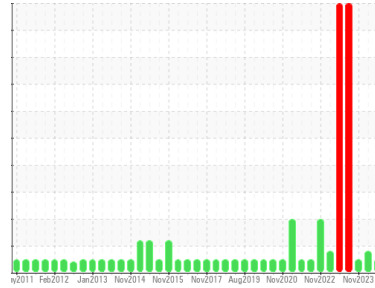




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
ALSTOM R042

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		WC0673298	WC0673299	WC0798904
Sample Date	Client Info		16 Nov 2023	15 Nov 2023	10 Nov 2023
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	ABNORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >200	126	▲ 257	144
Chromium	ppm	ASTM D5185m >10	<1	3	2
Nickel	ppm	ASTM D5185m >10	0	<1	<1
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	3	6	4
Lead	ppm	ASTM D5185m >50	1	5	5
Copper	ppm	ASTM D5185m >200	42	82	64
Tin	ppm	ASTM D5185m >10	0	<1	<1
Vanadium	ppm	ASTM D5185m	<1	<1	<1
Cadmium	ppm	ASTM D5185m	0	0	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	2	2
Barium	ppm	ASTM D5185m	0	<1	0
Molybdenum	ppm	ASTM D5185m	0	<1	<1
Manganese	ppm	ASTM D5185m	2	3	3
Magnesium	ppm	ASTM D5185m	<1	2	0
Calcium	ppm	ASTM D5185m	8	15	0
Phosphorus	ppm	ASTM D5185m	336	327	203
Zinc	ppm	ASTM D5185m	69	105	47
Sulfur	ppm	ASTM D5185m	3878	3852	3551

CONTAMINANTS

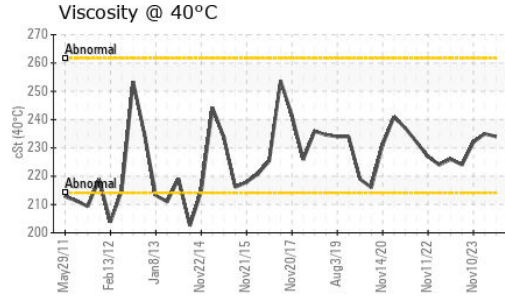
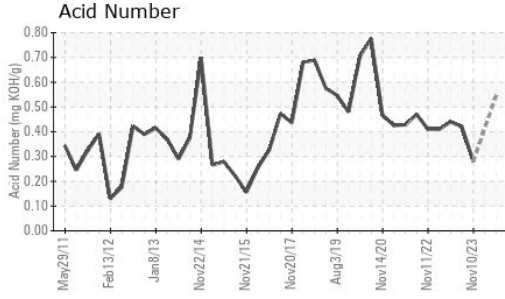
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	25	39	25
Sodium	ppm	ASTM D5185m	22	37	40
Potassium	ppm	ASTM D5185m >20	<1	1	1

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.544	---	0.28



OIL ANALYSIS REPORT



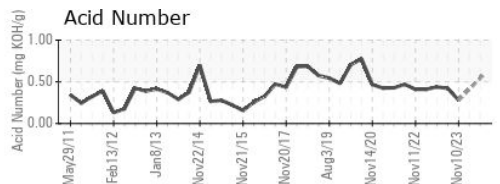
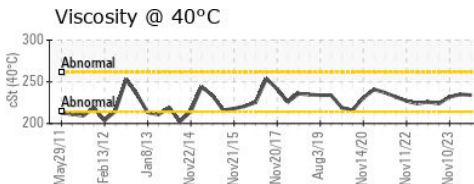
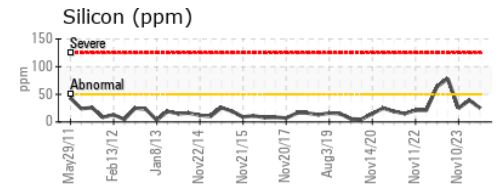
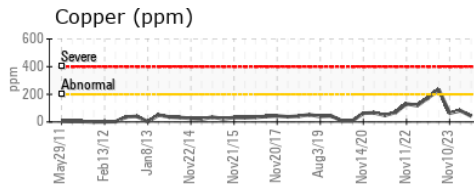
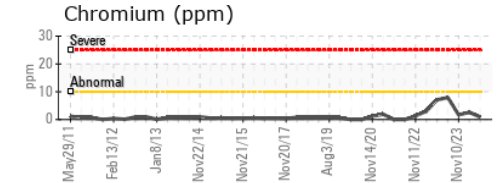
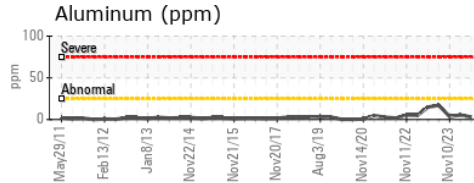
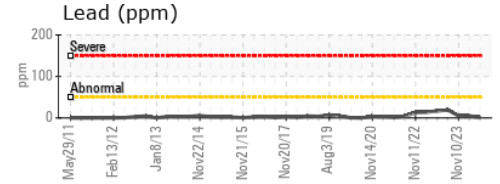
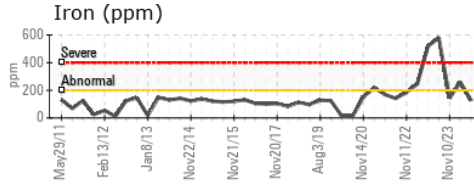
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	234	235	232

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. : WC0673298
 Lab Number : 06056859
 Unique Number : 10822808
 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)