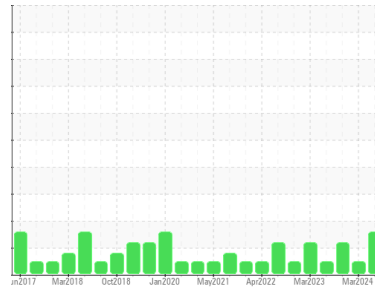


# OIL ANALYSIS REPORT

Sample Rating Trend



Area  
**DE Samples - CAT LAB**  
 Machine ID  
**CATERPILLAR 990H LOADER 6572 (S/N BWX00474)**  
 Component  
**Steering**  
 Fluid  
**TULCO LUBSOIL SUPER HYDRAULIC HZ 46 (--- GAL)**

## DIAGNOSIS

### Recommendation

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

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the fluid.

### Fluid Condition

The AN level is acceptable for this fluid. The fluid is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>TO10003599</b>	TO10003383	TO10002845
Sample Date	Client Info		<b>29 May 2024</b>	04 Mar 2024	27 Nov 2023
Machine Age	hrs	Client Info	<b>32161</b>	31604	31072
Oil Age	hrs	Client Info	<b>5265</b>	4708	4176
Oil Changed	Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Sample Status			<b>ABNORMAL</b>	NORMAL	ATTENTION

## CONTAMINATION

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

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >60	<b>3</b>	2	3
Chromium	ppm	ASTM D5185m >12	<b>2</b>	1	2
Nickel	ppm	ASTM D5185m >6	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >4	<b>1</b>	0	1
Lead	ppm	ASTM D5185m >12	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >30	<b>2</b>	1	2
Tin	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>0</b>	0	0
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Manganese	ppm	ASTM D5185m	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m	<b>166</b>	151	155
Calcium	ppm	ASTM D5185m	<b>157</b>	162	159
Phosphorus	ppm	ASTM D5185m	<b>909</b>	789	854
Zinc	ppm	ASTM D5185m	<b>1063</b>	890	1017
Sulfur	ppm	ASTM D5185m	<b>3575</b>	3329	3337

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >10	<b>&lt;1</b>	<1	1
Sodium	ppm	ASTM D5185m	<b>&lt;1</b>	3	0
Potassium	ppm	ASTM D5185m >20	<b>2</b>	<1	2

## FLUID CLEANLINESS

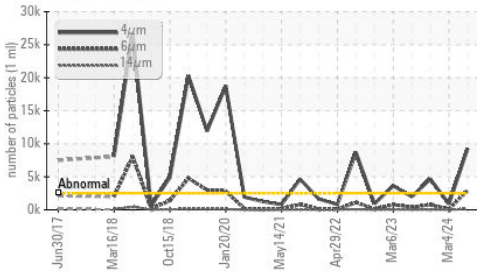
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	<b>▲ 9246</b>	871	● 4659
Particles >6µm	ASTM D7647	>640	<b>▲ 2924</b>	93	● 761
Particles >14µm	ASTM D7647	>80	<b>● 144</b>	4	34
Particles >21µm	ASTM D7647	>20	<b>26</b>	1	5
Particles >38µm	ASTM D7647	>4	<b>1</b>	0	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	<b>▲ 20/19/14</b>	17/14/9	● 19/17/12

## FLUID DEGRADATION

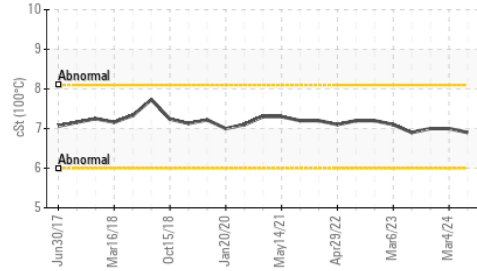
	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>1.33</b>	0.88	0.65

# OIL ANALYSIS REPORT

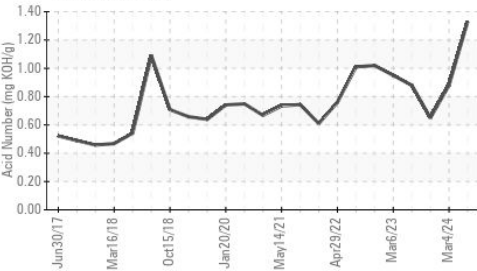
### ▲ Particle Trend



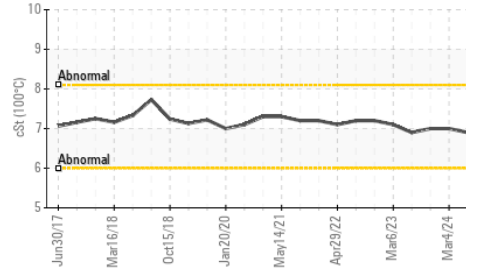
### Viscosity @ 100°C



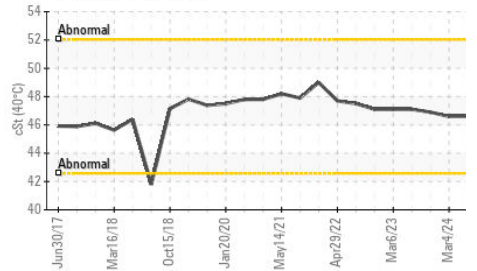
### Acid Number



### Viscosity @ 100°C



### Viscosity @ 40°C



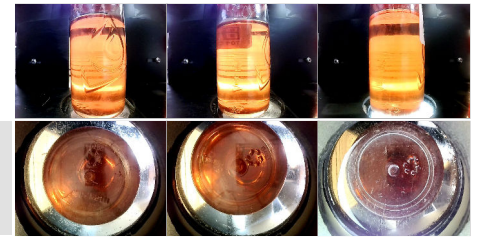
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46.6	46.6	46.9
Visc @ 100°C	cSt	ASTM D445	6.9	7.0	7
Viscosity Index (VI)	Scale	ASTM D2270	103	107	105

SAMPLE IMAGES	method	limit/base	current	history1	history2
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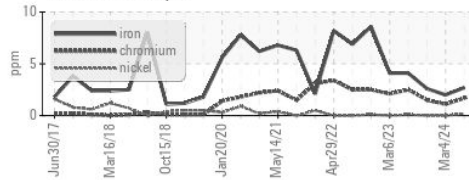
Color

Bottom

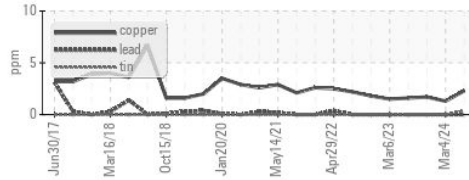


### GRAPHS

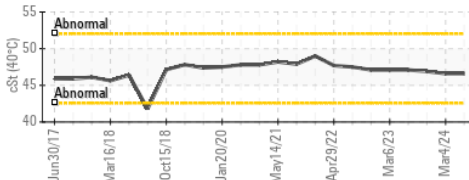
#### Ferrous Alloys



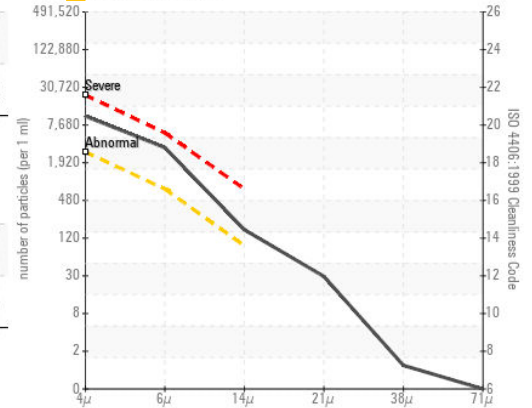
#### Non-ferrous Metals



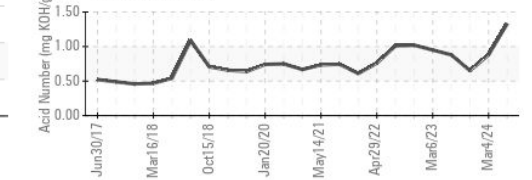
#### Viscosity @ 40°C



#### ▲ Particle Count



#### Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : TO10003599

Lab Number : 06198180

Unique Number : 11060303

Test Package : MOB 2 ( Additional Tests: KV100, PrtCount, VI )

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)

Received : 03 Jun 2024

Tested : 05 Jun 2024

Diagnosed : 05 Jun 2024 - Wes Davis

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