

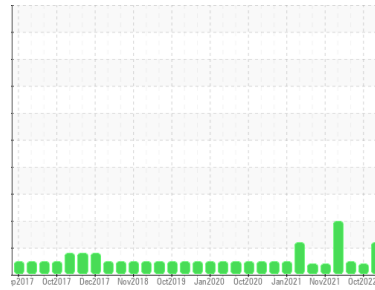


OIL ANALYSIS REPORT



Area
GUAY SON [CONHER]
 Machine Id
CATERPILLAR IBACO BM CHINO I
 Component
Diesel Engine
 Fluid
Xtra Rev 15W40 (80 LTR)

Sample Rating Trend



FUEL



DIAGNOSIS

▲ Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

▲ Contamination

Light fuel dilution occurring. The amount and size of particulates present in the system are acceptable.

▲ Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		KL0011280	KL0010122	KL0009217
Sample Date	Client Info		22 Nov 2022	04 Oct 2022	23 Mar 2022
Machine Age	hrs	Client Info	17406	16535	0
Oil Age	hrs	Client Info	712	3341	0
Oil Changed	Client Info		Not Chngd	Not Chngd	N/A
Sample Status			ATTENTION	ATTENTION	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	9	19	24
Chromium	ppm	ASTM D5185m >20	<1	1	1
Nickel	ppm	ASTM D5185m >2	0	<1	0
Titanium	ppm	ASTM D5185m >2	0	0	0
Silver	ppm	ASTM D5185m >2	0	0	<1
Aluminum	ppm	ASTM D5185m >25	2	2	2
Lead	ppm	ASTM D5185m >40	1	1	2
Copper	ppm	ASTM D5185m >330	3	4	5
Tin	ppm	ASTM D5185m >15	<1	<1	<1
Antimony	ppm	ASTM D5185m	---	---	---
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	15	61
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	4	39	83
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	25	194	444
Calcium	ppm	ASTM D5185m	3211	2520	1966
Phosphorus	ppm	ASTM D5185m	1311	1088	981
Zinc	ppm	ASTM D5185m	1479	1288	1117
Sulfur	ppm	ASTM D5185m	5212	4922	3024

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	6	10	12
Sodium	ppm	ASTM D5185m	1	5	5
Potassium	ppm	ASTM D5185m >20	<1	2	0
Fuel	%	ASTM D3524 >5	▲ 2.0	<1.0	<1.0

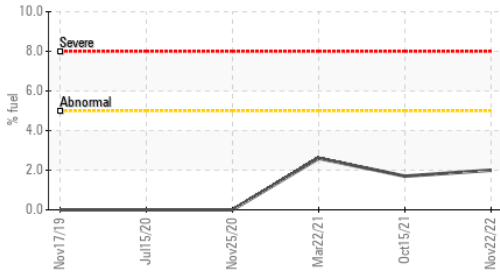
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.2	0.8	1
Nitration	Abs/cm	*ASTM D7624 >20	7.7	9.3	10.3
Sulfation	Abs.1mm	*ASTM D7415 >30	18.1	24.1	28.5

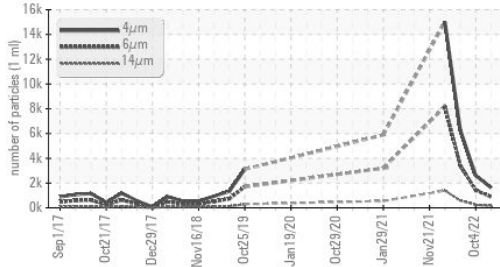


OIL ANALYSIS REPORT

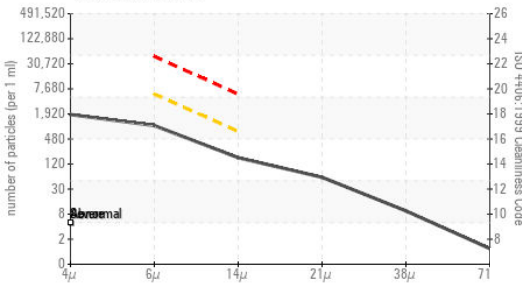
Fuel Dilution



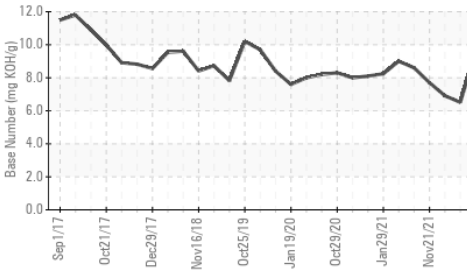
Particle Trend



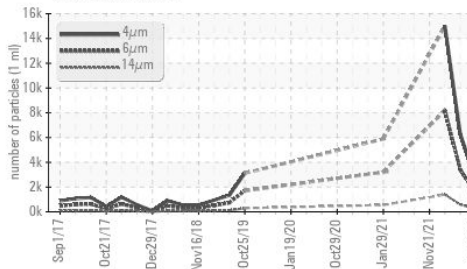
Particle Count



Base Number



Particle Trend



FLUID CLEANLINESS

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		1622	2614	6290
Particles >6µm	ASTM D7647	>5000	884	1424	3426
Particles >14µm	ASTM D7647	>640	150	242	583
Particles >21µm	ASTM D7647	>160	51	82	196
Particles >38µm	ASTM D7647	>40	8	13	30
Particles >71µm	ASTM D7647	>10	1	1	3
Oil Cleanliness	ISO 4406 (c)	>19/16	17/14	18/15	19/16

FLUID DEGRADATION

FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	*ASTM D7414	>25	10.1	14.3	18.6
Base Number (BN)	mg KOH/g	ASTM D2896		9.51	9.55	6.51

VISUAL

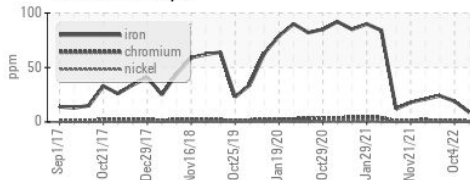
VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance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

FLUID PROPERTIES

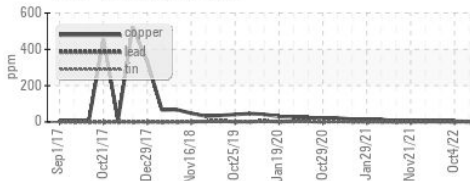
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	▲ 10.5	▲ 12.1	12.7

GRAPHS

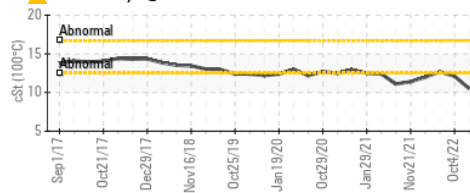
Ferrous Alloys



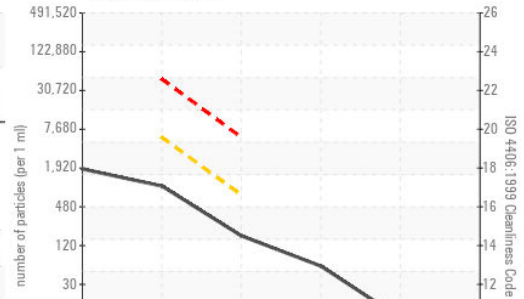
Non-ferrous Metals



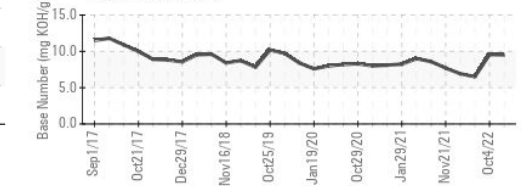
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0011280 **Received** : 06 Dec 2022
Lab Number : **05710554** **Diagnosed** : 12 Dec 2022
Unique Number : 10245129 **Diagnostician** : Don Baldrige
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel, PrtCount)

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)

CONOR
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