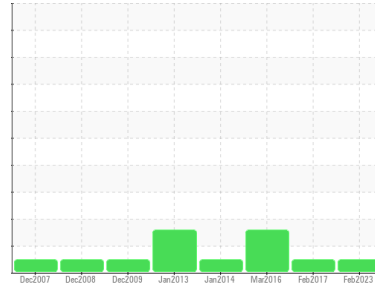




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
MCQUAY NORTHROP GRUMMAN CRMF CHILLER 21 (S/N STNU051100121)
 Component
Refrigeration Compressor
 Fluid
EMKARATE RL 32H (10 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

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		WC0384572	WCI2260055	WCI2261832
Sample Date	Client Info		27 Feb 2023	16 Feb 2017	29 Mar 2016
Machine Age	hrs	Client Info	27240	4680	510
Oil Age	hrs	Client Info	0	4680	0
Oil Changed	Client Info		Not Changed	Not Changed	N/A
Sample Status			NORMAL	NORMAL	MARGINAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	3	1	1
Chromium	ppm	ASTM D5185m >10	0	0	0
Nickel	ppm	ASTM D5185m	0	<1	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >50	5	1	2
Lead	ppm	ASTM D5185m >10	0	2	<1
Copper	ppm	ASTM D5185m >100	<1	2	3
Tin	ppm	ASTM D5185m >10	2	1	<1
Antimony	ppm	ASTM D5185m	---	0	2
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	<1	<1
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 0	0	0	<1
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 0	0	0	0
Calcium	ppm	ASTM D5185m 0	0	0	0
Phosphorus	ppm	ASTM D5185m 5	5	<1	0
Zinc	ppm	ASTM D5185m 10	2	1	2
Sulfur	ppm	ASTM D5185m 50	48	29	29

CONTAMINANTS

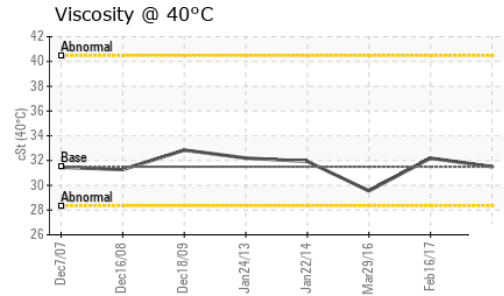
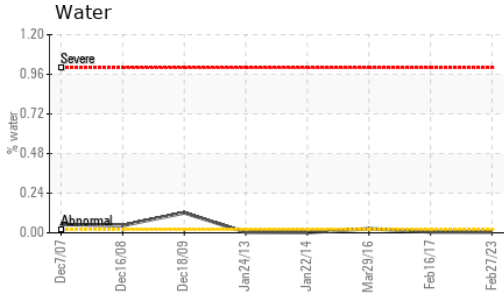
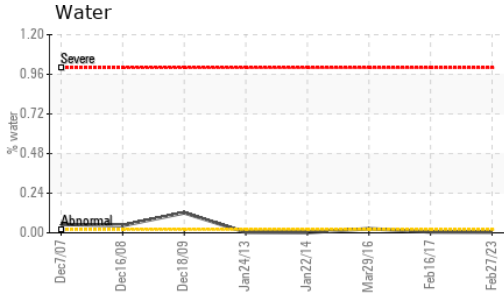
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	3	6	12
Sodium	ppm	ASTM D5185m	2	<1	<1
Potassium	ppm	ASTM D5185m >20	<1	0	0
Water	%	ASTM D6304 >0.02	0.004	0.005	▲ 0.025
ppm Water	ppm	ASTM D6304 >250	42.4	50	▲ 250

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974 .05	0.057	0.075	0.055



OIL ANALYSIS REPORT



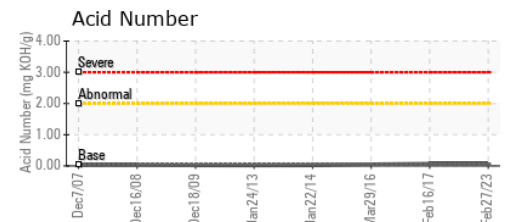
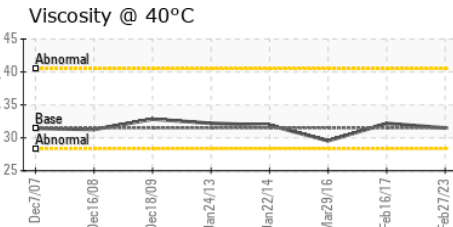
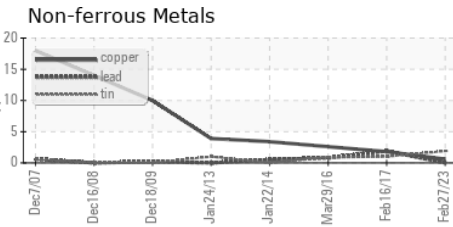
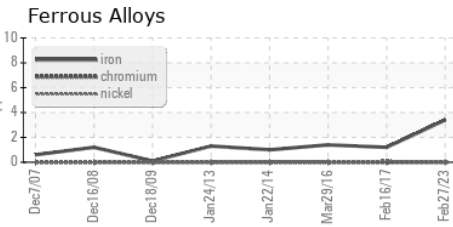
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.02	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	31.5	32.19	29.55

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0384572 **Received** : 01 Mar 2023
Lab Number : 05780178 **Diagnosed** : 02 Mar 2023
Unique Number : 10359848 **Diagnostician** : Don Baldrige
Test Package : IND 2

DAIKIN APPLIED
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 BOWIE, MD
 US 20715
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 andrew.turlington@daikinapplied.com
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Certificate L2367
 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)