



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ATTENTION



Machine Id
CATERPILLAR 930K 001804 (S/N CAT0930KERHN00483)
 Component
Hydraulic System
 Fluid
CASTROL DUAL RANGE HV HYD OIL ISO 46 (24 GAL)

RECOMMENDATION

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0800522	WC0724697	WC0700997
Sample Date		Client Info		04 Dec 2023	13 Apr 2023	15 Aug 2022
Machine Age	hrs	Client Info		11242	10574	10153
Oil Age	hrs	Client Info		668	2000	1000
Filter Age	hrs	Client Info		668	421	636
Oil Changed		Client Info		Not Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	6	3	3
Chromium	ppm	ASTM D5185m	>10	<1	0	<1
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	2	2	4
Lead	ppm	ASTM D5185m	>10	0	0	0
Copper	ppm	ASTM D5185m	>75	<1	0	<1
Tin	ppm	ASTM D5185m	>10	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	▲ MODER
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Moderate concentration of visible dirt/debris present in the oil.

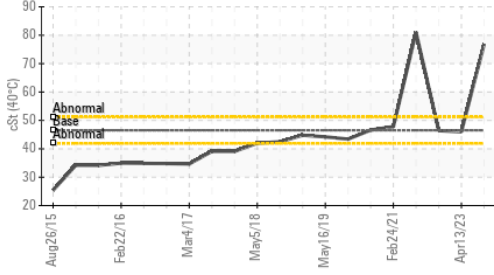
Silicon	ppm	ASTM D5185m	>20	7	2	3
Potassium	ppm	ASTM D5185m	>20	2	0	0
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	---	▲ 16370	---
Particles >6µm		ASTM D7647	>1300	---	▲ 4510	---
Particles >14µm		ASTM D7647	>160	---	▲ 173	---
Particles >21µm		ASTM D7647	>40	---	37	---
Particles >38µm		ASTM D7647	>10	---	1	---
Particles >71µm		ASTM D7647	>3	---	0	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	---	▲ 21/19/15	---
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	▲ MODER	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

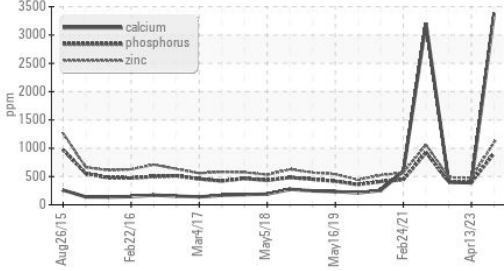
The oil viscosity is higher than normal. This plus the additive levels indicates the addition of a different brand, or type of oil. Confirm oil type. The AN level is acceptable for this fluid.

Sodium	ppm	ASTM D5185m		0	<1	1
Boron	ppm	ASTM D5185m		10	0	3
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		5	2	1
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m		46	9	12
Calcium	ppm	ASTM D5185m		▲ 3382	387	404
Phosphorus	ppm	ASTM D5185m		▲ 908	393	404
Zinc	ppm	ASTM D5185m		▲ 1103	475	485
Sulfur	ppm	ASTM D5185m		3701	1094	1308
Acid Number (AN)	mg KOH/g	ASTM D8045		1.07	0.31	0.31
Visc @ 40°C	cSt	ASTM D445	46.5	▲ 76.8	46.0	46.4

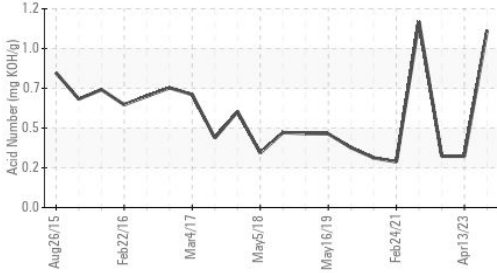
▲ Viscosity @ 40°C



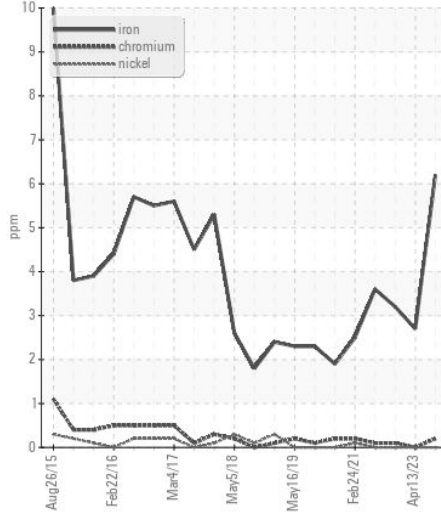
▲ Additives



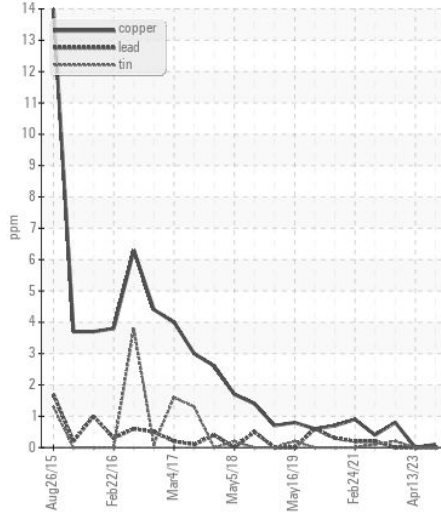
Acid Number



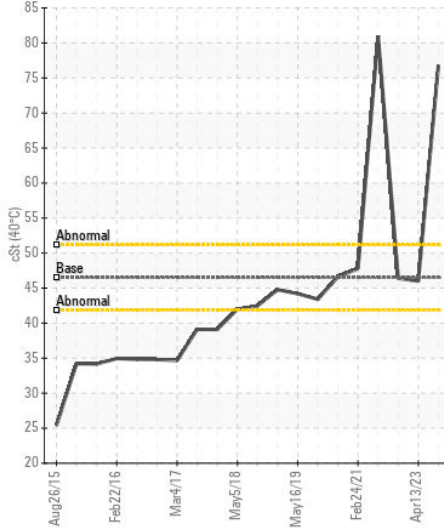
Ferrous Alloys



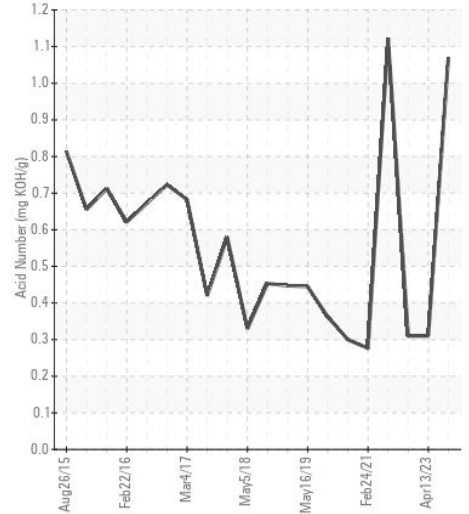
Non-ferrous Metals



▲ Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0800522 **Received** : 12 Jan 2024
Lab Number : 06060155 **Diagnosed** : 16 Jan 2024
Unique Number : 10831537 **Diagnostician** : Don Baldrige
Test Package : CONST

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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