

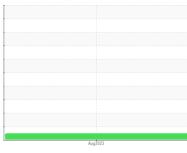
Chem-Ecol

A2308112

OIL ANALYSIS REPORT

Sample Rating Trend







Component Hydraulic System Fluid AW HYDRAULIC OIL ISO 46 (--- GAL)

DIAGNOSIS

Recommendation

This is a baseline read-out on the submitted sample.

Wear

{not applicable}

Contamination {not applicable}

Fluid Condition {not applicable}

| SAMPLE INFORM | NATION | method | limit/base | current | history1 | history2 |
|-----------------|--------|---------------|------------|-------------|---------------------------------------|----------|
| Sample Number | | Client Info | | E30000138 | | |
| Sample Date | | Client Info | | 21 Aug 2023 | | |
| Machine Age | hrs | Client Info | | 0 | | |
| Oil Age | hrs | Client Info | | 0 | | |
| Oil Changed | | Client Info | | N/A | | |
| Sample Status | | | | NORMAL | | |
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185(m) | >20 | <1 | | |
| Chromium | ppm | ASTM D5185(m) | >20 | 0 | | |
| Nickel | ppm | ASTM D5185(m) | >20 | <1 | | |
| Titanium | ppm | ASTM D5185(m) | | 0 | | |
| Silver | ppm | ASTM D5185(m) | | 0 | | |
| Aluminum | ppm | ASTM D5185(m) | >20 | <1 | | |
| Lead | ppm | ASTM D5185(m) | >20 | 0 | | |
| Copper | ppm | ASTM D5185(m) | >20 | <1 | | |
| Tin | ppm | ASTM D5185(m) | >20 | 0 | | |
| Antimony | ppm | ASTM D5185(m) | | 0 | | |
| Vanadium | ppm | ASTM D5185(m) | | 0 | | |
| Beryllium | ppm | ASTM D5185(m) | | 0 | | |
| Cadmium | ppm | ASTM D5185(m) | | 0 | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| | | | | | · · · · · · · · · · · · · · · · · · · | |
| Boron | ppm | ASTM D5185(m) | 5 | <1 | | |
| Barium | ppm | ASTM D5185(m) | 5 | 0 | | |
| Molybdenum | ppm | ASTM D5185(m) | 5 | 0 | | |
| Manganese | ppm | ASTM D5185(m) | 05 | 0 | | |
| Magnesium | ppm | ASTM D5185(m) | 25 | 4 | | |
| Calcium | ppm | ASTM D5185(m) | 200 | 49 | | |
| Phosphorus | ppm | ASTM D5185(m) | 300 | 334 | | |
| Zinc | ppm | ASTM D5185(m) | 370 | 404 | | |
| Sulfur | ppm | ASTM D5185(m) | 2500 | 762 | | |
| Lithium | ppm | ASTM D5185(m) | | <1 | | |
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
| Silicon | ppm | ASTM D5185(m) | | <1 | | |
| Sodium | ppm | ASTM D5185(m) | | <1 | | |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | | |
| Water | % | ASTM D6304* | >0.05 | 0.001 | | |
| ppm Water | ppm | ASTM D6304* | >500 | 6.9 | | |
| FLUID CLEANLIN | IESS | method | limit/base | current | history1 | history2 |
| Particles >4µm | | ASTM D7647 | >5000 | 358 | | |
| Particles >6µm | | ASTM D7647 | >1300 | 80 | | |
| Particles >14µm | | ASTM D7647 | >160 | 6 | | |
| Particles >21µm | | ASTM D7647 | >40 | 2 | | |
| Particles >38µm | | ASTM D7647 | >10 | 0 | | |
| Particles >71µm | | ASTM D7647 | >3 | 0 | | |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | 16/13/10 | | |



OIL ANALYSIS REPORT

| 0 | | | FLUID DEGRADA | TION | method | limit/base | CL |
|--|---|----------|--|------------------|--------------------|---|------------------------|
| Severe | | | Acid Number (AN) | mg KOH/g | ASTM D974* | 0.57 | 0.44 |
| | | | VISUAL | | method | limit/base | CL |
| | | | White Metal | scalar | Visual* | NONE | NO |
| | | | Yellow Metal | scalar | Visual* | NONE | NO |
| normal | | | Precipitate | scalar | Visual* | NONE | NOM |
| | | Aug21/23 | Silt | scalar | Visual* | NONE | NON |
| | | Auaž | | scalar | Visual* | NONE | NO |
| osity @ 100° | с | | Sand/Dirt | | Visual* | NONE | NO |
| , - | | | Appearance | scalar | Visual* | NORML | NOF |
| mal | | | Odor Emulsified Water | scalar | Visual* Visual* | NORML | NO |
| | | | Free Water | scalar scalar | Visual* | >0.05 | NEC |
| | | | | | | | |
| ormal | | | FLUID PROPERT | IES | method | limit/base | CL |
| | | | Visc @ 40°C | cSt | ASTM D7279(m) | 46 | 43.1 |
| | | 1/23 | Visc @ 100°C | cSt | ASTM D7279(m) | 6.7 | 7 |
| | | Aug21/23 | Viscosity Index (VI) | Scale | ASTM D2270* | 97 | 121 |
| ticle Trend | | | SAMPLE IMAGES | S | method | limit/base | CL |
| 4µm] | | | | | | | 23 |
| 444444 6μm 14μm | | | Color | | | | 35 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | (max |
| | | | Bottom | | | | |
| | | | - | | | | |
| | | Aug21/23 | GRAPHS | | | | |
| cosity @ 100° | с | | Ferrous Alloys | | | | Partic |
| , с 200 . | | | 10 iron 1 | | | 491,52 | |
| rmal | | | E 5 - | | | 122,88 | 0 - Severe |
| | | | | | | 30,72 | 0 |
| ormal | | | /23 | | | s (per 1 ml) s (per 1 ml) | 0 Abnormal |
| | | | Aug21 | | | 939.7 June 2017/23 1921/23 1921/23 1921/23 1921/23 1921/23 | 0- |
| | | | Non-ferrous Metal | S | | pitted 48 | |
| | | | 10 copper | | | per of | 0 |
| | | | E. 5 - | | | unu 3 | 0- |
| | | | | | | | 8- |
| osity @ 40°C | | | 0 L | | | | |
| | | | 23. | | | 1/23 | 2- |
| | | | Aug21/23 | | | Aug21/23 | 2 0 |
| | | | Viscosity @ 40°C | | | | 2 0 4μ Acid Ι |
| | | | Viscosity @ 40°C | | | | 2 0 4μ Acid Ι |
| | | | Viscosity @ 40°C | | | | Acid M Abnorm |
| ormal | | | Viscosity @ 40°C Viscosity @ 40°C 55 Abnormal Base Abnormal Abnormal | | | | Acid I Abnorm |
| scosity @ 40°C normal se normal | | | Viscosity @ 40°C | | | Aug21/23 + Aug21/22 Acid Number (mg K0H(g) | Acid I Abnorm |

Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

Validity of results and interpretation are based on the sample and information as supplied.

NONE NONE NONE NONE NORML NORML NEG NEG 43.1 7 121 no image no image no image no image Particle Count 91.520 22.88 30.72 20 180 7 68 4406:1999 Cle 18 1.920 480 16 120 14 30 12 8 8

Acid Number

NONE NONE

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Aug21/23 -