

OIL ANALYSIS REPORT

Sample Number

hrs

hrs

Sample Date

Machine Age

Oil Changed

Sample Status

CONTAMINATION

Oil Age

Water

BUILDING 63 - CENTRAL DRAIN & FILL **BARREL VAN 12** Component

Bulk Fluid Tank Fluid {not provided} (--- GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

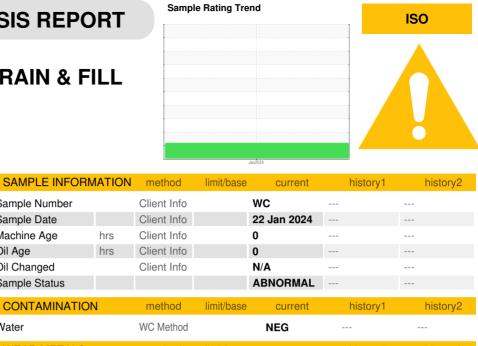
All component wear rates are normal.

Contamination

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

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.



| Waler | | WC Method | | NEG | | |
|---|---|---|------------|---|----------------------------------|----------------------------------|
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185(m) | | 1 | | |
| Chromium | ppm | ASTM D5185(m) | | 0 | | |
| Nickel | ppm | ASTM D5185(m) | | 0 | | |
| Titanium | ppm | ASTM D5185(m) | | 0 | | |
| Silver | ppm | ASTM D5185(m) | | 0 | | |
| Aluminum | ppm | ASTM D5185(m) | | <1 | | |
| Lead | ppm | ASTM D5185(m) | | <1 | | |
| Copper | ppm | ASTM D5185(m) | | 6 | | |
| Tin | ppm | ASTM D5185(m) | | 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) | | <1 | | |
| Berein | pp | | | | | |
| Barium | ppm | ASTM D5185(m) | | 0 | | |
| | | . , | | 0 0 | | |
| Barium | ppm | ASTM D5185(m) | | - | | |
| Barium Molybdenum | ppm ppm | ASTM D5185(m) ASTM D5185(m) | | 0 | | |
| Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | | 0 | | |
| Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | | 0 0 <1 | | |
| Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | | 0 0 <1 80 | | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm | ASTM D5185(m) | | 0 0 <1 80 577 | | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm | ASTM D5185(m) | | 0 0 <1 80 577 619 | | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) | limit/base | 0 0 <1 80 577 619 1913 | | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) | limit/base | 0 0 <1 80 577 619 1913 <1 | | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) | limit/base | 0 0 <1 80 577 619 1913 <1 current | history1 | history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D5185(m) | limit/base | 0 0 <1 80 577 619 1913 <1 current <1 | history1 | history2 |

| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|-------------------|--------------|------------|-------------------|----------|----------|
| Particles >4µm | ASTM D7647 | >5000 | A 17975 | | |
| Particles >6µm | ASTM D7647 | >1300 | <u> </u> | | |
| Particles >14µm | ASTM D7647 | >160 | 115 | | |
| Particles >21µm | ASTM D7647 | >40 | 22 | | |
| Particles >38µm | ASTM D7647 | >10 | 1 | | |
| Particles >71µm | ASTM D7647 | >3 | 0 | | |
| Oil Cleanliness | ISO 4406 (c) | >19/17/14 | A 21/19/14 | | |

Contact/Location: Matt Morand - HIRWIN



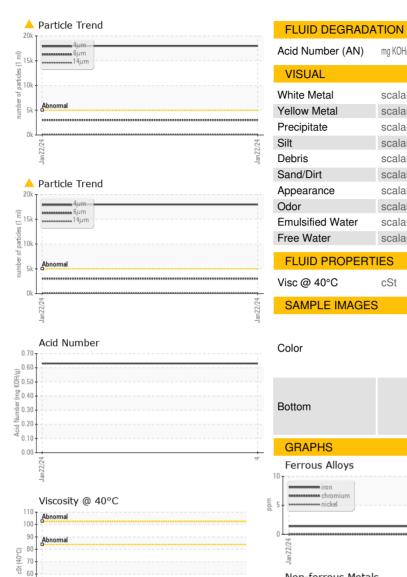
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OIL ANALYSIS REPORT

method

limit/base

current



| | FLUID DEGRADA | | methou | IIIIII/Dase | current | Thistory I | Thistory2 |
|--|------------------------|----------------------|---------------|---|--------------------|----------------|---------------------------|
| | Acid Number (AN) | mg KOH/g | ASTM D974* | | 0.63 | | |
| | VISUAL | | method | limit/base | current | history1 | history2 |
| | White Metal | scalar | Visual* | NONE | NONE | | |
| | Yellow Metal | scalar | Visual* | NONE | NONE | | |
| | Precipitate | scalar | Visual* | NONE | NONE | | |
| 2/24 | Silt | scalar | Visual* | NONE | NONE | | |
| Jan22/24 | Debris | scalar | Visual* | NONE | NONE | | |
| | Sand/Dirt | scalar | Visual* | NONE | NONE | | |
| | Appearance | scalar | Visual* | NORML | NORML | | |
| | Odor | | Visual* | NORML | NORML | | |
| | Emulsified Water | | Visual* | | NEG | | |
| | Free Water | scalar | Visual* | | NEG | | |
| | FLUID PROPERT | FIES | method | limit/base | current | history1 | history2 |
| | Visc @ 40°C | cSt | ASTM D7279(m) | | 33.1 | | |
| Jan22/24 | SAMPLE IMAGES | S | method | limit/base | current | history1 | history2 |
| L L | Color | | | | | no image | no image |
| | Bottom | | | | | no image | no image |
| | GRAPHS | | | | | | |
| 9: | Ferrous Alloys | | | 404 500 | Particle Count | | |
| | 10 iron | | | 491,520 | | | [²⁶ |
| | 툴. 5- mickel | | | 122,880 | Severe | | -24 |
| | | | | 30,720 | · · · · | | -22 |
| | 0 | | | t ि≣ 7,680 | Abnormal | | -20 |
| | Jan 22/24 | | | Jan 22/24 (per 1 m | | | -20 -18 -16 -14 |
| | ⊸ Non-ferrous Metal | ls | | r sapiti 480. | | | 16 |
| | ¹⁰ T | | | of pair | | | |
| | copper | | | 1,580 1,722 1,020 1,000 1,020 | | | ¹⁴ |
| | 톱 5tin | | | = 30 | | | -12 |
| | 0 | | | 8 | | | -10 |
| | 2/24 | | | 2/24 | | | -8 |
| | Jan 22/24 | | | Jan22/24 | | | |
| | Viscosity @ 40°C | | | | وہو Acid Number | 14μ 21μ | 38µ 71µ |
| | 120 100 Abnormal | | | (D)HO 0.60 B 0.60 | | | |
| 0.0 | | | | S 0.60 | | | |
| cSt (40°C) | 60- | | | 뉼 0.40 - 은 | | | |
| 5 | 40 | | | B 0.40 B 0.20 Will No.20 | | | |
| | 20 + +2/ | | | | 2/24 | | |
| | Jan 22/24 | | | Jan 22/24 | Jan 22/24 | | |
| | | | | | | | |
| CALA Laboratory | : WearCheck - C8-11 | | | | | | |
| Sample No. Lab Number | | Recieved Diagnose | | Jan 2024 Jan 2024 | 2072 RIV | ERSIDE DRIVE E | AST, BOX 25 VINDSOR, O |
| edited Unique Number | | Diagnosti | | in Marson | | v | CA N8Y 45 |
| Test Package | : IND 2 | | | | | Contac | t: Matt Morar |
| scuss this sample report, c denoted (*) outside scope | contact Customer Servi | ice at 1-80 | 00-268-2131 | 1. | | tt.morand@per | nod-ricard.co |

Contact/Location: Matt Morand - HIRWIN

history1

history2