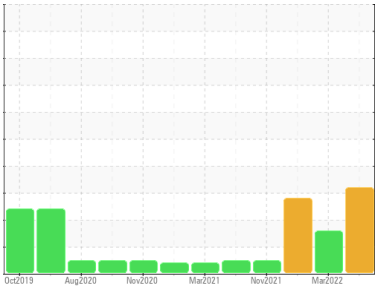
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Area
GUAY SON [CONHER]
Machine Id
IBACO NANDO
Component
Bottom Diesel Engine
Fluid
XTRA REV 15W40 (160 LTR)

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a high amount of particulates present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition
Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KL0012844**	KL0009215	KL0009127
Sample Date		Client Info		**20 Sep 2023**	23 Mar 2022	24 Feb 2022
Machine Age	hrs	Client Info		**10886**	0	8994
Oil Age	hrs	Client Info		**7**	447	2140
Oil Changed		Client Info		**Not Changd**	N/A	Not Changd
Sample Status				**ABNORMAL**	ATTENTION	ABNORMAL

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	**7**	63	56
Chromium	ppm	ASTM D5185m	>20	**0**	5	6
Nickel	ppm	ASTM D5185m	>4	**0**	0	<1
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	<1	0
Aluminum	ppm	ASTM D5185m	>20	**3**	6	6
Lead	ppm	ASTM D5185m	>40	**2**	6	4
Copper	ppm	ASTM D5185m	>330	**5**	72	93
Tin	ppm	ASTM D5185m	>15	**<1**	1	1
Antimony	ppm	ASTM D5185m		**---**	---	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

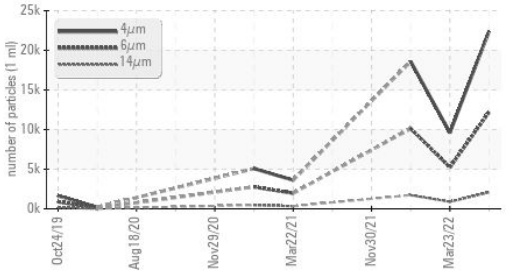
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	63	28
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**<1**	114	115
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**5**	566	562
Calcium	ppm	ASTM D5185m		**2525**	1669	1679
Phosphorus	ppm	ASTM D5185m		**1123**	901	885
Zinc	ppm	ASTM D5185m		**1366**	1080	1161
Sulfur	ppm	ASTM D5185m		**3485**	2650	2947

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**9**	18	20
Sodium	ppm	ASTM D5185m		**3**	55	52
Potassium	ppm	ASTM D5185m	>20	**2**	4	6
Fuel	%	ASTM D3524	>5	▲ **4.8**	<1.0	<1.0

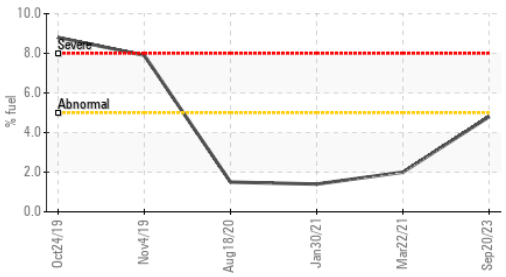
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0**	1.2	1.2
Nitration	Abs/cm	*ASTM D7624	>20	**4.3**	11.0	10.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	**12.3**	30.1	30.6

OIL ANALYSIS REPORT

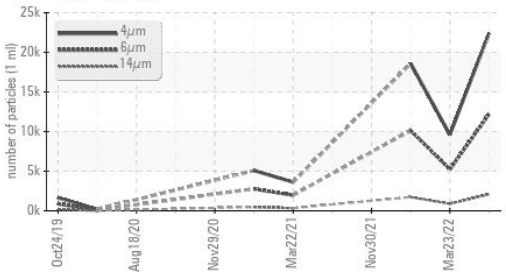
Particle Trend



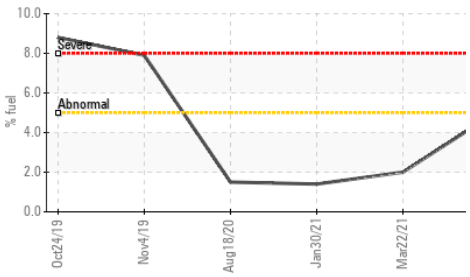
Fuel Dilution



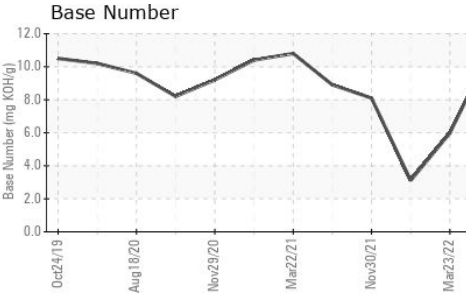
Particle Trend



Fuel Dilution



Base Number



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**22410**	9609	18604
Particles >6µm		ASTM D7647	>5000	▲ **12208**	▲ 5235	▲ 10135
Particles >14µm		ASTM D7647	>640	▲ **2078**	▲ 891	▲ 1725
Particles >21µm		ASTM D7647	>160	▲ **700**	▲ 300	▲ 581
Particles >38µm		ASTM D7647	>40	▲ **108**	▲ 46	▲ 90
Particles >71µm		ASTM D7647	>10	**11**	5	9
Oil Cleanliness		ISO 4406 (c)	>19/16	▲ **21/18**	▲ 20/17	▲ 21/18

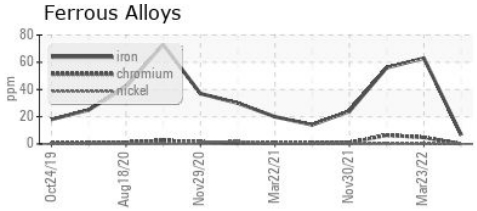
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**6.2**	24.9	24.8
Base Number (BN)	mg KOH/g	ASTM D2896		**10.82**	5.98	▲ 3.11

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	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

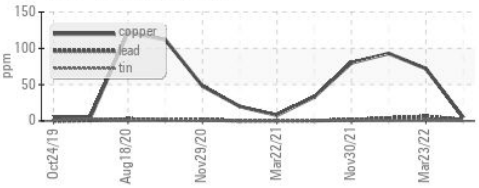
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		▲ **12.3**	15.6	14.9

GRAPHS

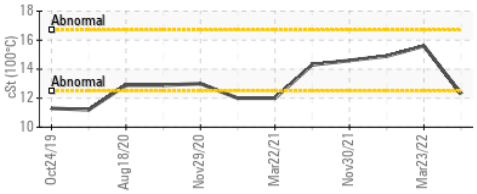
Ferrous Alloys



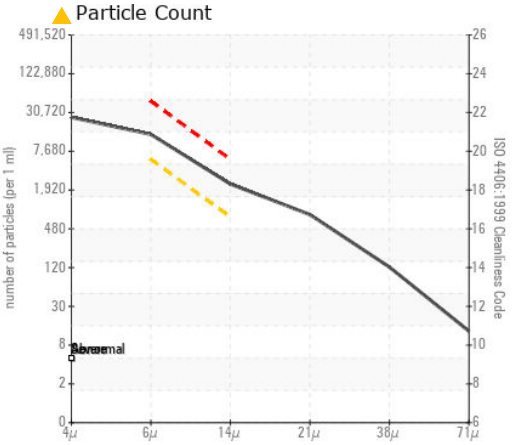
Non-ferrous Metals



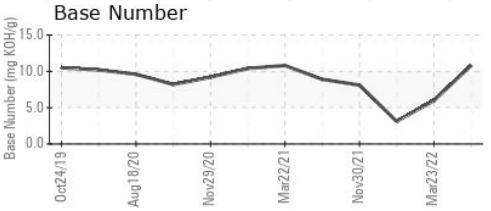
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012844 **Received** : 29 Sep 2023
Lab Number : 05964775 **Diagnosed** : 03 Oct 2023
Unique Number : 10671326 **Diagnostician** : Angela Borella
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)

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