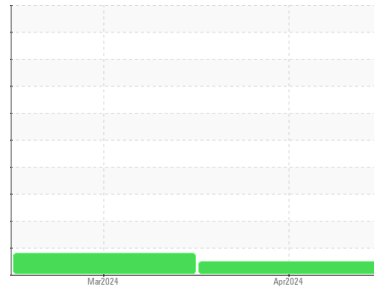




# OIL ANALYSIS REPORT

Area  
**MINING**  
Machine Id  
**ME-117 CATERPILLAR 980M KRS00356**  
Component  
**Hydraulic System**  
Fluid  
**SHELL Spirax S4 CX 10W (--- GAL)**

### Sample Rating Trend



**NORMAL**



### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

#### 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			<b>WC0920009</b>	WC0920003	---
Sample Date	Client Info			<b>01 Apr 2024</b>	11 Mar 2024	---
Machine Age	hrs	Client Info		<b>11592</b>	11464	---
Oil Age	hrs	Client Info		<b>100</b>	129	---
Oil Changed	Client Info			<b>Changed</b>	Filtered	---
Sample Status				<b>NORMAL</b>	ABNORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.1	<b>NEG</b>	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	<b>10</b>	▲ 24	---
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	---
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	<1	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
Silver	ppm	ASTM D5185m		<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>10	<b>3</b>	1	---
Lead	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	---
Copper	ppm	ASTM D5185m	>75	<b>&lt;1</b>	2	---
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	---
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
Cadmium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>0</b>	0	---
Barium	ppm	ASTM D5185m		<b>0</b>	0	---
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	---
Magnesium	ppm	ASTM D5185m		<b>11</b>	57	---
Calcium	ppm	ASTM D5185m		<b>46</b>	193	---
Phosphorus	ppm	ASTM D5185m		<b>66</b>	762	---
Zinc	ppm	ASTM D5185m		<b>404</b>	976	---
Sulfur	ppm	ASTM D5185m		<b>760</b>	2311	---

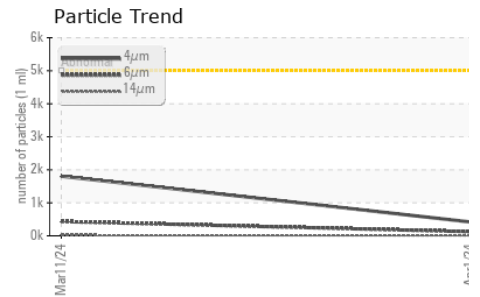
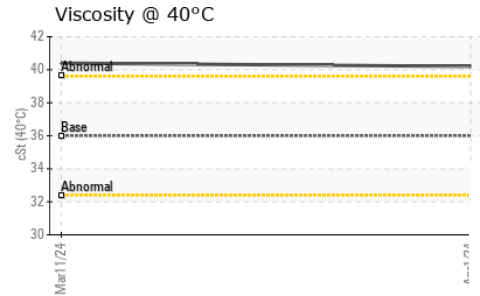
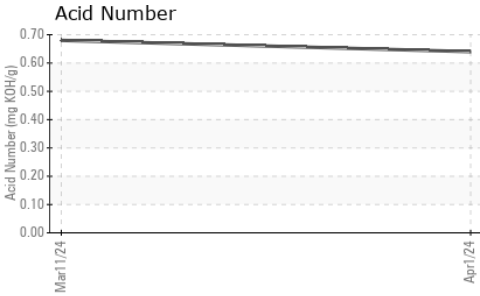
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	<b>1</b>	2	---
Sodium	ppm	ASTM D5185m		<b>1</b>	2	---
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	<1	---

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	<b>418</b>	1806	---
Particles >6µm		ASTM D7647	>1300	<b>124</b>	433	---
Particles >14µm		ASTM D7647	>160	<b>14</b>	18	---
Particles >21µm		ASTM D7647	>40	<b>4</b>	3	---
Particles >38µm		ASTM D7647	>10	<b>0</b>	0	---
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>16/14/11</b>	18/16/11	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.64</b>	0.68	---



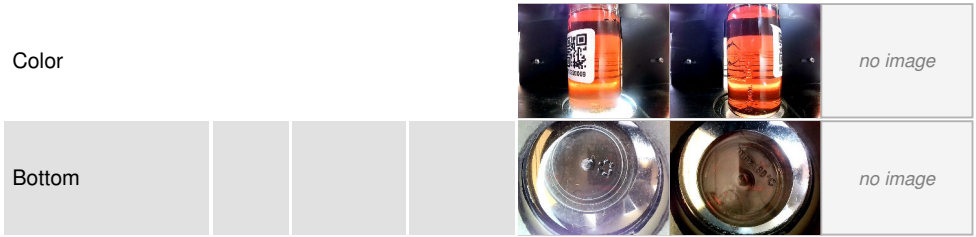
# OIL ANALYSIS REPORT



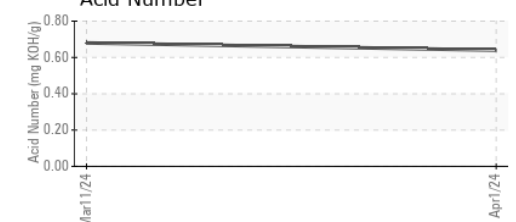
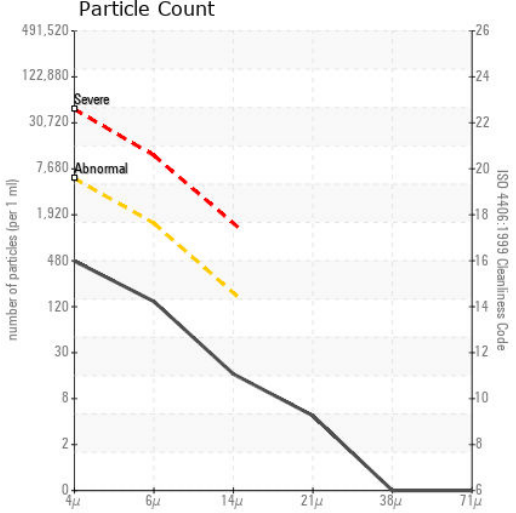
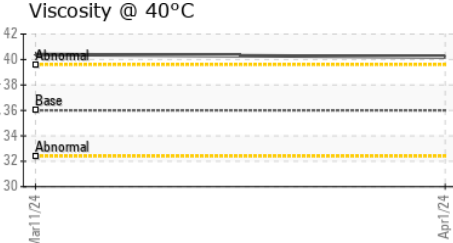
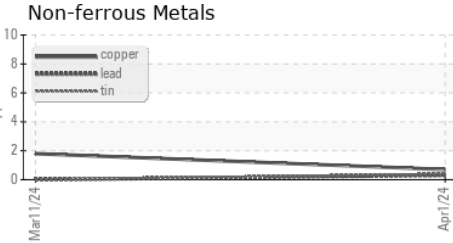
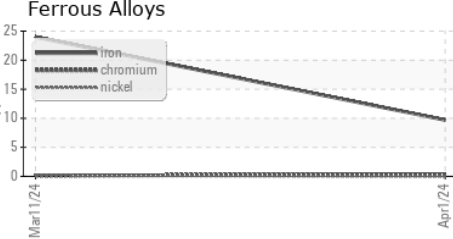
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*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 36	40.2	40.4	---

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.** : WC0920009  
**Lab Number** : 06139855  
**Unique Number** : 10964663  
**Test Package** : CONST

**Received** : 05 Apr 2024  
**Tested** : 08 Apr 2024  
**Diagnosed** : 08 Apr 2024 - Wes Davis

**COVIA - MENOMONIE - 852**  
 N5628 580TH STREET  
 MENOMONIE, WI  
 US 54751

Contact: Jeremy Wagner  
 jeremy.wagner@coviacorp.com  
 T: (715)235-0942

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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