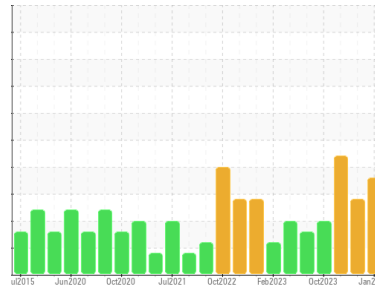


Machine Id
QL6 LEVELER LUBE OIL SYSTEM

Component
Hydraulic System

Fluid
TRIBOL GEAROIL 1100/320 (1500 GAL)



DIAGNOSIS

Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. Due to an abnormal test result it is recommended to contact Stauff Corp at (201)-444-7800 for help resolving the issue.

Wear

The aluminum level is abnormal. All other component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil. Elemental level of silicon (Si) above normal.

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 | | | ST43196 | ST43866 | ST43806 |
| Sample Date | Client Info | | | 11 Jan 2024 | 05 Jan 2024 | 13 Nov 2023 |
| Machine Age | mths | Client Info | | 0 | 0 | 0 |
| Oil Age | mths | Client Info | | 0 | 0 | 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 | >40 | 2 | <1 | <1 |
| Chromium | ppm | ASTM D5185m | >4 | <1 | 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 | >4 | ▲ 12 | ▲ 16 | ▲ 21 |
| Lead | ppm | ASTM D5185m | >10 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >60 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | <1 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|-------------|----------|----------|
| Boron | ppm | ASTM D5185m | | 0 | 45 | 0 |
| Barium | ppm | ASTM D5185m | | 12 | 2 | 14 |
| Molybdenum | ppm | ASTM D5185m | | 1934 | 1891 | 2189 |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Calcium | ppm | ASTM D5185m | | 66 | 69 | 81 |
| Phosphorus | ppm | ASTM D5185m | | 2964 | 3046 | 3358 |
| Zinc | ppm | ASTM D5185m | | 1047 | 1073 | 1137 |
| Sulfur | ppm | ASTM D5185m | | 6218 | 5465 | 6187 |

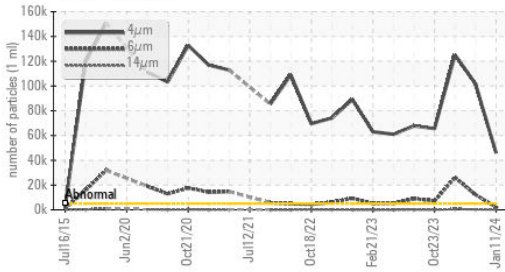
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >20 | ▲ 27 | 15 | ▲ 23 |
| Sodium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | <1 | 2 |
| Water | % | ASTM D6304 | >0.05 | 0.009 | 0.008 | 0.013 |
| ppm Water | ppm | ASTM D6304 | >500 | 97 | 81 | 133.8 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|-------------------|--|--------------|------------|-------------------|------------|------------|
| Particles >4µm | | ASTM D7647 | >5000 | ▲ 46025 | ▲ 101650 | ▲ 125074 |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ 2090 | ▲ 12230 | ▲ 26156 |
| Particles >14µm | | ASTM D7647 | >160 | 48 | ▲ 326 | ▲ 589 |
| Particles >21µm | | ASTM D7647 | >40 | 9 | ▲ 71 | ▲ 116 |
| Particles >38µm | | ASTM D7647 | >10 | 0 | 1 | 2 |
| Particles >71µm | | ASTM D7647 | >3 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ 23/18/13 | ▲ 24/21/16 | ▲ 24/22/16 |

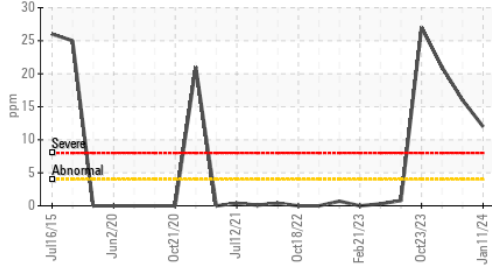
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 3.60 | 3.263 | 3.64 |

OIL ANALYSIS REPORT

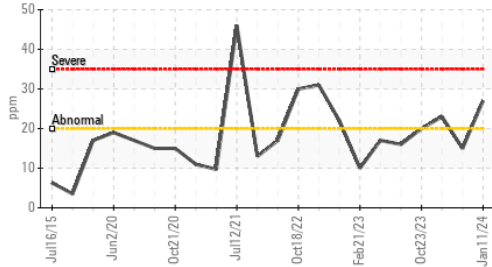
▲ Particle Trend



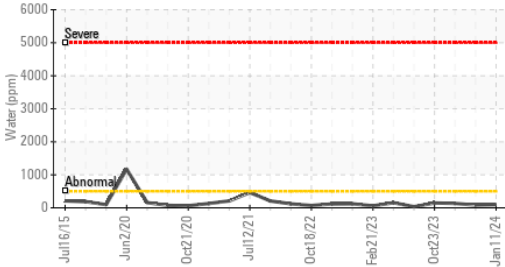
▲ Aluminum (ppm)



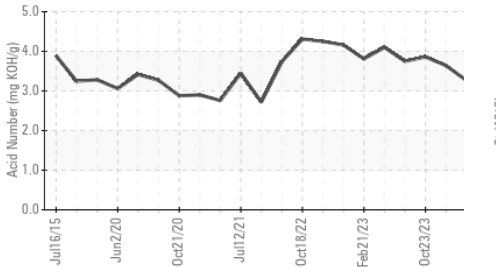
▲ Silicon (ppm)



Water (KF)



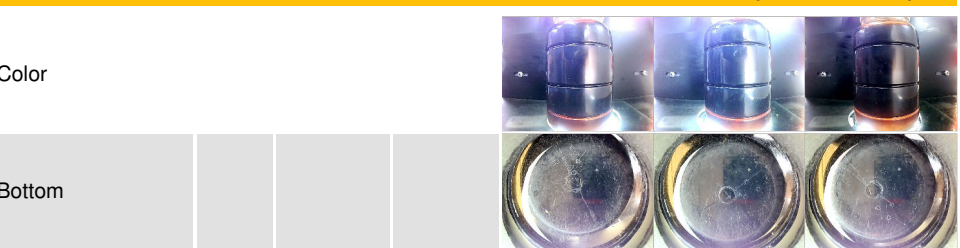
Acid Number



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

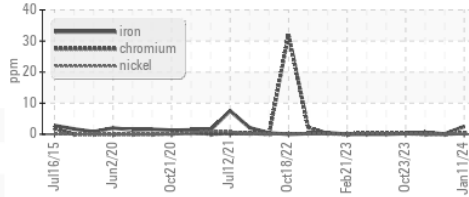
| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 320 | 298 | 297 |

SAMPLE IMAGES

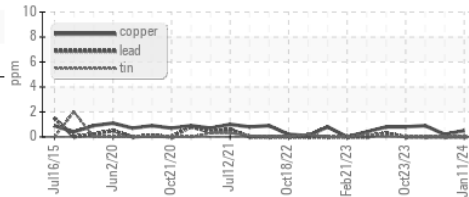


GRAPHS

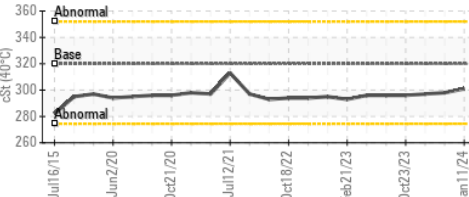
Ferrous Alloys



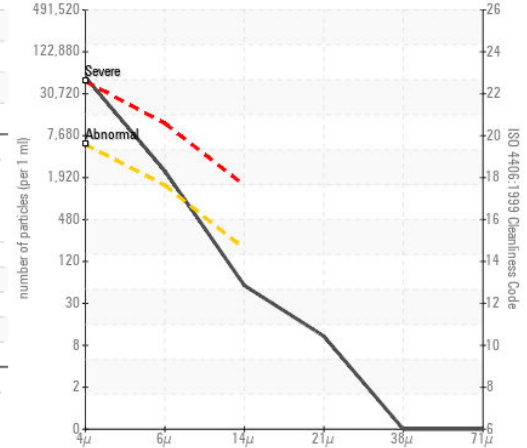
Non-ferrous Metals



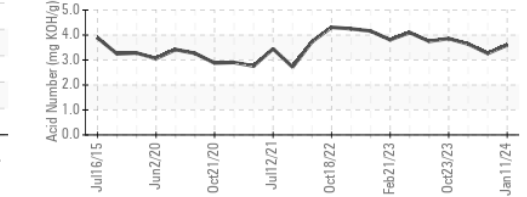
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : ST43196 **Received** : 17 Jan 2024
Lab Number : 06063568 **Diagnosed** : 19 Jan 2024
Unique Number : 10834950 **Diagnostician** : Don Baldrige
Test Package : IND 2 (Additional Tests: KF)

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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 ben.lomax@ssab.com
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 F: (251)662-4784