



# OIL ANALYSIS REPORT

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

Machine Id  
**EMD MARC 14 MAIN**  
 Component  
**Diesel Engine**  
 Fluid  
**BRAD PENN DDS PLUS SAE 40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>DC0035763</b>	DC0034382	DC0028908
Sample Date		Client Info		<b>18 Mar 2024</b>	19 Feb 2024	02 Jan 2024
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	N/A
Filter Changed		Client Info		<b>Changed</b>	Not Changd	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>19</b>	18	19
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	2
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	<1
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>2</b>	3	3
Lead	ppm	ASTM D5185m	>40	<b>9</b>	9	9
Copper	ppm	ASTM D5185m	>330	<b>45</b>	42	47
Tin	ppm	ASTM D5185m	>15	<b>9</b>	10	10
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

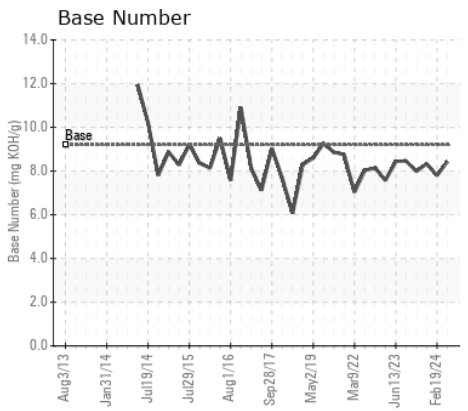
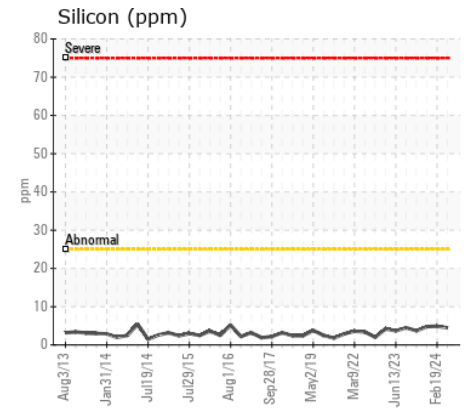
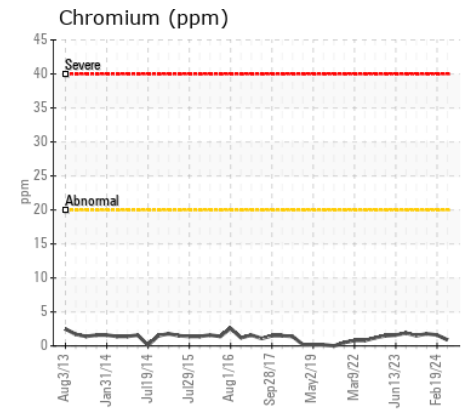
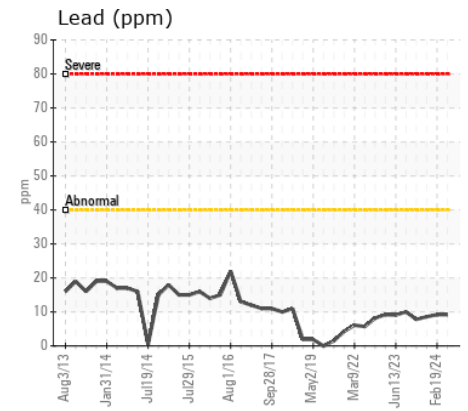
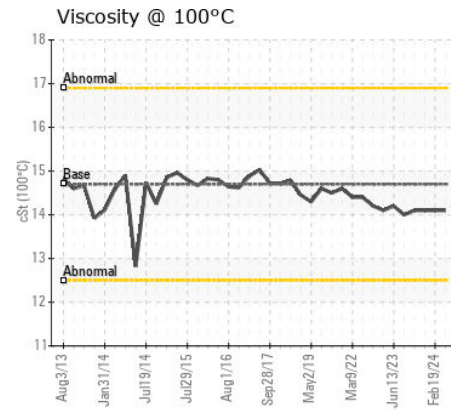
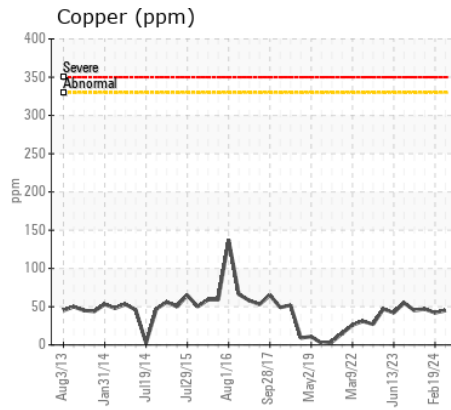
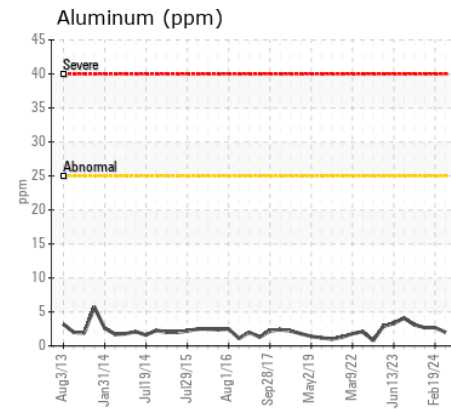
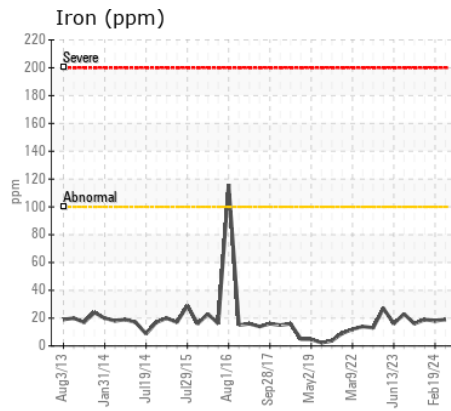
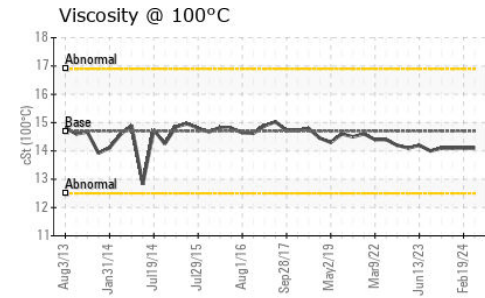
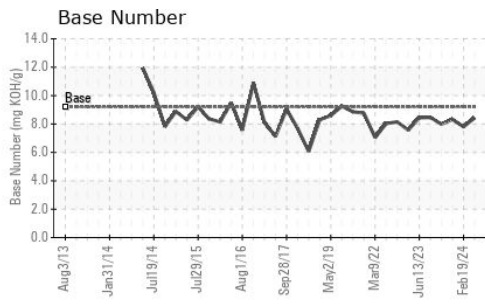
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>4</b>	5	5
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	1	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>0.5</b>	0.5	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.0</b>	10.0	10.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>17.8</b>	17.8	17.5
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>4</b>	5	2
Boron	ppm	ASTM D5185m		<b>34</b>	33	32
Barium	ppm	ASTM D5185m		<b>0</b>	0	2
Molybdenum	ppm	ASTM D5185m		<b>47</b>	44	45
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>28</b>	18	12
Calcium	ppm	ASTM D5185m		<b>3510</b>	3305	3171
Phosphorus	ppm	ASTM D5185m		<b>40</b>	32	51
Zinc	ppm	ASTM D5185m	10	<b>45</b>	20	15
Sulfur	ppm	ASTM D5185m		<b>3511</b>	2850	3002
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>11.4</b>	11.2	11.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.2	<b>8.43</b>	7.8	8.33
Visc @ 100°C	cSt	ASTM D445	14.7	<b>14.1</b>	14.1	14.1



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DC0035763  
**Lab Number** : 06123887  
**Unique Number** : 10938038  
**Test Package** : MOB 2

**Received** : 20 Mar 2024  
**Tested** : 21 Mar 2024  
**Diagnosed** : 21 Mar 2024 - Wes Davis

**ALSTOM - BALTIMORE**  
 1600 LUDLOW ST  
 BALTIMORE, MD  
 US 21230

Contact: SEAN MCCARTY  
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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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