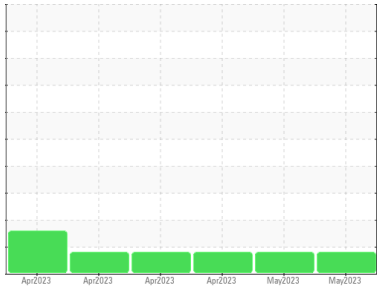
# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Area
**RIG 879**
Machine Id
**R879-P-03**
Component
**Pump Drive**
Fluid
**NOT GIVEN (--- GAL)**

## DIAGNOSIS

**Recommendation**
No corrective action is recommended at this time. Resample at the next service interval to monitor.

**Wear**
All component wear rates are normal.

**Contamination**
There is a high amount of silt (particulates < 14 microns in size) present in the oil.

**Fluid Condition**
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **KL0012216** | KL0012427 | KL0012421 |
| Sample Date | | Client Info | | **23 May 2023** | 01 May 2023 | 26 Apr 2023 |
| Machine Age | days | Client Info | | **45069** | 45047 | 45042 |
| Oil Age | days | Client Info | | **0** | 15 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >500 | **11** | 13 | 8 |
| Chromium | ppm | ASTM D5185m | >15 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >10 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **4** | 2 | 0 |
| Lead | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >35 | **1** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >4 | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **1** | 0 | 0 |
| Barium | ppm | ASTM D5185m | | **2** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **9** | 9 | 7 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | | **7** | 5 | 4 |
| Calcium | ppm | ASTM D5185m | | **439** | 496 | 512 |
| Phosphorus | ppm | ASTM D5185m | | **48** | 40 | 31 |
| Zinc | ppm | ASTM D5185m | | **18** | 4 | 15 |
| Sulfur | ppm | ASTM D5185m | | **10402** | 9969 | 8742 |

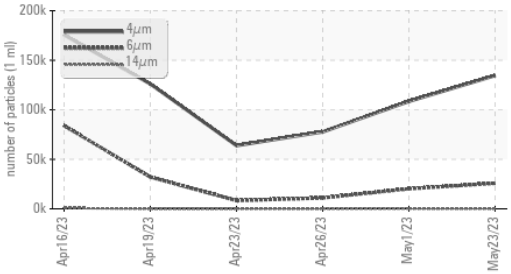
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >75 | **13** | 12 | 9 |
| Sodium | ppm | ASTM D5185m | | **24** | 44 | 48 |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | <1 | 1 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **134567** | 108461 | 77673 |
| Particles >6µm | | ASTM D7647 | >5000 | ▲ **25768** | ▲ 20216 | ▲ 10967 |
| Particles >14µm | | ASTM D7647 | >640 | **154** | 194 | 64 |
| Particles >21µm | | ASTM D7647 | >160 | **8** | 21 | 7 |
| Particles >38µm | | ASTM D7647 | >40 | **0** | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >10 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/16 | ▲ **22/14** | ▲ 22/15 | ▲ 21/13 |

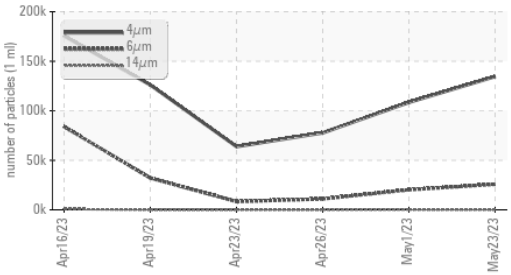
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **0.71** | 0.096 | 0.157 |

# OIL ANALYSIS REPORT

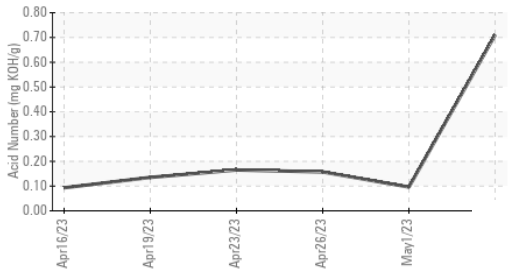
Particle Trend



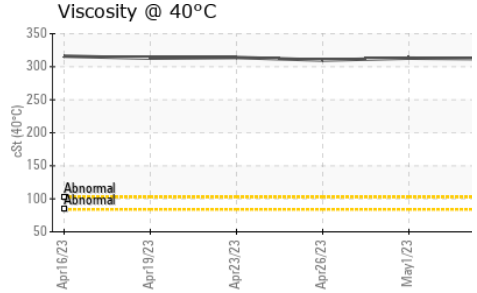

Particle Trend




Acid Number

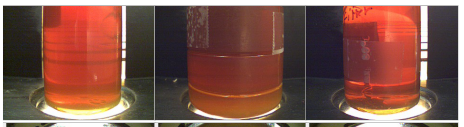



Viscosity @ 40°C



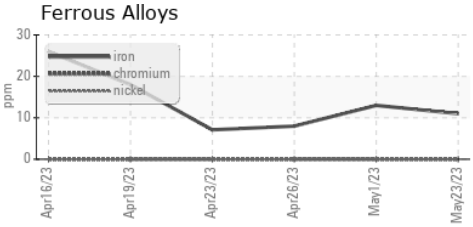

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **LIGHT** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 @ 40°C | cSt | ASTM D445 | | **312** | 313 | 310 |

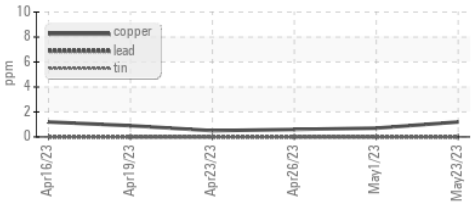
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

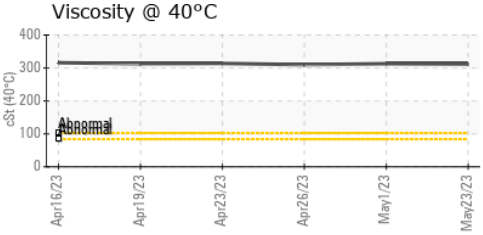
Ferrous Alloys



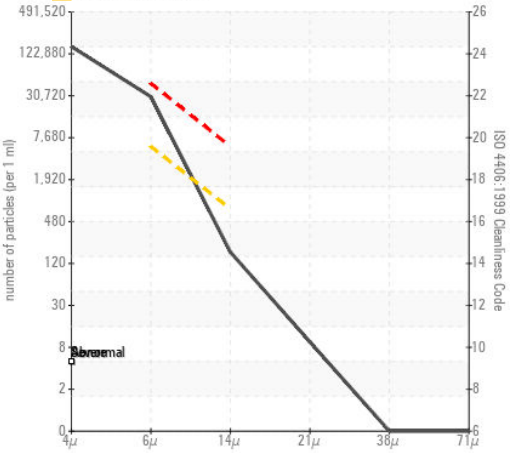

Non-ferrous Metals



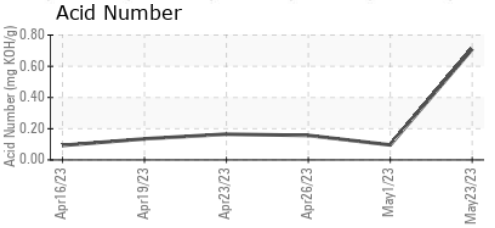

Viscosity @ 40°C




Particle Count




Acid Number




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KL0012216 **Received** : 25 May 2023
**Lab Number** : 05857191 **Diagnosed** : 26 May 2023
**Unique Number** : 10486546 **Diagnostician** : Doug Bogart
**Test Package** : MOB 2 ( Additional Tests: PrtCount )

Certificate L2367

*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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