



| | |
|-----------------|---------------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |



Machine Id
CATERPILLAR 223-0002
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | PC0088726 | PC0072284 | PC0071119 |
| Sample Date | | Client Info | | 08 Apr 2024 | 26 Oct 2023 | 24 Jan 2023 |
| Machine Age | hrs | Client Info | | 30577 | 28770 | 29492 |
| Oil Age | hrs | Client Info | | 0 | 250 | 250 |
| Filter Age | hrs | Client Info | | 0 | 250 | 250 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|---------------|------|--------------|------|-----|
| Iron | ppm | ASTM D5185(m) | >100 | 7 | 16 | 16 |
| Chromium | ppm | ASTM D5185(m) | >20 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >2 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | >2 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >2 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >25 | <1 | <1 | 1 |
| Lead | ppm | ASTM D5185(m) | >40 | 0 | 1 | 1 |
| Copper | ppm | ASTM D5185(m) | >330 | 3 | 6 | 7 |
| Tin | ppm | ASTM D5185(m) | >15 | 0 | 0 | <1 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| White Metal | scalar | Visual* | NONE | NONE | NONE | --- |
| Yellow Metal | scalar | Visual* | NONE | NONE | NONE | --- |

CONTAMINATION

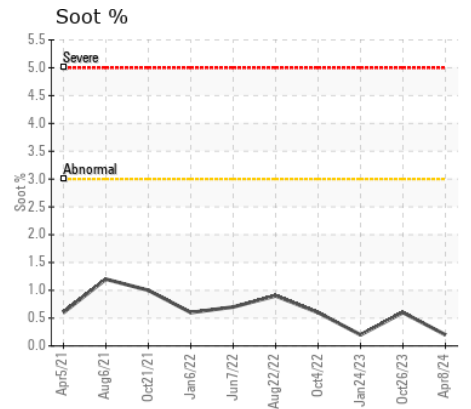
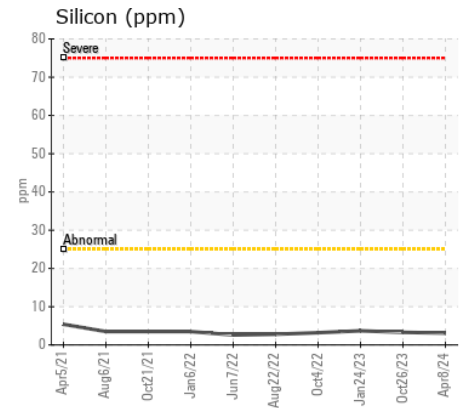
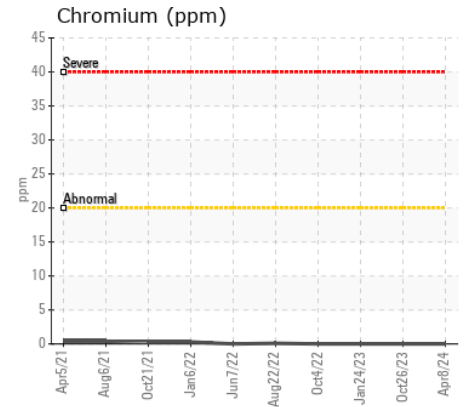
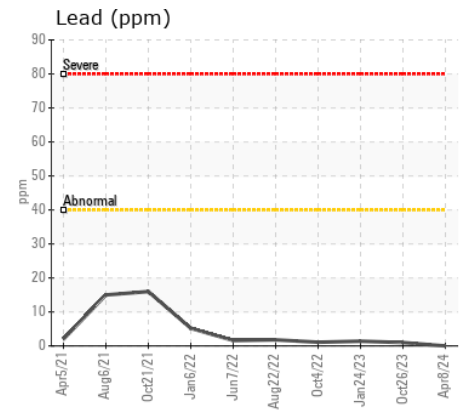
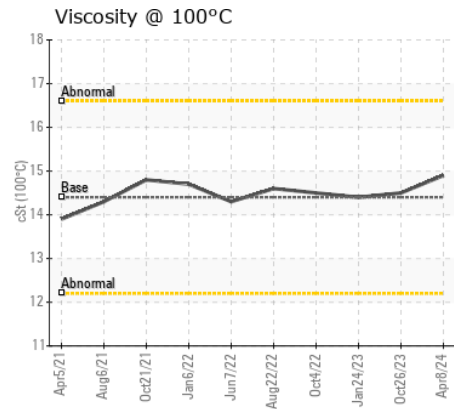
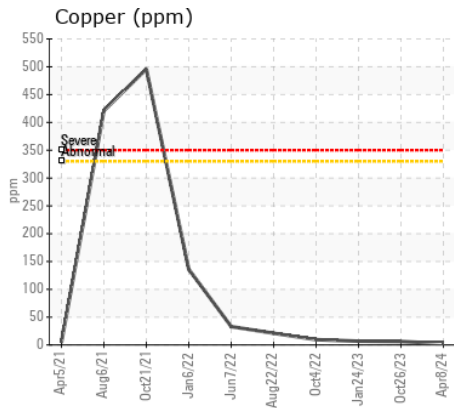
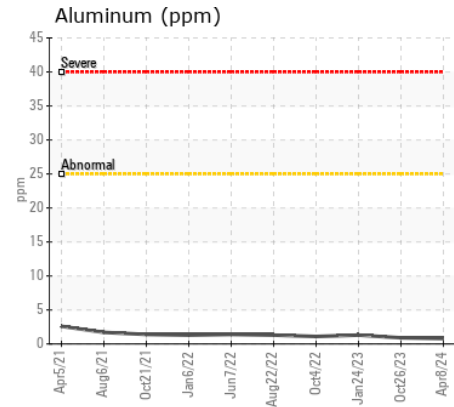
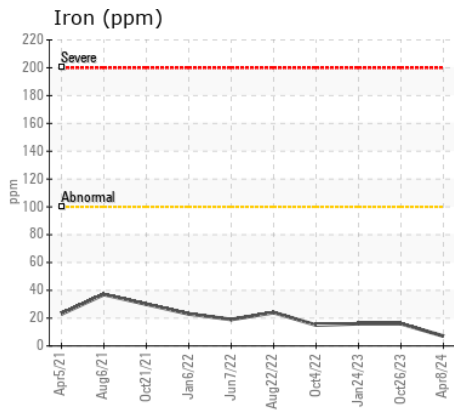
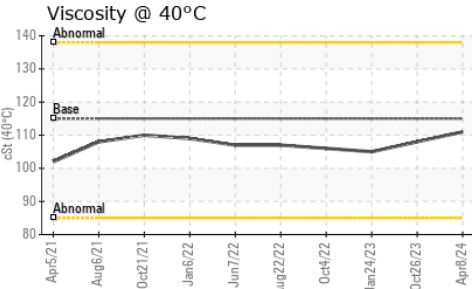
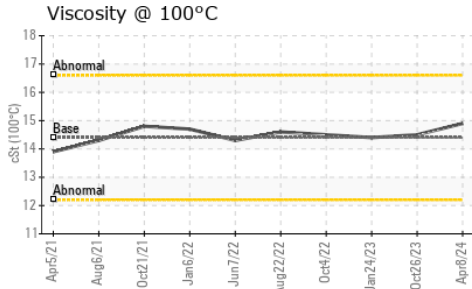
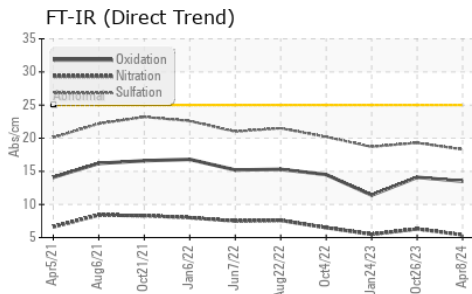
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|---------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185(m) | >25 | 3 | 3 | 4 |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | 0 | 2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | ASTM D7844* | >3 | 0.2 | 0.6 | 0.2 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 5.4 | 6.3 | 5.5 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 18.3 | 19.3 | 18.7 |
| Silt | scalar | Visual* | NONE | NONE | VLITE | --- |
| Debris | scalar | Visual* | NONE | NONE | NONE | --- |
| Sand/Dirt | scalar | Visual* | NONE | NONE | NONE | --- |
| Appearance | scalar | Visual* | NORML | NORML | NORML | --- |
| Odor | scalar | Visual* | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | NEG |

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

| | | | | | | |
|----------------------|----------|---------------|------|-------------|------|------|
| Sodium | ppm | ASTM D5185(m) | >158 | 2 | 2 | 10 |
| Boron | ppm | ASTM D5185(m) | 250 | 2 | 2 | 5 |
| Barium | ppm | ASTM D5185(m) | 10 | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 100 | 57 | 60 | 60 |
| Manganese | ppm | ASTM D5185(m) | | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 450 | 951 | 965 | 967 |
| Calcium | ppm | ASTM D5185(m) | 3000 | 1049 | 1052 | 1103 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | 968 | 1011 | 1077 |
| Zinc | ppm | ASTM D5185(m) | 1350 | 1160 | 1197 | 1197 |
| Sulfur | ppm | ASTM D5185(m) | 4250 | 2495 | 2604 | 2655 |
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 13.5 | 14.1 | 11.4 |
| Visc @ 40°C | cSt | ASTM D7279(m) | 115 | 111 | 108 | 105 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 14.4 | 14.9 | 14.5 | 14.4 |
| Viscosity Index (VI) | Scale | ASTM D2270* | 126 | 139 | 137 | 140 |



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0088726
Lab Number : 02633064
Unique Number : 5774217
Test Package : MOB 1 (Additional Tests: KV40, VI, Visual)

Received : 03 May 2024
Tested : 03 May 2024
Diagnosed : 03 May 2024 - Wes Davis

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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