

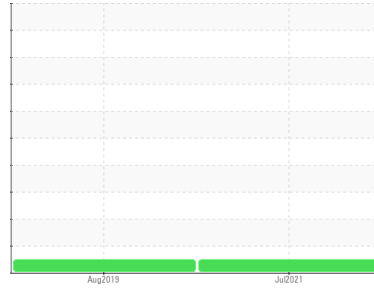
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
DE Samples - CAT LAB
Machine Id
CATERPILLAR 336 EXCAVATOR 6853 (S/N RKB01612)
Component
Diesel Engine
Fluid
TULCO LUBSOIL CK-4 15W40 (10 GAL)



DIAGNOSIS

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.

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number	Client Info			TO105307487	TO1006755	---
Sample Date	Client Info			07 Jul 2021	16 Aug 2019	---
Machine Age	hrs	Client Info		8477	5440	---
Oil Age	hrs	Client Info		277	300	---
Oil Changed	Client Info			Changed	Changed	---
Sample Status				NORMAL	NORMAL	---

CONTAMINATION		method	limit/base	current	history 1	history 2
Fuel	WC Method	>5		<1.0	<1.0	---
Glycol	WC Method			NEG	NEG	---

WEAR METALS		method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>100	7	7	---
Chromium	ppm	ASTM D5185m	>20	<1	<1	---
Nickel	ppm	ASTM D5185m	>2	0	<1	---
Titanium	ppm	ASTM D5185m	>2	<1	0	---
Silver	ppm	ASTM D5185m	>2	0	<1	---
Aluminum	ppm	ASTM D5185m	>25	3	1	---
Lead	ppm	ASTM D5185m	>40	<1	<1	---
Copper	ppm	ASTM D5185m	>330	1	9	---
Tin	ppm	ASTM D5185m	>15	<1	0	---
Antimony	ppm	ASTM D5185m		0	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
Cadmium	ppm	ASTM D5185m		0	0	---

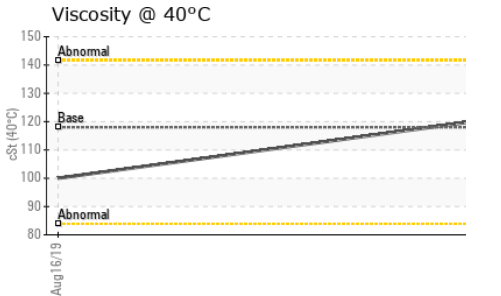
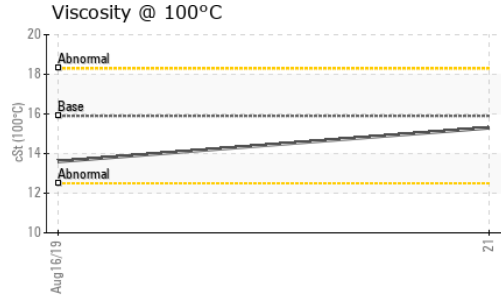
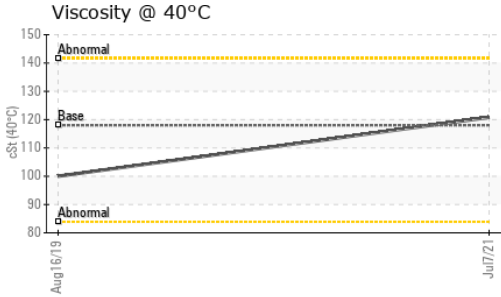
ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m		5	8	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m	65	4	54	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m	1060	76	888	---
Calcium	ppm	ASTM D5185m	1140	2735	1152	---
Phosphorus	ppm	ASTM D5185m	1170	905	913	---
Zinc	ppm	ASTM D5185m	1230	1068	1180	---
Sulfur	ppm	ASTM D5185m	3130	3404	2877	---

CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185m	>25	4	2	---
Sodium	ppm	ASTM D5185m		2	5	---
Potassium	ppm	ASTM D5185m	>20	1	0	---

INFRA-RED		method	limit/base	current	history 1	history 2
Soot %	%	*ASTM D7844	>3	0.5	0.5	---
Nitration	Abs/cm	*ASTM D7624	>20	7.3	8	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	18	19.6	---

FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Oxidation	Abs/.1mm	*ASTM D7414	>25	9.4	15.1	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.8	9.54	9.58	---

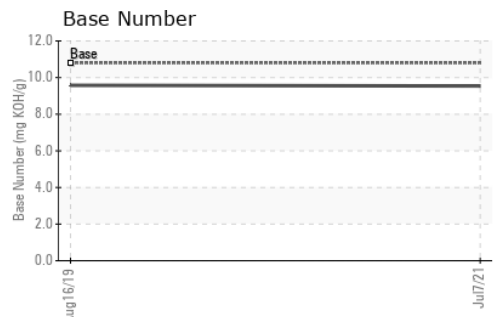
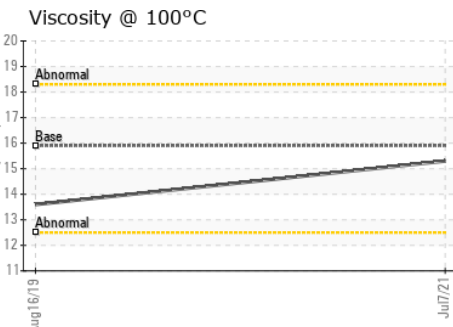
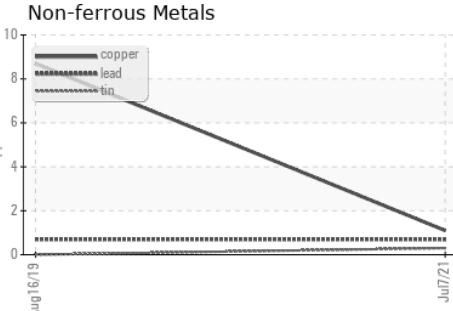
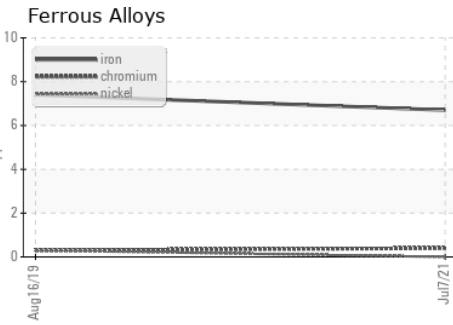
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history 1	history 2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history 1	history 2	
Visc @ 40°C	cSt	ASTM D445	118	120.8	100	---
Visc @ 100°C	cSt	ASTM D445	15.9	15.3	13.6	---
Viscosity Index (VI)	Scale	ASTM D2270	143	131	136	---

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO105307487 **Received** : 20 Jul 2021
Lab Number : **05307487** **Diagnosed** : 23 Jul 2021
Unique Number : 9591456 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: KV40, VI)

ANCHOR STONE TULSA ROCK
 TULSA ROCK QUARRY, 66TH ST N 145TH AVENUE
 TULSA, OK
 US 74137
 Contact: DAVID MORRIS
 dmorris@anchorstoneco.com

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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F: