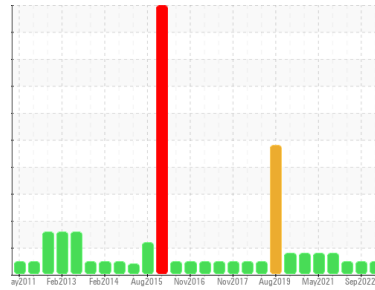




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**[BOSTON]**  
 Machine Id  
**ALSTOM R045**

Component  
**Gearbox**  
 Fluid  
**TOTAL CARTER SH 220 (3 GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>WC0781655</b>	WC0667726	WC0592322
Sample Date	Client Info			<b>11 Nov 2023</b>	11 Sep 2022	13 May 2022
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed	Client Info			<b>Not Chngd</b>	N/A	Not Chngd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	<b>148</b>	147	91
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	1	0
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>3</b>	4	3
Lead	ppm	ASTM D5185m	>50	<b>2</b>	<1	<1
Copper	ppm	ASTM D5185m	>200	<b>46</b>	50	50
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	0
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>0</b>	9	2
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	<1	0
Manganese	ppm	ASTM D5185m		<b>2</b>	2	0
Magnesium	ppm	ASTM D5185m		<b>1</b>	1	0
Calcium	ppm	ASTM D5185m		<b>5</b>	8	0
Phosphorus	ppm	ASTM D5185m		<b>333</b>	429	340
Zinc	ppm	ASTM D5185m		<b>92</b>	40	74
Sulfur	ppm	ASTM D5185m		<b>3279</b>	5662	3698

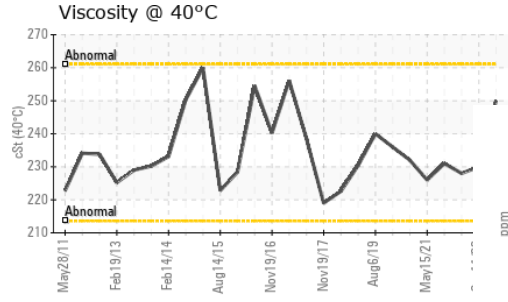
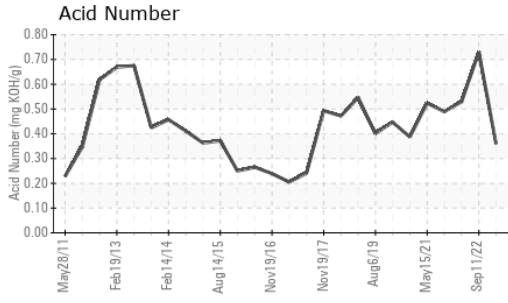
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	<b>20</b>	35	14
Sodium	ppm	ASTM D5185m		<b>20</b>	27	16
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0	0

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.36</b>	0.73	0.53

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
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
Free Water	scalar	*Visual		<b>NEG</b>	NEG	NEG



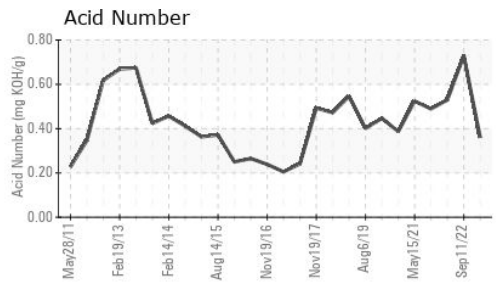
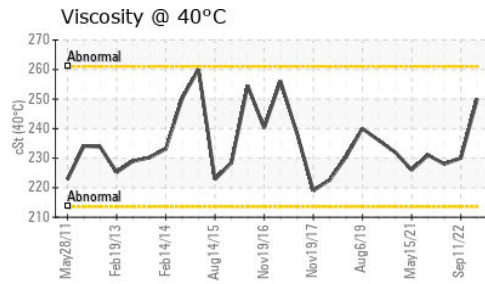
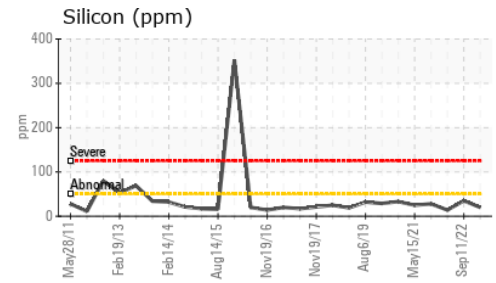
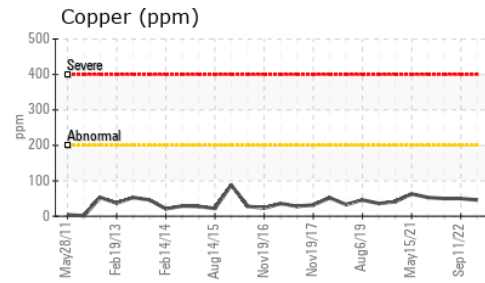
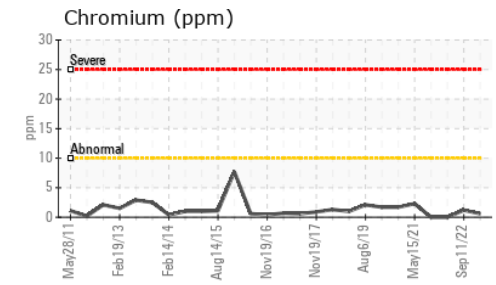
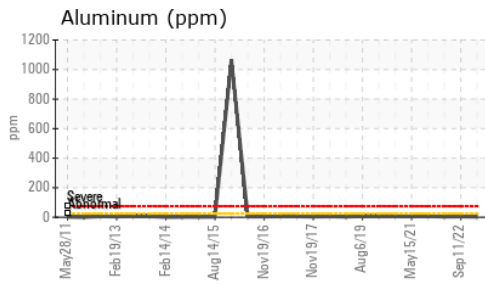
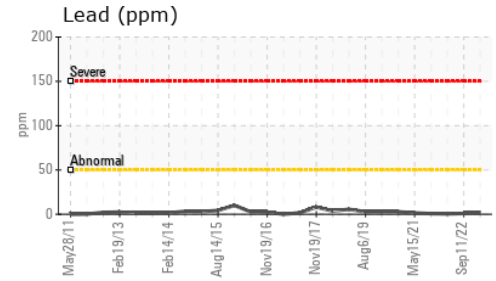
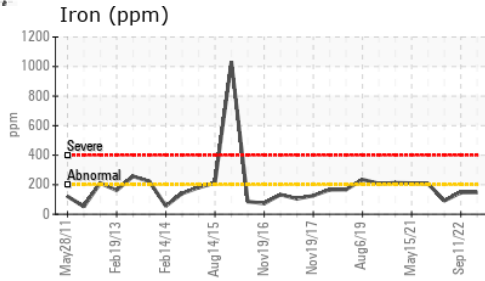
# OIL ANALYSIS REPORT



FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		250	230	228

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color				no image	no image	no image
Bottom				no image	no image	no image

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0781655 **Received** : 17 Nov 2023  
**Lab Number** : 06011032 **Diagnosed** : 20 Nov 2023  
**Unique Number** : 10750176 **Diagnostician** : Wes Davis  
**Test Package** : MOB 2

**AMTRAK**  
 1401 W STREET NE, HIGH SPEED RAIL 2ND FLOOR  
 WASHINGTON, DC  
 US 20018

Contact: MICHAEL PORTER  
 michael.porter@amtrak.com  
 T: (202)870-1399

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: