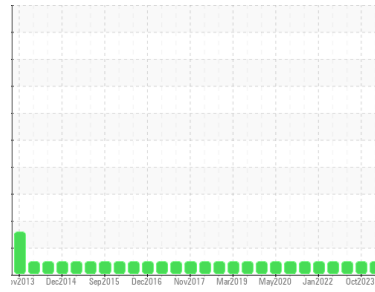




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

CHEATHAM ANNEX

Machine Id

1A 1ALW CRANE 1A (S/N 62510224)

Component

Gearbox

Fluid

SHELL OMALA S4 WE 220 (--- 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 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		WC0752642	WC0752683	WC0752675
Sample Date	Client Info		16 Apr 2024	01 Oct 2023	22 Jan 2023
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	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >200	7	10	9
Chromium	ppm	ASTM D5185m >15	0	<1	<1
Nickel	ppm	ASTM D5185m >15	0	<1	3
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	<1
Aluminum	ppm	ASTM D5185m >25	1	4	1
Lead	ppm	ASTM D5185m >100	0	0	0
Copper	ppm	ASTM D5185m >200	0	0	0
Tin	ppm	ASTM D5185m >25	0	1	<1
Vanadium	ppm	ASTM D5185m	<1	0	<1
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	1
Molybdenum	ppm	ASTM D5185m	0	0	0
Manganese	ppm	ASTM D5185m	0	<1	<1
Magnesium	ppm	ASTM D5185m	<1	5	<1
Calcium	ppm	ASTM D5185m	2	5	2
Phosphorus	ppm	ASTM D5185m	432	463	352
Zinc	ppm	ASTM D5185m	0	<1	4
Sulfur	ppm	ASTM D5185m	160	163	111

CONTAMINANTS

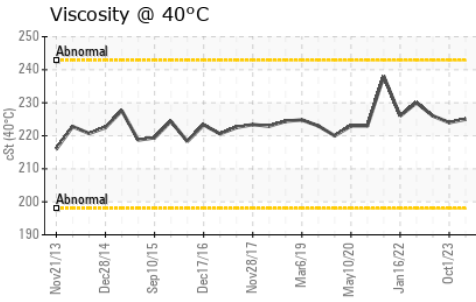
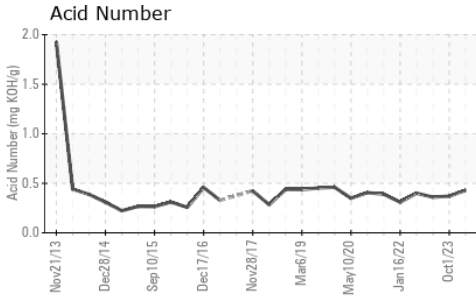
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	8	14	8
Sodium	ppm	ASTM D5185m	0	0	4
Potassium	ppm	ASTM D5185m >20	0	5	2

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.43	0.37	0.36



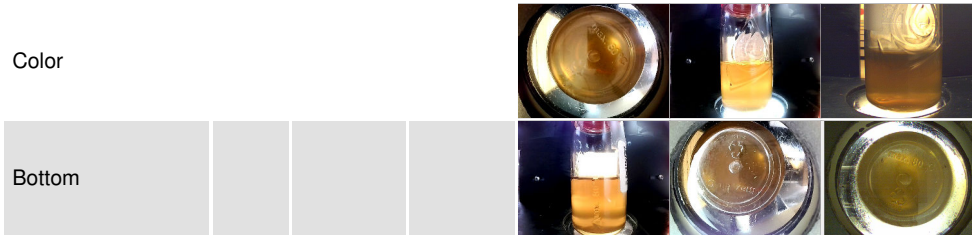
OIL ANALYSIS REPORT



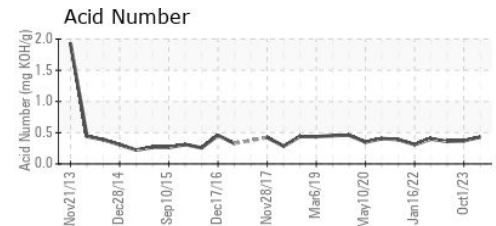
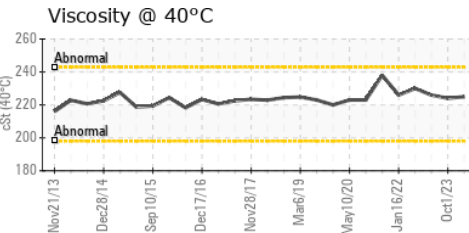
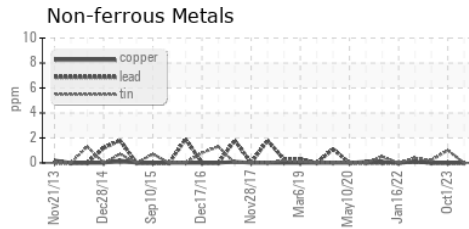
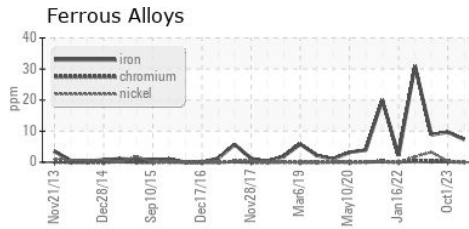
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	225	224	226

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0752642
Lab Number : 06151257
Unique Number : 10981335
Test Package : IND 2

Received : 16 Apr 2024
Tested : 18 Apr 2024
Diagnosed : 19 Apr 2024 - Jonathan Hester

CARGOTEC MARINE - MACGREGOR
 525 BYRON ST, SUITE B
 CHESAPEAKE, VA
 US 23320

Contact: TARMO MAGI
 tarmo.magi@macgregor.com
 T: (757)558-4584
 F: (757)558-4581

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)