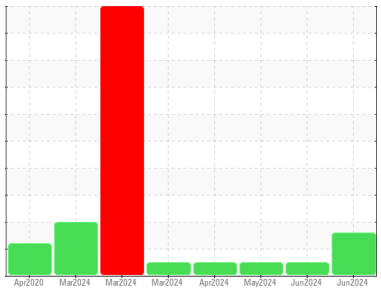
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Machine Id
CATERPILLAR 980M L56
Component
Hydraulic System
Fluid
AMERICAN CHEMICAL TECH. ECOSAFE FR-46 (--- GAL)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. (Customer Sample Comment: Brake/Fan pump failure)

Wear
All component wear rates are normal.

Contamination
There is a light concentration of water present in the oil. The amount and size of particulates present in the system are acceptable.

Fluid Condition
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0123730**	PCA0123796	PCA0123760
Sample Date		Client Info		**24 Jun 2024**	05 Jun 2024	21 May 2024
Machine Age	hrs	Client Info		**17776**	17415	17212
Oil Age	hrs	Client Info		**1000**	0	866
Oil Changed		Client Info		**Changed**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**12**	7	2
Chromium	ppm	ASTM D5185m	>10	**<1**	<1	<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	**1**	<1	<1
Lead	ppm	ASTM D5185m	>10	**0**	0	0
Copper	ppm	ASTM D5185m	>75	**36**	19	16
Tin	ppm	ASTM D5185m	>10	**<1**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	0
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**2**	1	<1
Calcium	ppm	ASTM D5185m		**6**	8	9
Phosphorus	ppm	ASTM D5185m		**712**	756	726
Zinc	ppm	ASTM D5185m		**95**	63	49
Sulfur	ppm	ASTM D5185m		**2414**	2251	2405

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**1**	<1	0
Sodium	ppm	ASTM D5185m		**1**	<1	<1
Potassium	ppm	ASTM D5185m	>20	**2**	1	<1
Water	%	ASTM D6304	>0.1	▲ **0.213**	---	---
ppm Water	ppm	ASTM D6304	>1000	▲ **2130**	---	---

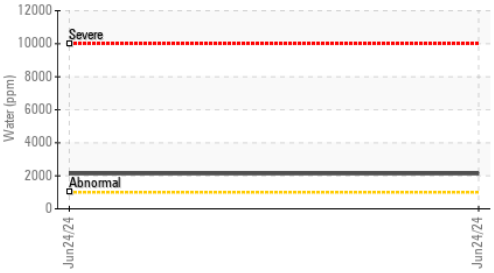
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	**757**	2879	1117
Particles >6µm		ASTM D7647	>1300	**412**	268	241
Particles >14µm		ASTM D7647	>160	**70**	13	24
Particles >21µm		ASTM D7647	>40	**24**	4	6
Particles >38µm		ASTM D7647	>10	**4**	1	0
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**17/16/13**	19/15/11	17/15/12

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.45**	0.44	0.46

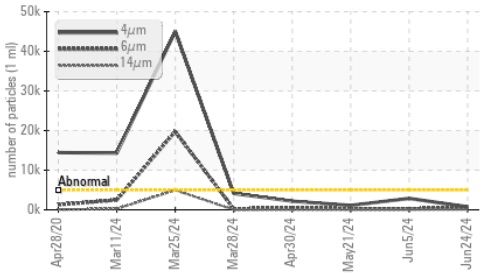
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

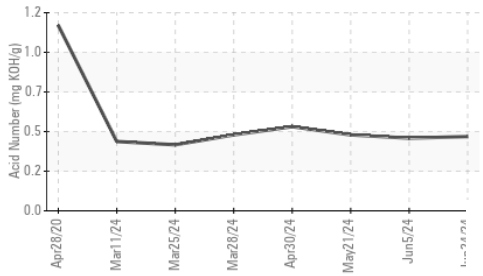
Water (KF)



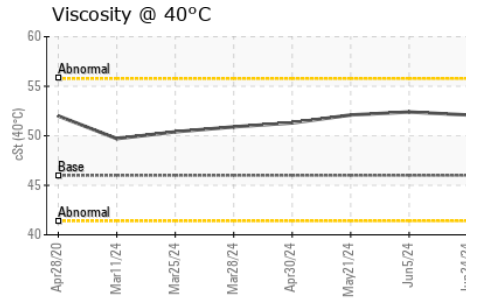
Particle Trend



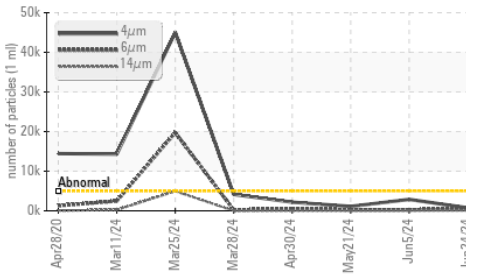
Acid Number



Viscosity @ 40°C



Particle Trend



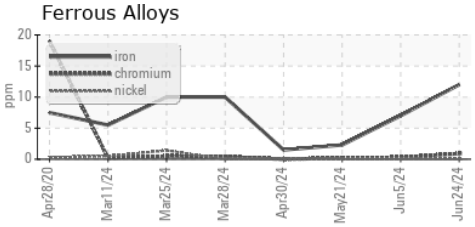
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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	**0.2%**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	**52.1**	52.4	52.1

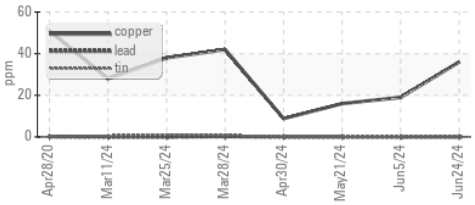
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

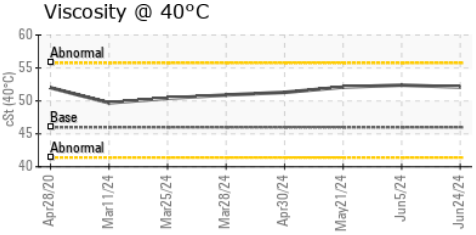
Ferrous Alloys



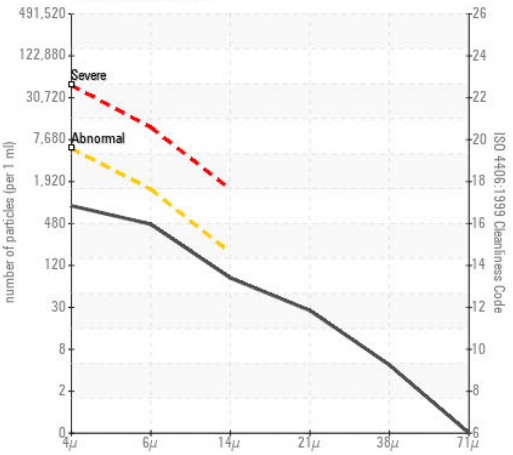
Non-ferrous Metals



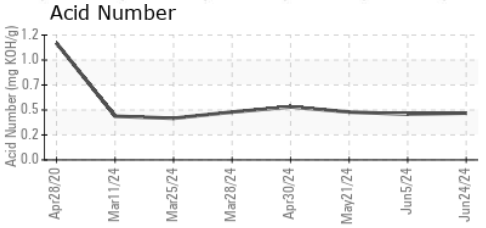
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0123730
Lab Number : 06226169
Unique Number : 11109662
Test Package : MOB 2 (Additional Tests: KF)

Received : 02 Jul 2024
Tested : 09 Jul 2024
Diagnosed : 09 Jul 2024 - Jonathan Hester

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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US 43938
Contact: FRANK NALLY
fnally@scrapmetalservices.com
T:
F:

Report Id: SCRMIN [WUSCAR] 06226169 (Generated: 07/09/2024 11:07:38) Rev: 1

Submitted By: TIM RANDOLPH