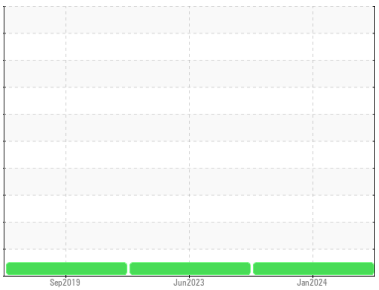
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## KINGAIR 200 (B6)
Component
**Hydraulic System**
Fluid
**TULCO LUBSOIL SYNTHETIC HYDRAULIC 15 (220 GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

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

**Contamination**
There is no indication of any contamination in the component. The amount and size of particulates present in the system is acceptable.

**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 | | **TO50002049** | TO5003265 | TO5010696 |
| Sample Date | | Client Info | | **23 Jan 2024** | 29 Jun 2023 | 10 Sep 2019 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **2** | 2 | <1 |
| Chromium | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Lead | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185m | >20 | **<1** | 0 | <1 |
| Tin | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |
| Antimony | ppm | ASTM D5185m | | **---** | --- | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | <1 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Barium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | **<1** | 2 | <1 |
| Calcium | ppm | ASTM D5185m | | **6** | 4 | <1 |
| Phosphorus | ppm | ASTM D5185m | 50 | **103** | 70 | 73 |
| Zinc | ppm | ASTM D5185m | 4 | **50** | 8 | 3 |
| Sulfur | ppm | ASTM D5185m | 80 | **763** | 376 | 250 |

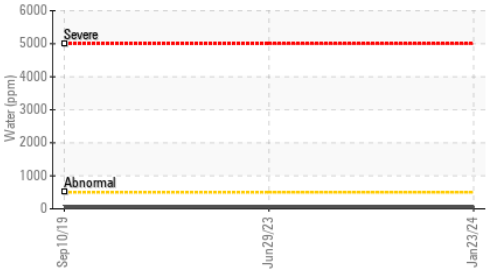
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **<1** | 0 | <1 |
| Sodium | ppm | ASTM D5185m | | **4** | 4 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 0 | 0 |
| Water | % | ASTM D6304 | >0.05 | **0.004** | 0.005 | 0.004 |
| ppm Water | ppm | ASTM D6304 | >500 | **41** | 52.5 | 41.9 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | **737** | 197 | 473 |
| Particles >6µm | | ASTM D7647 | >1300 | **285** | 39 | 110 |
| Particles >14µm | | ASTM D7647 | >160 | **36** | 5 | 10 |
| Particles >21µm | | ASTM D7647 | >40 | **11** | 1 | 2 |
| Particles >38µm | | ASTM D7647 | >10 | **0** | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | **17/15/12** | 15/12/10 | 16/14/10 |

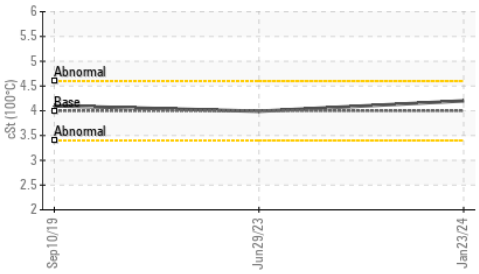
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.11 | **0.28** | 0.23 | 0.224 |

# OIL ANALYSIS REPORT

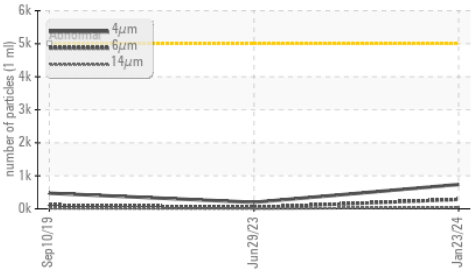
Water (KF)



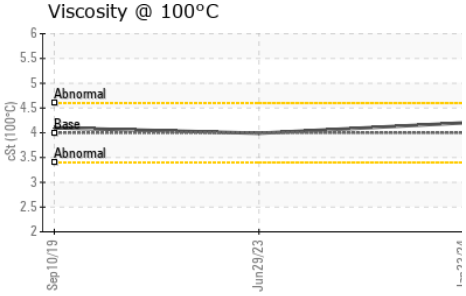

Viscosity @ 100°C



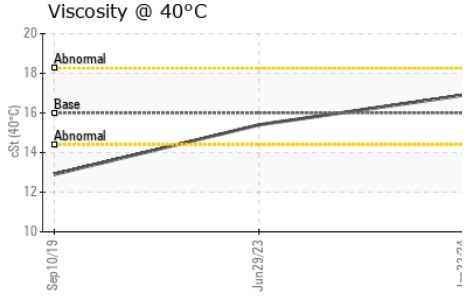

Particle Trend




Viscosity @ 100°C

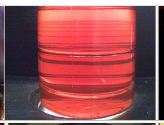
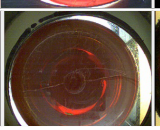
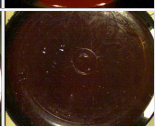



Viscosity @ 40°C



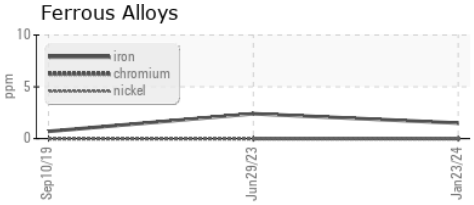

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | LIGHT | 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 | >0.05 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 16 | **16.9** | 15.4 | 12.9 |
| Visc @ 100°C | cSt | ASTM D445 | 4 | **4.2** | 3.99 | 4.1 |
| Viscosity Index (VI) | Scale | ASTM D2270 | 156 | **161** | 166 | 255 |

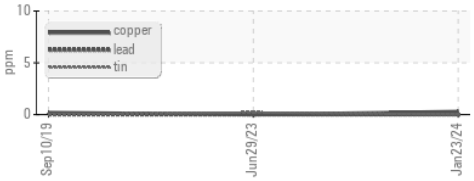
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  |  |  |
| Bottom | | |  |  |  |

## GRAPHS

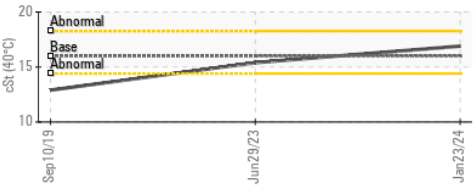
Ferrous Alloys



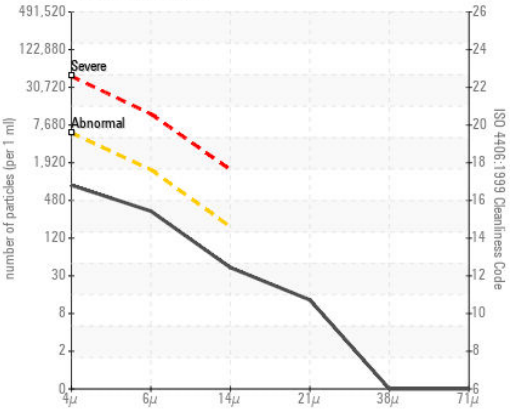

Non-ferrous Metals



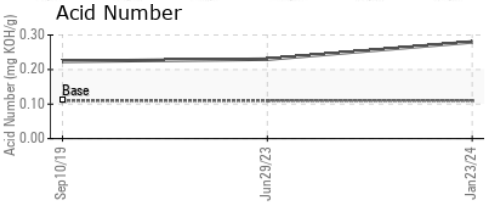

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : TO50002049 **Received** : 30 May 2024
**Lab Number** : 06195898 **Tested** : 04 Jun 2024
**Unique Number** : 11058021 **Diagnosed** : 04 Jun 2024 - Jonathan Hester
**Test Package** : IND 2 ( Additional Tests: KF, KV100, VI )

*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)*

**CAE SIMUFLITE**
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Report Id: CAEDAL [WUSCAR] 06195898 (Generated: 06/04/2024 08:22:41) Rev: 1

Contact/Location: IVO GRAEVE - CAEDAL