MOB II

TULCO OILS
001 - Tulsa Division

WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
DE Samples - CAT LAB
Machine Id
CATERPILLAR 420 FST BACKHOE 6010 (S/N SKR04232)
Component
Diesel Engine
Fluid
TULCO LUBSOIL DIESEL TURBO CJ4 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

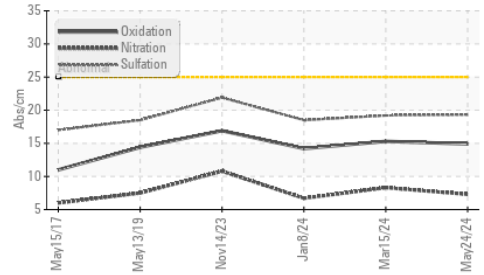
There is no indication of any contamination in the oil.

FLUID CONDITION

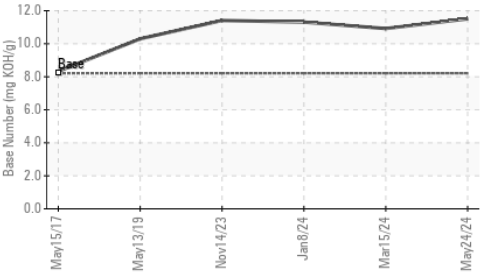
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10003594	TO10002035	TO10003074
Sample Date		Client Info		24 May 2024	15 Mar 2024	08 Jan 2024
Machine Age	hrs	Client Info		13344	13344	13137
Oil Age	hrs	Client Info		279	461	254
Filter Age	hrs	Client Info		279	461	254
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Filter Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	ATTENTION	ATTENTION
Iron	ppm	ASTM D5185m	>100	12	20	7
Chromium	ppm	ASTM D5185m	>20	0	1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	4	5	4
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	<1	2	2
Tin	ppm	ASTM D5185m	>15	<1	1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	7	8	5
Potassium	ppm	ASTM D5185m	>20	2	10	5
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	7.3	8.3	6.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.3	19.2	18.5
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	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m		34	119	87
Boron	ppm	ASTM D5185m	1	8	17	14
Barium	ppm	ASTM D5185m		0	1	0
Molybdenum	ppm	ASTM D5185m	40	61	70	65
Manganese	ppm	ASTM D5185m		<1	1	<1
Magnesium	ppm	ASTM D5185m	935	969	899	890
Calcium	ppm	ASTM D5185m	1234	1115	1168	1085
Phosphorus	ppm	ASTM D5185m	1089	1109	1024	1050
Zinc	ppm	ASTM D5185m	1090	1309	1243	1259
Sulfur	ppm	ASTM D5185m	3700	3978	3437	3259
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.9	15.3	14.2
Base Number (BN)	mg KOH/g	ASTM D2896	8.21	11.51	10.92	11.31
Visc @ 40°C	cSt	ASTM D445	110	103	103	102
Visc @ 100°C	cSt	ASTM D445	15	13.7	13.5	13.6
Viscosity Index (VI)	Scale	ASTM D2270	143	133	130	133

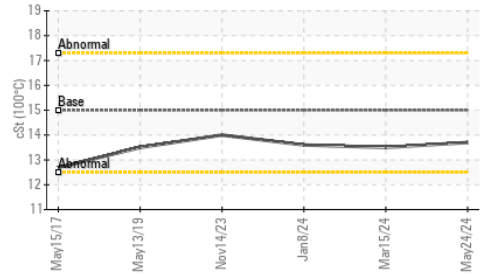
FT-IR (Direct Trend)



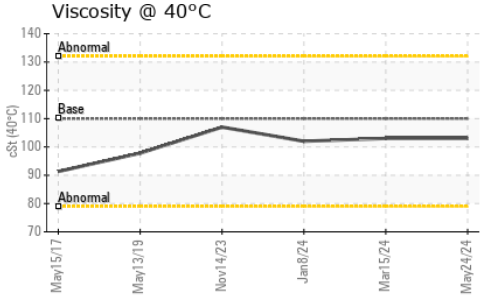
Base Number



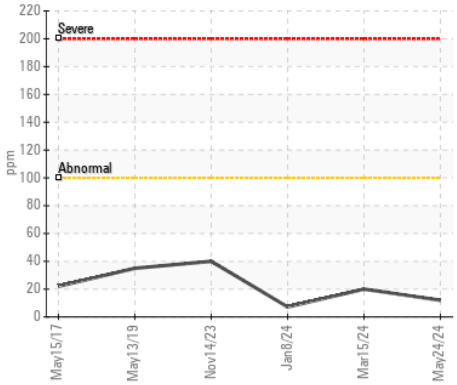
Viscosity @ 100°C



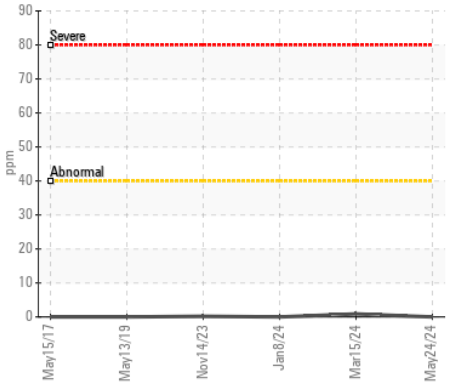
Viscosity @ 40°C



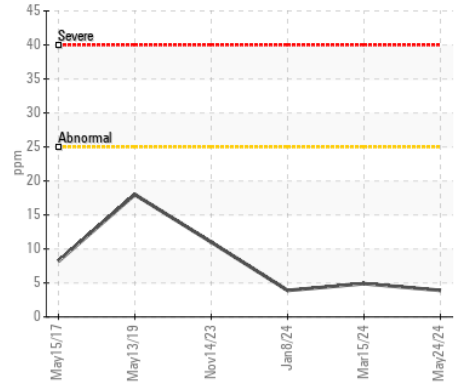
Iron (ppm)



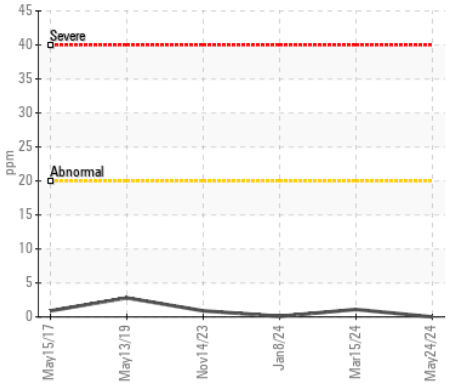
Lead (ppm)



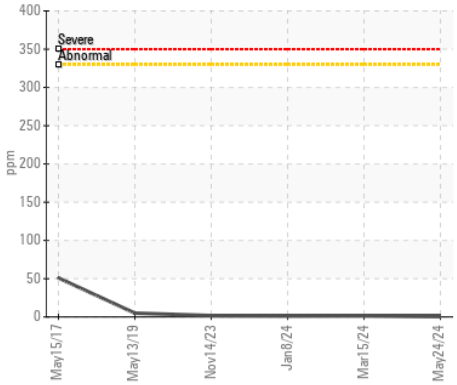
Aluminum (ppm)



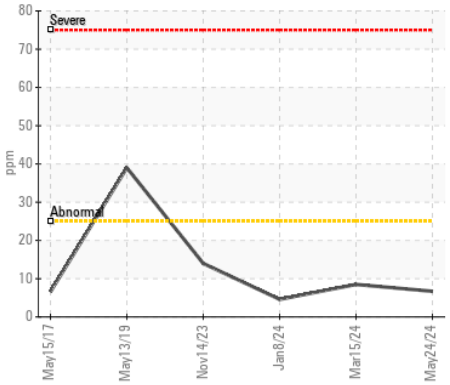
Chromium (ppm)



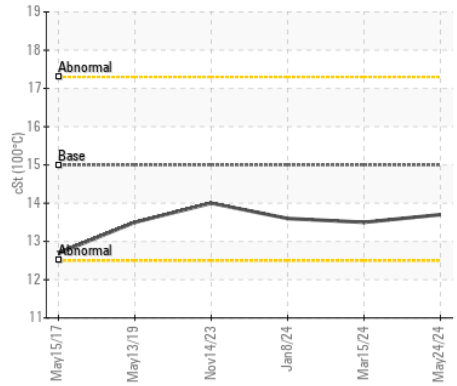
Copper (ppm)



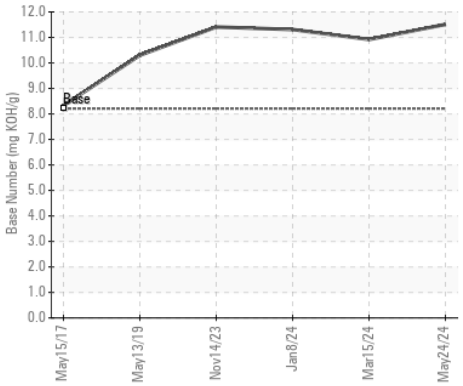
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10003594
Lab Number : 06193028
Unique Number : 11049780
Test Package : MOB 2 (Additional Tests: KV40, VI)

Received : 28 May 2024
Tested : 02 Jun 2024
Diagnosed : 02 Jun 2024 - Wes Davis

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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