10938039

**Test Package** : MOB 2

**Received** : 20 Mar 2024

**Tested** : 21 Mar 2024

**Diagnosed** : 22 Mar 2024 - Don Baldrige

**ALSTOM - BALTIMORE**

1600 LUDLOW ST

BALTIMORE, MD

US 21230

Contact: SEAN MCCARTY

sean.mccarty@rail.bombardier.com

T:

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)

F: (443)220-0469