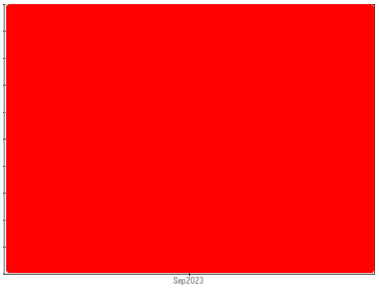
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
CATERPILLAR 303.5 MINI EX2123 (S/N 0CR502472)
Component
Hydraulic System
Fluid
DURALENE ZD AW 46 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check all areas where dirt can enter the system. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. (Customer Sample Comment: Now has Duralene AW46)

Wear

The iron level is severe.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition

The oil viscosity is higher than normal. Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**DC0027529**	---	---
Sample Date		Client Info		**20 Sep 2023**	---	---
Machine Age	hrs	Client Info		**4050**	---	---
Oil Age	hrs	Client Info		**4050**	---	---
Oil Changed		Client Info		**Changed**	---	---
Sample Status				**SEVERE**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	⬢ **102**	---	---
Chromium	ppm	ASTM D5185m	>10	**1**	---	---
Nickel	ppm	ASTM D5185m	>10	**1**	---	---
Titanium	ppm	ASTM D5185m		**<1**	---	---
Silver	ppm	ASTM D5185m		**0**	---	---
Aluminum	ppm	ASTM D5185m	>10	▲ **10**	---	---
Lead	ppm	ASTM D5185m	>10	**1**	---	---
Copper	ppm	ASTM D5185m	>75	**30**	---	---
Tin	ppm	ASTM D5185m	>10	**<1**	---	---
Vanadium	ppm	ASTM D5185m		**<1**	---	---
Cadmium	ppm	ASTM D5185m		**<1**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**31**	---	---
Barium	ppm	ASTM D5185m		**0**	---	---
Molybdenum	ppm	ASTM D5185m		**7**	---	---
Manganese	ppm	ASTM D5185m		**1**	---	---
Magnesium	ppm	ASTM D5185m		▲ **44**	---	---
Calcium	ppm	ASTM D5185m		▲ **2127**	---	---
Phosphorus	ppm	ASTM D5185m		▲ **884**	---	---
Zinc	ppm	ASTM D5185m		▲ **1128**	---	---
Sulfur	ppm	ASTM D5185m		**4130**	---	---

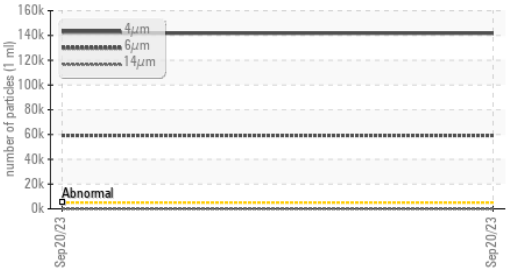
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	▲ **42**	---	---
Sodium	ppm	ASTM D5185m		**3**	---	---
Potassium	ppm	ASTM D5185m	>20	**3**	---	---

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **141789**	---	---
Particles >6µm		ASTM D7647	>1300	▲ **59221**	---	---
Particles >14µm		ASTM D7647	>160	**32**	---	---
Particles >21µm		ASTM D7647	>40	**7**	---	---
Particles >38µm		ASTM D7647	>10	**1**	---	---
Particles >71µm		ASTM D7647	>3	**1**	---	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **24/23/12**	---	---

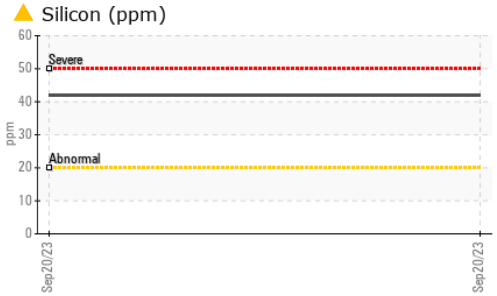
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.31**	---	---

OIL ANALYSIS REPORT

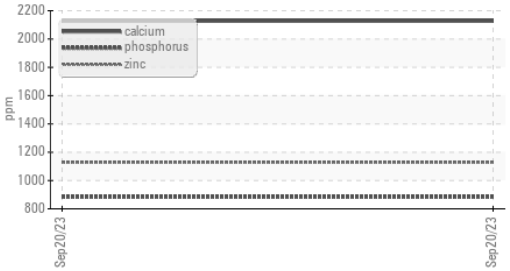
Particle Trend



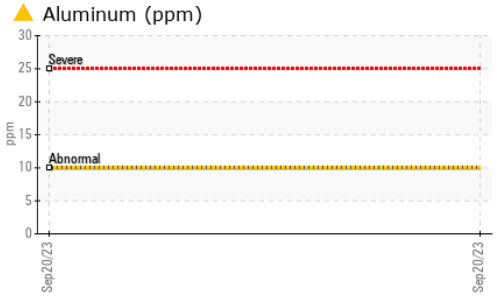
Silicon (ppm)



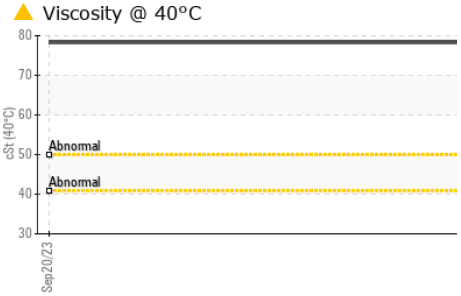
Additives



Aluminum (ppm)

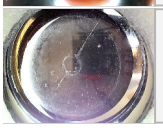


Viscosity @ 40°C



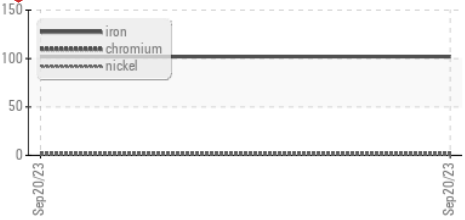
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**LIGHT**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	---	---
Appearance	scalar	*Visual	NORML	**NORML**	---	---
Odor	scalar	*Visual	NORML	**NORML**	---	---
Emulsified Water	scalar	*Visual	>0.1	**NEG**	---	---
Free Water	scalar	*Visual		**NEG**	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445		▲ **78.28**	---	---

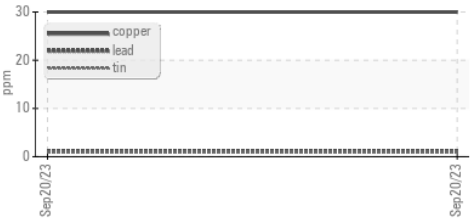
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

GRAPHS

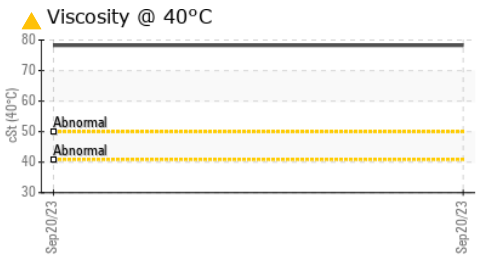
Ferrous Alloys



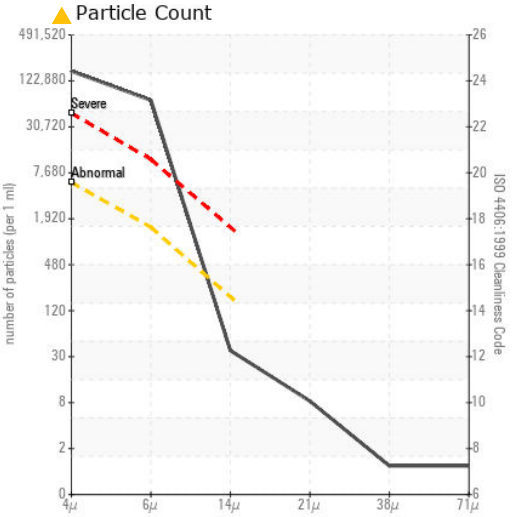
Non-ferrous Metals



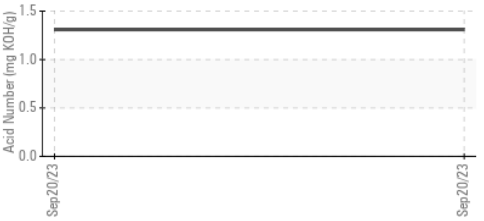
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DC0027529
Lab Number : 05961735
Unique Number : 10662948
Test Package : MOB 2

Received : 26 Sep 2023
Diagnosed : 29 Sep 2023
Diagnostician : Jonathan Hester

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)

COMER CONSTRUCTION
2100 SLADE LANE
FOREST HILL, MD
US 21050
Contact: RANDY SLADE
rslade@comerconstruction.com
T:
F: (410)638-0289

Report Id: COMFORMD [WUSCAR] 05961735 (Generated: 09/29/2023 23:58:28) Rev: 1

Submitted By: DONALD FOX