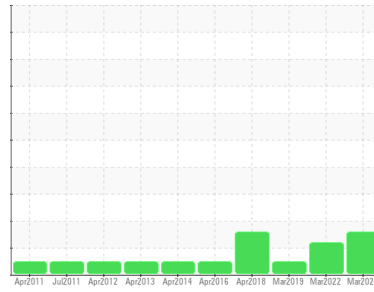




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
[IVY CITY]
 Machine Id
ALSTOM 3202 C3202
 Component
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 particulates 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 INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0798924	WC0592238	WCM2322775
Sample Date	Client Info			29 Mar 2024	26 Mar 2022	31 Mar 2019
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				ATTENTION	ATTENTION	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.1	NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	3	3	4
Chromium	ppm	ASTM D5185m	>10	2	4	6
Nickel	ppm	ASTM D5185m	>10	14	27	39
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	<1	0
Aluminum	ppm	ASTM D5185m	>10	2	<1	<1
Lead	ppm	ASTM D5185m	>10	13	13	16
Copper	ppm	ASTM D5185m	>75	15	7	8
Tin	ppm	ASTM D5185m	>10	<1	<1	<1
Antimony	ppm	ASTM D5185m		---	---	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

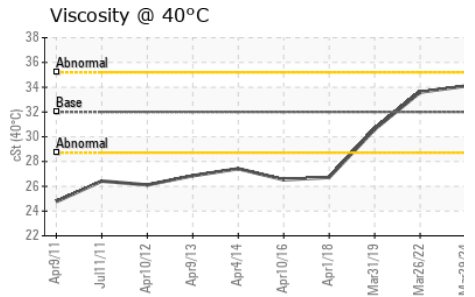
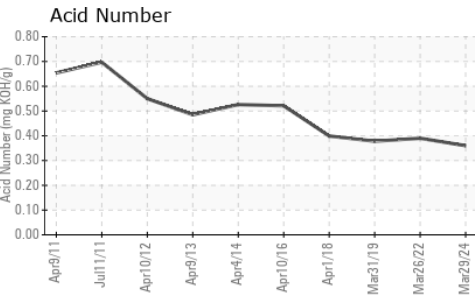
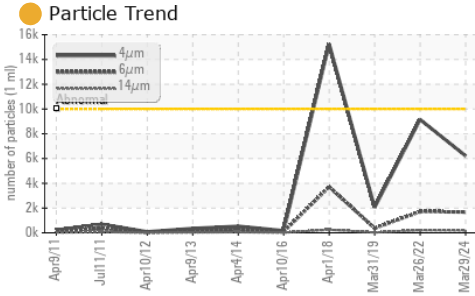
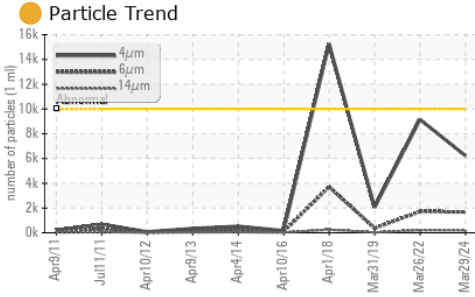
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	.1	0	<1	<1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m	.3	0	0	0
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m	0	2	0	<1
Calcium	ppm	ASTM D5185m	74	55	47	60
Phosphorus	ppm	ASTM D5185m	266	367	353	338
Zinc	ppm	ASTM D5185m	338	431	345	438
Sulfur	ppm	ASTM D5185m		2954	2586	4468

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	<1	1	1
Sodium	ppm	ASTM D5185m		<1	2	3
Potassium	ppm	ASTM D5185m	>20	<1	0	0

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	6214	9146	2060
Particles >6µm		ASTM D7647	>1300	1677	1715	372
Particles >14µm		ASTM D7647	>160	186	214	27
Particles >21µm		ASTM D7647	>40	58	76	8
Particles >38µm		ASTM D7647	>10	2	9	0
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>20/17/14	20/18/15	20/18/15	18/16/12



OIL ANALYSIS REPORT

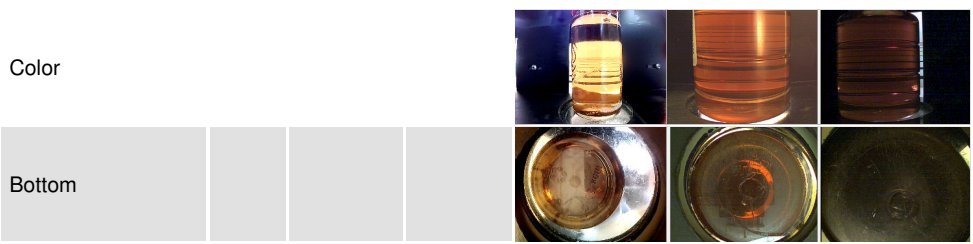


FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.36	0.39	0.378

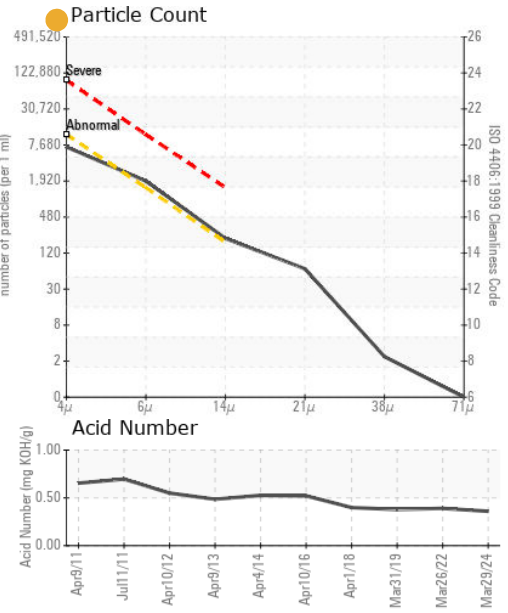
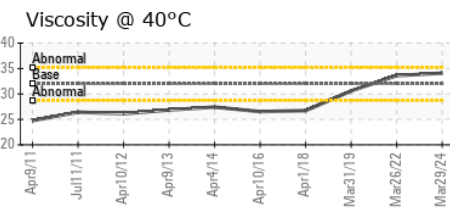
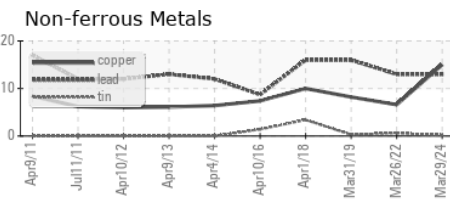
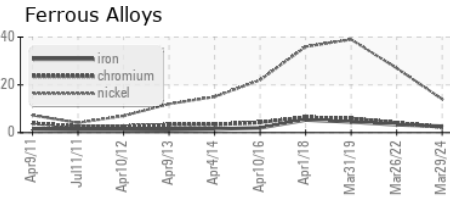
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual	NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	34.1	33.6	30.6

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0798924
Lab Number : 06137350
Unique Number : 10956815
Test Package : MOB 2

Received : 03 Apr 2024
Tested : 05 Apr 2024
Diagnosed : 05 Apr 2024 - Jonathan Hester

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)