



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
DE Samples - CAT LAB
Machine Id
CATERPILLAR 980H LOADER 6821 (S/N JMS06208)
Component
Rear Left Final Drive
Fluid
TULCO LUBSOIL TO-4 50 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10003145	TO10002864	TO10002464
Sample Date		Client Info		20 Feb 2024	13 Nov 2023	28 Aug 2023
Machine Age	hrs	Client Info		28828	28310	27775
Oil Age	hrs	Client Info		5219	4444	249
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		None	None	None
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

PQ		ASTM D8184	>500	24	17	19
Iron	ppm	ASTM D5185m	>800	11	10	7
Chromium	ppm	ASTM D5185m	>10	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	<1	0
Titanium	ppm	ASTM D5185m	>15	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>75	2	2	2
Lead	ppm	ASTM D5185m	>10	0	<1	<1
Copper	ppm	ASTM D5185m	>75	1	1	<1
Tin	ppm	ASTM D5185m	>8	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

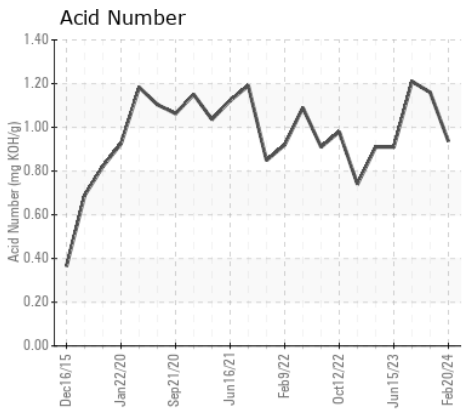
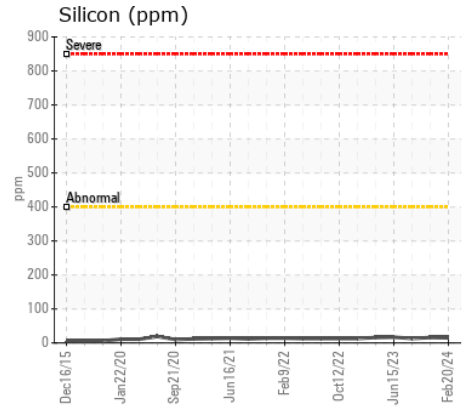
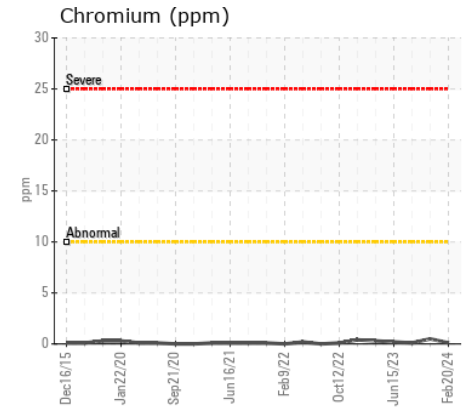
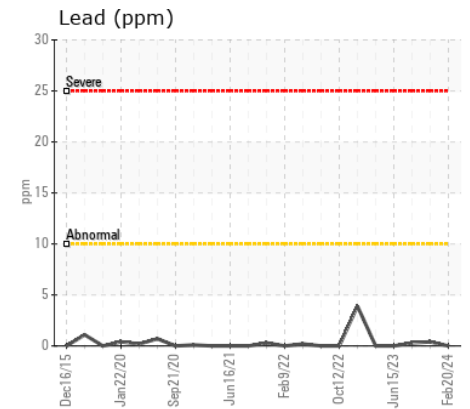
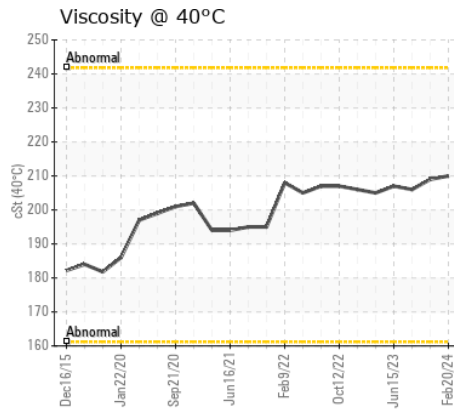
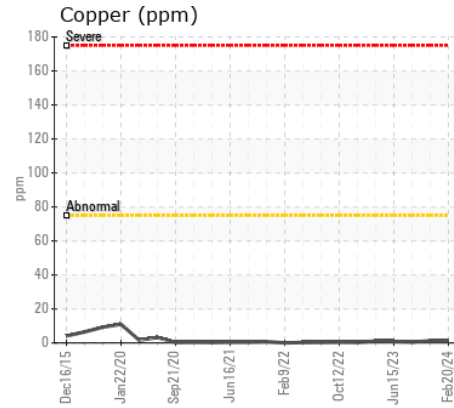
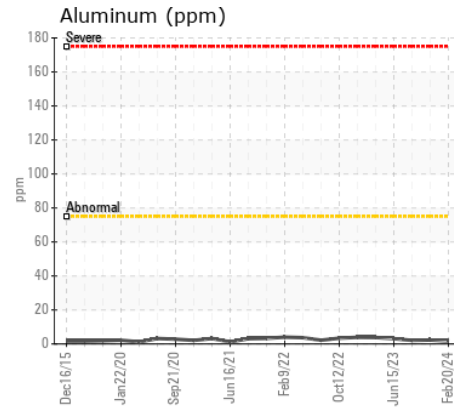
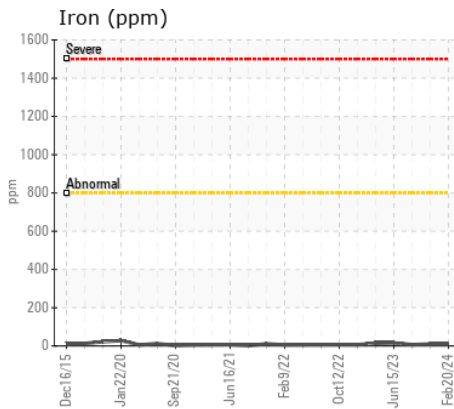
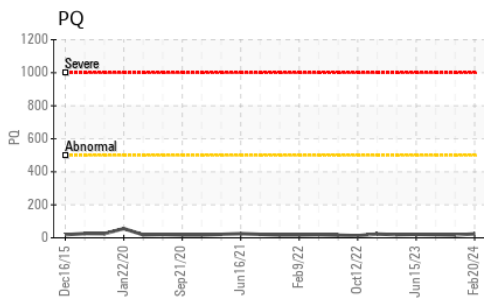
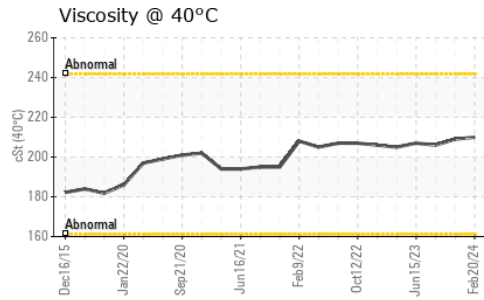
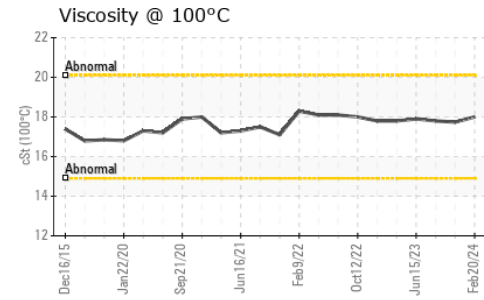
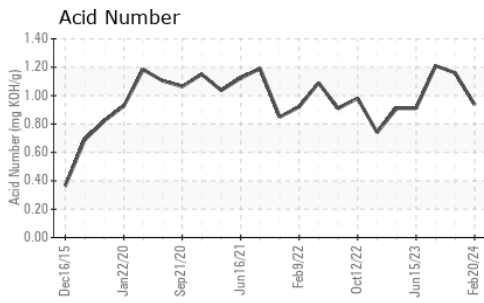
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>400	15	16	13
Potassium	ppm	ASTM D5185m	>20	0	0	1
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		4	5	4
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	<1	0
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		14	0	17
Calcium	ppm	ASTM D5185m		3420	3431	3619
Phosphorus	ppm	ASTM D5185m		924	813	909
Zinc	ppm	ASTM D5185m		1137	1124	1178
Sulfur	ppm	ASTM D5185m		4846	4403	5654
Acid Number (AN)	mg KOH/g	ASTM D8045		0.936	1.16	1.21
Visc @ 40°C	cSt	ASTM D445		210	209	206
Visc @ 100°C	cSt	ASTM D445		18.0	17.74	17.8
Viscosity Index (VI)	Scale	ASTM D2270		93	91	93



Certificate L2367

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

Sample No. : TO10003145

Lab Number : 06105375

Unique Number : 10903605

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

Received : 29 Feb 2024

Tested : 02 Mar 2024

Diagnosed : 02 Mar 2024 - Wes Davis

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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