



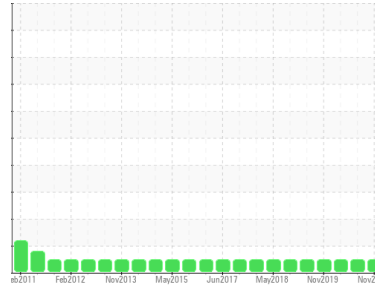
# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**[BOSTON]**  
 Machine Id  
**ALSTOM R034**  
 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>WC0798721</b>	WC0571682	WC0417765
Sample Date	Client Info		<b>11 Nov 2023</b>	16 Nov 2021	06 May 2021
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>N/A</b>	Not Changd	N/A
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >200	<b>105</b>	131	82
Chromium	ppm	ASTM D5185m >10	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m >10	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >25	<b>2</b>	2	1
Lead	ppm	ASTM D5185m >50	<b>1</b>	7	4
Copper	ppm	ASTM D5185m >200	<b>47</b>	66	53
Tin	ppm	ASTM D5185m >10	<b>&lt;1</b>	<1	<1
Antimony	ppm	ASTM D5185m >5	<b>---</b>	0	0
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>1</b>	3	4
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>0</b>	<1	<1
Manganese	ppm	ASTM D5185m	<b>1</b>	2	1
Magnesium	ppm	ASTM D5185m	<b>0</b>	0	<1
Calcium	ppm	ASTM D5185m	<b>7</b>	4	2
Phosphorus	ppm	ASTM D5185m	<b>371</b>	353	358
Zinc	ppm	ASTM D5185m	<b>84</b>	147	115
Sulfur	ppm	ASTM D5185m	<b>3748</b>	2383	2400

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	<b>16</b>	9	8
Sodium	ppm	ASTM D5185m	<b>19</b>	24	21
Potassium	ppm	ASTM D5185m >20	<b>0</b>	0	1

## FLUID DEGRADATION

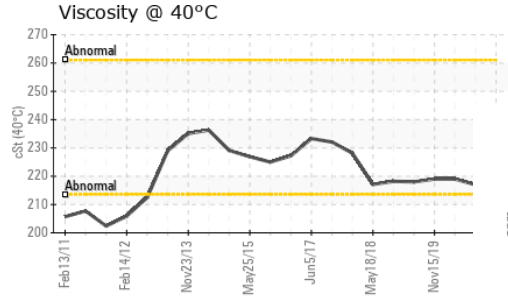
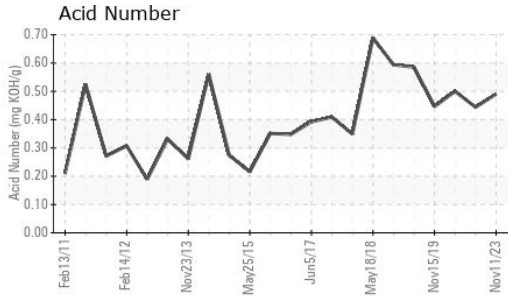
	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.49</b>	0.444	0.500

## VISUAL

	method	limit/base	current	history1	history2
White Metal	scalar	*Visual NONE	<b>NONE</b>	NONE	LIGHT
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>	NONE	NONE



# OIL ANALYSIS REPORT

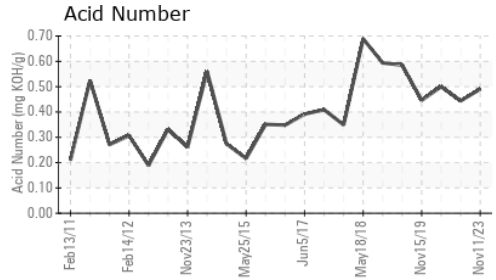
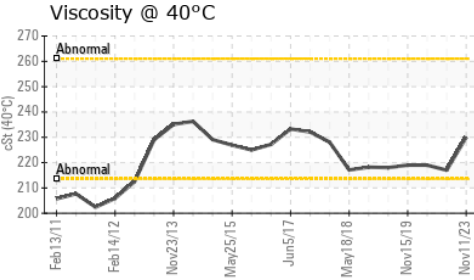
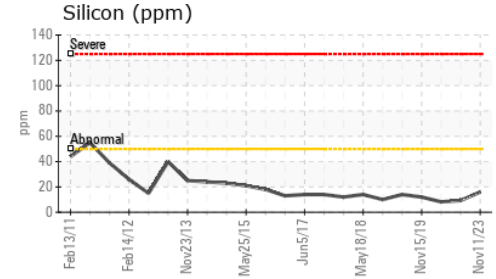
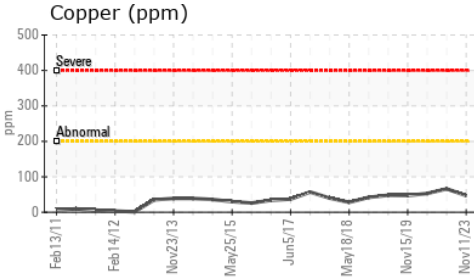
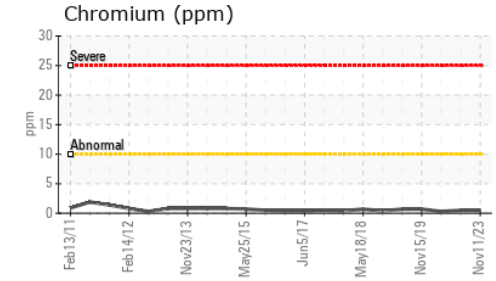
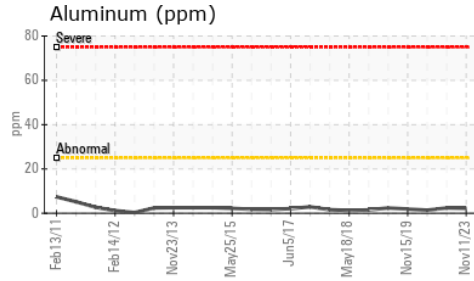
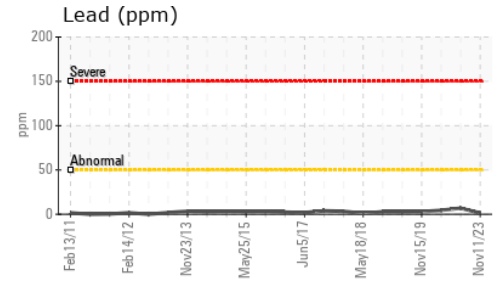
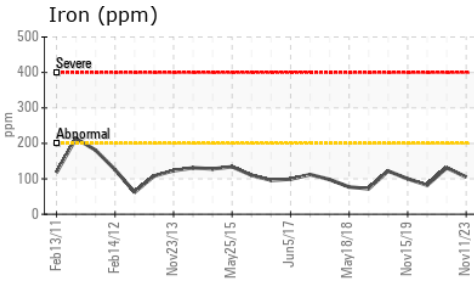


FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		<b>230</b>	217	219

SAMPLE IMAGES		method	limit/base	current	history1	history2
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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.** : WC0798721 **Received** : 17 Nov 2023  
**Lab Number** : **06011030** **Diagnosed** : 20 Nov 2023  
**Unique Number** : 10750174 **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

F:

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)