

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id [] WC-9800B-0102-5 Chiller #2

Chiller

Fluid YORK TYPE K (--- 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.

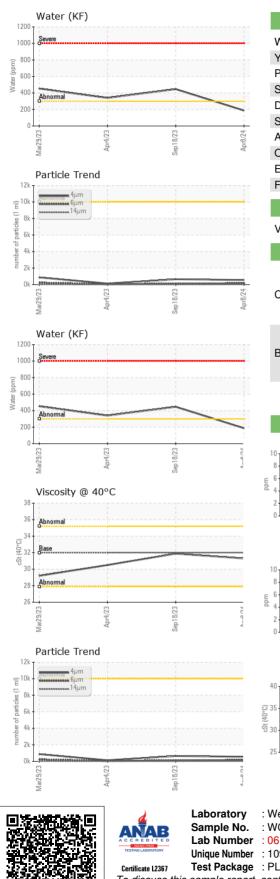
Fluid Condition

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

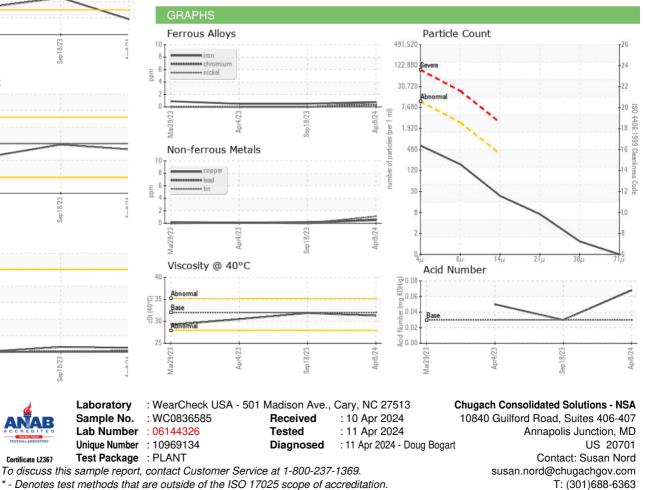
| Sample Date Client Info 06 Apr 2024 18 Sep 2023 04 Apr 2023 Machine Age hrs Client Info 27999 26142 24435 Dil Age hrs Client Info 0 0 0 Dil Changed Client Info N/A N/A N/A Sample Status method limit/base current history1 history2 ron ppm ASTM D5185m >2 <1 0 0 Sikel ppm ASTM D5185m >2 <1 0 0 Siker ppm ASTM D5185m >2 0 0 0 Siker ppm ASTM D5185m >2 0 0 0 Auminum ppm ASTM D5185m >2 1 0 0 0 Auadium ppm ASTM D5185m >2 1 0 0 0 Auadium ppm ASTM D5185m >2 1 0 0 0 | SAMPLE INFORM | 1ATION | method | limit/base | current | history1 | history2 |
|---|------------------|----------|--------------|------------|-------------|-------------|-------------|
| Machine Age hrs Client Info 27999 26142 24435 Dil Age hrs Client Info 0 0 0 Dil Age hrs Client Info N/A N/A N/A Sample Status Imit/base current history1 history2 tron ppm ASTM 05185m >8 <1 <1 <1 Chromium ppm ASTM 05185m >2 <1 0 0 Vickel ppm ASTM 05185m >2 <1 0 0 Silver ppm ASTM 05185m >2 <1 0 0 Lead ppm ASTM 05185m >2 <1 0 0 Zadmium ppm ASTM 05185m >4 1 0 0 Adanaganese ppm ASTM 05185m <1 0 0 0 Adanaganese ppm ASTM 05185m <1 0 0 0 Adanaganesep | Sample Number | | Client Info | | WC0836585 | WC0836536 | WC0784760 |
| Dil Age hrs Client Info 0 0 0 Dil Changed Client Info N/A N/A N/A N/A Sample Status Imil/base Current history1 history2 ron ppm ASTM D5165m >8 <1 <1 <1 Stromium ppm ASTM D5165m >2 <1 0 0 Vickel ppm ASTM D5165m >2 0 0 0 Silver ppm ASTM D5165m >2 0 0 0 Silver ppm ASTM D5165m >2 0 0 0 Astm D5165m >2 0 0 0 0 0 Astm D5165m 2 1 0 0 0 0 Astm D5165m 2 1 0 0 0 0 Astm D5165m 0 <1 0 0 0 0 Astm D5165m 0 <1 <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>08 Apr 2024</th> <th>18 Sep 2023</th> <th>04 Apr 2023</th> | Sample Date | | Client Info | | 08 Apr 2024 | 18 Sep 2023 | 04 Apr 2023 |
| Dil Changed Client Info N/A N/A N/A N/A N/A WEAR METALS method limit/base current history1 history2 ron ppm ASTM 05185m >2 <1 0 0 Chromium ppm ASTM 05185m >2 <1 0 0 Vickel ppm ASTM 05185m >2 <1 0 0 Silver ppm ASTM 05185m >2 0 0 0 Silver ppm ASTM 05185m >3 2 0 0 0 Lead ppm ASTM 05185m >2 <1 0 0 Zadmium ppm ASTM 05185m 2 <1 0 0 Adagnesium ppm ASTM 05185m 2 <1 0 0 Zadmium ppm ASTM 05185m 0 0 0 0 0 Adagnesium ppm ASTM 05185m 0 | Machine Age | hrs | Client Info | | 27999 | 26142 | 24435 |
| Sample Status NORMAL NORMAL NORMAL NORMAL NORMAL WEAR METALS method limit/base current history1 history2 tron ppm ASTM 05185m >8 <1 <1 <1 Chromium ppm ASTM 05185m >2 <1 0 0 Itentium ppm ASTM 05185m >2 0 0 0 Silver ppm ASTM 05185m >2 0 0 0 Qopper ppm ASTM 05185m >2 <1 0 0 Candium ppm ASTM 05185m >2 <1 0 0 Admatum ppm ASTM 05185m >4 1 0 0 Admatum ppm ASTM 05185m <4 1 0 0 Admatum ppm ASTM 05185m 0 <1 0 0 Admatum ppm ASTM 05185m 0 <1 0 0 | Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| WEAR METALS method limit/base current history1 history2 ron ppm ASTM D5185m >8 <1 <1 <1 Diromium ppm ASTM D5185m >2 <1 0 0 Nickel ppm ASTM D5185m >2 <1 0 0 Silver ppm ASTM D5185m >2 0 0 0 Astm D5185m >2 0 0 0 0 ead ppm ASTM D5185m >2 <1 0 0 Astm D5185m >8 <1 <1 0 0 0 Aranadium ppm ASTM D5185m <1 0 0 0 Adanatium ppm ASTM D5185m 0 0 0 0 0 Adanatium ppm ASTM D5185m 0 <1 0 0 0 Adanatium ppm ASTM D5185m 0 <1 0 | Oil Changed | | Client Info | | N/A | N/A | N/A |
| ron ppm ASTM D5185m >8 <1 | Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Dromium ppm ASTM D5185n >2 <1 | WEAR METALS | | method | limit/base | current | history1 | history2 |
| Nickel ppm ASTM D5185m <1 | Iron | ppm | ASTM D5185m | >8 | <1 | <1 | <1 |
| Titanium ppm ASTM D5185m <1 | Chromium | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Silver ppm ASTM D5185m >2 0 0 Aluminum ppm ASTM D5185m >3 2 0 0 Auminum ppm ASTM D5185m >2 <1 0 <1 Copper ppm ASTM D5185m >2 <1 0 0 Anuminum ppm ASTM D5185m <4 1 0 0 Anuminum ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m <1 0 0 0 Anum ppm ASTM D5185m <1 0 0 0 Adaptesian ppm ASTM D5185m 0 <1 0 0 Adagnesium ppm ASTM D5185m 0 <1 <1 0 Calcium ppm ASTM D5185m 0 <1 <1 0 Calcium ppm ASTM D5185m 0 <1 <1 <1 <t< th=""><th>Nickel</th><th>ppm</th><th>ASTM D5185m</th><th></th><th><1</th><th>0</th><th>0</th></t<> | Nickel | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Numinum ppm ASTM D5185m >3 2 0 0 Lead ppm ASTM D5185m >2 <1 0 <1 Copper ppm ASTM D5185m >8 <1 <1 <1 Copper ppm ASTM D5185m >8 <1 0 0 Anadium ppm ASTM D5185m <4 1 0 0 Admain ppm ASTM D5185m <1 0 0 0 Admium ppm ASTM D5185m 0 0 0 0 0 Barium ppm ASTM D5185m 0 <1 0 0 0 Magaese ppm ASTM D5185m 0 <1 0 0 0 Astm D5185m 0 <1 0 0 0 0 0 Astm D5185m 0 <1 <1 0 0 0 15 Concalum ppm ASTM D5185m | Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Lead ppm ASTM D5185m >2 <1 | Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Dopper ppm ASTM D5185m >8 <1 | Aluminum | ppm | ASTM D5185m | >3 | 2 | 0 | 0 |
| Tin ppm ASTM D5185m >4 1 0 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 <1 0 0 Magaese ppm ASTM D5185m 0 <1 0 0 Magaesium ppm ASTM D5185m 0 <1 0 0 Calcium ppm ASTM D5185m 0 2 9 2 Zinc ppm ASTM D5185m 0 0 <1 <1 Sulfur ppm ASTM D5185m 10 0 10 10 Solfur ppm ASTM D5185m >10 10 10 10 Solfur <th>Lead</th> <th>ppm</th> <th>ASTM D5185m</th> <th>>2</th> <th><1</th> <th>0</th> <th><1</th> | Lead | ppm | ASTM D5185m | >2 | <1 | 0 | <1 |
| Tin ppm ASTM D5185m >4 1 0 0 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 0 0 Barium ppm ASTM D5185m 0 <1 0 0 Magaese ppm ASTM D5185m 0 <1 0 0 Magaesium ppm ASTM D5185m 0 <1 0 0 Calcium ppm ASTM D5185m 0 2 9 2 Zinc ppm ASTM D5185m 0 0 <1 <1 Sulfur ppm ASTM D5185m 10 0 10 10 Solfur ppm ASTM D5185m >10 10 10 10 Solfur <th>Copper</th> <th></th> <th>ASTM D5185m</th> <th>>8</th> <th><1</th> <th><1</th> <th><1</th> | Copper | | ASTM D5185m | >8 | <1 | <1 | <1 |
| Vanadium ppm ASTM D5185m <1 | Tin | | | | | | |
| Dadmium ppm ASTM D5185m <1 | Vanadium | | ASTM D5185m | | <1 | 0 | 0 |
| Boron ppm ASTM D5185m 0 0 0 0 0 Barium ppm ASTM D5185m 0 <1 0 0 Malganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 0 <1 0 0 Calcium ppm ASTM D5185m 0 <1 <1 0 Calcium ppm ASTM D5185m 0 3 0 0 Calcium ppm ASTM D5185m 0 3 0 0 Calcium ppm ASTM D5185m 0 0 <1 <1 Calcium ppm ASTM D5185m 10 0 0 15 Contractifuer ppm ASTM D5185m >15 10 10 10 Solicon ppm ASTM D5185m >20 2 1 <1 Potassium ppm ASTM D6304 >0.03 0.018 | Cadmium | | ASTM D5185m | | <1 | 0 | |
| Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Manganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 0 <1 <1 0 Calcium ppm ASTM D5185m 0 3 0 0 Calcium ppm ASTM D5185m 0 3 0 0 Phosphorus ppm ASTM D5185m 0 0 <1 <1 Sulfur ppm ASTM D5185m 0 0 0 15 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 1 <1 Potassium ppm ASTM D5185m >20 2 1 <1 Potassium ppm ASTM D6304 >0.03 0.01 | ADDITIVES | | method | limit/base | current | history1 | history2 |
| Barium ppm ASTM D5185m 0 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 0 0 Maganese ppm ASTM D5185m 0 <1 0 0 Magnesium ppm ASTM D5185m 0 <1 <1 0 Calcium ppm ASTM D5185m 0 3 0 0 Calcium ppm ASTM D5185m 0 3 0 0 Phosphorus ppm ASTM D5185m 0 0 <1 <1 Sulfur ppm ASTM D5185m 0 0 0 15 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 2 1 <1 Potassium ppm ASTM D5185m >20 2 1 <1 Potassium ppm ASTM D6304 >0.03 <th>Boron</th> <th>ppm</th> <th>ASTM D5185m</th> <th>0</th> <th>0</th> <th>0</th> <th>0</th> | Boron | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum ppm ASTM D5185m 0 <1 | Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Manganese ppm ASTM D5185m 0 <1 | Molybdenum | ppm | ASTM D5185m | 0 | <1 | 0 | 0 |
| Magnesium ppm ASTM D5185m 0 <1 | Manganese | ppm | ASTM D5185m | 0 | <1 | 0 | 0 |
| Delacium ppm ASTM D5185m 0 3 0 0 Phosphorus ppm ASTM D5185m 5 0 2 9 Zinc ppm ASTM D5185m 0 0 <1 <1 Sulfur ppm ASTM D5185m 10 0 0 15 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 10 10 10 Sodium ppm ASTM D5185m >15 10 10 10 Potassium ppm ASTM D5185m >20 2 1 <1 Potassium ppm ASTM D6304 >0.03 0.018 0.044 0.034 Appm Water ppm ASTM D7647 >10000 550 640 125 Particles >4µm ASTM D7647 >2500 160 92 45 Particles >14µm ASTM D7647 >320 20 1 | Magnesium | ppm | ASTM D5185m | 0 | <1 | <1 | 0 |
| Zinc ppm ASTM D5185m 0 0 <1 | Calcium | ppm | ASTM D5185m | 0 | 3 | 0 | 0 |
| Zinc ppm ASTM D5185m 0 0 0 <1 | Phosphorus | ppm | ASTM D5185m | 5 | 0 | 2 | 9 |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >15 10 10 10 Sodium ppm ASTM D5185m 0 <1 1 Potassium ppm ASTM D5185m >20 2 1 <1 Nater % ASTM D6304 >0.03 0.018 0.044 0.034 opm Water ppm ASTM D6304 >300 187 446.1 340.1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 550 640 125 Particles >6µm ASTM D7647 >200 160 92 45 Particles >14µm ASTM D7647 >20 10 0 0 Particles >21µm ASTM D7647 >20 1 0 0 Particles >38µm ASTM D7647 >20 1 0 0 | Zinc | ppm | ASTM D5185m | 0 | 0 | <1 | <1 |
| Silicon ppm ASTM D5185m >15 10 10 10 Sodium ppm ASTM D5185m 0 <1 1 Potassium ppm ASTM D5185m >20 2 1 <1 Potassium ppm ASTM D5185m >20 2 1 <1 Nater % ASTM D6304 >0.03 0.018 0.044 0.034 opm Water ppm ASTM D6304 >300 187 446.1 340.1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 550 640 125 Particles >6µm ASTM D7647 >2500 160 92 45 Particles >14µm ASTM D7647 >320 20 12 7 Particles >21µm ASTM D7647 >20 1 0 0 Particles >38µm ASTM D7647 >20 1 0 0 0 | Sulfur | ppm | ASTM D5185m | 10 | 0 | 0 | 15 |
| Sodium ppm ASTM D5185m 0 <1 | CONTAMINANTS | | method | limit/base | current | history1 | history2 |
| Potassium ppm ASTM D5185m >20 2 1 <1 | Silicon | ppm | ASTM D5185m | >15 | 10 | 10 | 10 |
| Water % ASTM D6304 >0.03 0.018 0.044 0.034 oppm Water ppm ASTM D6304 >300 187 446.1 340.1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 550 640 125 Particles >6µm ASTM D7647 >2500 160 92 45 Particles >14µm ASTM D7647 >320 20 12 7 Particles >21µm ASTM D7647 >20 1 0 0 Particles >38µm ASTM D7647 >20 1 0 0 Particles >38µm ASTM D7647 >4 0 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 <th>Sodium</th> <th>ppm</th> <th>ASTM D5185m</th> <th></th> <th>0</th> <th><1</th> <th>1</th> | Sodium | ppm | ASTM D5185m | | 0 | <1 | 1 |
| Oppm Water ppm ASTM D6304 >300 187 446.1 340.1 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 550 640 125 Particles >6µm ASTM D7647 >2500 160 92 45 Particles >6µm ASTM D7647 >320 20 12 7 Particles >14µm ASTM D7647 >320 20 12 7 Particles >21µm ASTM D7647 >20 1 0 0 Particles >38µm ASTM D7647 >20 1 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 | Potassium | ppm | ASTM D5185m | >20 | 2 | 1 | <1 |
| FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >10000 550 640 125 Particles >6µm ASTM D7647 >2500 160 92 45 Particles >14µm ASTM D7647 >320 20 12 7 Particles >14µm ASTM D7647 >80 6 4 1 Particles >21µm ASTM D7647 >20 1 0 0 Particles >38µm ASTM D7647 >20 1 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 | Water | % | ASTM D6304 | >0.03 | 0.018 | 0.044 | 0.034 |
| Particles >4μm ASTM D7647 >10000 550 640 125 Particles >6μm ASTM D7647 >2500 160 92 45 Particles >14μm ASTM D7647 >320 20 12 7 Particles >21μm ASTM D7647 >80 6 4 1 Particles >38μm ASTM D7647 >20 1 0 0 Particles >38μm ASTM D7647 >20 1 0 0 Particles >71μm ASTM D7647 >4 0 0 0 Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 | ppm Water | ppm | ASTM D6304 | >300 | 187 | 446.1 | 340.1 |
| Particles >6µm ASTM D7647 >2500 160 92 45 Particles >14µm ASTM D7647 >320 20 12 7 Particles >21µm ASTM D7647 >80 6 4 1 Particles >21µm ASTM D7647 >80 6 4 1 Particles >38µm ASTM D7647 >20 1 0 0 Particles >38µm ASTM D7647 >20 1 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 | FLUID CLEANLIN | ESS | method | limit/base | current | history1 | history2 |
| Particles >14µm ASTM D7647 >320 20 12 7 Particles >21µm ASTM D7647 >80 6 4 1 Particles >21µm ASTM D7647 >80 6 4 1 Particles >38µm ASTM D7647 >20 1 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Particles >71µm ASTM D7647 >4 0 0 0 Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 | Particles >4µm | | ASTM D7647 | >10000 | 550 | 640 | 125 |
| Particles >21μm ASTM D7647 >80 6 4 1 Particles >38μm ASTM D7647 >20 1 0 0 Particles >38μm ASTM D7647 >20 1 0 0 Particles >71μm ASTM D7647 >4 0 0 0 Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 | Particles >6µm | | ASTM D7647 | >2500 | 160 | 92 | 45 |
| Particles >38μm ASTM D7647 >20 1 0 0 Particles >71μm ASTM D7647 >4 0 0 0 Particles >71μm ASTM D7647 >4 0 0 0 Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 | Particles >14µm | | ASTM D7647 | >320 | 20 | 12 | 7 |
| Particles >71µm ASTM D7647 >4 0 0 0 Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 | Particles >21µm | | ASTM D7647 | >80 | 6 | 4 | 1 |
| Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 | Particles >38µm | | ASTM D7647 | >20 | 1 | 0 | 0 |
| Dil Cleanliness ISO 4406 (c) >20/18/15 16/14/11 16/14/11 14/13/10 FLUID DEGRADATION method limit/base current history1 history2 | Particles >71µm | | ASTM D7647 | >4 | 0 | 0 | 0 |
| | Oil Cleanliness | | ISO 4406 (c) | >20/18/15 | 16/14/11 | 16/14/11 | 14/13/10 |
| | FLUID DEGRADA | | method | limit/base | current | history1 | history2 |
| | Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.03 | 0.068 | 0.03 | 0.05 |



OIL ANALYSIS REPORT



| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|-----------|------------|---------|----------|----------|
| 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 | >0.03 | 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 | 32.0 | 31.3 | 31.88 | 30.5 |
| SAMPLE IMAGES | \$ | method | limit/base | current | history1 | history2 |
| Color | | | | | | |
| Bottom | | | | | | |



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) Report Id: CHUANN [WUSCAR] 06144326 (Generated: 04/11/2024 12:13:09) Rev: 1

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Page 2 of 2

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