



OIL ANALYSIS REPORT

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



Machine Id
CATERPILLAR 950K 140 (S/N R4A2622)
 Component
Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (7 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | RW0005284 | RW0005164 | RW0004496 |
| Sample Date | | Client Info | | 01 Jun 2024 | 12 Mar 2024 | 19 Aug 2023 |
| Machine Age | hrs | Client Info | | 8477 | 8143 | 7739 |
| Oil Age | hrs | Client Info | | 334 | 404 | 289 |
| Filter Age | hrs | Client Info | | 334 | 404 | 289 |
| 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 D5185m | >100 | 17 | 31 | 34 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | 0 | 1 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | 13 | 18 | 22 |
| Lead | ppm | ASTM D5185m | >40 | <1 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 4 | 1 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

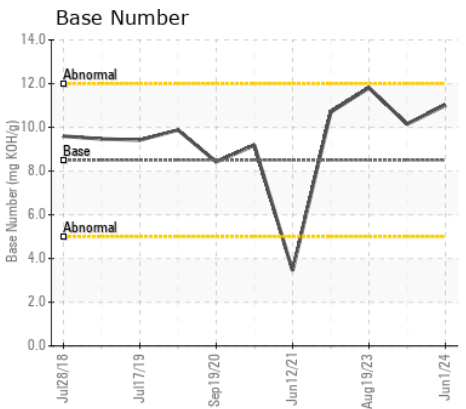
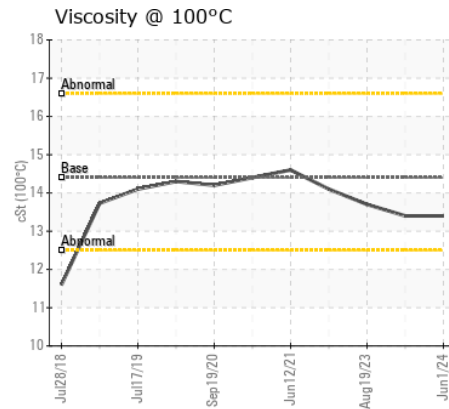
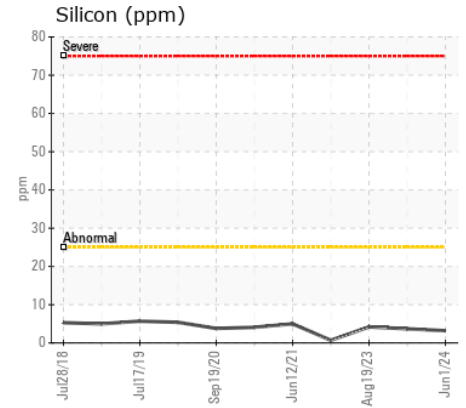
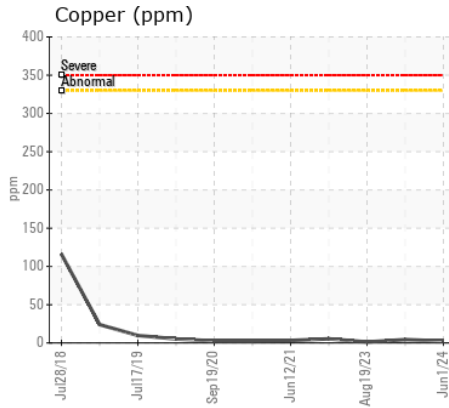
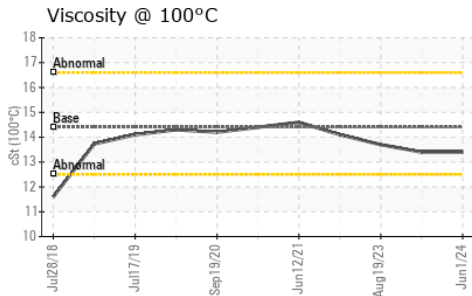
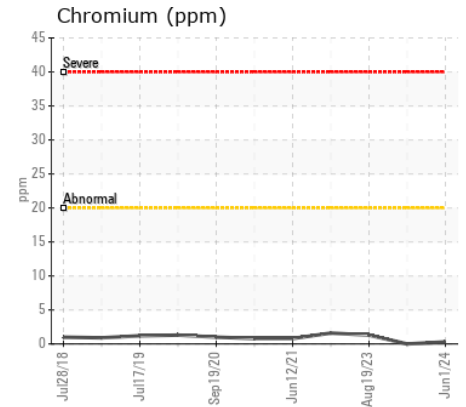
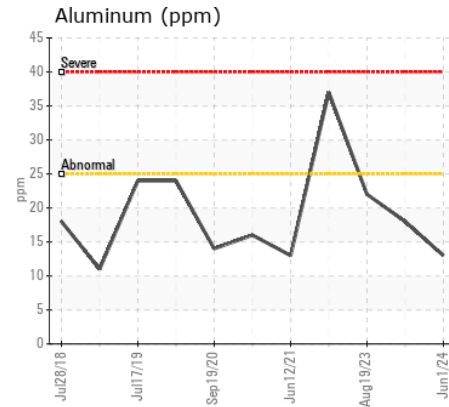
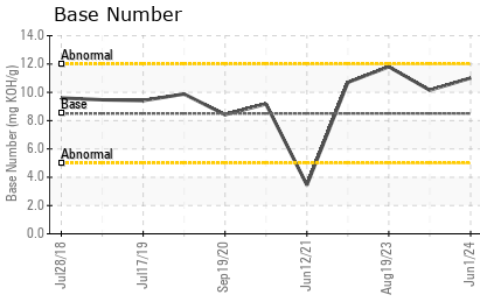
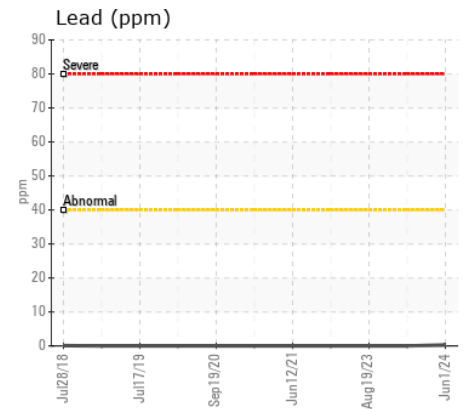
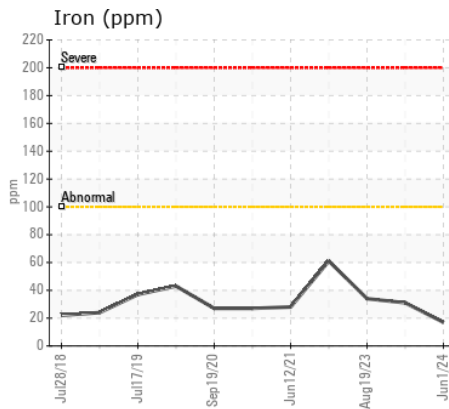
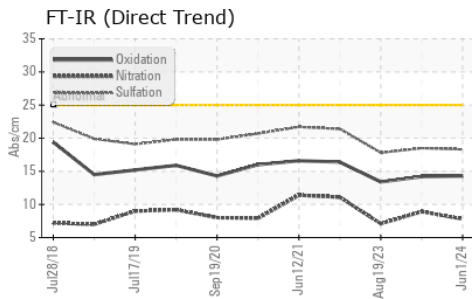
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 3 | 4 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 4 | <1 | <1 |
| 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 | 0.4 | 1 | 0.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.8 | 8.9 | 7.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.3 | 18.5 | 17.8 |
| 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 | >0.2 | NEG | NEG | NEG |

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|-------|-------|
| Sodium | ppm | ASTM D5185m | >158 | 4 | 8 | 10 |
| Boron | ppm | ASTM D5185m | 250 | 11 | 0 | 6 |
| Barium | ppm | ASTM D5185m | 10 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | 63 | 68 | 67 |
| Manganese | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | 905 | 1044 | 989 |
| Calcium | ppm | ASTM D5185m | 3000 | 1250 | 1320 | 1305 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1153 | 1179 | 1172 |
| Zinc | ppm | ASTM D5185m | 1350 | 1358 | 1417 | 1447 |
| Sulfur | ppm | ASTM D5185m | 4250 | 4070 | 4200 | 4338 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.3 | 14.2 | 13.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 11.01 | 10.15 | 11.81 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 13.4 | 13.4 | 13.7 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RW0005284
Lab Number : 06229282
Unique Number : 11112775
Test Package : MOB 2
Received : 05 Jul 2024
Tested : 08 Jul 2024
Diagnosed : 08 Jul 2024 - Wes Davis

HALLACK CONTRACTING, INC.
 4223 W POLK
 HART, MI
 US 49420
 Contact: DAN HALLACK KARL BUTCHER
 shop@hallackcontracting.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)