



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
HITACHI 002121
Component
Hydraulic System
Fluid
CASTROL DUAL RANGE HV HYD OIL ISO 46 (51 GAL)

RECOMMENDATION

The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0800529	WC0724578	WC0724665
Sample Date		Client Info		29 Nov 2023	19 Jun 2023	16 Jun 2023
Machine Age	hrs	Client Info		5950	5858	5542
Oil Age	hrs	Client Info		1500	550	1050
Filter Age	hrs	Client Info		100	550	550
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	SEVERE	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	11	16	10
Chromium	ppm	ASTM D5185m	>10	<1	0	0
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	2	1	<1
Lead	ppm	ASTM D5185m	>10	0	0	0
Copper	ppm	ASTM D5185m	>75	5	8	4
Tin	ppm	ASTM D5185m	>10	0	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

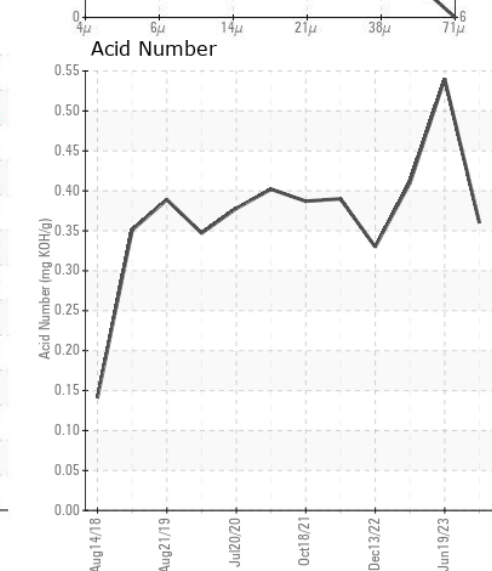
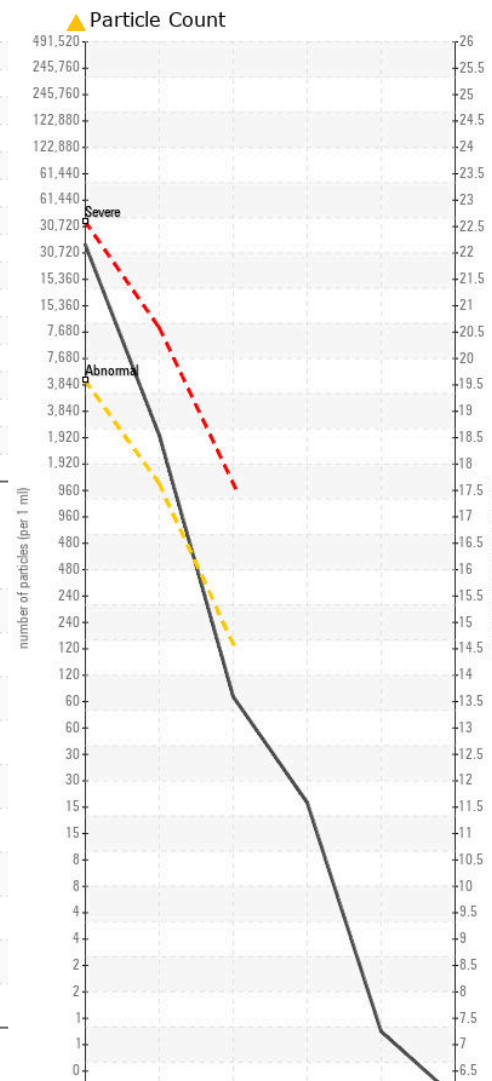
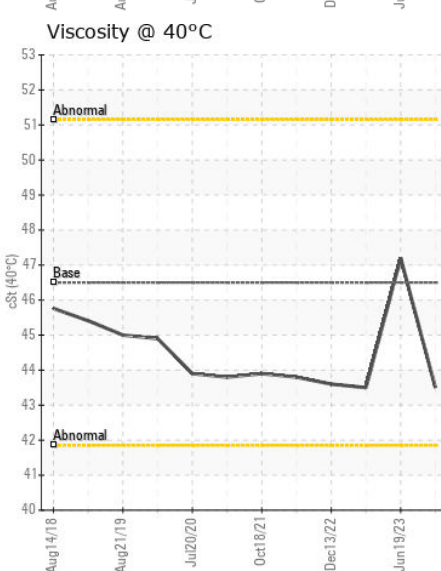
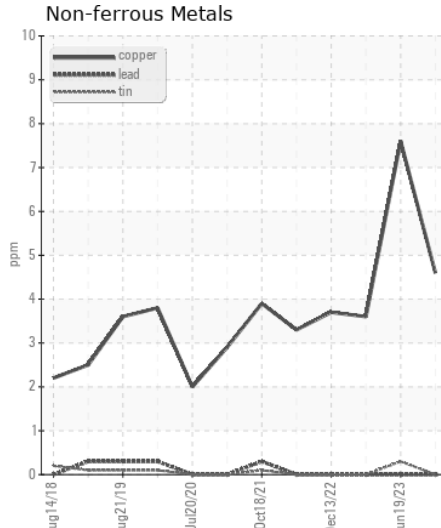
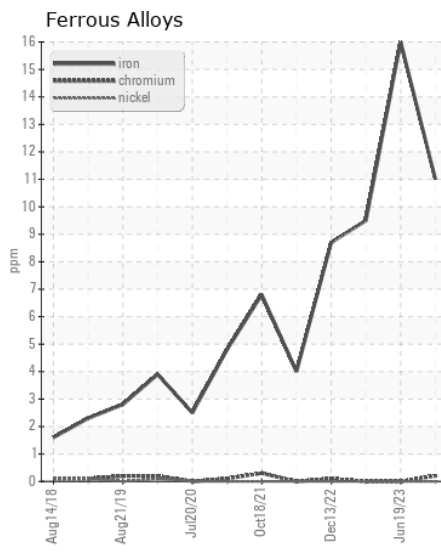
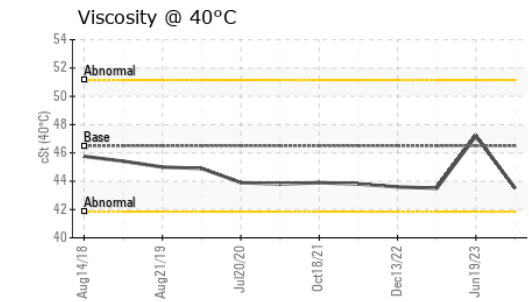
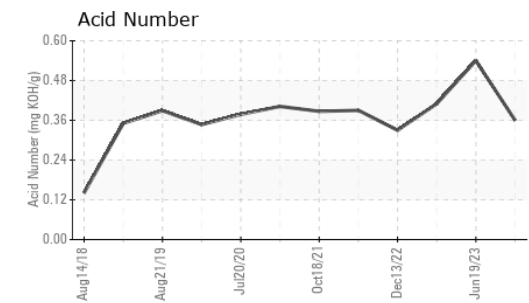
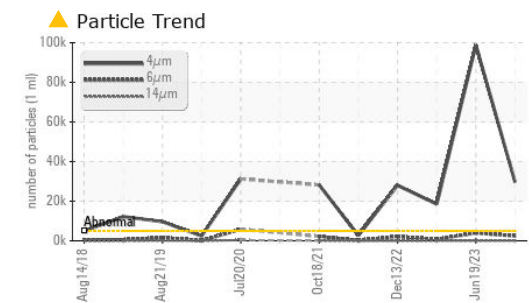
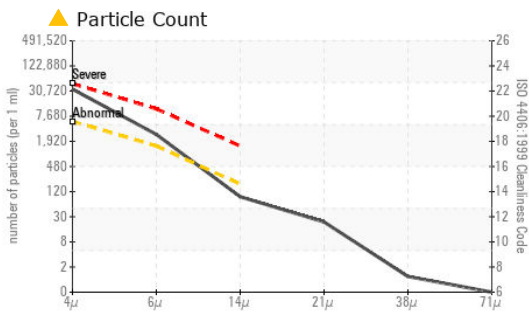
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Silicon	ppm	ASTM D5185m	>20	3	9	2
Potassium	ppm	ASTM D5185m	>20	2	0	0
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	▲ 29642	● 98774	▲ 18505
Particles >6µm		ASTM D7647	>1300	▲ 2455	▲ 3939	774
Particles >14µm		ASTM D7647	>160	80	38	37
Particles >21µm		ASTM D7647	>40	20	9	8
Particles >38µm		ASTM D7647	>10	1	0	0
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ 22/18/13	● 24/19/12	▲ 21/17/12
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	>0.1	NEG	NEG	NEG

FLUID CONDITION

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Sodium	ppm	ASTM D5185m		0	1	1
Boron	ppm	ASTM D5185m		<1	6	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	3	1
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		29	54	21
Calcium	ppm	ASTM D5185m		167	805	163
Phosphorus	ppm	ASTM D5185m		421	523	403
Zinc	ppm	ASTM D5185m		349	522	354
Sulfur	ppm	ASTM D5185m		1114	1750	1243
Acid Number (AN)	mg KOH/g	ASTM D8045		0.36	0.54	0.41
Visc @ 40°C	cSt	ASTM D445	46.5	43.5	47.2	43.5



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0800529 **Received** : 12 Jan 2024
Lab Number : 06060179 **Diagnosed** : 16 Jan 2024
Unique Number : 10831561 **Diagnostician** : Wes Davis
Test Package : CONST

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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)