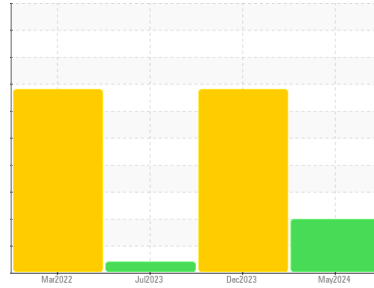




# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Area

**CAST HOUSE/CRANES**

Machine Id

**89 MAIN HOIST GEARBOX 1015-U89-4000**

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 is abnormal. All other component wear rates are normal.

### Contamination

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

### Fluid Condition

The oil viscosity is higher than normal. The AN level is acceptable for this fluid.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>KFS0004646</b>	KFS0005224	KFS0003339
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	ABNORMAL

## 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>114</b>	▲ 342	66
Chromium	ppm	ASTM D5185m	>15	<b>2</b>	2	0
Nickel	ppm	ASTM D5185m	>15	<b>0</b>	1	0
Titanium	ppm	ASTM D5185m		<b>17</b>	<1	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	▲ <b>33</b>	10	16
Lead	ppm	ASTM D5185m	>100	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>200	<b>9</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>	2	4
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	0	<1
Manganese	ppm	ASTM D5185m		<b>4</b>	2	2
Magnesium	ppm	ASTM D5185m		<b>21</b>	7	10
Calcium	ppm	ASTM D5185m		<b>29</b>	6	15
Phosphorus	ppm	ASTM D5185m		<b>340</b>	362	362
Zinc	ppm	ASTM D5185m		<b>27</b>	13	81
Sulfur	ppm	ASTM D5185m		<b>8877</b>	10454	15498

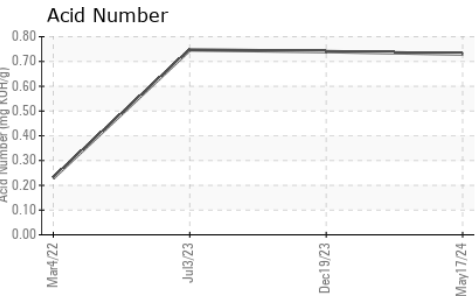
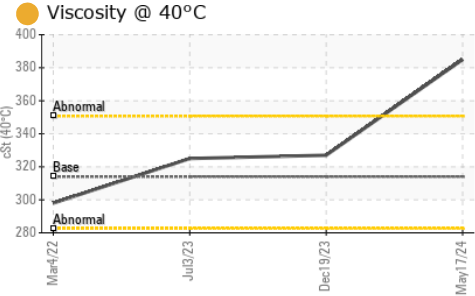
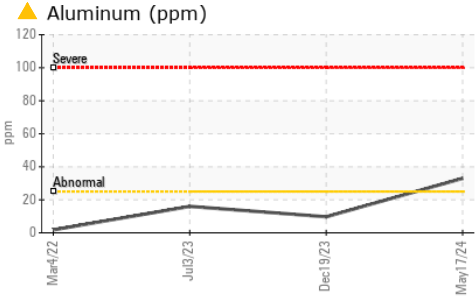
## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>50	<b>7</b>	9	2
Sodium	ppm	ASTM D5185m		<b>10</b>	0	0
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	2	0

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	<b>---</b>	▲ 290781	---
Particles >6µm	ASTM D7647	>5000	<b>---</b>	▲ 219123	---
Particles >14µm	ASTM D7647	>640	<b>---</b>	▲ 13863	---
Particles >21µm	ASTM D7647	>160	<b>---</b>	▲ 685	---
Particles >38µm	ASTM D7647	>40	<b>---</b>	6	---
Particles >71µm	ASTM D7647	>10	<b>---</b>	1	---
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>---</b>	▲ 25/25/21	---

# OIL ANALYSIS REPORT

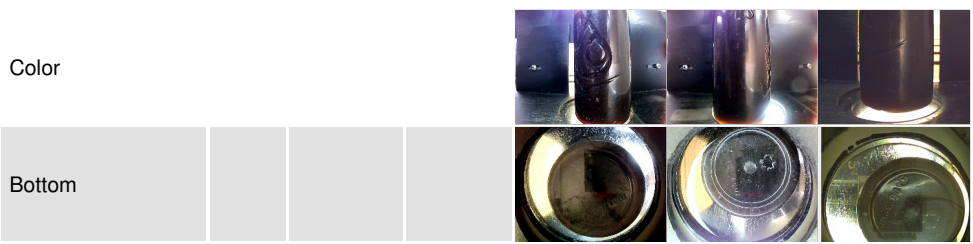


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.73</b>	0.74	0.747

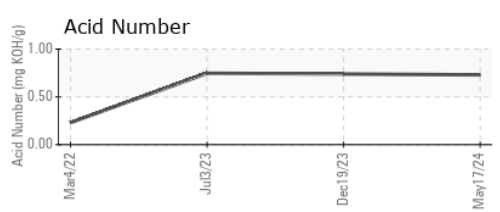
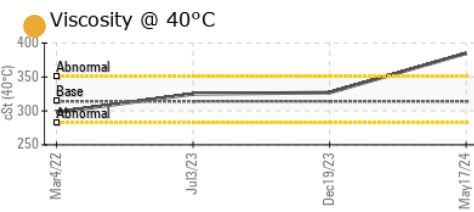
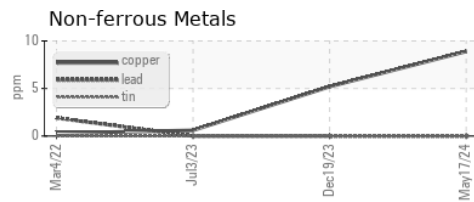
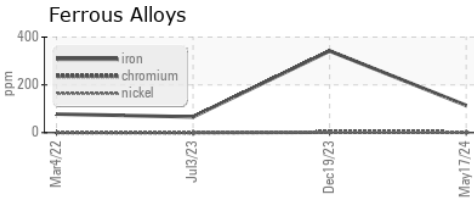
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	MODER
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>▲ MODER</b>	NONE	LIGHT
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	<b>▲ MODER</b>
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>● 385</b>	327	325

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



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KFS0004646      **Received** : 19 Jun 2024  
**Lab Number** : **06214631**      **Tested** : 21 Jun 2024  
**Unique Number** : 11087495      **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  
 T: (256)386-6956  
 F:

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)