



OIL ANALYSIS REPORT

| | |
|-----------------|-----------------|
| WEAR | ABNORMAL |
| CONTAMINATION | ABNORMAL |
| FLUID CONDITION | NORMAL |

Area
RIG 2
Machine Id
WHITE STAR 2450 R2-P-02G-NKL
Component
Gearbox
Fluid
GEAR OIL ISO 320 (--- GAL)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

WEAR

Gear wear is indicated.

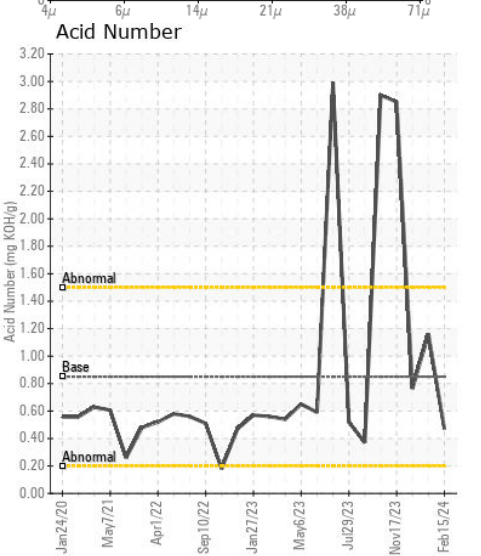
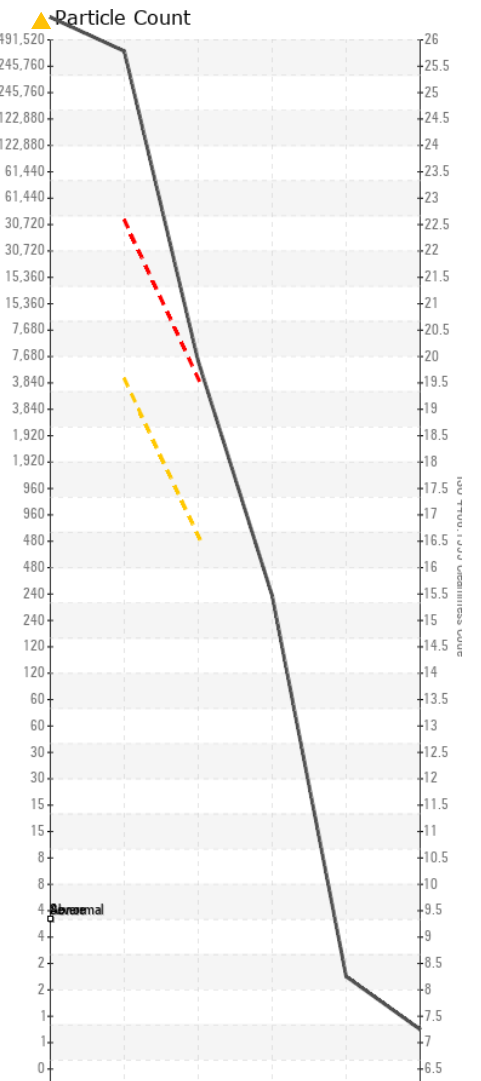
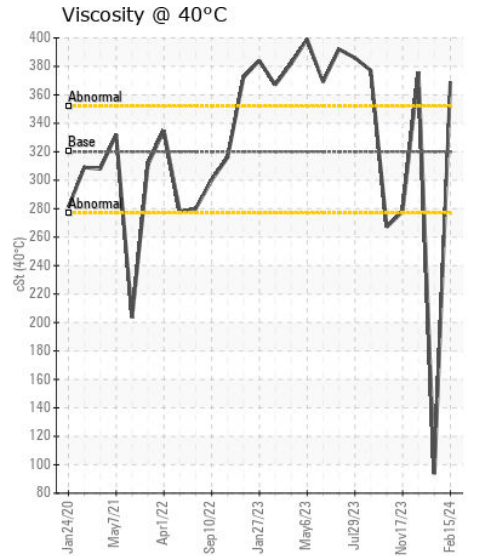
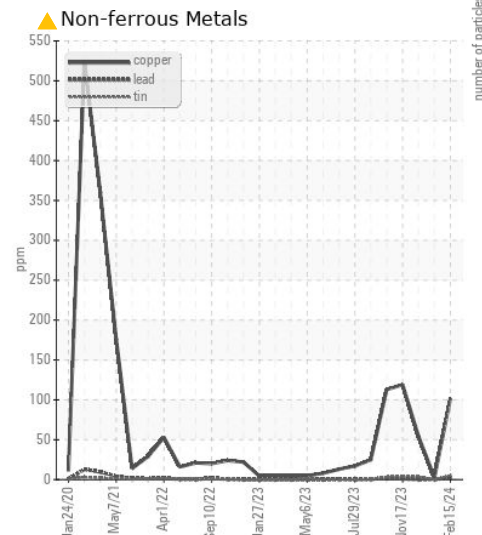
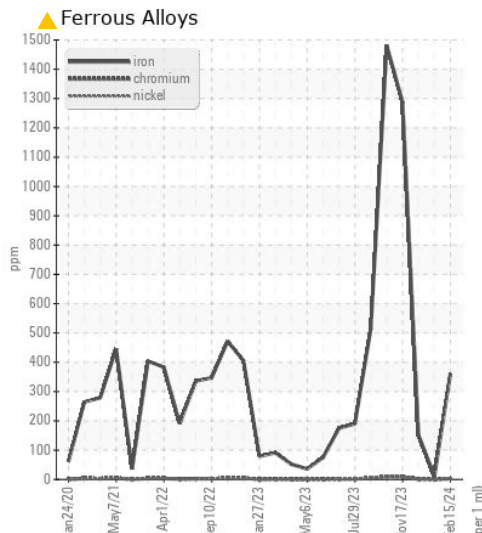
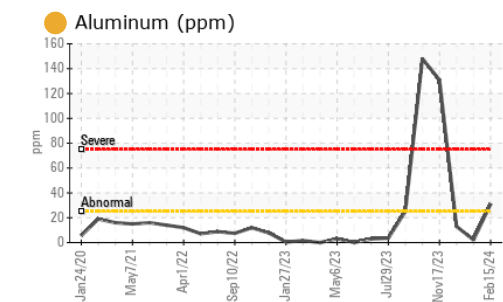
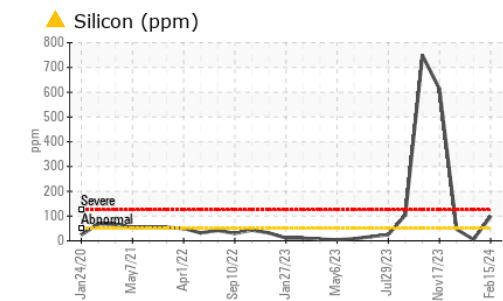
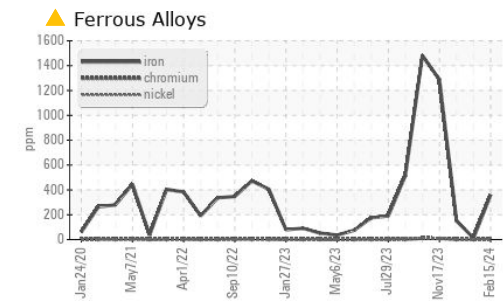
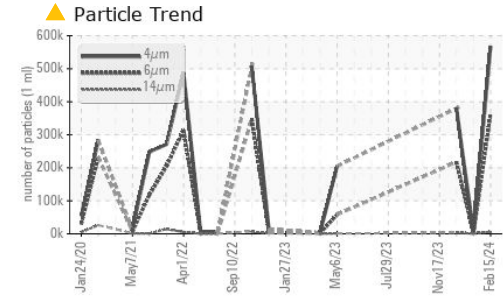
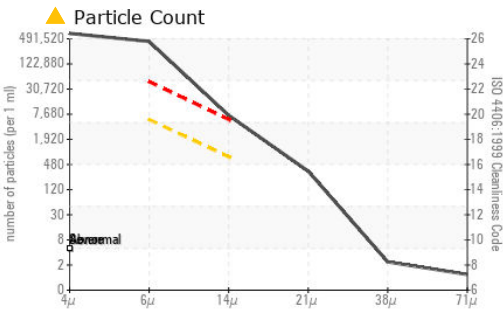
CONTAMINATION

There is a high amount of particulates present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

FLUID CONDITION

The AN level is acceptable for this fluid.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|------------------|----------|--------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | KL0013898 | KL0013829 | KL0014048 |
| Sample Date | | Client Info | | 15 Feb 2024 | 24 Jan 2024 | 29 Dec 2023 |
| Machine Age | days | Client Info | | 45337 | 0 | 45290 |
| Oil Age | days | Client Info | | 0 | 0 | 0 |
| Filter Age | days | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | ABNORMAL | ATTENTION | ABNORMAL |
| Iron | ppm | ASTM D5185m | >200 | ▲ 361 | 12 | 151 |
| Chromium | ppm | ASTM D5185m | >10 | 3 | 0 | 1 |
| Nickel | ppm | ASTM D5185m | >10 | 2 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | 1 | 0 | <1 |
| Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | ● 31 | 2 | 13 |
| Lead | ppm | ASTM D5185m | >50 | 2 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >200 | 102 | 2 | 54 |
| Tin | ppm | ASTM D5185m | >10 | ▲ 5 | 0 | 4 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >50 | ▲ 100 | 5 | 47 |
| Potassium | ppm | ASTM D5185m | >20 | 17 | 5 | 6 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Particles >4µm | | ASTM D7647 | | 567052 | 3889 | 380044 |
| Particles >6µm | | ASTM D7647 | >5000 | ▲ 363748 | 2118 | ▲ 217449 |
| Particles >14µm | | ASTM D7647 | >640 | ▲ 6283 | 361 | ▲ 3510 |
| Particles >21µm | | ASTM D7647 | >160 | ▲ 292 | 121 | ▲ 293 |
| Particles >38µm | | ASTM D7647 | >40 | 2 | 19 | 0 |
| Particles >71µm | | ASTM D7647 | >10 | 1 | 2 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/16 | ▲ 26/20 | 18/16 | ▲ 25/19 |
| 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 |
| Sodium | ppm | ASTM D5185m | | 167 | 9 | 54 |
| Boron | ppm | ASTM D5185m | 50 | 40 | 74 | 44 |
| Barium | ppm | ASTM D5185m | 15 | 58 | 0 | 18 |
| Molybdenum | ppm | ASTM D5185m | 15 | 47 | ● 64 | 25 |
| Manganese | ppm | ASTM D5185m | | 3 | 0 | 2 |
| Magnesium | ppm | ASTM D5185m | 50 | 60 | 91 | 43 |
| Calcium | ppm | ASTM D5185m | 50 | 197 | ● 1746 | 119 |
| Phosphorus | ppm | ASTM D5185m | 350 | 250 | ● 954 | 195 |
| Zinc | ppm | ASTM D5185m | 100 | 84 | ● 1133 | 54 |
| Sulfur | ppm | ASTM D5185m | 12500 | 6257 | ● 4330 | 6958 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.85 | 0.47 | 1.16 | 0.764 |
| Visc @ 40°C | cSt | ASTM D445 | 320 | 369 | ● 93.7 | 376 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013898 **Received** : 29 Feb 2024
Lab Number : 06105188 **Tested** : 01 Mar 2024
Unique Number : 10903418 **Diagnosed** : 04 Mar 2024 - Don Baldrige
Test Package : MOB 2 (Additional Tests: 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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