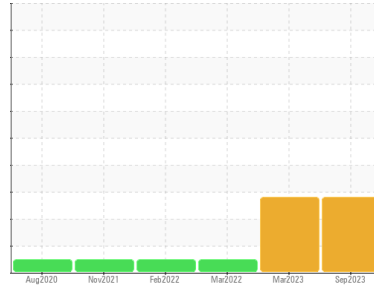




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area
GUAY SON [CONHER]
 Machine Id
IBACO BM DAGIO I
 Component
Auxiliary Power Unit Diesel Engine
 Fluid
XTRA REV 15W40 (8 LTR)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. 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. Light fuel dilution occurring.

Fluid Condition

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

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | KL0012863 | KL0011409 | KL0009208 |
| Sample Date | Client Info | | 21 Sep 2023 | 30 Mar 2023 | 23 Mar 2022 |
| Machine Age | hrs | Client Info | 15131 | 15107 | 0 |
| Oil Age | hrs | Client Info | 24 | 168 | 0 |
| Oil Changed | Client Info | | Changed | Not Changd | N/A |
| Sample Status | | | ABNORMAL | ABNORMAL | 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 | 18 | 49 |
| Chromium | ppm | ASTM D5185m >20 | <1 | 0 | 4 |
| Nickel | ppm | ASTM D5185m >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185m >3 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m >20 | 3 | <1 | 7 |
| Lead | ppm | ASTM D5185m >40 | 0 | 0 | 2 |
| Copper | ppm | ASTM D5185m >330 | <1 | 0 | 5 |
| Tin | ppm | ASTM D5185m >15 | <1 | 0 | 3 |
| Antimony | ppm | ASTM D5185m | --- | --- | --- |
| 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 | 6 | 262 | 188 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 4 | 103 | 101 |
| Manganese | ppm | ASTM D5185m | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 22 | 462 | 501 |
| Calcium | ppm | ASTM D5185m | 2476 | 1518 | 1425 |
| Phosphorus | ppm | ASTM D5185m | 1070 | 810 | 761 |
| Zinc | ppm | ASTM D5185m | 1311 | 1045 | 887 |
| Sulfur | ppm | ASTM D5185m | 3684 | 3622 | 2442 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 8 | 8 | 17 |
| Sodium | ppm | ASTM D5185m | 5 | 2 | 30 |
| Potassium | ppm | ASTM D5185m >20 | 1 | 2 | 1 |
| Fuel | % | ASTM D3524 >5 | ▲ 2.8 | ▲ 5.9 | <1.0 |

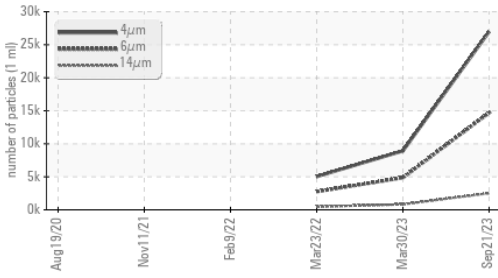
INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0 | 0.2 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 4.5 | 8.2 | 14.0 |
| Sulfation | Abs./1mm | *ASTM D7415 >30 | 12.6 | 21.0 | 25.7 |

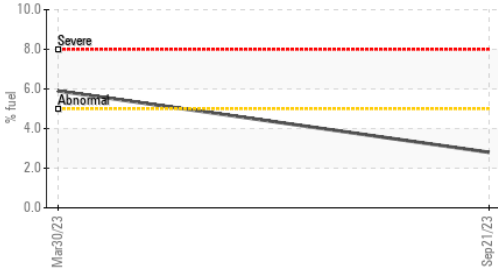


OIL ANALYSIS REPORT

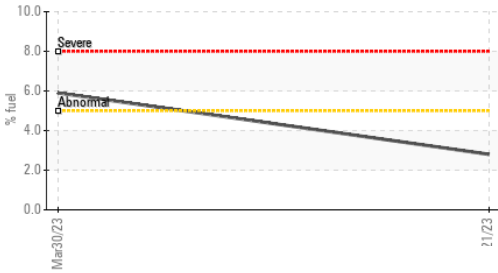
Particle Trend



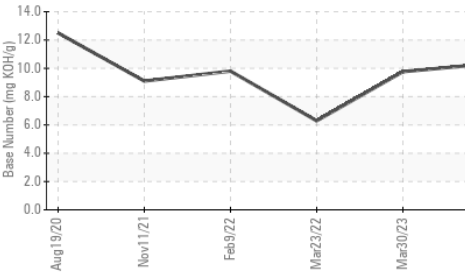
Fuel Dilution



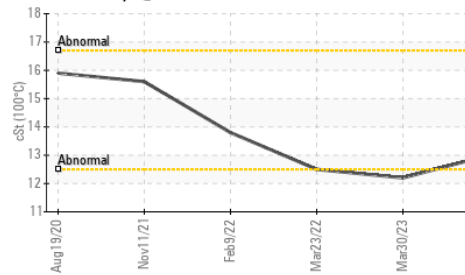
Fuel Dilution



Base Number



Viscosity @ 100°C



| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|-------------------|--------------|------------|----------------|----------|----------|
| Particles >4µm | ASTM D7647 | | 26978 | 8926 | 5037 |
| Particles >6µm | ASTM D7647 | >5000 | ▲ 14696 | 4862 | 2744 |
| Particles >14µm | ASTM D7647 | >640 | ▲ 2501 | ▲ 828 | 467 |
| Particles >21µm | ASTM D7647 | >160 | ▲ 842 | ▲ 279 | 157 |
| Particles >38µm | ASTM D7647 | >40 | ▲ 130 | ▲ 43 | 24 |
| Particles >71µm | ASTM D7647 | >10 | ▲ 13 | 4 | 2 |
| Oil Cleanliness | ISO 4406 (c) | >19/16 | ▲ 21/19 | ▲ 19/17 | 19/16 |

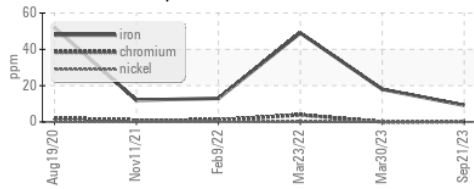
| FLUID DEGRADATION | method | limit/base | current | history1 | history2 |
|-------------------|----------------------|------------|--------------|----------|----------|
| Oxidation | Abs/.1mm *ASTM D7414 | >25 | 6.6 | 18.5 | 30.7 |
| Base Number (BN) | mg KOH/g ASTM D2896 | | 10.33 | 9.76 | 6.29 |

| 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 |

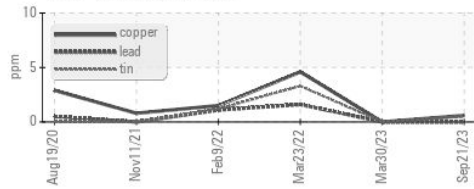
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|---------------|------------|-------------|----------|----------|
| Visc @ 100°C | cSt ASTM D445 | | 13.0 | ▲ 12.2 | 12.5 |

GRAPHS

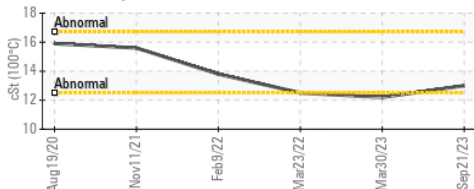
Ferrous Alloys



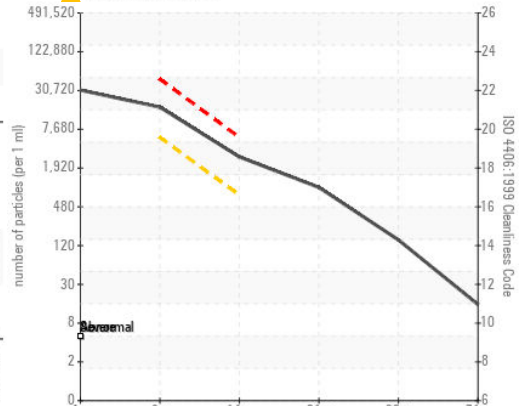
Non-ferrous Metals



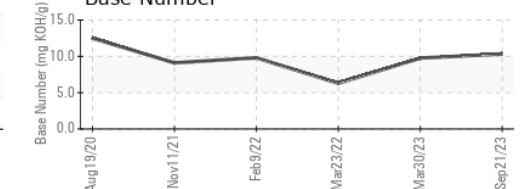
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012863 **Received** : 29 Sep 2023
Lab Number : 05964769 **Diagnosed** : 03 Oct 2023
Unique Number : 10671320 **Diagnostician** : Angela Borella
Test Package : MOB 2 (Additional Tests: 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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 MX 83140

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