

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **ER21** Component Refrigeration Compressor Fluid CALUMET RO 30 (--- GAL)

DIAGNOSIS

A Recommendation

Resample at the next service interval to monitor.

A Wear

The iron level is abnormal.

Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Fluid Condition

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

| SAMPLE INFORM | ATION | method | limit/base | current | history1 | history2 |
|------------------|----------|---------------|------------|-------------|-------------|----------------|
| Sample Number | | Client Info | | USP0006623 | USP0002811 | USP0001029 |
| Sample Date | | Client Info | | 27 Apr 2024 | 26 Oct 2023 | 26 Jul 2023 |
| 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 | | | | ABNORMAL | ABNORMAL | ABNORMAL |
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| Iron | nnm | ASTM D5185m | <u> </u> | 16 | -1 | 3 |
| Chromium | nnm | ASTM D5185m | >2 | 0 | <1 | 0 |
| Nickel | nnm | ASTM D5185m | ~~ | 0 | 0 | 0 |
| Titanium | nnm | ASTM D5185m | | -1 | -1 | 0 |
| Silver | ppm | ASTM D5185m | \ 2 | 0 | 0 | 0 |
| Aluminum | ppm | AGTM D5105m | >2 | 0 | 1 | 0 |
| Lood | ppm | AGTM D5105m | >0 | 0 | 0 | 0 |
| Connor | ppm | ACTM DE105m | >2 | -1 | -1 | 0 |
| Тір | ppiii | AGTM D5105III | >0 | <1 | <1 | 0 |
| | ррп | ASTM DE105m | >4 | 0 | < 1 | 0 |
| Variadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM DS185m | | U | <1 | U |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Manganese | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Calcium | ppm | ASTM D5185m | | 1 | 0 | 0 |
| Phosphorus | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Zinc | ppm | ASTM D5185m | | 21 | 0 | 5 |
| Sulfur | ppm | ASTM D5185m | | 151 | 44 | 160 |
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
| Silicon | ppm | ASTM D5185m | >15 | 0 | 0 | <1 |
| Sodium | ppm | ASTM D5185m | | 2 | 0 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 2 | 0 |
| Water | % | ASTM D6304 | >0.01 | 0.002 | 0.002 | 0.004 |
| ppm Water | ppm | ASTM D6304 | >100 | 17 | 20.7 | 42.8 |
| FLUID CLEANLIN | IESS | method | limit/base | current | history1 | history2 |
| Particles >4µm | | ASTM D7647 | >10000 | 5547 | ▲ 81574 | 1 21991 |
| Particles >6um | | ASTM D7647 | >2500 | 1642 | A 15187 | A 29386 |
| Particles >14um | | ASTM D7647 | >320 | 67 | 105 | 375 |
| Particles >21um | | ASTM D7647 | >80 | 5 | 9 | 32 |
| Particles >38um | | ASTM D7647 | >20 | 0 | 0 | 0 |
| Particles >71um | | ASTM D7647 | >4 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >20/18/15 | 20/18/13 | ▲ 24/21/14 | ▲ 24/22/16 |
| | | method | limit/bace | current | history1 | history2 |
| | | | minubase | 0.015 | | 0.000 |
| Acia Number (AN) | mg KOH/g | ASTM D9/4 | | 0.015 | 0.014 | 0.028 |



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| VISUAI | | method | limit/base | current | history1 | history2 |
|------------------|--------|-----------|------------|---------|------------|----------|
| VICONE | | method | | ourion | motory | motory |
| 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 | 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 | >0.01 | NEG | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |
| FLUID PROPERT | IES | method | limit/base | current | history1 | history2 |
| Visc @ 40°C | cSt | ASTM D445 | | 93.1 | 68.6 | ▲ 93.3 |
| SAMPLE IMAGES | ; | method | limit/base | current | history1 | history2 |
| Color | | | | | • • | |
| | | | | | 11 | |

Bottom



* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

T: (479)968-5110 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (479)964-8190

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Page 2 of 2