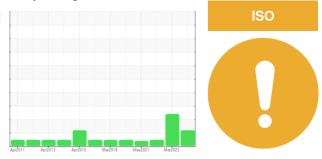


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

ALSTOM CC3209 Component Center Hydraulic System Fluid ESSO UNIVIS N 32 (55 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

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

Sample Date Client Info 27 Mar 2024 25 Mar 2023 29 Mar 2023 Machine Age hrs Client Info 0 0 0 0 Oil Age hrs Client Info 0 0 0 0 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status Imit/base current history1 history1 history2 Water WC Method >0.1 NEG NEG NEG Vear WC Method >0.1 NEG NEG NEG Vear WC Method >0.1 NEG NEG NEG Iron ppm ASTM D5185m >10 1 0 2 Nickel ppm ASTM D5185m >10 0 <1 2 Auminum ppm ASTM D5185m >10 0 <1 2 Copper ppm ASTM D5185m >10 0 <1 2 Copper <th>SAMPLE INFORM</th> <th>IATION</th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info N/A N/A N/A Sample Status Imit/base ATTENTION ABNORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG Iron ppm ASTM D5165m >20 <1 <1 2 Chromium ppm ASTM D5165m >10 16 10 16 Titanium ppm ASTM D5165m >10 0 <1 <1 Copper ppm ASTM D5165m >10 0 <1 <1 Cadadium ppm ASTM D5165m >10 10 4 11 Copper ppm ASTM D5165m >10 11 0 <1 Cadadium ppm ASTM D5165m 0 <1 0 0 Cadmium<	Sample Number		Client Info		WC0798842	WC0649671	WC0643789
Oil Age hrs Client Info 0 0 0 Oil Changed Client Info N/A N/A N/A N/A Sample Status Image Limit/base current history1 history2 Water WC Method >.0.1 NEG NEG NEG Water WC Method >.0.1 NEG NEG NEG Water WC Method >.0.1 NEG NEG NEG Vickel ppm ASTM D5185m >.0.0 1 0 2 Nickel ppm ASTM D5185m >.10 16 10 16 Titanium ppm ASTM D5185m >.10 0 .1 11 Lead ppm ASTM D5185m >.10 0 .1 11 Copper ppm ASTM D5185m >.10 .1 0 .1 Cadamium ppm ASTM D5185m .1 0 .1 0 Cademium <t< th=""><th>Sample Date</th><th></th><th>Client Info</th><th></th><th>27 Mar 2024</th><th>25 Mar 2023</th><th>29 Mar 2022</th></t<>	Sample Date		Client Info		27 Mar 2024	25 Mar 2023	29 Mar 2022
Oil Changed Sample StatusClient InfoN/AN/AN/ASample StatusImit/baseATTENTIONABNORMALNORMALCONTAMINATIONmethodimit/basecurrenthistory1history2WaterWC Method>0.1NEGNEGNEGWEAR METALSmethodimit/basecurrenthistory1history2IronppmASTM D5185m>20<1<12NickelppmASTM D5185m>10161016TitaniumppmASTM D5185m>1016100SilverppmASTM D5185m>1010411CopperppmASTM D5185m>1010411CopperppmASTM D5185m>1010411CopperppmASTM D5185m>1010411AntimonyppmASTM D5185m0<100YanadiumppmASTM D5185m0<100ADDITIVESmethodImit/basecurrenthistory1history2BoronppmASTM D5185m1000MalyadenumppmASTM D5185m0<100MandaumppmASTM D5185m0<100MaduimppmASTM D5185m0<100MandaumppmASTM D5185m0<100Maduim <t< th=""><th>Machine Age</th><th>hrs</th><th>Client Info</th><th></th><th>0</th><th>0</th><th>0</th></t<>	Machine Age	hrs	Client Info		0	0	0
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Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >20 <1 <1 2 Chromium ppm ASTM D5185m >10 16 0 2 Nickel ppm ASTM D5185m >10 16 0 0 Silver ppm ASTM D5185m >10 0 <1 <1 Lead ppm ASTM D5185m >10 10 4 11 Copper ppm ASTM D5185m >10 <1 0 <1 Lead ppm ASTM D5185m >10 <1 0 <1 0 Cadmium ppm ASTM D5185m >10 <1 0 <1 0 Cadmium ppm ASTM D5185m 1 0 <1 0 Cadmium ppm ASTM D5185m 1 0	Sample Status				ATTENTION	ABNORMAL	NORMAL
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Lead ppm ASTM D5185m >10 10 4 11 Copper ppm ASTM D5185m >75 5 3 7 Tin ppm ASTM D5185m >10 <1 0 <1 Antimony ppm ASTM D5185m 0 <1 0 <1 Vanadium ppm ASTM D5185m 0 <1 0 <1 0 Cadmium ppm ASTM D5185m 0	Silver	ppm					
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Magnesium ppm ASTM D5185m 0 <1				.3			
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Particles >4μm ASTM D7647 >10000 10081 15546 5438 Particles >6μm ASTM D7647 >1300 1861 3191 845 Particles >14μm ASTM D7647 >160 112 387 77 Particles >21μm ASTM D7647 >40 36 160 32	Potassium	ppm	ASTM D5185m	>20	<1	0	0
Particles >6μm ASTM D7647 >1300 1861 Δ 3191 845 Particles >14μm ASTM D7647 >160 112 Δ 387 77 Particles >21μm ASTM D7647 >40 36 Δ 160 32	FLUID CLEANLIN	ESS	method	limit/base	current	history1	history2
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Particles >21μm ASTM D7647 >40 36 ▲ 160 32			ASTM D7647	>1300	<mark> </mark> 1861	A 3191	845
	Particles >14µm		ASTM D7647	>160	112	A 387	77
Particles >38µm ASTM D7647 >10 2 14 2	Particles >21µm		ASTM D7647	>40	36		32
	Particles >38µm		ASTM D7647	>10	2	1 4	2

ASTM D7647 >3

Particles >71µm

Oil Cleanliness

0

ISO 4406 (c) >20/17/14 **21/18/14**

1

▲ 21/19/16

0

20/17/13



2

Ok

0.80 0.70 0.60 0.50 0.40 0.40

0.30-90.20-0.10-0.00-

Apr15/1

35 Ab

(J)-0+) 30 - Ab

Abnormal

40

2!

20

Apr15/11

Apr15/1

Acid Number

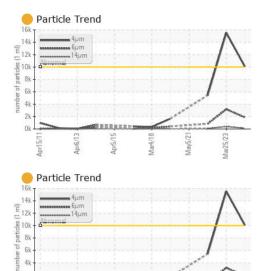
Apr6/13

Viscosity @ 40°C

nr6/13

OIL ANALYSIS REPORT

FLUID DEGRADATION



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pr5/15

Apr5/15

kor5/15

Mar4/18

Mar4/18

Mar4/18

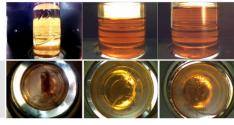
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Mav5/21

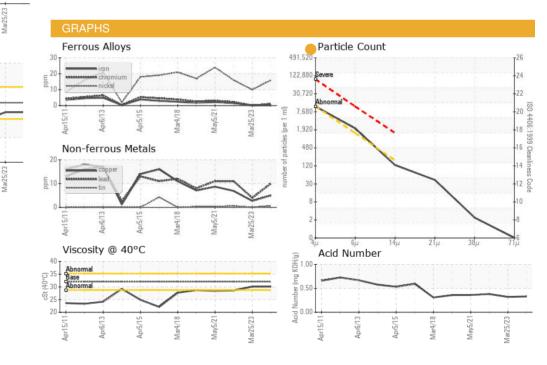
May5/21

1 LOID BLOIN B						inotory_
Acid Number (AN)	mg KOH/g	ASTM D8045		0.33	0.32	0.38
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT	VLITE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	TIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32	30.1	30.1	28.6
SAMPLE IMAGES	S	method	limit/base	current	history1	history2
				The state name top, 52		

Color



Bottom



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 AMTRAK : WC0798842 1401 W STREET NE, HIGH SPEED RAIL 2ND FLOOR Sample No. Received : 05 Apr 2024 Lab Number : 06140628 Tested : 08 Apr 2024 WASHINGTON, DC Unique Number : 10965436 Diagnosed : 09 Apr 2024 - Don Baldridge US 20018 Test Package : MOB 2 Contact: MICHAEL PORTER Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. michael.porter@amtrak.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (202)870-1399 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: AMTRAK [WUSCAR] 06140628 (Generated: 04/09/2024 12:06:40) Rev: 1

Contact/Location: MICHAEL PORTER - AMTRAK

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