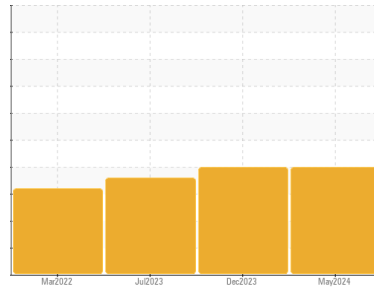




# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Area

**CAST HOUSE/CRANES**

Machine Id

**89 CENTER BRIDGE GEARBOX 1015-U89-2000**

Component

**Gearbox**

Fluid

**CITGO COMPOUND EP 320 (10 GAL)**

## DIAGNOSIS

### Recommendation

We recommend you service the filters on this component if applicable. We recommend an early resample to monitor this condition.

### Wear

Gear wear is indicated.

### Contamination

There is a high amount of particulates present in the oil.

### Fluid Condition

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

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>KFS0004615</b>	KFS0005164	KFS0003337
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>	ABNORMAL	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>▲ 353</b>	▲ 318	▲ 442
Chromium	ppm	ASTM D5185m >15	<b>2</b>	2	3
Nickel	ppm	ASTM D5185m >15	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >25	<b>▲ 125</b>	▲ 98	▲ 195
Lead	ppm	ASTM D5185m >100	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >200	<b>2</b>	<1	5
Tin	ppm	ASTM D5185m >25	<b>0</b>	0	<1
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>15</b>	12	32
Barium	ppm	ASTM D5185m	<b>3</b>	2	0
Molybdenum	ppm	ASTM D5185m	<b>5</b>	2	8
Manganese	ppm	ASTM D5185m	<b>7</b>	6	12
Magnesium	ppm	ASTM D5185m	<b>24</b>	19	39
Calcium	ppm	ASTM D5185m	<b>19</b>	24	481
Phosphorus	ppm	ASTM D5185m	<b>249</b>	173	293
Zinc	ppm	ASTM D5185m	<b>53</b>	39	78
Sulfur	ppm	ASTM D5185m	<b>8124</b>	6846	6707

## CONTAMINANTS

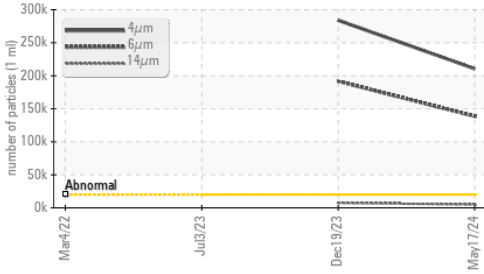
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	<b>41</b>	36	17
Sodium	ppm	ASTM D5185m	<b>4</b>	2	4
Potassium	ppm	ASTM D5185m >20	<b>4</b>	2	0

## FLUID CLEANLINESS

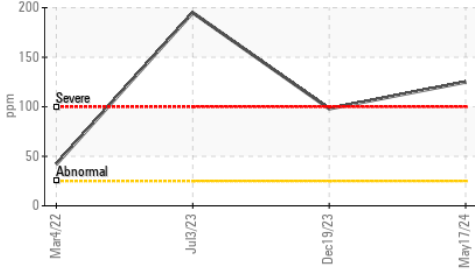
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	<b>▲ 210590</b>	▲ 284015	---
Particles >6µm	ASTM D7647	>5000	<b>▲ 138516</b>	▲ 191517	---
Particles >14µm	ASTM D7647	>640	<b>▲ 4846</b>	▲ 7348	---
Particles >21µm	ASTM D7647	>160	<b>▲ 798</b>	▲ 788	---
Particles >38µm	ASTM D7647	>40	<b>29</b>	20	---
Particles >71µm	ASTM D7647	>10	<b>1</b>	2	---
Oil Cleanliness	ISO 4406 (c)	>21/19/16	<b>▲ 25/24/19</b>	▲ 25/25/20	---

# OIL ANALYSIS REPORT

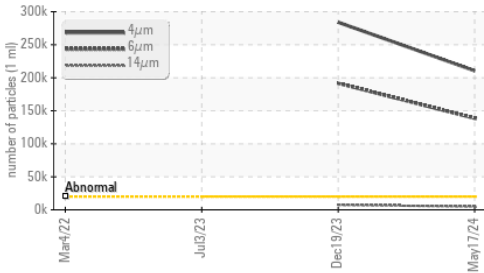
### ▲ Particle Trend



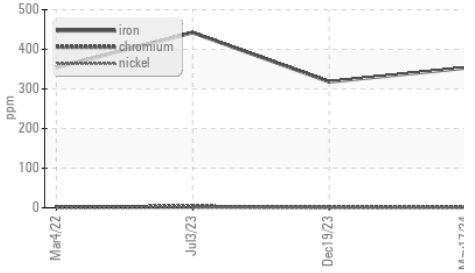
### ▲ Aluminum (ppm)



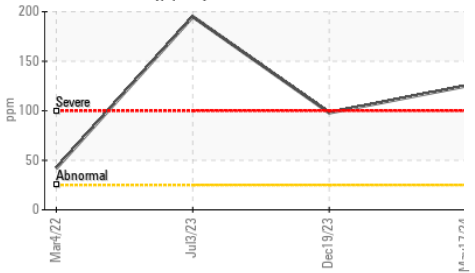
### ▲ Particle Trend



### ▲ Ferrous Alloys



### ▲ Aluminum (ppm)

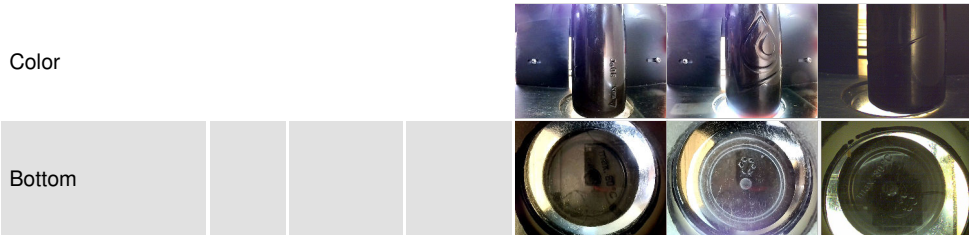


FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.91</b>	1.12	0.91

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

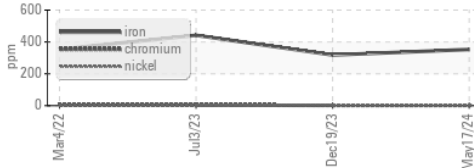
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 314	▲ <b>277</b>	▲ 275	● 372.2

SAMPLE IMAGES	method	limit/base	current	history1	history2
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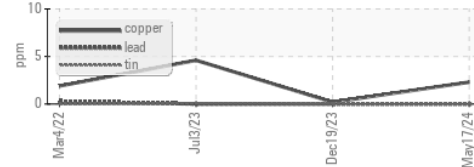


## GRAPHS

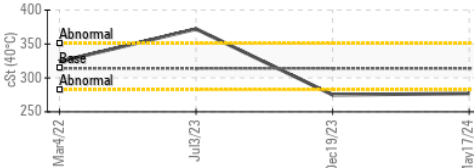
### ▲ Ferrous Alloys



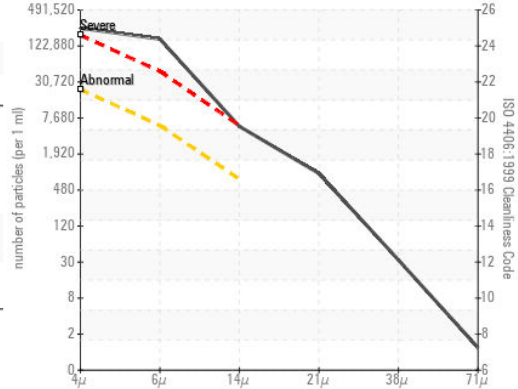
### Non-ferrous Metals



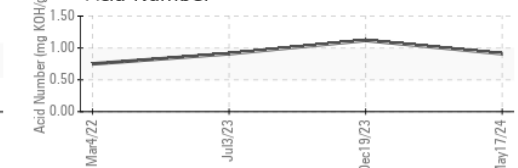
### ▲ Viscosity @ 40°C



### ▲ Particle Count



### Acid Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KFS0004615      **Received** : 19 Jun 2024  
**Lab Number** : 06214636      **Tested** : 20 Jun 2024  
**Unique Number** : 11087500      **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)

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 F: