



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
DE Samples - CAT LAB
Machine Id
CATERPILLAR 980 HAUL LOADER 6583 (S/N JMS05055)
Component
Diesel Engine
Fluid
TULCO LUBSOIL CK-4 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO10002073	TO10002101	TO10003347
Sample Date		Client Info		22 Jun 2024	28 May 2024	31 Mar 2024
Machine Age	hrs	Client Info		35189	35122	30863
Oil Age	hrs	Client Info		471	404	305
Filter Age	hrs	Client Info		471	404	305
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	ATTENTION	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	3	36	14
Chromium	ppm	ASTM D5185m	>20	0	<1	0
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	0	4	<1
Lead	ppm	ASTM D5185m	>40	0	4	<1
Copper	ppm	ASTM D5185m	>330	0	4	2
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

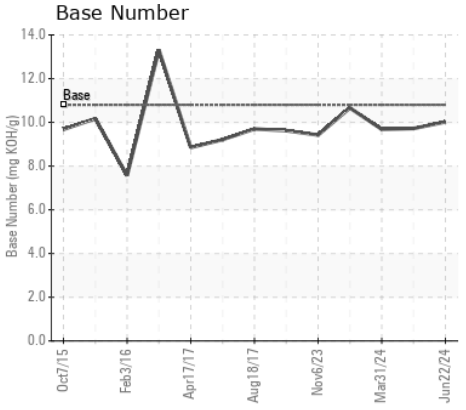
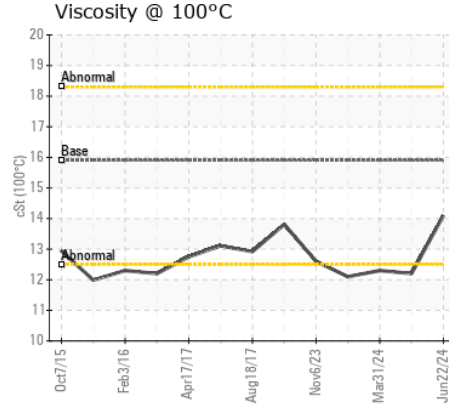
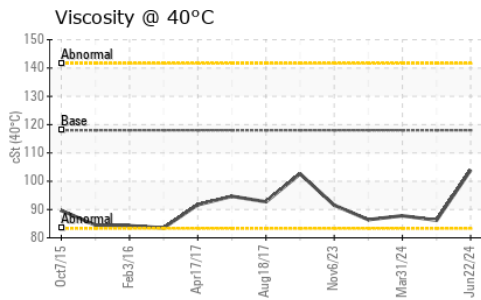
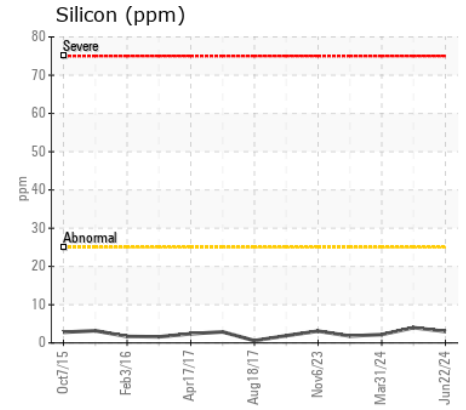
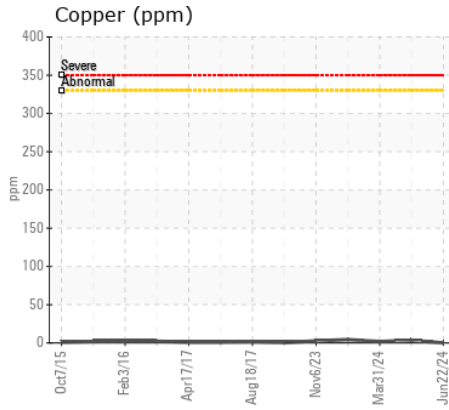
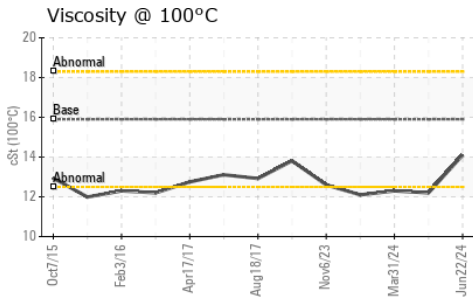
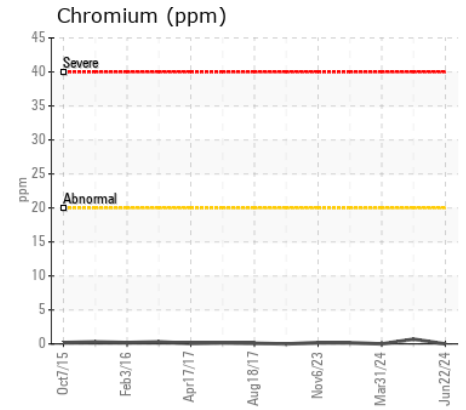
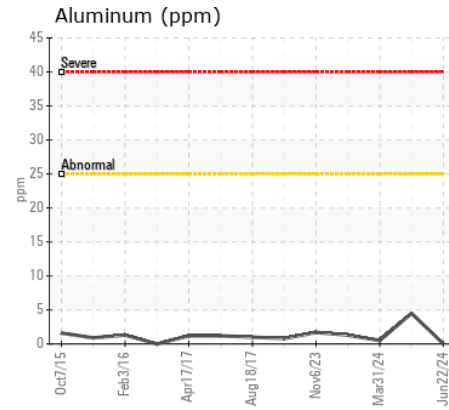
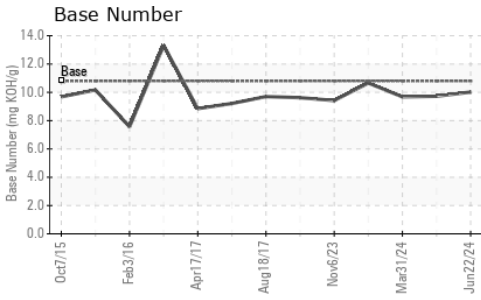
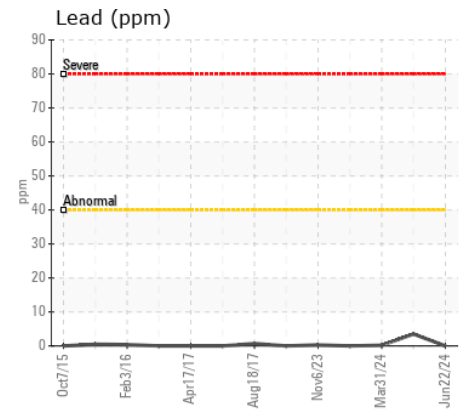
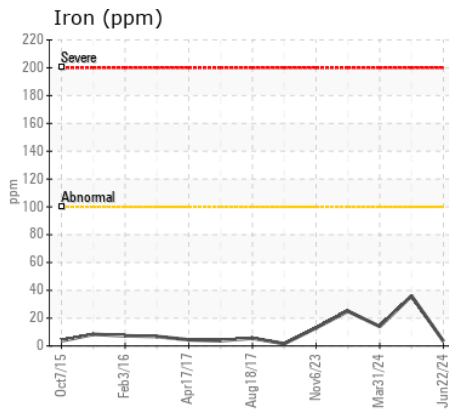
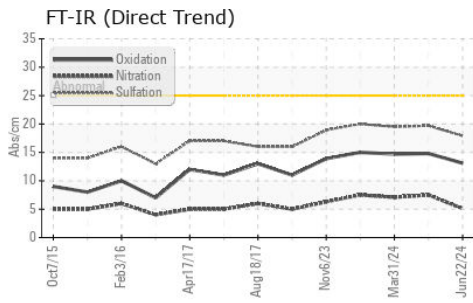
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	3	4	2
Potassium	ppm	ASTM D5185m	>20	0	4	0
Fuel		WC Method	>5	<1.0	▲ 4.9	▲ 5.7
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	5.1	7.5	7.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.9	19.7	19.5
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

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.

Sodium	ppm	ASTM D5185m		1	10	2
Boron	ppm	ASTM D5185m		3	4	9
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m	65	60	34	57
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m	1060	1020	● 490	907
Calcium	ppm	ASTM D5185m	1140	1186	● 770	1048
Phosphorus	ppm	ASTM D5185m	1170	1123	● 520	1037
Zinc	ppm	ASTM D5185m	1230	1362	● 836	1220
Sulfur	ppm	ASTM D5185m	3130	4304	● 1725	3374
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.1	14.8	14.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.8	10.02	9.72	9.68
Visc @ 40°C	cSt	ASTM D445	118	103.9	86.2	87.8
Visc @ 100°C	cSt	ASTM D445	15.9	14.1	12.2	12.3
Viscosity Index (VI)	Scale	ASTM D2270	143	137	136	135



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10002073
Lab Number : 06225333
Unique Number : 11103530
Test Package : MOB 2 (Additional Tests: KV40, VI)

ANCHOR STONE TULSA ROCK
 TULSA ROCK QUARRY, 66TH ST N 145TH AVENUE
 TULSA, OK
 US 74137

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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