



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Machine Id
CATERPILLAR 980H LOADER 6583 (S/N JMS05055)
Component
Hydraulic System
Fluid
TULCO LUBSOIL SUPER HYDRAULIC HZ 46 (--- GAL)

RECOMMENDATION

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10003077	TO10002752	TO10002310
Sample Date		Client Info		08 Jan 2024	02 Oct 2023	14 Jul 2023
Machine Age	hrs	Client Info		34718	34179	33615
Oil Age	hrs	Client Info		5126	4587	4023
Filter Age	hrs	Client Info		539	564	486
Oil Changed		Client Info		Not Changed	Not Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	7	8	10
Chromium	ppm	ASTM D5185m	>10	0	0	<1
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	1	0	2
Lead	ppm	ASTM D5185m	>10	0	0	0
Copper	ppm	ASTM D5185m	>75	1	2	1
Tin	ppm	ASTM D5185m	>10	0	0	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

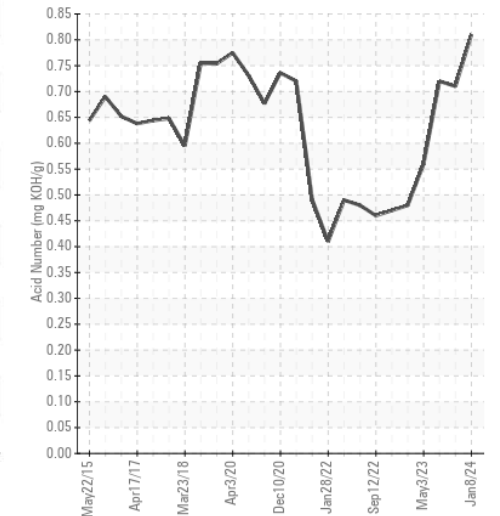
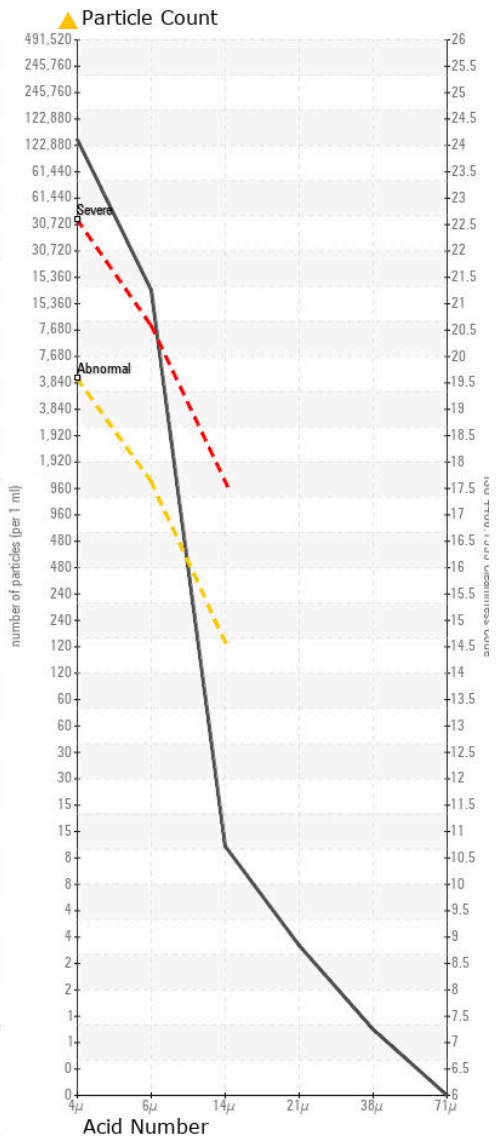
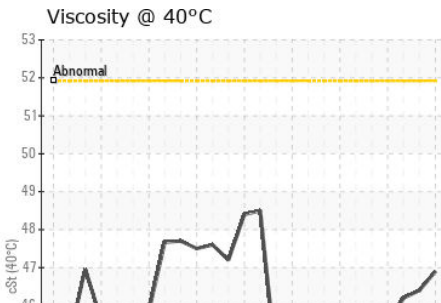
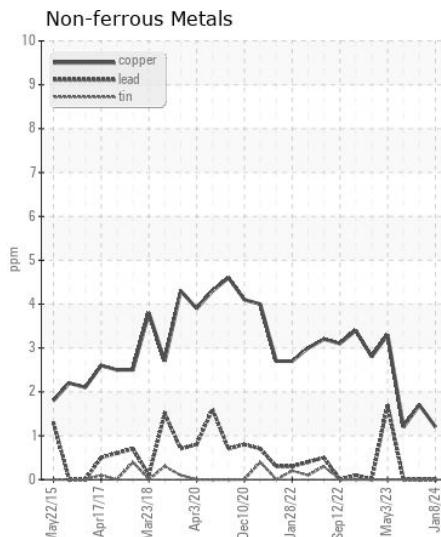
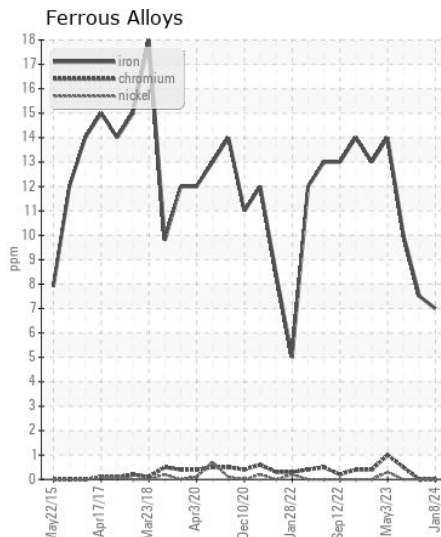
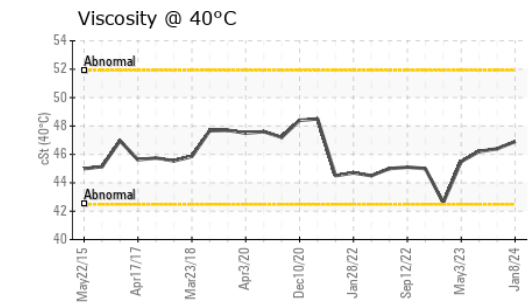
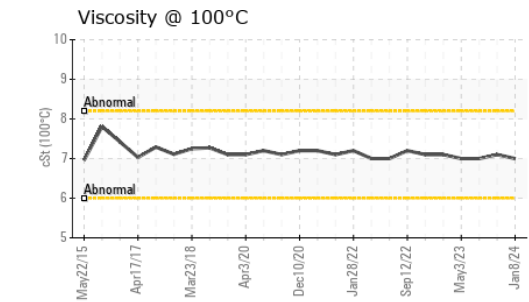
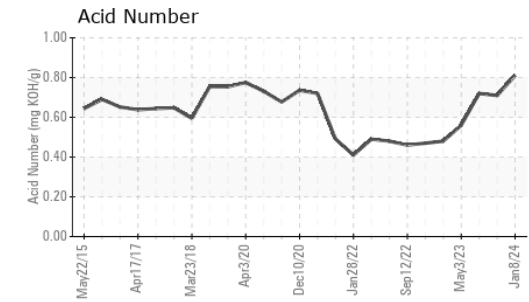
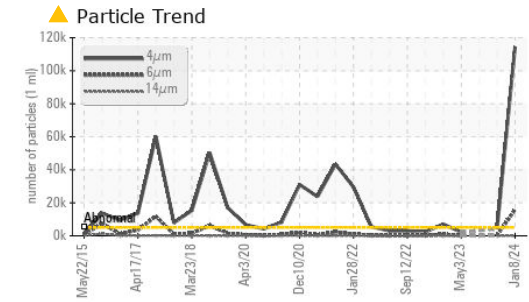
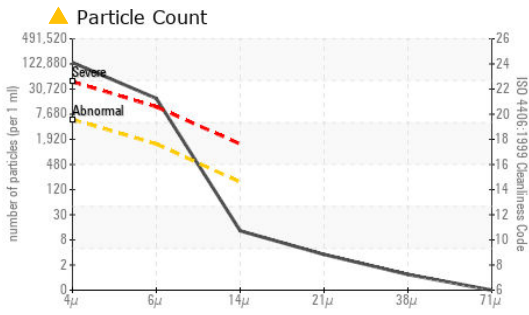
There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Silicon	ppm	ASTM D5185m	>20	7	4	7
Potassium	ppm	ASTM D5185m	>20	0	2	<1
Water	%	ASTM D6304	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	▲ 114412	4184	---
Particles >6µm		ASTM D7647	>1300	▲ 15919	220	---
Particles >14µm		ASTM D7647	>160	11	27	---
Particles >21µm		ASTM D7647	>40	3	9	---
Particles >38µm		ASTM D7647	>10	1	0	---
Particles >71µm		ASTM D7647	>3	0	0	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ 24/21/11	19/15/12	---
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	▲ MODER
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	>0.1	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		3	3	2
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	0	<1
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		153	140	140
Calcium	ppm	ASTM D5185m		189	191	204
Phosphorus	ppm	ASTM D5185m		648	562	597
Zinc	ppm	ASTM D5185m		788	718	741
Sulfur	ppm	ASTM D5185m		2416	2331	2816
Acid Number (AN)	mg KOH/g	ASTM D8045		0.81	0.71	0.72
Visc @ 40°C	cSt	ASTM D445		46.9	46.4	46.2
Visc @ 100°C	cSt	ASTM D445		7	7.1	7
Viscosity Index (VI)	Scale	ASTM D2270		105	111	108



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10003077 **Received** : 16 Jan 2024
Lab Number : 06061043 **Diagnosed** : 17 Jan 2024
Unique Number : 10832425 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: KF, KV100, VI)

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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)