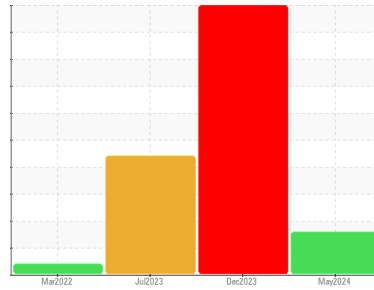




# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Area

**CAST HOUSE/CRANES**

Machine Id

**89 AUX HOIST GEARBOX 1015-U89-5000**

Component

**Gearbox**

Fluid

**CITGO COMPOUND EP 320 (25 GAL)**

## DIAGNOSIS

### Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

### Wear

The aluminum level has decreased, but is still abnormal. All other component wear rates are normal.

### Contamination

There is a moderate amount of visible silt present in the sample.

### 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		<b>KFS0004645</b>	KFS0005225	KFS0003340
Sample Date	Client Info		<b>17 May 2024</b>	19 Dec 2023	03 Jul 2023
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	SEVERE	SEVERE

## CONTAMINATION

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

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>200	<b>155</b>	▲ 490	68
Chromium	ppm	ASTM D5185m	>15	<b>2</b>	3	0
Nickel	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>25</b>	<1	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	▲ <b>54</b>	▲ 251	16
Lead	ppm	ASTM D5185m	>100	<b>2</b>	0	0
Copper	ppm	ASTM D5185m	>200	<b>24</b>	5	1
Tin	ppm	ASTM D5185m	>25	<b>0</b>	0	0
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		<b>3</b>	33	4
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	10	<1
Manganese	ppm	ASTM D5185m		<b>6</b>	6	2
Magnesium	ppm	ASTM D5185m		<b>38</b>	11	10
Calcium	ppm	ASTM D5185m		<b>45</b>	390	13
Phosphorus	ppm	ASTM D5185m		<b>393</b>	323	367
Zinc	ppm	ASTM D5185m		<b>49</b>	86	79
Sulfur	ppm	ASTM D5185m		<b>8447</b>	7298	15338

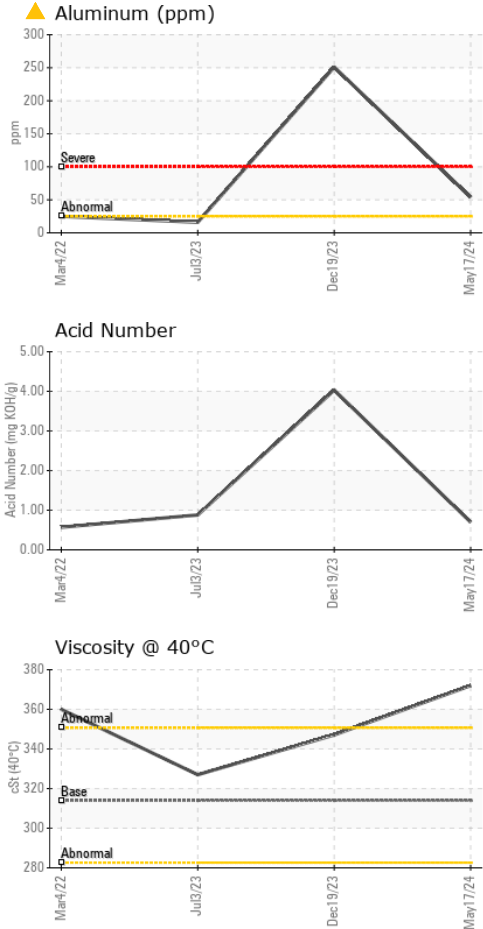
## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>50	<b>9</b>	▲ 107	3
Sodium	ppm	ASTM D5185m		<b>2</b>	0	<1
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	<1	0

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	<b>---</b>	---	▲ 233384
Particles >6µm	ASTM D7647	>5000	<b>---</b>	---	▲ 121174
Particles >14µm	ASTM D7647	>640	<b>---</b>	---	▲ 4733
Particles >21µm	ASTM D7647	>160	<b>---</b>	---	▲ 950
Particles >38µm	ASTM D7647	>40	<b>---</b>	---	15
Particles >71µm	ASTM D7647	>10	<b>---</b>	---	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>---</b>	---	▲ 25/24/19

# OIL ANALYSIS REPORT

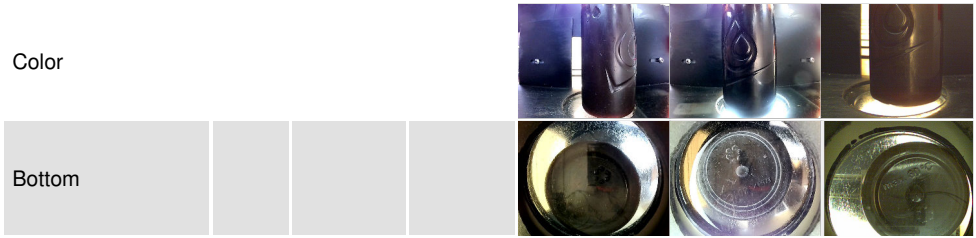


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.70</b>	▲ 4.03	0.88

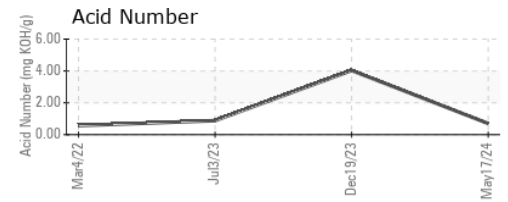
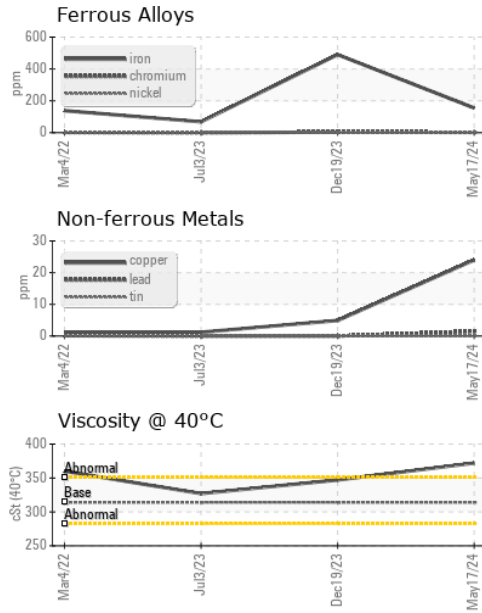
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	▲ MODER	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	▲ <b>MODER</b>	NONE	LIGHT
Debris	scalar	*Visual	NONE	<b>NONE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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	314	<b>372</b>	▲ 347.1	327

SAMPLE IMAGES		method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KFS0004645      **Received** : 19 Jun 2024  
**Lab Number** : **06214633**      **Tested** : 21 Jun 2024  
**Unique Number** : 11087497      **Diagnosed** : 21 Jun 2024 - Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: PrtCount )

**CONSTELLIUM**  
 4805 SECOND STREET  
 MUSCLE SHOALS, AL  
 US 35661  
 Contact: Randy Nichols  
 randall.nichols@constellium.com

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)