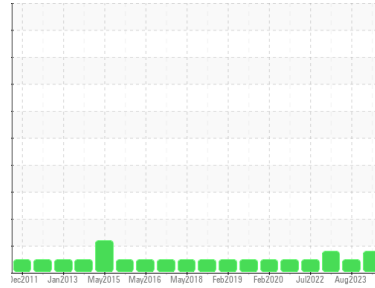




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
ALSTOM R107

Component
Gearbox

Fluid
TOTAL CARTER SH 220 (3 GAL)

DIAGNOSIS

▲ Recommendation

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

▲ Wear

Gear wear is indicated.

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		WC0649665	WC0417774	WC0667696
Sample Date	Client Info		28 Jan 2024	13 Aug 2023	31 Jan 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			ABNORMAL	NORMAL	ABNORMAL

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	▲ 205	77	▲ 359
Chromium	ppm	ASTM D5185m >10	<1	0	3
Nickel	ppm	ASTM D5185m >10	1	0	<1
Titanium	ppm	ASTM D5185m	<1	0	<1
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	5	<1	5
Lead	ppm	ASTM D5185m >50	3	1	6
Copper	ppm	ASTM D5185m >200	30	18	77
Tin	ppm	ASTM D5185m >10	<1	<1	<1
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<1	3	0
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	0	0	2
Manganese	ppm	ASTM D5185m	3	2	4
Magnesium	ppm	ASTM D5185m	3	0	3
Calcium	ppm	ASTM D5185m	10	1	13
Phosphorus	ppm	ASTM D5185m	341	289	282
Zinc	ppm	ASTM D5185m	119	83	140
Sulfur	ppm	ASTM D5185m	3102	3370	2357

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	16	9	29
Sodium	ppm	ASTM D5185m	30	21	30
Potassium	ppm	ASTM D5185m >20	3	<1	2

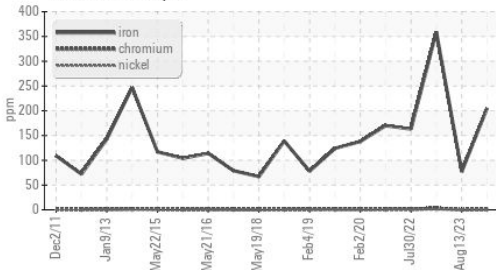
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.32	0.36	0.17

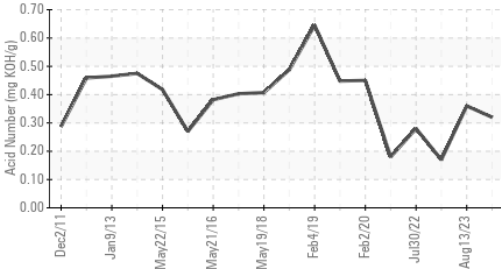


OIL ANALYSIS REPORT

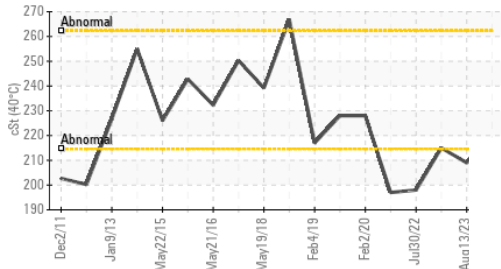
▲ Ferrous Alloys



Acid Number



Viscosity @ 40°C



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

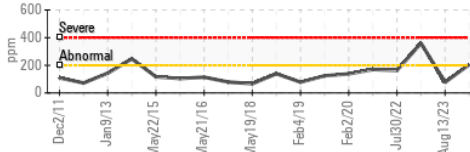
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	218	209	215

SAMPLE IMAGES

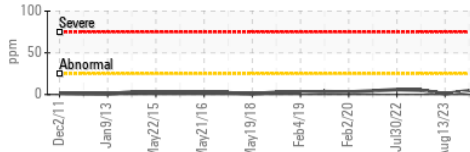
method	limit/base	current	history1	history2
Color			no image	no image
Bottom			no image	no image

GRAPHS

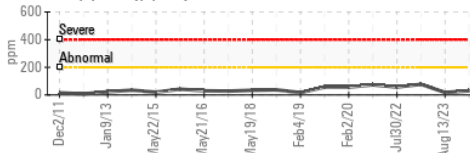
▲ Iron (ppm)



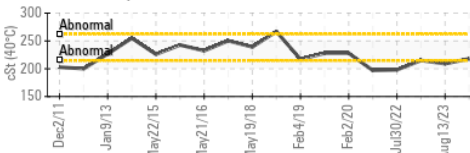
Aluminum (ppm)



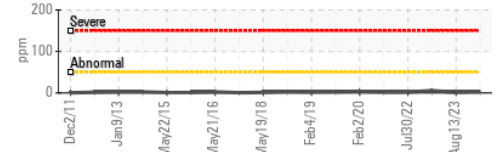
Copper (ppm)



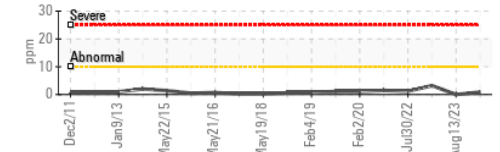
Viscosity @ 40°C



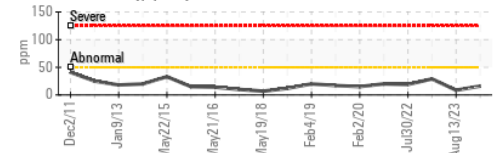
Lead (ppm)



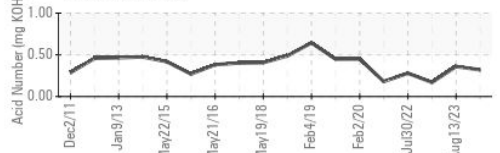
Chromium (ppm)



Silicon (ppm)



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0649665 **Received** : 30 Jan 2024
Lab Number : 06074952 **Diagnosed** : 01 Feb 2024
Unique Number : 10857043 **Diagnostician** : Don Baldrige
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)