



# OIL ANALYSIS REPORT

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

Machine Id  
**CAT MARC 12**  
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>DC0028853</b>	DC0030014	DC0025708
Sample Date		Client Info		<b>07 Jan 2024</b>	20 Nov 2023	01 Oct 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>N/A</b>	Changed	Not Changed
Filter Changed		Client Info		<b>N/A</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>10</b>	22	9
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	1	<1
Nickel	ppm	ASTM D5185m	>2	<b>1</b>	2	2
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>&lt;1</b>	2	1
Lead	ppm	ASTM D5185m	>40	<b>0</b>	2	0
Copper	ppm	ASTM D5185m	>330	<b>1</b>	2	<1
Tin	ppm	ASTM D5185m	>15	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

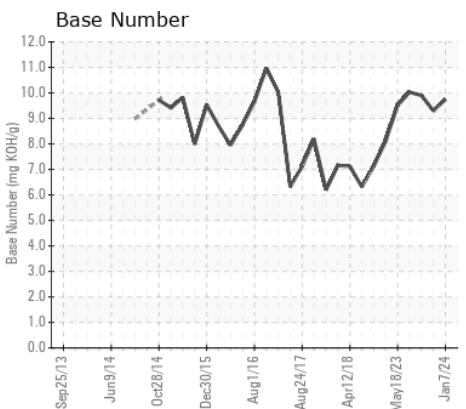
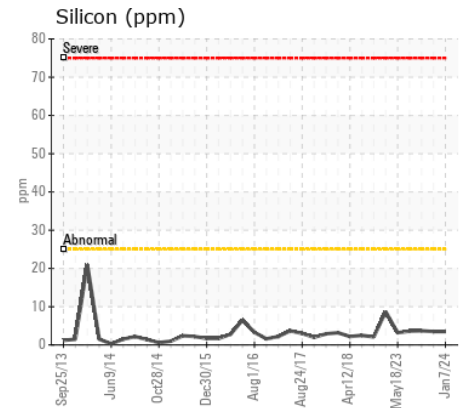
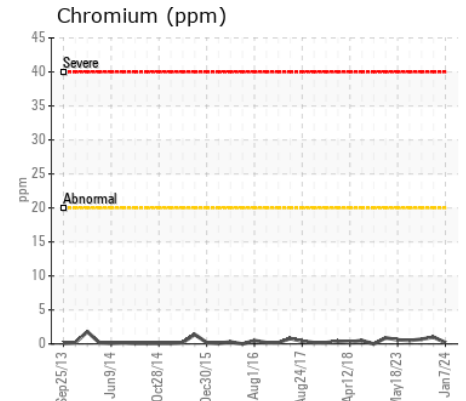
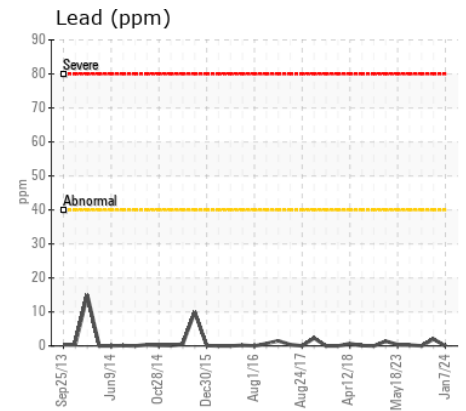
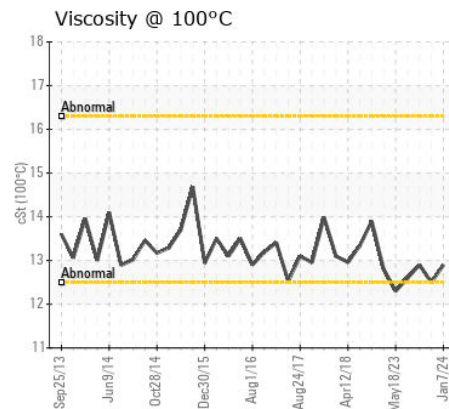
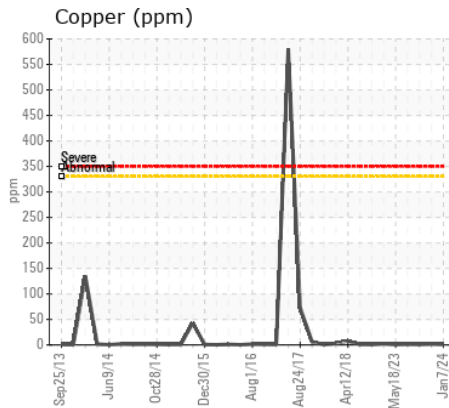
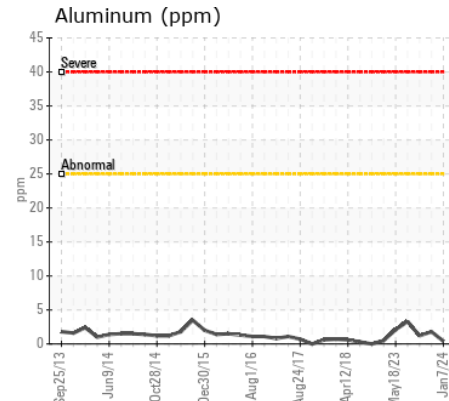
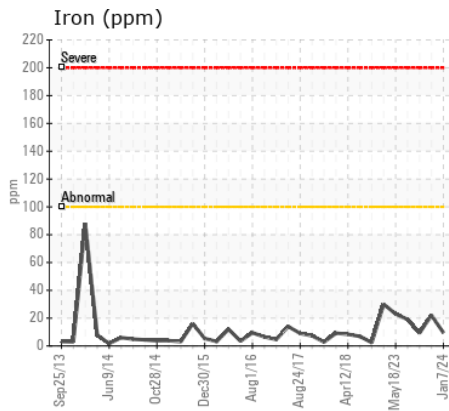
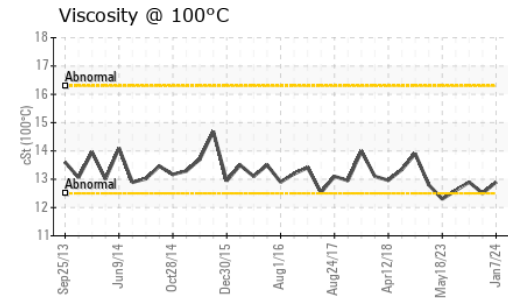
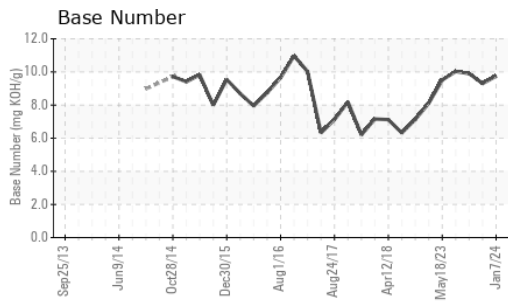
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>4</b>	4	4
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>0.2</b>	0.4	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.6</b>	8.4	7.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.5</b>	19.5	18.4
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>	2	3
Boron	ppm	ASTM D5185m		<b>34</b>	17	19
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>42</b>	28	24
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>673</b>	430	390
Calcium	ppm	ASTM D5185m		<b>1302</b>	1684	1688
Phosphorus	ppm	ASTM D5185m		<b>770</b>	819	801
Zinc	ppm	ASTM D5185m		<b>896</b>	971	967
Sulfur	ppm	ASTM D5185m		<b>2454</b>	2845	3055
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.7</b>	15.3	13.3
Base Number (BN)	mg KOH/g	ASTM D2896		<b>9.75</b>	9.30	9.90
Visc @ 100°C	cSt	ASTM D445		<b>12.9</b>	12.5	12.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DC0028853 **Received** : 09 Jan 2024  
**Lab Number** : 06056015 **Diagnosed** : 11 Jan 2024  
**Unique Number** : 10821964 **Diagnostician** : Jonathan Hester  
**Test Package** : MOB 2

**ALSTOM - BALTIMORE**  
 1600 LUDLOW ST  
 BALTIMORE, MD  
 US 21230  
 Contact: SEAN MCCARTY  
 sean.mccarty@rail.bombardier.com  
 T:  
 F: (443)220-0469

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)