



# WEAR CHECK

## OIL ANALYSIS REPORT

WEAR	<b>SEVERE</b>
CONTAMINATION	<b>SEVERE</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**CATERPILLAR 299D SKIDSTEER 040-0019 (S/N CAT0299DAFD204356)**  
Component  
**Left Final Drive**  
Fluid  
**SCHAEFFER SCHAEFFER 293 MOLY 75W90 (1 QTS)**

### RECOMMENDATION

We advise that you check all areas where dirt can enter the system. We advise that you check for the source of water entry. The oil 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.

### WEAR

Gear wear is indicated.

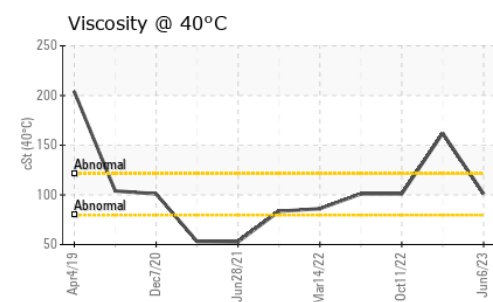
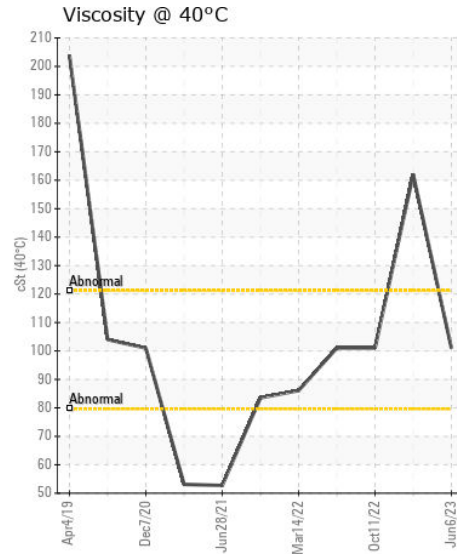
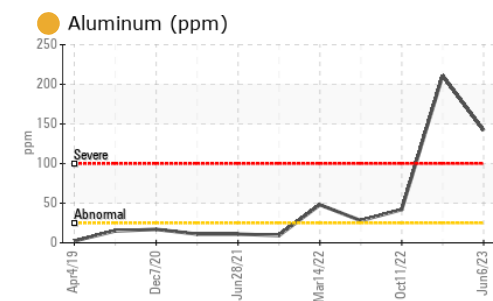
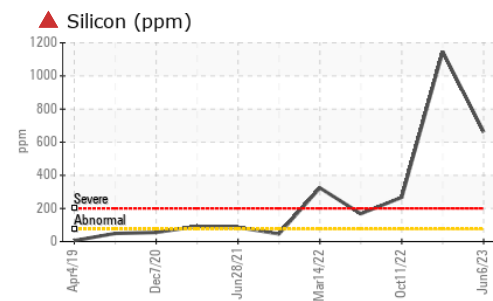
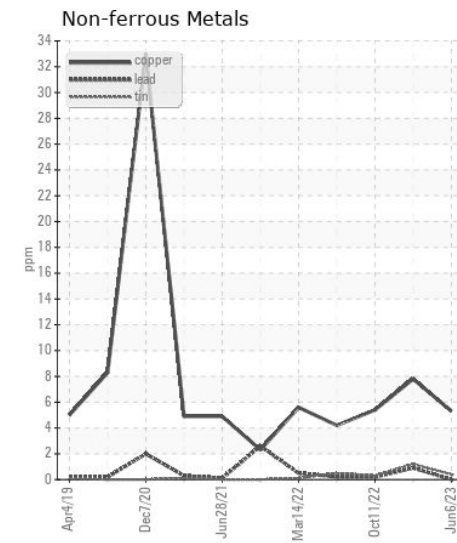
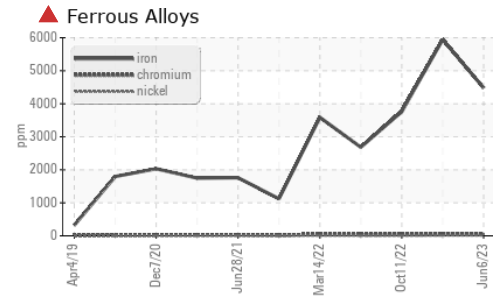
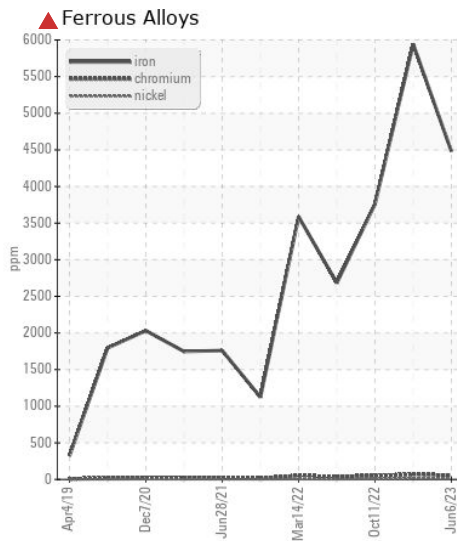
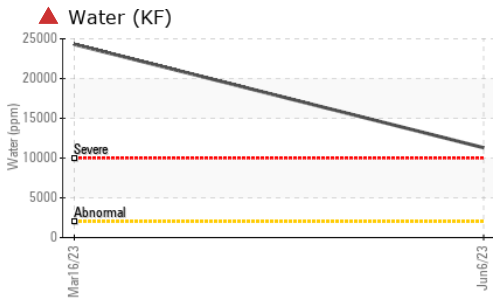
### CONTAMINATION

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. There is a high concentration of water present in the oil.

### FLUID CONDITION

The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0815193</b>	WC0750659	WC0698039
Sample Date		Client Info		<b>06 Jun 2023</b>	16 Mar 2023	11 Oct 2022
Machine Age	hrs	Client Info		<b>9154</b>	8422	7131
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>SEVERE</b>	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>500	<b>▲ 4480</b>	▲ 5944	▲ 3761
Chromium	ppm	ASTM D5185m	>10	<b>▲ 57</b>	▲ 67	▲ 54
Nickel	ppm	ASTM D5185m		<b>7</b>	▲ 10	4
Titanium	ppm	ASTM D5185m		<b>7</b>	13	3
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>● 142</b>	● 211	● 42
Lead	ppm	ASTM D5185m	>25	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185m	>50	<b>5</b>	8	5
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silicon	ppm	ASTM D5185m	>75	<b>▲ 662</b>	▲ 1146	▲ 267
Potassium	ppm	ASTM D5185m	>20	<b>32</b>	28	8
Water	%	ASTM D6304	>0.2	<b>▲ 1.13</b>	▲ 2.43	---
ppm Water	ppm	ASTM D6304	>2000	<b>▲ 11300</b>	▲ 24300	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
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>▲ 0.2%</b>	▲ 0.2%	NEG
Sodium	ppm	ASTM D5185m		<b>4</b>	7	2
Boron	ppm	ASTM D5185m		<b>53</b>	93	125
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>272</b>	210	276
Manganese	ppm	ASTM D5185m		<b>37</b>	53	33
Magnesium	ppm	ASTM D5185m		<b>74</b>	148	27
Calcium	ppm	ASTM D5185m		<b>1112</b>	1964	386
Phosphorus	ppm	ASTM D5185m		<b>582</b>	584	1142
Zinc	ppm	ASTM D5185m		<b>37</b>	53	49
Sulfur	ppm	ASTM D5185m		<b>14866</b>	14957	23912
Visc @ 40°C	cSt	ASTM D445		<b>101</b>	162	101



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0815193  
**Lab Number** : 05880381  
**Unique Number** : 10525484  
**Test Package** : CONST ( Additional Tests: KF )

**Received** : 21 Jun 2023  
**Tested** : 23 Jun 2023  
**Diagnosed** : 24 Jun 2023 - Don Baldrige

**SHIMMICK CONSTRUCTION**  
 5535 TRAILHEAD DRIVE  
 CHATTANOOGA, TN  
 US 37415  
 Contact: DANIEL LISELLA  
 daniel.lisella@shimmick.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)

T:  
F: