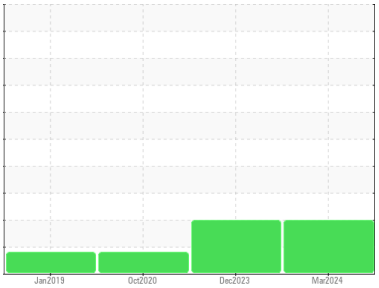
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
CARRIER CITY OF NET CHILLER 1 (S/N 2576)
Component
Refrigeration Compressor
Fluid
MINERAL OIL (--- GAL)

DIAGNOSIS

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

Wear
The copper level is abnormal. All other component wear rates are normal.

Contamination
There is a high 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 acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0827300**	WC0758427	WC0507720
Sample Date		Client Info		**25 Mar 2024**	20 Dec 2023	26 Oct 2020
Machine Age	hrs	Client Info		**5097**	5097	3605
Oil Age	hrs	Client Info		**3605**	5097	0
Oil Changed		Client Info		**N/A**	N/A	Changed
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>8	**11**	<1	3
Chromium	ppm	ASTM D5185m	>2	**<1**	0	0
Nickel	ppm	ASTM D5185m		**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>3	**0**	0	0
Lead	ppm	ASTM D5185m	>2	**2**	<1	3
Copper	ppm	ASTM D5185m	>8	▲ **50**	● 16	▲ 80
Tin	ppm	ASTM D5185m	>4	**5**	1	3
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		**0**	0	0
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**0**	<1	<1
Calcium	ppm	ASTM D5185m		**2**	2	3
Phosphorus	ppm	ASTM D5185m		**29**	33	77
Zinc	ppm	ASTM D5185m		**26**	0	34
Sulfur	ppm	ASTM D5185m		**934**	837	908

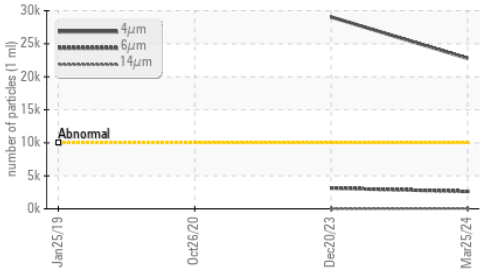
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**9**	5	6
Sodium	ppm	ASTM D5185m		**0**	1	0
Potassium	ppm	ASTM D5185m	>20	**0**	0	2
Water	%	ASTM D6304	>0.01	**0.003**	0.001	0.001
ppm Water	ppm	ASTM D6304	>100	**26**	7	14.0

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	▲ **22791**	▲ 29050	---
Particles >6µm		ASTM D7647	>2500	● **2625**	● 3126	---
Particles >14µm		ASTM D7647	>320	**52**	9	---
Particles >21µm		ASTM D7647	>80	**12**	2	---
Particles >38µm		ASTM D7647	>20	**0**	0	---
Particles >71µm		ASTM D7647	>4	**0**	0	---
Oil Cleanliness		ISO 4406 (c)	>20/18/15	▲ **22/19/13**	▲ 22/19/10	---

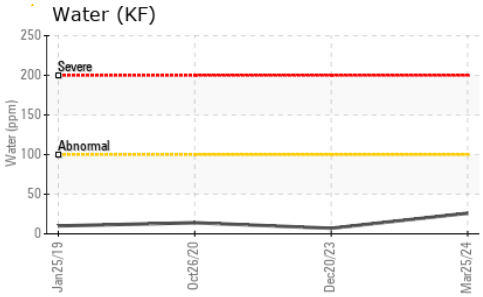
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974		**0.455**	0.126	0.074

OIL ANALYSIS REPORT

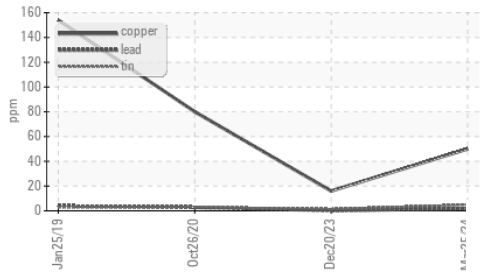
Particle Trend



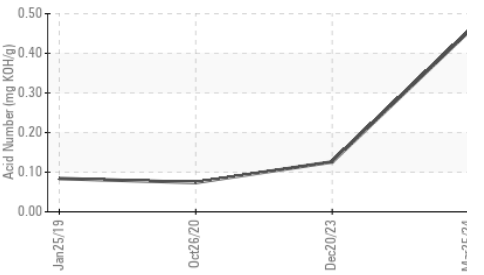
Water (KF)



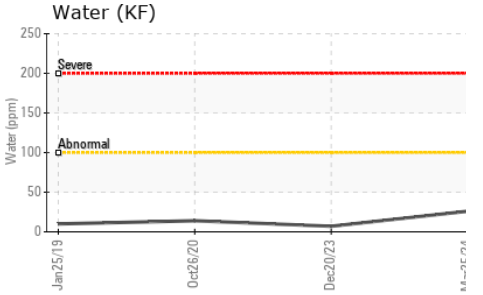
Non-ferrous Metals



Acid Number



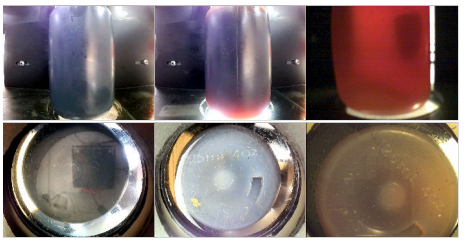
Water (KF)



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	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	>0.01	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

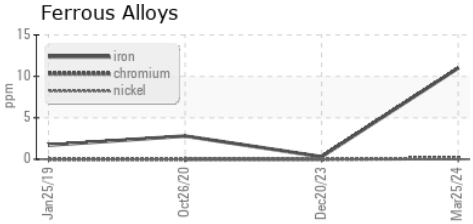
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		**61.8**	57.4	51.8

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

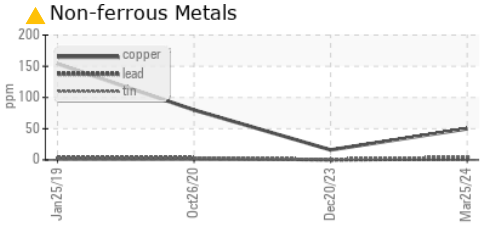


GRAPHS

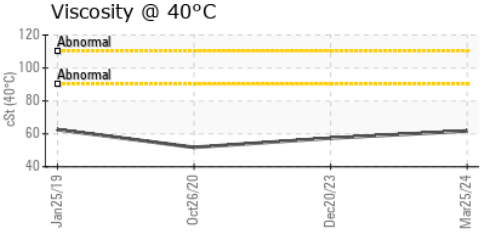
Ferrous Alloys



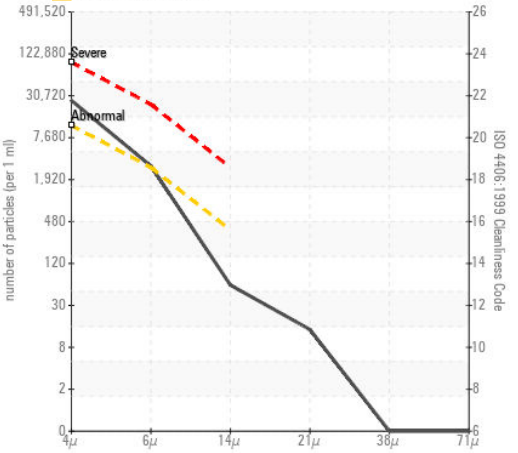
Non-ferrous Metals



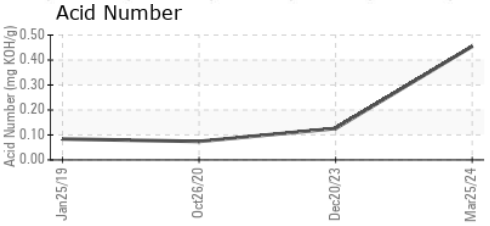
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0827300
Lab Number : 06135030
Unique Number : 10954495
Test Package : PLANT

Received : 01 Apr 2024
Tested : 02 Apr 2024
Diagnosed : 03 Apr 2024 - Don Baldridge

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)

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