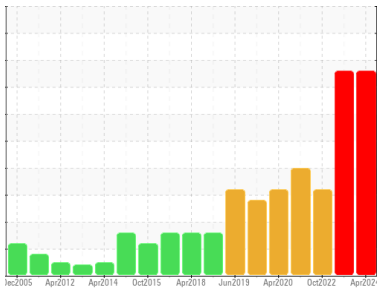
PROBLEM SUMMARY

Sample Rating Trend



DIRT

Machine Id

600 TON CHILLER 530002-15 (S/N HBDM000419)

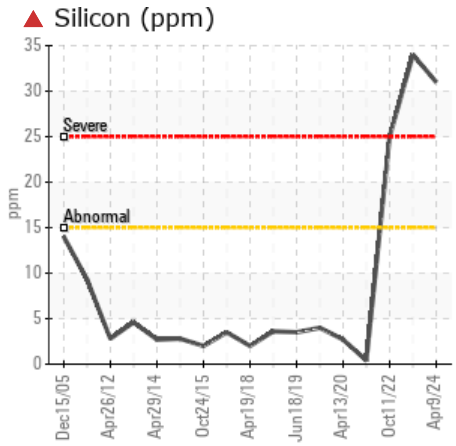
Component

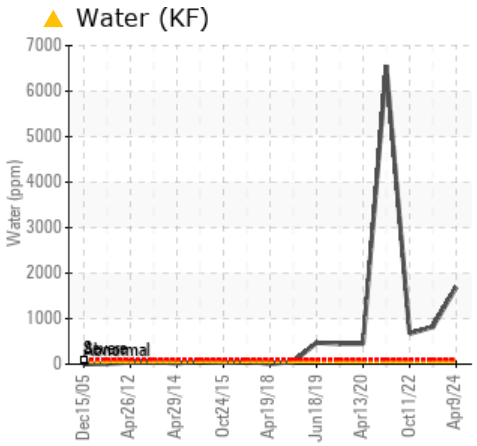
Refrigeration Compressor

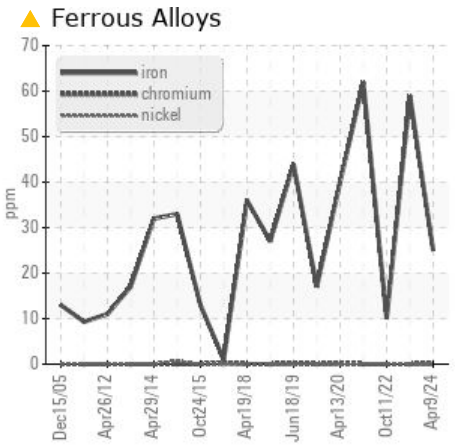
Fluid

YORK TYPE C (13 GAL)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. We were unable to perform a particle count due to a high concentration of particles present in this sample.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	ABNORMAL
Iron	ppm	ASTM D5185m	>8	▲ **25**	▲ 59	10
Silicon	ppm	ASTM D5185m	>15	▲ **31**	▲ 34	▲ 25
Water	%	ASTM D6304	>0.005	▲ **0.169**	▲ 0.082	▲ 0.067
ppm Water	ppm	ASTM D6304	>50	▲ **1690**	▲ 820	▲ 670
Debris	scalar	*Visual	NONE	▲ **LIGHT**	▲ LIGHT	LIGHT
Emulsified Water	scalar	*Visual	>0.005	▲ **0.2%**	▲ 0.2%	0.2%

Customer Id: THRSPR
Sample No.: WC0882525
Lab Number: 06148655
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Alert	---	---	?	We were unable to perform a particle count due to a high concentration of particles present in this sample.

HISTORICAL DIAGNOSIS

DIRT

17 Jun 2023 Diag: Jonathan Hester
Oil and filter change at the time of sampling has been noted. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. We were unable to perform a particle count due to a high concentration of particles present in this sample.The iron level is abnormal. There is a light concentration of water present in the oil. Light concentration of visible dirt/debris present in the oil. The AN level is acceptable for this fluid.

view report

WATER

11 Oct 2022 Diag: Jonathan Hester
No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. Elemental level of silicon (Si) above normal indicating ingress of seal material. There is a trace of moisture present in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

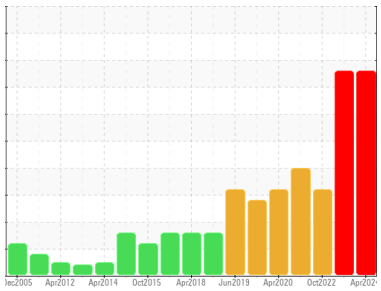
WATER

14 Apr 2022 Diag: Doug Bogart
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles and water present in this sample.The iron level is abnormal. Light concentration of visible metal present. There is a moderate concentration of water present in the oil. Light concentration of visible dirt/debris present in the oil. The condition of the oil is acceptable for the time in service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
600 TON CHILLER 530002-15 (S/N HBDM000419)
Component
Refrigeration Compressor
Fluid
YORK TYPE C (13 GAL)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. We recommend an early resample to monitor this condition. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear
The iron level is abnormal.

Contamination
There is a light concentration of water present in the oil. Light concentration of visible dirt/debris present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition
The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0882525**	WC0765994	WC0741637
Sample Date		Client Info		**09 Apr 2024**	17 Jun 2023	11 Oct 2022
Machine Age	hrs	Client Info		**15659**	9842	9637
Oil Age	hrs	Client Info		**0**	0	250
Oil Changed		Client Info		**N/A**	Changed	Changed
Sample Status				**SEVERE**	SEVERE	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>8	▲ **25**	▲ 59	10
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	<1
Lead	ppm	ASTM D5185m	>2	**0**	0	0
Copper	ppm	ASTM D5185m	>8	**8**	4	25
Tin	ppm	ASTM D5185m	>4	**<1**	0	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	0
Barium	ppm	ASTM D5185m	0	**0**	2	0
Molybdenum	ppm	ASTM D5185m	0	**0**	0	0
Manganese	ppm	ASTM D5185m	0	**0**	<1	<1
Magnesium	ppm	ASTM D5185m	0	**<1**	0	0
Calcium	ppm	ASTM D5185m	0	**<1**	0	0
Phosphorus	ppm	ASTM D5185m	0	**1**	6	<1
Zinc	ppm	ASTM D5185m	0	**0**	2	0
Sulfur	ppm	ASTM D5185m	200	**192**	159	188

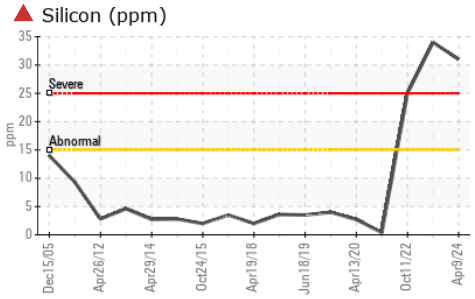
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	▲ **31**	▲ 34	▲ 25
Sodium	ppm	ASTM D5185m		**<1**	0	1
Potassium	ppm	ASTM D5185m	>20	**0**	2	0
Water	%	ASTM D6304	>0.005	▲ **0.169**	▲ 0.082	▲ 0.067
ppm Water	ppm	ASTM D6304	>50	▲ **1690**	▲ 820	▲ 670

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	**---**	---	7101
Particles >6µm		ASTM D7647	>2500	**---**	---	729
Particles >14µm		ASTM D7647	>320	**---**	---	22
Particles >21µm		ASTM D7647	>80	**---**	---	5
Particles >38µm		ASTM D7647	>20	**---**	---	1
Particles >71µm		ASTM D7647	>4	**---**	---	1
Oil Cleanliness		ISO 4406 (c)	>20/18/15	**---**	---	20/17/12

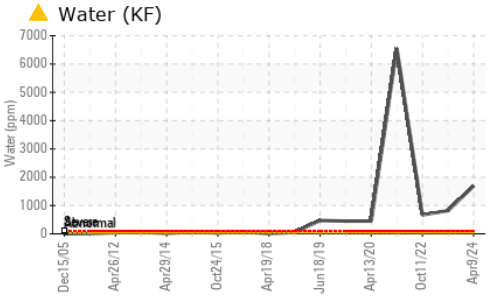
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974	0.11	**0.19**	0.15	0.117

OIL ANALYSIS REPORT

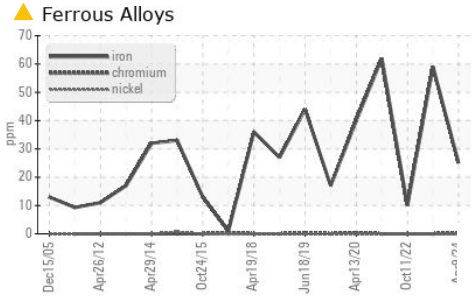
Silicon (ppm)



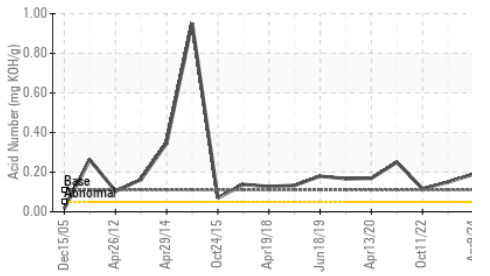
Water (KF)



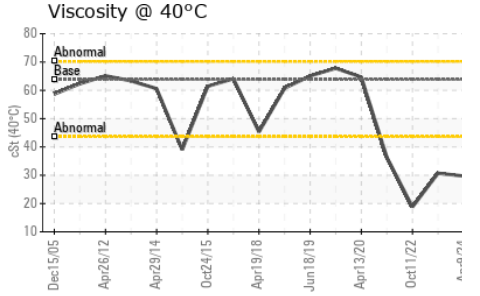
Ferrous Alloys



Acid Number

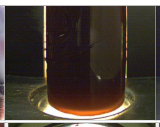
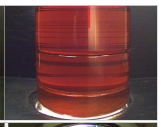
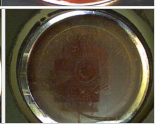


Viscosity @ 40°C



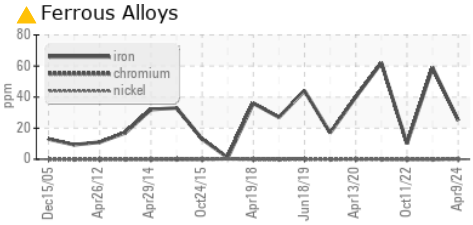
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	▲ **LIGHT**	▲ LIGHT	LIGHT
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	>0.005	▲ **0.2%**	▲ 0.2%	0.2%
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	63.8	**29.7**	30.7	18.8

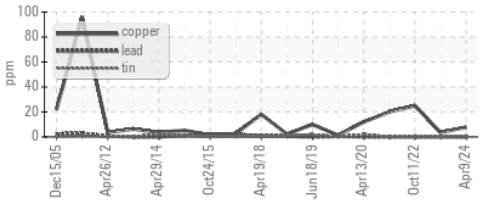
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

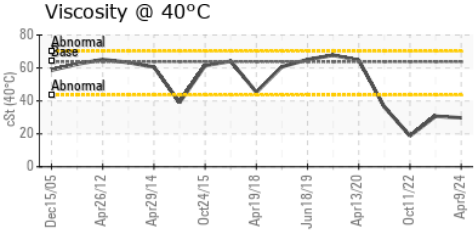
Ferrous Alloys



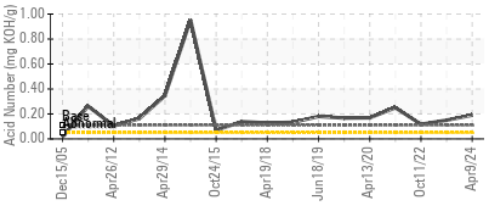
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0882525 **Received** : 15 Apr 2024
Lab Number : 06148655 **Tested** : 18 Apr 2024
Unique Number : 10978733 **Diagnosed** : 18 Apr 2024 - Jonathan Hester
Test Package : IND 2 (Additional Tests: PrtCount)

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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