

Machine Id CATERPILLAR 299D SKIDSTEER 040-0019 (S/N CAT0299DAFD204356) Left Final Drive

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

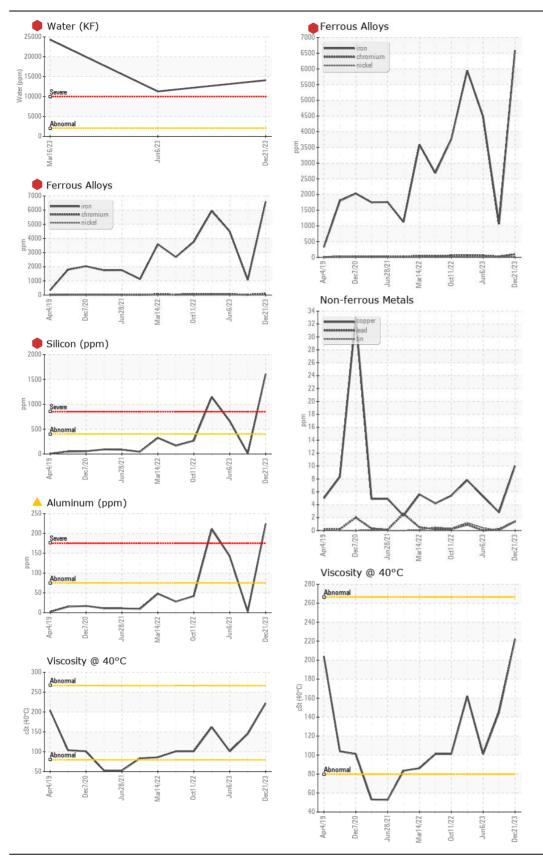
Elemental levels of silicon (Si) and aluminum (AI) indicate aluminasilicate (coarse dirt) ingress. There is a high concentration of water present in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number	00101	Client Info	Linnerton	WC0868389	WC0815227	WC0815193
Sample Date		Client Info		21 Dec 2023	03 Oct 2023	06 Jun 2023
Machine Age	hrs	Client Info		11252	10384	9154
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed	1113	Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Not Changd	Not Change	Changed
Sample Status				SEVERE	ABNORMAL	SEVERE
Iron	ppm	ASTM D5185m	>800	6586	🔺 1060	4480
Chromium	ppm	ASTM D5185m	>10	98 🏓	A 22	5 7
Nickel	ppm	ASTM D5185m	>5	8	2	7
Titanium	ppm	ASTM D5185m	>15	13	<1	7
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>75	224	2	1 42
Lead	ppm	ASTM D5185m	>10	1	<1	0
Copper	ppm	ASTM D5185m	>75	10	3	5
Tin	ppm	ASTM D5185m	>8	1	0	<1
Vanadium	ppm	ASTM D5185m		1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	nnm	ASTM D5185m	<u>\400</u>	1608	9	662
Silicon	ppm	ASTM D5185m	>400	1608 57	9	662
Potassium	ppm	ASTM D5185m	>20	57	9 4	32
Potassium Water	ppm %	ASTM D5185m ASTM D6304	>20 >0.2	57 • 1.41	4	32 1.13
Potassium Water ppm Water	ppm % ppm	ASTM D5185m ASTM D6304 ASTM D6304	>20 >0.2 >2000	57 1.41 14100	4	32 1.13 11300
Potassium Water ppm Water Silt	ppm % ppm scalar	ASTM D5185m ASTM D6304 ASTM D6304 *Visual	>20 >0.2 >2000 NONE	57 1.41 14100 NONE	4 NONE	32 1.13 11300 NONE
Potassium Water ppm Water	ppm % ppm	ASTM D5185m ASTM D6304 ASTM D6304	>20 >0.2 >2000	57 1.41 14100	4	32 1.13 11300
Potassium Water ppm Water Silt Debris Sand/Dirt	ppm % ppm scalar scalar scalar	ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual	>20 >0.2 >2000 NONE NONE	57 1.41 14100 NONE NONE	4 NONE NONE	32 1.13 11300 NONE NONE
Potassium Water ppm Water Silt Debris	ppm % ppm scalar scalar	ASTM D5185m ASTM D6304 *Visual *Visual *Visual	>20 >0.2 >2000 NONE NONE NONE	57 1.41 14100 NONE NONE NONE	4 NONE NONE NONE	32 1.13 11300 NONE NONE NONE
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance	ppm % ppm scalar scalar scalar scalar	ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORE	4 NONE NONE NONE NORML	32 1.13 11300 NONE NONE NORE NORML
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor	ppm % ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML NORML	4 NONE NONE NONE NORML NORML	32 1.13 11300 NONE NONE NORML NORML
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor	ppm % ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML NORML	4 NONE NONE NONE NORML NORML	32 1.13 11300 NONE NONE NORML NORML
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm % ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML NORML 0.2%	4 NONE NONE NORML NORML NEG	32 1.13 11300 NONE NONE NORML NORML 0.2%
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm % ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML NORML 0.2% 8 167 3	4 NONE NONE NORML NORML NEG <1 32 0	32 1.13 11300 NONE NONE NORML NORML 0.2% 4 53 0
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm % ppm scalar scalar scalar scalar scalar scalar ppm	ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML NORML 0.2% 8 167 3 124	4 NONE NONE NORML NORML NORML NEG <1 32 0 80	32 1.13 11300 NONE NONE NORML NORML 0.2% 4 53 0 272
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm % ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML NORML 0.2% 8 167 3 124 60	4 NONE NONE NORML NORML NEG <1 32 0 80 11	32 1.13 11300 NONE NONE NORML 0.2% 4 53 0 272 37
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm % ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML NORML 0.2% 8 167 3 124	4 NONE NONE NORML NORML NEG <1 32 0 80 11 0	32 1.13 11300 NONE NONE NORML 0.2% 4 53 0 272 37 74
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm % ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML 0.2% 8 167 3 124 60 149 2088	4 NONE NONE NORML NORML NEG <1 32 0 80 11 0 80 11 0 41	32 1.13 11300 NONE NONE NORML NORML 0.2% 4 53 0 272 37 74 1112
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm % ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML NORML 0.2% 8 167 3 124 60 149 2088 1160	4 NONE NONE NORML NORML NEG <1 32 0 80 11 0 41 1004	32 1.13 11300 NONE NONE NORML 0.2% 4 53 0 272 37 74 1112 582
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm % scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML NORML 0.2% 8 167 3 124 60 149 2088 1160 27	4 NONE NONE NORML NORML NEG <1 32 0 80 11 32 0 80 11 1004 13	32 1.13 11300 NONE NONE NORML 0.2% 4 53 0 272 37 74 1112 582 37
Potassium Water ppm Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm % scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.2 >2000 NONE NONE NONE NORML	57 1.41 14100 NONE NONE NORML NORML 0.2% 8 167 3 124 60 149 2088 1160	4 NONE NONE NORML NORML NEG <1 32 0 80 11 0 41 1004	32 1.13 11300 NONE NONE NORML 0.2% 4 53 0 272 37 74 1112 582

FLUID CONDITION

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

Contact/Location: DANIEL LISELLA - AECCHATN



SHIMMICK CONSTRUCTION Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0868389 : 30 Jan 2024 5535 TRAILHEAD DRIVE Sample No. Recieved Lab Number : 06074221 CHATTANOOGA, TN Diagnosed : 31 Jan 2024 : 10856312 Diagnostician : Jonathan Hester US 37415 Unique Number Test Package : CONST (Additional Tests: KF) Contact: DANIEL LISELLA Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. daniel.lisella@shimmick.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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