

OIL ANALYSIS REPORT

Sample Rating Trend

ISO

Machine Id **100394397** Component **Hydraulic System** Fluid **AW HYDRAULIC OIL ISO 32 (--- GAL)**

DIAGNOSIS

Recommendation

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is a light amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

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

| SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
|---|--|---|---|---|--|--|
| Sample Number | | Client Info | | WC0911862 | WC0555138 | |
| Sample Date | | Client Info | | 19 Apr 2024 | 09 Apr 2021 | |
| Machine Age | mls | Client Info | | 0 | 0 | |
| Oil Age | mls | Client Info | | 0 | 0 | |
| Oil Changed | | Client Info | | Not Changd | Not Changd | |
| Sample Status | | | | ATTENTION | NORMAL | |
| CONTAMINATIO | N | method | limit/base | current | history1 | history2 |
| Water | | WC Method | >0.1 | NEG | NEG | |
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >20 | 3 | 2 | |
| Chromium | ppm | ASTM D5185m | >10 | <1 | <1 | |
| Nickel | ppm | ASTM D5185m | >10 | 0 | 0 | |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | |
| Silver | ppm | ASTM D5185m | | 0 | <1 | |
| Aluminum | ppm | ASTM D5185m | >10 | 0 | 0 | |
| Lead | ppm | ASTM D5185m | >10 | 0 | <1 | |
| Copper | ppm | ASTM D5185m | >75 | <1 | 1 | |
| Tin | ppm | ASTM D5185m | >10 | 0 | <1 | |
| Antimony | ppm | ASTM D5185m | | | 0 | |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| | | ASTM D5185m | 5 | 0 | <1 | |
| Boron | ppm | ACTIVI DOTOCITI | 0 | - | | |
| Boron Barium | ppm ppm | ASTM D5185m | 5 | 0 | 0 | |
| | | | | - | | |
| Barium | ppm | ASTM D5185m | 5 | 0 | 0 | |
| Barium Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m | 5 | 0 <1 | 0 1 | |
| Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 5 5 | 0 <1 0 | 0 1 <1 | |
| Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 5 5 25 | 0 <1 0 11 | 0 1 <1 14 | |
| Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 5 5 25 200 | 0 <1 0 11 91 | 0 1 <1 14 96 | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 5 5 25 200 300 | 0 <1 0 11 91 329 | 0 1 <1 14 96 354 | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 5 5 25 200 300 370 | 0 <1 0 11 91 329 422 | 0 1 <1 14 96 354 445 | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 5 5 25 200 300 370 2500 Limit/base | 0 <1 0 11 91 329 422 1210 | 0 1 <1 14 96 354 445 1013 | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 5 5 25 200 300 370 2500 Limit/base | 0 <1 0 11 91 329 422 1210 current | 0 1 <1 14 96 354 445 1013 history1 | history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m | 5 5 25 200 300 370 2500 Limit/base >20 | 0 <1 0 11 91 329 422 1210 current 1 | 0 1 <1 14 96 354 445 1013 history1 1 | history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m | 5 5 25 200 300 370 2500 Limit/base >20 | 0 <1 0 11 91 329 422 1210 current 1 1 <1 0 | 0 1 <1 14 96 354 445 1013 history1 1 0 | history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 5 5 25 200 300 370 2500 limit/base >20 | 0 <1 0 11 91 329 422 1210 current 1 1 <1 0 | 0 1 <1 14 96 354 445 1013 history1 1 0 0 | history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 5 5 25 200 300 370 2500 Limit/base >20 >20 Limit/base | 0 <1 0 11 91 329 422 1210 current 1 <1 0 current | 0 1 <1 14 96 354 445 1013 history1 1 0 0 history1 | history2 history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 5 5 25 200 300 370 2500 limit/base >20 limit/base >20 limit/base >5000 >1300 | 0 <1 0 11 91 329 422 1210 current 1 current 0 current 8691 | 0 1 <1 14 96 354 445 1013 history1 1 0 0 history1 3445 | history2 history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium FLUID CLEANLIN Particles >4µm Particles >6µm | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 5 5 25 200 300 370 2500 limit/base >20 limit/base >20 limit/base >5000 >1300 | 0 <1 0 11 91 329 422 1210 current 1 <1 0 current 0 8691 1018 | 0 1 <1 14 96 354 445 1013 history1 1 0 0 history1 3445 123 | history2 history2 history2 |

ASTM D7647 >10

ASTM D7647 >3

0

0

ISO 4406 (c) >19/17/14 **20/17/13**

Particles >38µm

Particles >71µm

Oil Cleanliness

0

0

19/14/10



OIL ANALYSIS REPORT

| Particle Trend | FLUID DEGRAD | ATION | method | limit/base | current | history1 | history |
|--|---------------------------------------|---------------|------------|---|---------------|-------------|-----------------|
| 4μm 6μm | Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.57 | 0.31 | 0.339 | |
| | VISUAL | | method | limit/base | current | history1 | history |
| Abnormal | White Metal | scalar | *Visual | NONE | NONE | NONE | |
| | Yellow Metal | scalar | *Visual | NONE | NONE | NONE | |
| | Precipitate | scalar | *Visual | NONE | NONE | NONE | |
| 921 | 5 Silt | scalar | *Visual | NONE | NONE | NONE | |
| Арг9/21 | Silt Debris | scalar | *Visual | NONE | NONE | NONE | |
| De ettele Tree e d | Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | |
| Particle Trend | Appearance | scalar | *Visual | NORML | NORML | NORML | |
| 4μm 6μm | Odor | scalar | *Visual | NORML | NORML | NORML | |
| •••••••••••••••••••••••••••••••••••••• | Emulsified Water | scalar | *Visual | >0.1 | NEG | NEG | |
| Abnormal | Free Water | scalar | *Visual | | NEG | NEG | |
| | FLUID PROPER | TIES | method | limit/base | current | history1 | history |
| | Visc @ 40°C | cSt | ASTM D445 | 32 | 32.2 | 32.2 | |
| April | SAMPLE IMAGE | S | method | limit/base | current | history1 | histor |
| Ϋ́Υ. | Apr | | | | | | |
| Acid Number | Color | | | | | 200 | no imag |
| Abnormal | | | | | E F | N BEISE | mag |
| | | | | | | | |
| Base | | | | | | | |
| | Bottom | | | | 1. 0. 0. A. | | no imag |
| Abnomal | | | | | | | |
| | GRAPHS | | | | | | |
| 9/21- | Ferrous Alloys | | | | Particle Coun | + | |
| Арг9/21 | | | | 491,520 | I | - | |
| Viscosity @ 400C | iron | | | 122,880 | | | |
| Viscosity @ 40°C | E. 5- nickel | | | 30,720 | Severe | | |
| Abnormal | | | | 1000 | | | |
| | Apr9/21 | | | | Annormal | | |
| Base | Apr | | | Apr19/24- 19/24 19/24 19/24 19/24 | | • | |
| | Non-ferrous Meta | ls | | | 1 | | |
| Abnormal | | | | L 120 | | • | |
| | | | | qump | | | |
| Apr5/21 | 5 - tin | | | = 30 | Ī | | |
| ≪. | | | | 8 | | | |
| | Apr9/21 | | | Apr19/24 | + | | |
| | P | | | dbr 0 | μ 6μ | 14µ 21µ | 38µ 7 |
| | Viscosity @ 40°C | | | _ | Acid Number | 14µ 21µ | 30μ 1 |
| | 40 Abnormal | | | (B) 1.00 | Abnormal | | |
| | 다 35 문 생 30 - Abnormal | | | E Start | Base | | ***** |
| | 영 30 + Abnormal | | | Jangung Nump | Abnormal | | |
| | 25 | | | 0.00 | | | |
| | Apr9/21 | | | Apr19/24 | Apr9/21 | | |
| | Ap | | | Apr1 | Ap | | |
| | | | | | | | |
| Labora | - | | | | | PALFINGER - | |
| | | Rece Teste | | May 2024 | | 415 | 1 W ST R |
| | Imber : 06184242 Iumber : 11035568 | | | May 2024 May 2024 - W | es Davis | | TIFFIN US 44 |
| Unique l | | Diagi | | 1114 LULH - VV | 55 DUVIS | Conto | ct: ERIC H |
| | ckage : CONST | | | | | Conta | |

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Contact/Location: ERIC HILL - PALTIF