



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
CATERPILLAR 980H LOADER 6821 (S/N JMS06208)
Component
Front Differential
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		TO10002889	TO10002483	TO10002347
Sample Date		Client Info		13 Nov 2023	28 Aug 2023	15 Jun 2023
Machine Age	hrs	Client Info		28310	27775	27269
Oil Age	hrs	Client Info		4701	4166	3660
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	UOM	Method	Limit/Abn	Current	History1	History2
Iron	ppm	ASTM D5185m	>500	38	36	32
Chromium	ppm	ASTM D5185m	>3	<1	<1	<1
Nickel	ppm	ASTM D5185m	>3	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>30	4	4	3
Lead	ppm	ASTM D5185m	>13	<1	<1	0
Copper	ppm	ASTM D5185m	>103	2	2	1
Tin	ppm	ASTM D5185m	>5	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

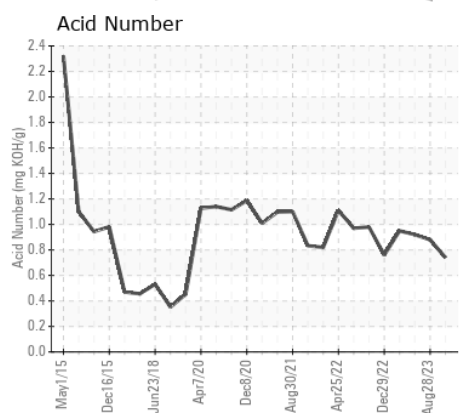
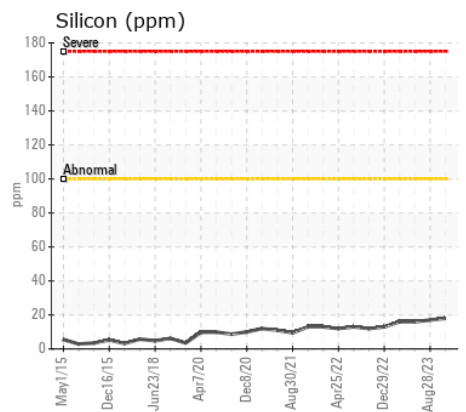
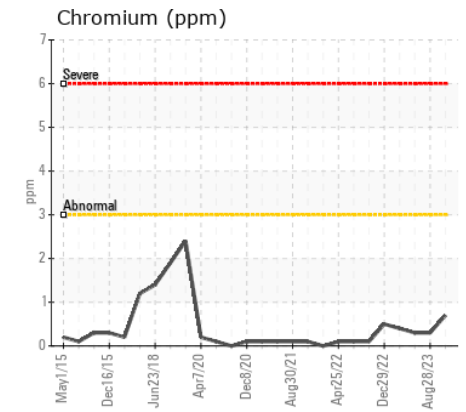
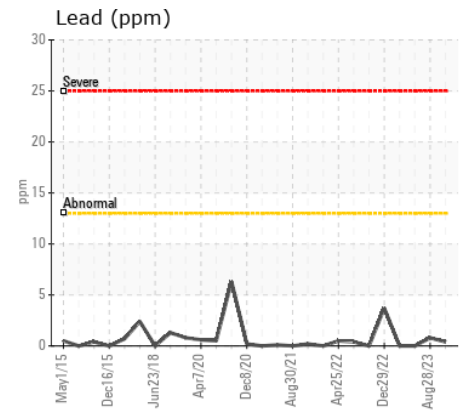
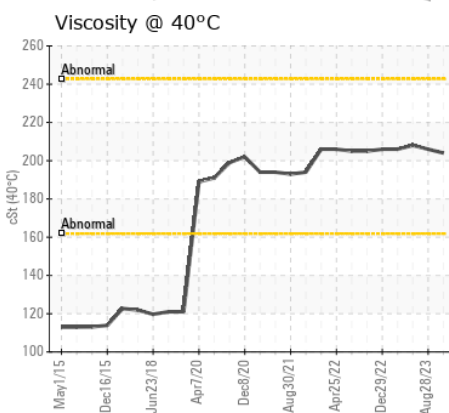
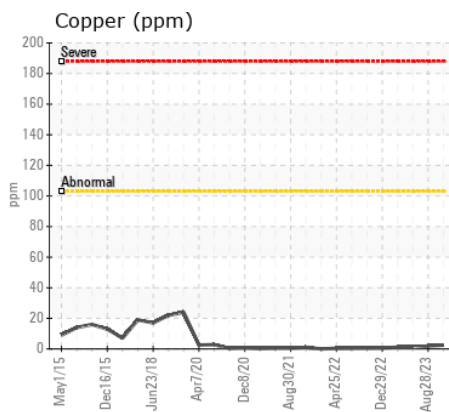
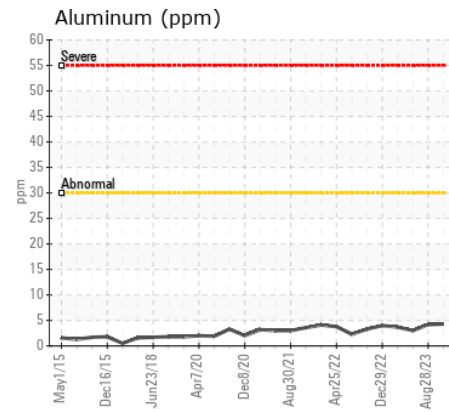
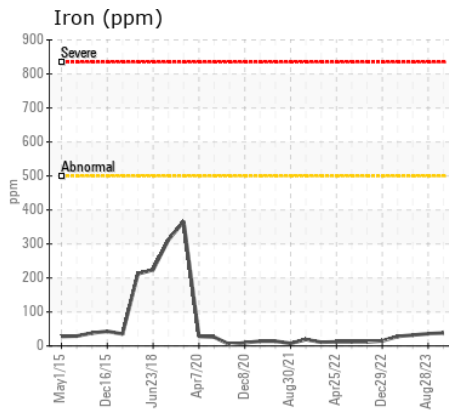
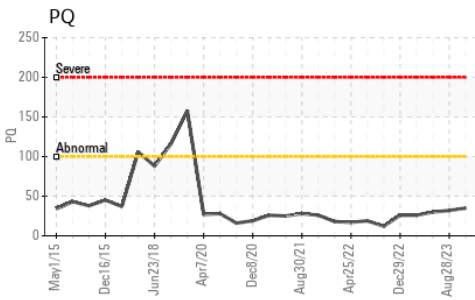
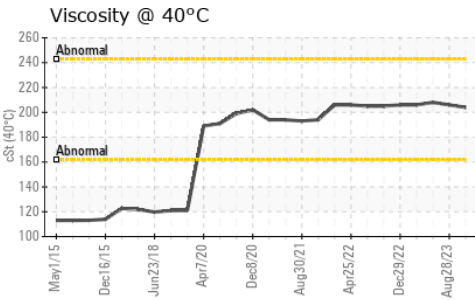
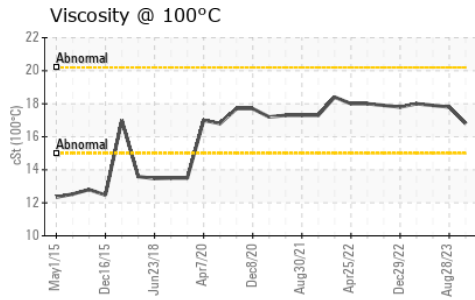
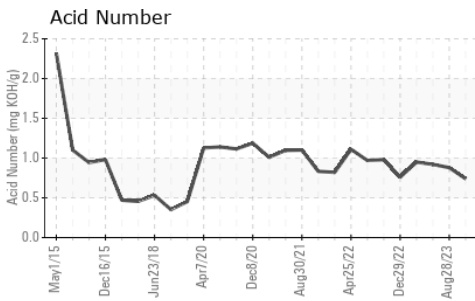
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>100	18	17	16
Potassium	ppm	ASTM D5185m	>20	0	2	0
Water		WC Method	>.2	NEG	NEG	NEG
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	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	>.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		5	4	4
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		<1	0	<1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		0	24	20
Calcium	ppm	ASTM D5185m		4089	4503	4728
Phosphorus	ppm	ASTM D5185m		672	814	830
Zinc	ppm	ASTM D5185m		912	1026	1047
Sulfur	ppm	ASTM D5185m		4141	5642	6011
Acid Number (AN)	mg KOH/g	ASTM D8045		0.74	0.88	0.92
Visc @ 40°C	cSt	ASTM D445		204	206	208
Visc @ 100°C	cSt	ASTM D445		16.8	17.8	17.9
Viscosity Index (VI)	Scale	ASTM D2270		85	93	93



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10002889 **Received** : 17 Nov 2023
Lab Number : 06011557 **Tested** : 20 Nov 2023
Unique Number : 10750701 **Diagnosed** : 20 Nov 2023 - Wes Davis
Test Package : MOB 2 (Additional Tests: KV100, PQ, VI)

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Certificate L2367
 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)