



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
HITACHI 002144
 Component
Hydraulic System
 Fluid
CASTROL DUAL RANGE HV HYD OIL ISO 46 (53 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0856163	WC0800524	WC0758062
Sample Date		Client Info		20 Jun 2024	01 Dec 2023	20 Mar 2023
Machine Age	hrs	Client Info		5492	4938	4331
Oil Age	hrs	Client Info		554	1500	546
Filter Age	hrs	Client Info		554	607	546
Oil Changed		Client Info		Not Changed	Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	SEVERE	ATTENTION

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	8	14	9
Chromium	ppm	ASTM D5185m	>10	<1	<1	0
Nickel	ppm	ASTM D5185m	>10	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		<1	0	0
Aluminum	ppm	ASTM D5185m	>10	2	2	<1
Lead	ppm	ASTM D5185m	>10	<1	0	0
Copper	ppm	ASTM D5185m	>75	3	5	3
Tin	ppm	ASTM D5185m	>10	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

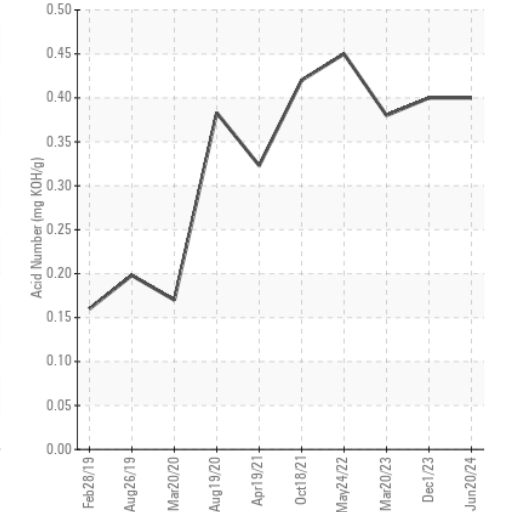
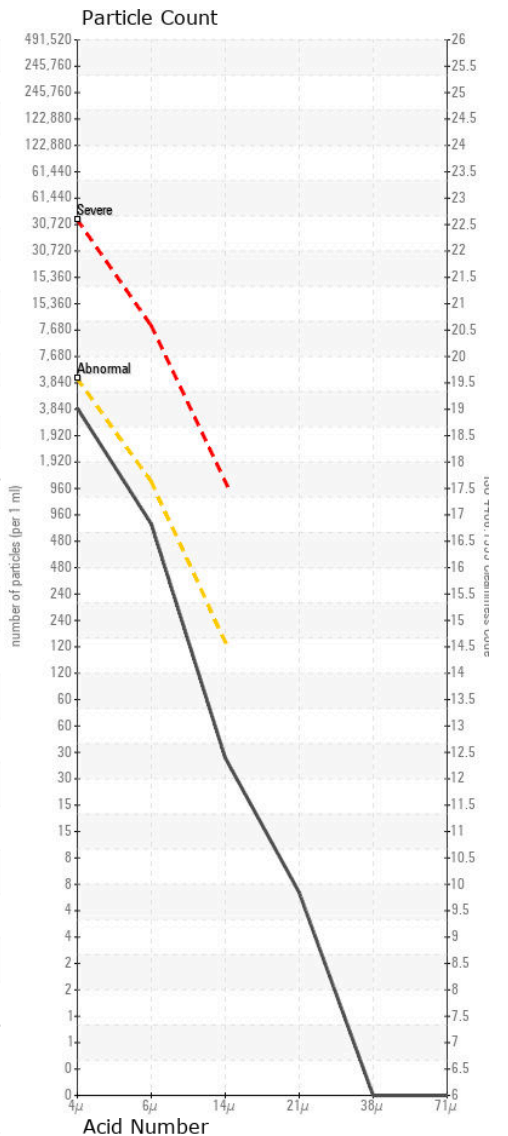
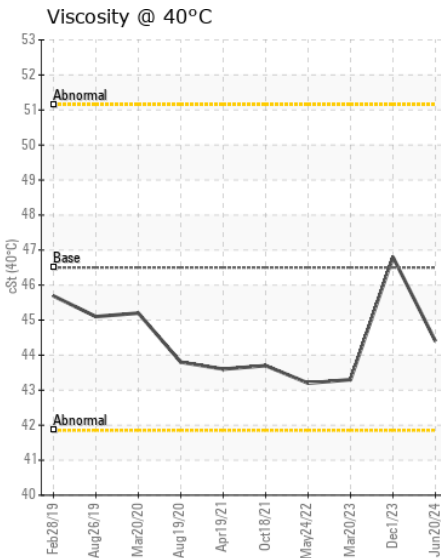
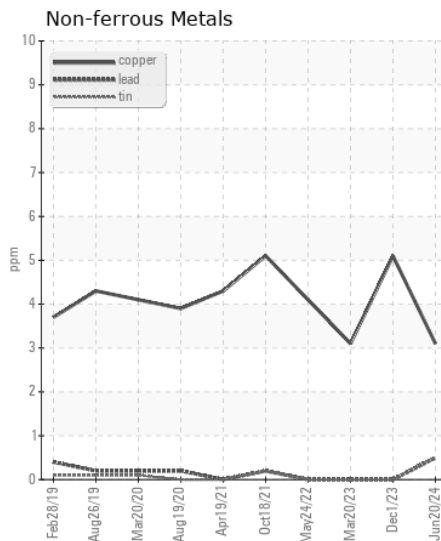
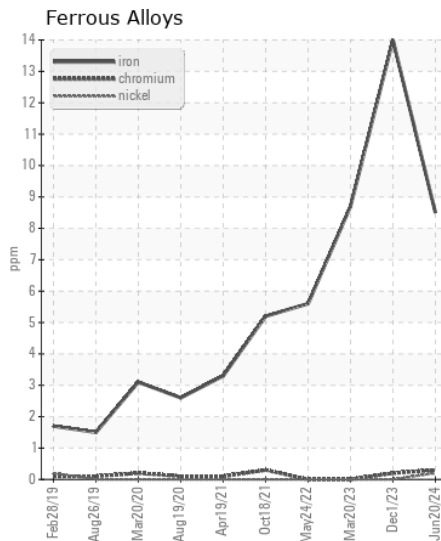
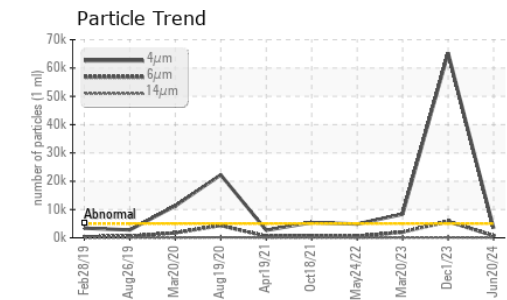
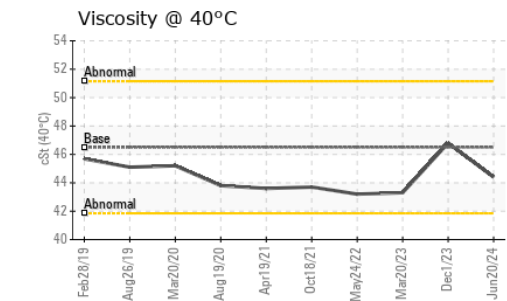
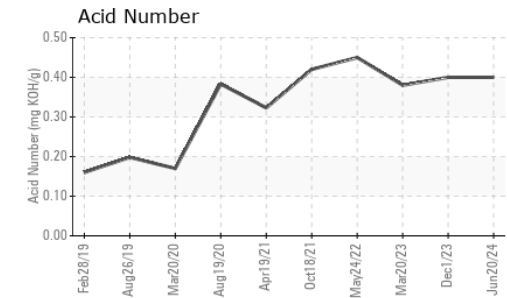
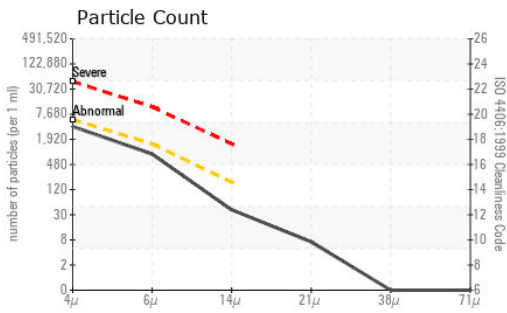
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185m	>20	2	2	1
Potassium	ppm	ASTM D5185m	>20	2	2	2
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	3396	▲ 65271	● 8353
Particles >6µm		ASTM D7647	>1300	748	▲ 5807	● 2002
Particles >14µm		ASTM D7647	>160	35	92	73
Particles >21µm		ASTM D7647	>40	6	25	11
Particles >38µm		ASTM D7647	>10	0	3	0
Particles >71µm		ASTM D7647	>3	0	2	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	19/17/12	▲ 23/20/14	● 20/18/13
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 condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		0	0	0
Boron	ppm	ASTM D5185m		<1	0	0
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m		2	1	2
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		36	26	18
Calcium	ppm	ASTM D5185m		137	121	102
Phosphorus	ppm	ASTM D5185m		362	470	430
Zinc	ppm	ASTM D5185m		330	291	279
Sulfur	ppm	ASTM D5185m		734	694	476
Acid Number (AN)	mg KOH/g	ASTM D8045		0.40	0.40	0.38
Visc @ 40°C	cSt	ASTM D445	46.5	44.4	46.8	43.3



Certificate L2367

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

Sample No. : WC0856163

Lab Number : 06231433

Unique Number : 11114926

Test Package : CONST

Received : 09 Jul 2024

Tested : 10 Jul 2024

Diagnosed : 10 Jul 2024 - Wes Davis

CJ MILLER LLC

2903 DEDE RD

FINKSBURG, MD

US 21048

Contact: JOE ROSS

jross@cjmillerllc.com

T: (410)239-8006

F: (410)239-1051

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)