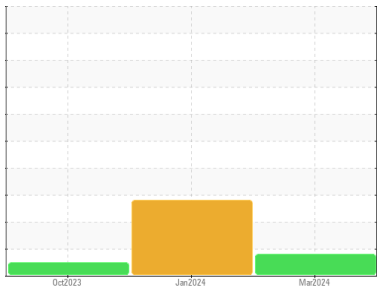
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
CATERPILLAR 980M 6161 (S/N MK210767)
Component
Hydraulic System
Fluid
TULCO LUBSOIL SUPER HYDRAULIC AW 46 (--- GAL)

DIAGNOSIS

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.

Wear
All component wear rates are normal.

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

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		**TO10003348**	TO10003032	TO10002787
Sample Date		Client Info		**31 Mar 2024**	26 Jan 2024	18 Oct 2023
Machine Age	hrs	Client Info		**9552**	8990	8534
Oil Age	hrs	Client Info		**1318**	756	300
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ATTENTION**	ABNORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**8**	10	4
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>20	**0**	2	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m		**<1**	0	0
Aluminum	ppm	ASTM D5185m	>20	**2**	2	2
Lead	ppm	ASTM D5185m	>20	**<1**	<1	<1
Copper	ppm	ASTM D5185m	>20	**5**	4	5
Tin	ppm	ASTM D5185m	>20	**<1**	<1	0
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	<1	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	11	0
Barium	ppm	ASTM D5185m		**<1**	0	10
Molybdenum	ppm	ASTM D5185m		**<1**	3	<1
Manganese	ppm	ASTM D5185m		**0**	<1	0
Magnesium	ppm	ASTM D5185m		**7**	84	7
Calcium	ppm	ASTM D5185m		**186**	2225	180
Phosphorus	ppm	ASTM D5185m	450	**765**	821	675
Zinc	ppm	ASTM D5185m	540	**945**	990	947
Sulfur	ppm	ASTM D5185m	1825	**1918**	3235	1840

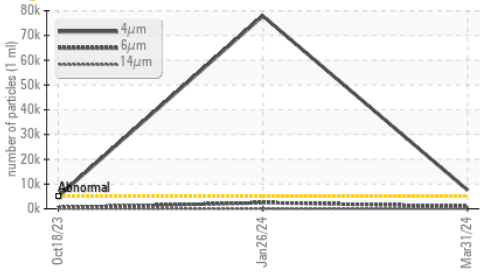
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**4**	▲ 40	5
Sodium	ppm	ASTM D5185m		**0**	3	0
Potassium	ppm	ASTM D5185m	>20	**3**	<1	2
Water	%	ASTM D6304	>0.05	**NEG**	NEG	NEG

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	**7541**	▲ 77838	4964
Particles >6µm		ASTM D7647	>1300	**949**	▲ 2470	461
Particles >14µm		ASTM D7647	>160	**58**	14	24
Particles >21µm		ASTM D7647	>40	**12**	2	6
Particles >38µm		ASTM D7647	>10	**0**	0	0
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**20/17/13**	▲ 23/18/11	19/16/12

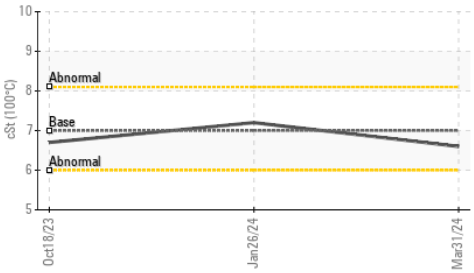
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	.7	**0.90**	1.17	0.70

OIL ANALYSIS REPORT

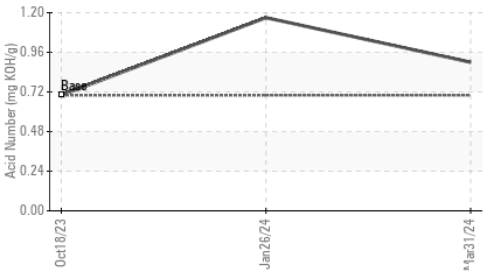
Particle Trend



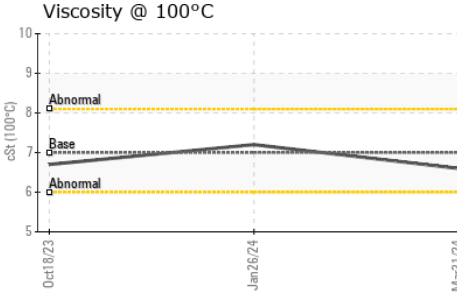
Viscosity @ 100°C



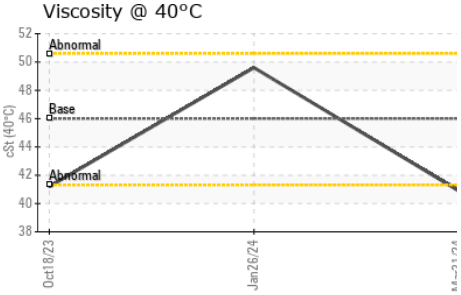
Acid Number



Viscosity @ 100°C



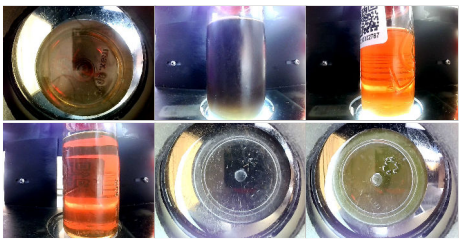
Viscosity @ 40°C



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	>0.05	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

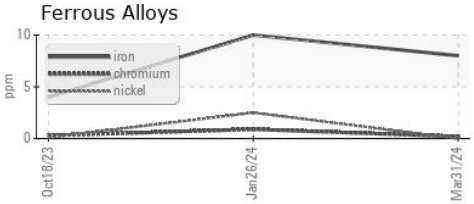
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	**40.9**	49.6	41.2
Visc @ 100°C	cSt	ASTM D445	7	**6.6**	7.2	6.7
Viscosity Index (VI)	Scale	ASTM D2270	109	**114**	103	117

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

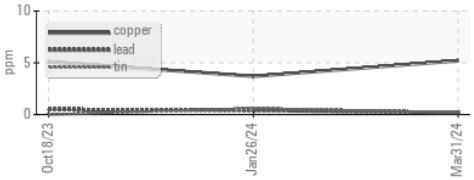


GRAPHS

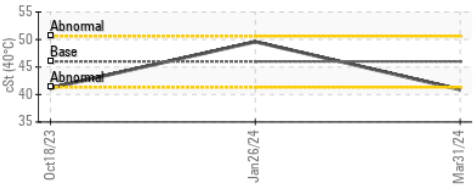
Ferrous Alloys



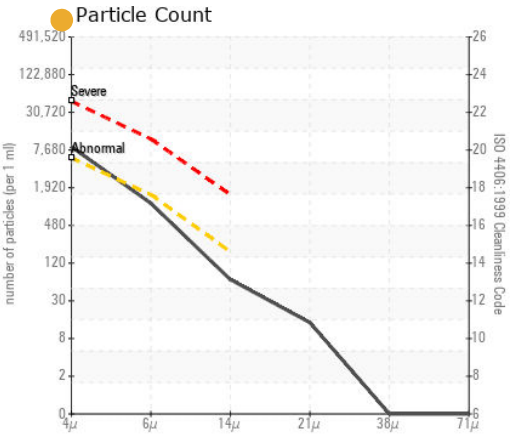
Non-ferrous Metals



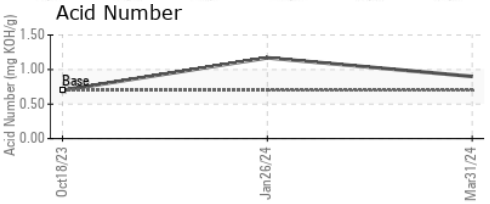
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10003348
Lab Number : 06142210
Unique Number : 10967018
Test Package : MOB 2 (Additional Tests: KF, KV100, VI)

Received : 08 Apr 2024
Tested : 11 Apr 2024
Diagnosed : 11 Apr 2024 - Don Baldridge

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)

ANCHOR STONE TULSA ROCK
TULSA ROCK QUARRY, 66TH ST N 145TH AVENUE
TULSA, OK
US 74137
Contact: MIKE SNYDER
msnyder@anchorstoneco.com
T: (417)850-9635
F:

Report Id: ANCTUL [WUSCAR] 06142210 (Generated: 04/11/2024 17:03:23) Rev: 1

Submitted By: SKIP SAENGERHAUSEN