

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL





2020 Ma2021 Ju2021 Max0022 Ju2022 Max0022 Max002 Ma2023

| Sample Number Client Info WC0820272 WC0820275 WC0820275 WC0820275 Machine Age mths Client Info 14 Nov 2023 03 Oct 2023 07 Sep 202 Machine Age mths Client Info 0 0 0 Oil Age mths Client Info N/A N/A N/A Sample Status Client Info N/A N/A N/A N/A WEAR METALS method imit/base current history history Iron ppm ASTM D5185m >70 0 0 0 Kickel ppm ASTM D5185m >10 <1 0 0 Silver ppm ASTM D5185m >3 2 0 0 0 Lead ppm ASTM D5185m >3 0 0 1 0 0 Copper ppm ASTM D5185m >3 0 0 1 0 0 Copper ppm ASTM D5185m | | | ¥2020 Mar202 | I JUNE VE I HOVEDET MINE | LE UNCOLL MUYLULL MIDILULS (| 1012023 100120 | |
|---|------------------|----------|--------------|--------------------------|------------------------------|----------------|------------|
| Sample Date Client Info 14 Nov 2023 03 Oct 2023 07 Sep 202 Machine Age mths Client Info 0 0 0 Oil Age mths Client Info 0 0 0 Oil Charged Client Info N/A N/A NA Sample Status Client Info N/A N/A NA VeAR METALS method imit/base current history1 history1 Iron ppm ASTM D5185m >70 0 0 0 Nickel ppm ASTM D5185m >10 <1 0 0 Silver ppm ASTM D5185m 3 2 0 0 Copper ppm ASTM D5185m >3 0 0 0 Vanadium ppm ASTM D5185m >3 0 0 0 AstM D5185m >3 0 0 0 0 0 Kikel ppm ASTM D5185m 0 | SAMPLE INFORM | 1ATION | method | limit/base | current | history1 | history |
| Machine Age mths Client Info 0 0 0 0 Oil Age mths Client Info 0 0 0 0 Oil Changed Client Info NVA N/A N/A N/A Sample Status Imit/base current history history Iron ppm ASTM D5185m >70 0 0 0 Nickel ppm ASTM D5185m >70 0 0 0 Silver ppm ASTM D5185m >10 <1 | Sample Number | | Client Info | | WC0820272 | WC0820275 | WC082024 |
| Oil Age mths Client Info 0 0 0 Oil Changed Client Info NA NA NA NA Sample Status Client Info NA NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history1 Iron ppm ASTM 05185m >70 0 0 0 Chromium ppm ASTM 05185m 10 -1 0 0 Nickel ppm ASTM 05185m 0 0 0 0 Auminum ppm ASTM 05185m >3 2 0 0 0 Additionum ppm ASTM 05185m >3 0 0 -1 0 0 Capper ppm ASTM 05185m 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <t< td=""><td>Sample Date</td><td></td><td>Client Info</td><td></td><th>14 Nov 2023</th><td>03 Oct 2023</td><td>07 Sep 202</td></t<> | Sample Date | | Client Info | | 14 Nov 2023 | 03 Oct 2023 | 07 Sep 202 |
| Oil Changed Client Info N/A N/A N/A N/A Sample Status method limit/base current history1 NoRMAL NORMAL WEAR METALS method limit/base current history1 history1 Iron ppm ASTM 05/85m >70 0 0 0 Chromium ppm ASTM 05/85m 0 0 0 0 Nickel ppm ASTM 05/85m 0 0 0 0 Silver ppm ASTM 05/85m >3 2 0 0 Lead ppm ASTM 05/85m >20 <1 | Machine Age | mths | Client Info | | 0 | 0 | 0 |
| Sample Status Instant NORMAL NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >70 0 0 0 Nickel ppm ASTM D5185m 0 0 -1 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >3 2 0 0 Auminum ppm ASTM D5185m >3 0 0 -1 Copper ppm ASTM D5185m >20 <1 | Oil Age | mths | Client Info | | 0 | 0 | 0 |
| WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >70 0 0 0 Otromium ppm ASTM D5185m >10 -1 0 0 Nickel ppm ASTM D5185m 0 0 0 0 Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >3 2 0 0 Lead ppm ASTM D5185m >20 -1 0 0 0 Vanadium ppm ASTM D5185m 20 -1 0 0 0 Vanadium ppm ASTM D5185m 0 0 0 0 0 Boron ppm ASTM D5185m 0 0 0 0 0 Maganese ppm ASTM D5185m 0 0 0 2 2 Calcium ppm <td< td=""><td>Oil Changed</td><td></td><td>Client Info</td><td></td><th>N/A</th><td>N/A</td><td>N/A</td></td<> | Oil Changed | | Client Info | | N/A | N/A | N/A |
| Iron ppm ASTM D5185m >70 0 0 0 Chromium ppm ASTM D5185m 0 <1 | Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Chromium ppm ASTM D5185m >10 <1 0 0 Nickel ppm ASTM D5185m 0 0 <1 | WEAR METALS | | method | limit/base | current | history1 | history |
| Nickel ppm ASTM D5185m 0 0 <1 Titanium ppm ASTM D5185m 0 0 0 Silver ppm ASTM D5185m >3 2 0 0 Auminum ppm ASTM D5185m >3 2 0 0 Lead ppm ASTM D5185m >20 <1 | Iron | ppm | ASTM D5185m | >70 | 0 | 0 | 0 |
| Titanium ppm ASTM D5185m <1 0 0 Silver ppm ASTM D5185m 3 2 0 0 Aluminum ppm ASTM D5185m >3 2 0 0 Lead ppm ASTM D5185m >4 0 0 <1 | Chromium | ppm | ASTM D5185m | >10 | <1 | 0 | 0 |
| Silver ppm ASTM D5185m 0 0 0 0 Aluminum ppm ASTM D5185m >3 2 0 0 Lead ppm ASTM D5185m >4 0 0 <1 | Nickel | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Atuminum ppm ASTM D5185m >3 2 0 0 Lead ppm ASTM D5185m >4 0 0 <1 | Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Lead ppm ASTM D5185m >4 0 0 <1 Copper ppm ASTM D5185m >20 <1 | Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Copper ppm ASTM D5185m >20 <1 0 0 Tin ppm ASTM D5185m >3 0 0 <1 | Aluminum | ppm | ASTM D5185m | >3 | 2 | 0 | 0 |
| Tin ppm ASTM D5185m >3 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m <1 | Lead | ppm | ASTM D5185m | >4 | 0 | 0 | <1 |
| Tin ppm ASTM D5185m >3 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m <1 | Copper | ppm | ASTM D5185m | >20 | <1 | 0 | 0 |
| Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 6 0 0 Magnese ppm ASTM D5185m 0 0 2 0 Magnesium ppm ASTM D5185m 0 0 2 0 Calcium ppm ASTM D5185m 0 0 2 0 Phosphorus ppm ASTM D5185m 0 0 0 23 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m 0 0 <1 | Tin | ppm | ASTM D5185m | >3 | 0 | 0 | <1 |
| Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 0 6 0 Molybdenum ppm ASTM D5185m 0 0 2 0 Manganese ppm ASTM D5185m 0 0 2 0 Calcium ppm ASTM D5185m 0 0 2 0 Calcium ppm ASTM D5185m 0 0 2 2 Calcium ppm ASTM D5185m 0 0 0 2 Zinc ppm ASTM D5185m 0 0 0 2 Silicon ppm ASTM D5185m >45 <1 0 <1 Sodium ppm ASTM D5185m >20 <1 <1 <1 | Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Boron ppm ASTM D5185m 0 0 0 Barium ppm ASTM D5185m -1 <1 | Cadmium | | ASTM D5185m | | <1 | 0 | 0 |
| Barium ppm ASTM D5185m 0 6 0 Molybdenum ppm ASTM D5185m <1 | ADDITIVES | | method | limit/base | current | history1 | history |
| Molybdenum ppm ASTM D5185m <1 <1 0 Manganese ppm ASTM D5185m 0 0 <1 | Boron | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 0 0 2 Calcium ppm ASTM D5185m 0 <1 | Barium | ppm | ASTM D5185m | | 0 | 6 | 0 |
| Manganese ppm ASTM D5185m 0 0 <1 Magnesium ppm ASTM D5185m 0 0 2 Calcium ppm ASTM D5185m 0 <1 | Molybdenum | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Magnesium ppm ASTM D5185m 0 0 2 Calcium ppm ASTM D5185m 0 <1 | - | | | | 0 | 0 | <1 |
| Calcium ppm ASTM D5185m 0 <1 0 Phosphorus ppm ASTM D5185m 1032 990 1022 Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 0 0 23 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >45 <1 | Magnesium | | ASTM D5185m | | 0 | 0 | 2 |
| Phosphorus ppm ASTM D5185m 1032 990 1022 Zinc ppm ASTM D5185m 0 0 0 23 Sulfur ppm ASTM D5185m 0 0 23 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >45 <1 0 <1 Sodium ppm ASTM D5185m >45 <1 0 <1 Potassium ppm ASTM D5185m >20 <1 <1 <1 Water % ASTM D6304 >0.6 0.0004 0.002 0.001 pm ASTM D6304 >0.6 0.0044 0.002 0.001 pm ASTM D7647 >10000 57 251 37 Particles >4µm ASTM D7647 >200 14 70 16 Particles >14µm ASTM D7647 >320 3 9 2 Particles >21µm | - | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Zinc ppm ASTM D5185m 0 0 0 Sulfur ppm ASTM D5185m 0 0 23 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >45 <1 | Phosphorus | | ASTM D5185m | | 1032 | 990 | 1022 |
| Sulfur ppm ASTM D5185m 0 0 23 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >45 <1 | | | ASTM D5185m | | 0 | 0 | 0 |
| CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >45 <1 | Sulfur | | ASTM D5185m | | 0 | | 23 |
| Silicon ppm ASTM D5185m >45 <1 0 <1 Sodium ppm ASTM D5185m 0 0 <1 <1 Potassium ppm ASTM D5185m >20 <1 <1 <1 <1 Vater % ASTM D6304 >0.6 0.004 0.002 0.001 ppm Water ppm ASTM D6304 >0.6 0.004 0.002 0.001 ppm Water ppm ASTM D6304 <0.6 0.004 0.002 0.001 Particles >4µm ASTM D7647 >10000 57 251 37 Particles >6µm ASTM D7647 >2500 14 70 16 Particles >14µm ASTM D7647 >320 3 9 2 Particles >21µm ASTM D7647 >80 0 3 1 Particles >38µm ASTM D7647 >20 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION method limit/base current <td>CONTAMINANTS</td> <td></td> <td>method</td> <td>limit/base</td> <th>current</th> <td>history1</td> <td>history</td> | CONTAMINANTS | | method | limit/base | current | history1 | history |
| Sodium ppm ASTM D5185m 0 0 <1 Potassium ppm ASTM D5185m >20 <1 | | | | | -1 | | |
| Potassium ppm ASTM D5185m >20 <1 <1 <1 Water % ASTM D6304 >0.6 0.004 0.002 0.001 ppm ASTM D6304 >0.6 0.004 0.002 0.001 ppm Water ppm ASTM D6304 41 23.4 10.3 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 >10000 57 251 37 Particles >6µm ASTM D7647 >2500 14 70 16 Particles >14µm ASTM D7647 >320 3 9 2 Particles >21µm ASTM D7647 >80 0 3 1 Particles >38µm ASTM D7647 >20 0 0 1 Particles >71µm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION | | | | 240 | | | |
| Water % ASTM D6304 >0.6 0.004 0.002 0.001 ppm Water ppm ASTM D6304 41 23.4 10.3 FLUID CLEANLINESS method limit/base current history1 history Particles >4µm ASTM D7647 >10000 57 251 37 Particles >6µm ASTM D7647 >2500 14 70 16 Particles >14µm ASTM D7647 >320 3 9 2 Particles >21µm ASTM D7647 >80 0 3 1 Particles >38µm ASTM D7647 >20 0 0 1 Particles >71µm ASTM D7647 >4 0 0 0 0 Ol Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION method limit/base current history1 history1 | | | | >20 | - | | |
| ppm Water ppm ASTM D6304 41 23.4 10.3 FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 >10000 57 251 37 Particles >6µm ASTM D7647 >2500 14 70 16 Particles >14µm ASTM D7647 >320 3 9 2 Particles >14µm ASTM D7647 >320 3 9 2 Particles >21µm ASTM D7647 >80 0 3 1 Particles >38µm ASTM D7647 >20 0 0 1 Particles >71µm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION method limit/base current history1 history1 | | | | | | | |
| FLUID CLEANLINESS method limit/base current history1 history1 Particles >4µm ASTM D7647 >10000 57 251 37 Particles >6µm ASTM D7647 >2500 14 70 16 Particles >6µm ASTM D7647 >320 3 9 2 Particles >14µm ASTM D7647 >320 3 9 2 Particles >21µm ASTM D7647 >80 0 3 1 Particles >38µm ASTM D7647 >20 0 0 1 Particles >71µm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION method limit/base current history1 history1 | | | | >0.0 | | | |
| Particles >6μm ASTM D7647 >2500 14 70 16 Particles >14μm ASTM D7647 >320 3 9 2 Particles >21μm ASTM D7647 >80 0 3 1 Particles >21μm ASTM D7647 >80 0 3 1 Particles >38μm ASTM D7647 >20 0 0 1 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION method limit/base current history1 history1 | | | method | limit/base | current | history1 | history |
| Particles >6μm ASTM D7647 >2500 14 70 16 Particles >14μm ASTM D7647 >320 3 9 2 Particles >21μm ASTM D7647 >80 0 3 1 Particles >21μm ASTM D7647 >80 0 3 1 Particles >38μm ASTM D7647 >20 0 0 1 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION method limit/base current history1 history | Particles >4µm | | ASTM D7647 | >10000 | 57 | 251 | 37 |
| Particles >14μm ASTM D7647 >320 3 9 2 Particles >21μm ASTM D7647 >80 0 3 1 Particles >21μm ASTM D7647 >20 0 0 1 Particles >38μm ASTM D7647 >20 0 0 1 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION method limit/base current history1 history | Particles >6µm | | ASTM D7647 | >2500 | 14 | | 16 |
| Particles >21μm ASTM D7647 >80 0 3 1 Particles >38μm ASTM D7647 >20 0 0 1 Particles >38μm ASTM D7647 >20 0 0 1 Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION method limit/base current history1 history1 | | | | | 3 | | |
| Particles >38μm ASTM D7647 >20 0 1 Particles >37μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION method limit/base current history1 history1 | • | | | | | | |
| Particles >71μm ASTM D7647 >4 0 0 0 Oil Cleanliness ISO 4406 (c) >20/18/15 13/11/9 15/13/10 12/11/9 FLUID DEGRADATION method limit/base current history1 history1 | | | | | | | |
| Oil CleanlinessISO 4406 (c) >20/18/1513/11/915/13/1012/11/9FLUID DEGRADATIONmethodlimit/basecurrenthistory1history1 | | | | | | | |
| | | | | | | | |
| Acid Number (AN) mg KOH/g ASTM D8045 0.097 0.22 0.081 | FLUID DEGRADA | | method | limit/base | current | history1 | history |
| | Acid Number (AN) | mg KOH/g | ASTM D8045 | | 0.097 | 0.22 | 0.081 |

Machine Id Component **Rotary Compressor**

INGERSOLL-RAND TURBOBLEND 46 (--- GAL)

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

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.

Contact/Location: JOE BARRETT - UGIMESWC



Water (KF)

1200

20

52 50

48

ري بخ 44

47

38 Vov23/20

r of particles (1 ml)

8

4k

21

Ab 40

OIL ANALYSIS REPORT

scalar

scalar

scalar

scalar

scalar

scalar

White Metal

Yellow Metal

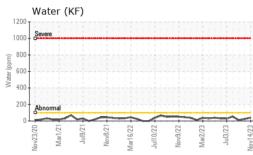
Precipitate

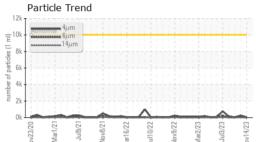
Silt

Debris

Sand/Dirt

Appearance







*Visual

*Visual

*Visual

*Visual

*Visual

*Visua

scalar *Visual

NONE

NONE

NONE

NONE

NONE

NONE

NORML

NORML

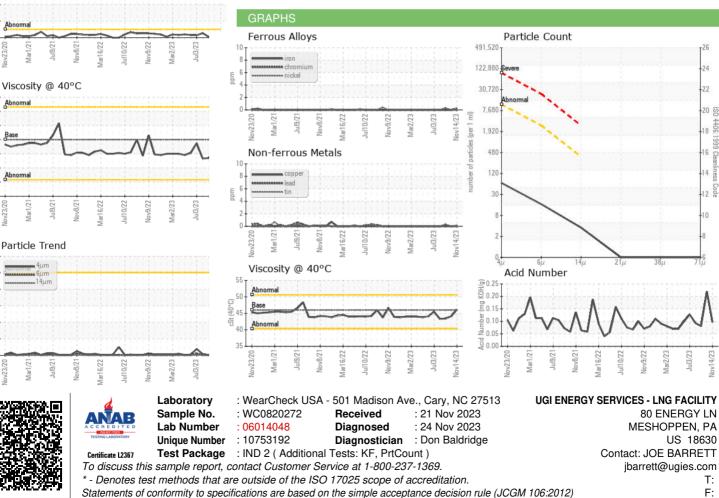
NEG

NEG

43.4

1406

6661



Contact/Location: JOE BARRETT - UGIMESWC