



OIL ANALYSIS REPORT

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

Machine Id
2
Component
Diesel Engine
Fluid
UNITED OIL DURALENE (--- QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | DC0032291 | DC0029669 | DC0028589 |
| Sample Date | | Client Info | | 11 May 2024 | 19 Oct 2023 | 21 Aug 2023 |
| Machine Age | hrs | Client Info | | 250 | 250 | 250 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | ATTENTION | ATTENTION | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 4 | 5 | 3 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | <1 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 1 | 2 | 3 |
| Lead | ppm | ASTM D5185m | >40 | <1 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 2 | <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

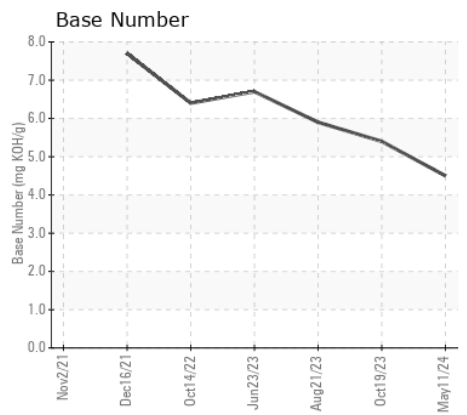
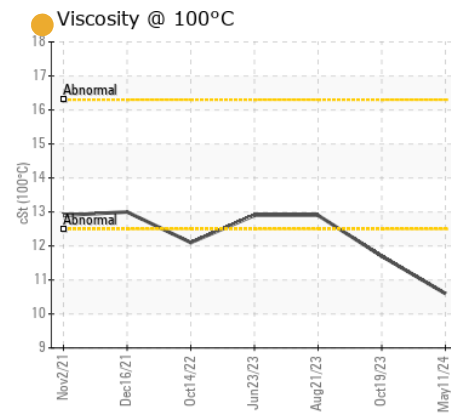
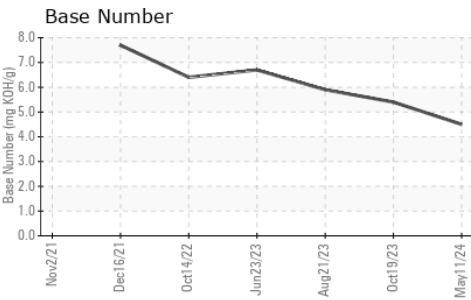
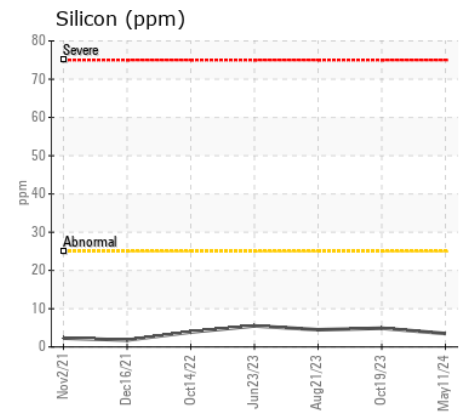
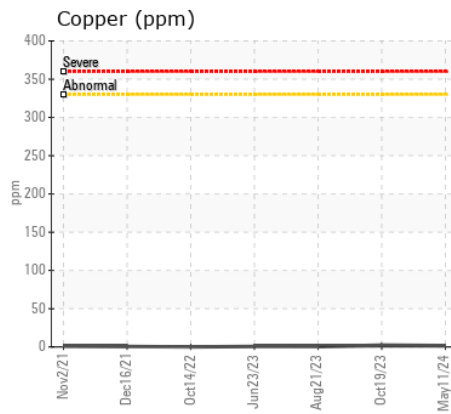
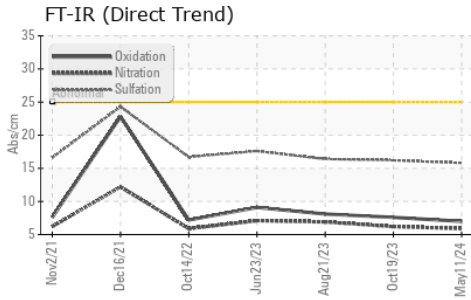
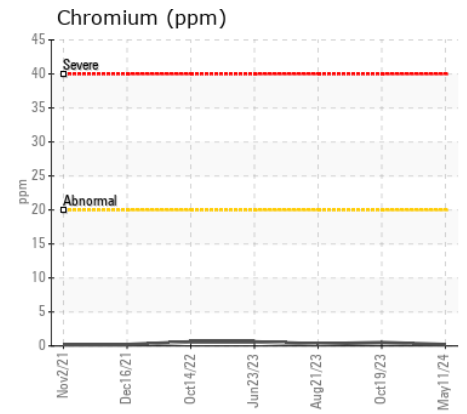
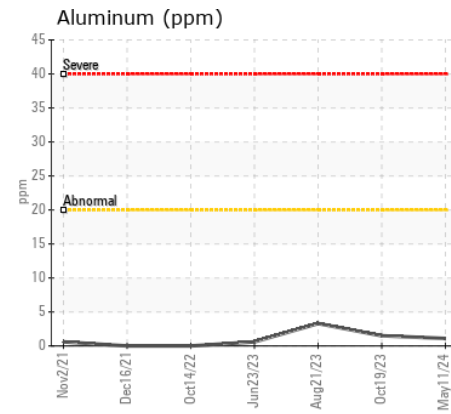
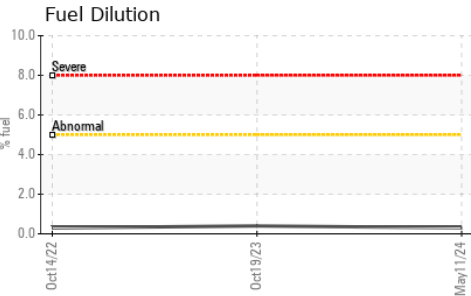
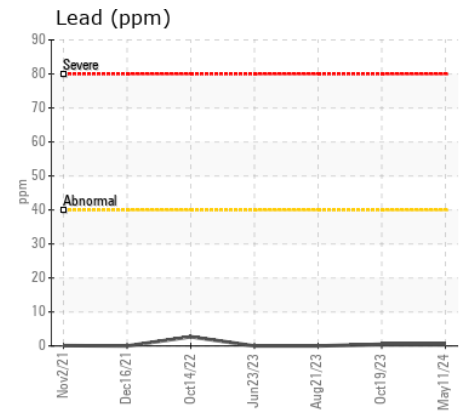
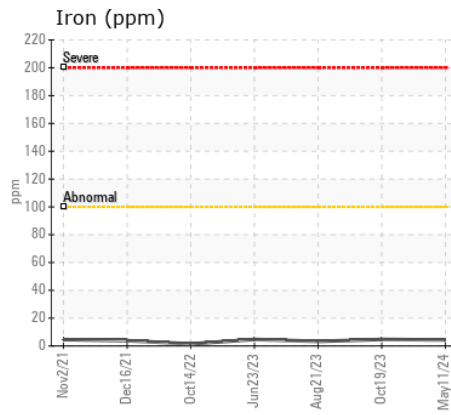
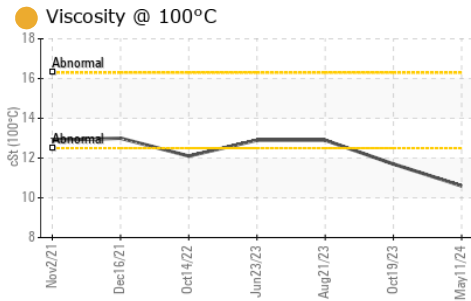
Fuel content negligible. There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 4 | 5 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 3 | <1 |
| Fuel | % | ASTM D3524 | >5 | 0.3 | 0.4 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.6 | 0.8 | 0.8 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 5.9 | 6.2 | 6.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 15.8 | 16.2 | 16.4 |
| 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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

| | | | | | | |
|------------------|----------|-------------|-----|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | 2 | 0 | <1 |
| Boron | ppm | ASTM D5185m | | 1 | 2 | <1 |
| Barium | ppm | ASTM D5185m | | 0 | 4 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 3 | 3 | 2 |
| Manganese | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | | 96 | 65 | 51 |
| Calcium | ppm | ASTM D5185m | | 1245 | 1938 | 2164 |
| Phosphorus | ppm | ASTM D5185m | | 644 | 903 | 866 |
| Zinc | ppm | ASTM D5185m | | 754 | 1017 | 1057 |
| Sulfur | ppm | ASTM D5185m | | 6317 | 6320 | 5416 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 7.0 | 7.6 | 8.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 4.5 | 5.4 | 5.9 |
| Visc @ 100°C | cSt | ASTM D445 | | 10.6 | 11.7 | 12.9 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DC0032291 **Received** : 28 May 2024
Lab Number : 06193415 **Tested** : 31 May 2024
Unique Number : 11050167 **Diagnosed** : 31 May 2024 - Don Baldrige
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, TBN)

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)

SIMS ARG
 3100 WEEDON STREET
 BALTIMORE, MD
 US 21226
 Contact: MARK NUZZO
 mark.nuzzo@simsmm.com
 T: (410)355-1488
 F: (410)355-5423