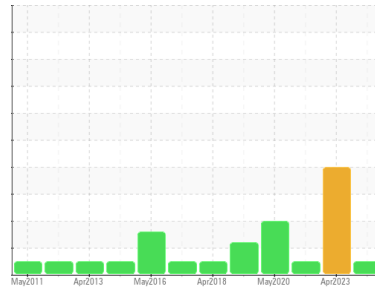




OIL ANALYSIS REPORT

Area
[IVY CITY]
 Machine Id
C.C. 3547
 Component
Hydraulic System
 Fluid
ESSO UNIVIS N 32 (55 GAL)

Sample Rating Trend



NORMAL



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

The amount and size of particulates present in the system is acceptable. There is no indication of any contamination in the component.

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		WC0798838	WC0667706	WC0560155
Sample Date	Client Info		20 Apr 2024	25 Apr 2023	01 May 2021
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	>0.1	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >20	0	3	2
Chromium	ppm	ASTM D5185m >10	<1	2	3
Nickel	ppm	ASTM D5185m >10	15	15	19
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	<1
Aluminum	ppm	ASTM D5185m >10	0	0	<1
Lead	ppm	ASTM D5185m >10	6	8	10
Copper	ppm	ASTM D5185m >75	2	4	6
Tin	ppm	ASTM D5185m >10	0	<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	0	2
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	0	1	0
Calcium	ppm	ASTM D5185m 74	49	61	54
Phosphorus	ppm	ASTM D5185m 266	324	378	317
Zinc	ppm	ASTM D5185m 338	429	513	415
Sulfur	ppm	ASTM D5185m	2617	2863	2377

CONTAMINANTS

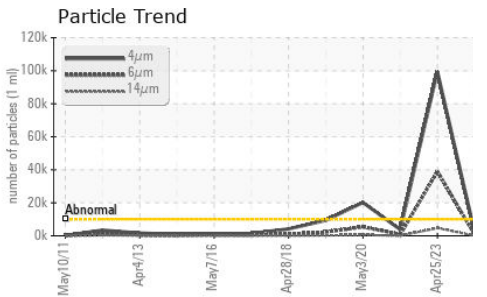
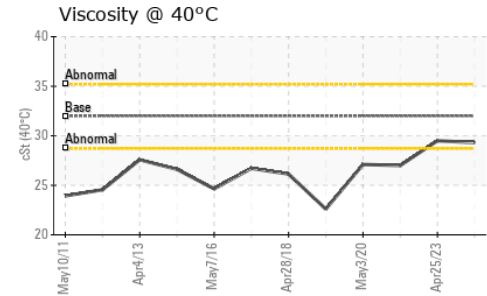
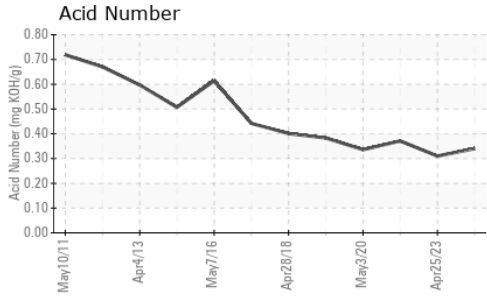
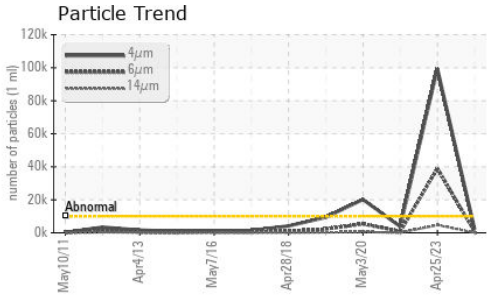
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	0	2	<1
Sodium	ppm	ASTM D5185m	<1	0	2
Potassium	ppm	ASTM D5185m >20	0	<1	0

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	2264	▲ 99409	3753
Particles >6µm	ASTM D7647	>1300	615	▲ 39022	842
Particles >14µm	ASTM D7647	>160	52	▲ 4718	53
Particles >21µm	ASTM D7647	>40	16	▲ 1410	12
Particles >38µm	ASTM D7647	>10	1	▲ 148	0
Particles >71µm	ASTM D7647	>3	0	▲ 6	0
Oil Cleanliness	ISO 4406 (c)	>20/17/14	18/16/13	▲ 24/22/19	19/17/13



OIL ANALYSIS REPORT

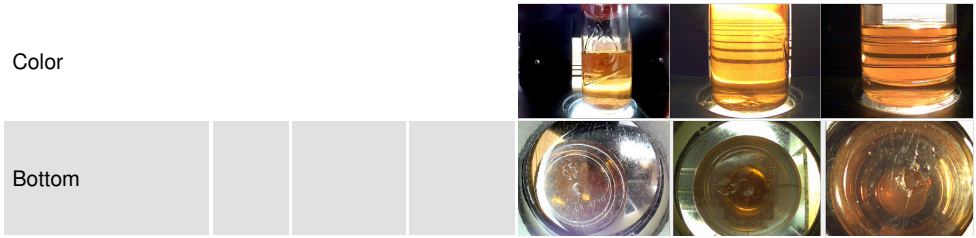


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.34	0.31	0.371

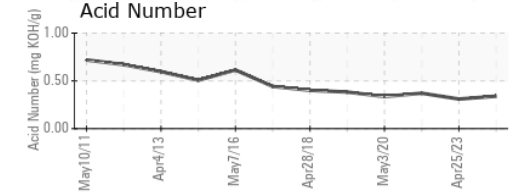
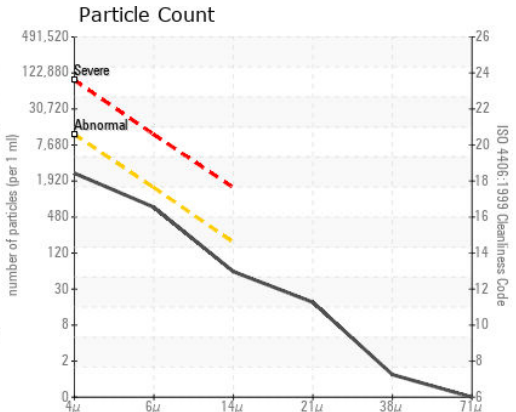
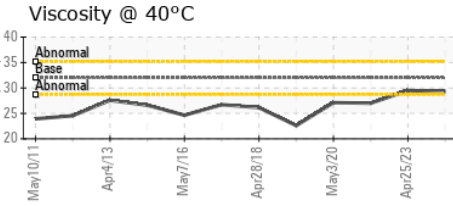
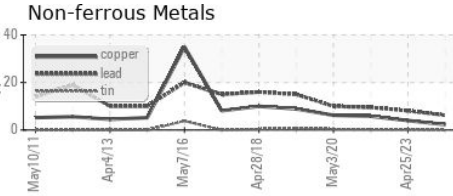
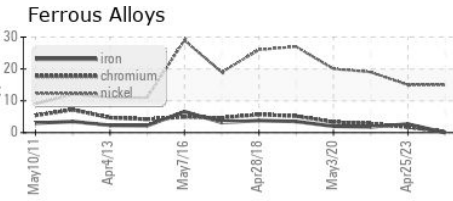
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	▲ HEAVY	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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 PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32	29.3	29.5	27.0

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0798838
Lab Number : 06159025
Unique Number : 10994448
Test Package : MOB 2

Received : 24 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 25 Apr 2024 - Don Baldrige

AMTRAK
 1401 W STREET NE, HIGH SPEED RAIL 2ND FLOOR
 WASHINGTON, DC
 US 20018

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)

Contact: MICHAEL PORTER
 michael.porter@amtrak.com
 T: (202)870-1399
 F: