



VOLVO

OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ATTENTION
ABNORMAL
NORMAL



Area

[SWA535991]

Machine Id

VOLVO A45G 352371

Component

Diesel Engine

Fluid

VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- GAL)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. 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 | | VCP455205 | VCP442671 | VCP349911 |
| Sample Date | | Client Info | | 09 May 2024 | 02 Feb 2024 | 03 Feb 2022 |
| Machine Age | hrs | Client Info | | 5551 | 5814 | 2372 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | N/A | Not Changd |
| Filter Changed | | Client Info | | Changed | Changed | Not Changd |
| Sample Status | | | | ABNORMAL | NORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 38 | 10 | 45 |
| Chromium | ppm | ASTM D5185m | >20 | 3 | <1 | 2 |
| Nickel | ppm | ASTM D5185m | >2 | 1 | 3 | 1 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | 8 | 3 | 6 |
| Lead | ppm | ASTM D5185m | >40 | 2 | <1 | <1 |
| Copper | ppm | ASTM D5185m | >330 | 2 | 2 | 2 |
| Tin | ppm | ASTM D5185m | >15 | 2 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

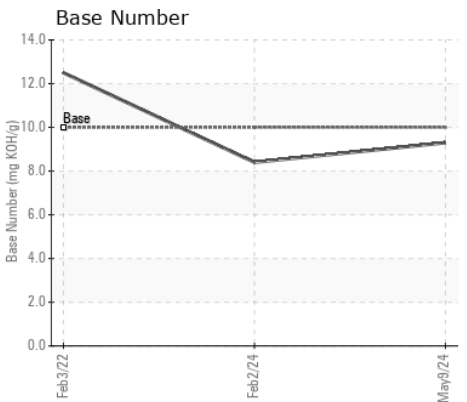
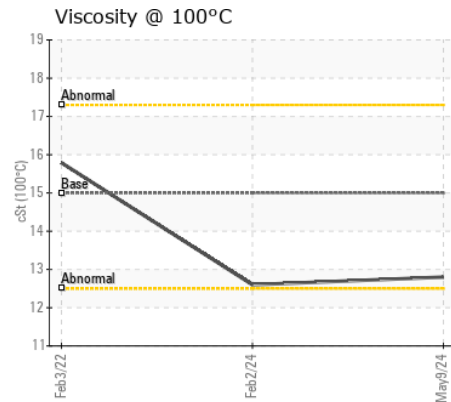
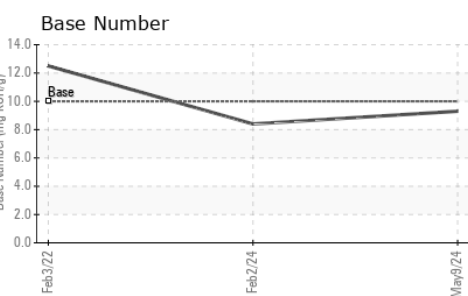
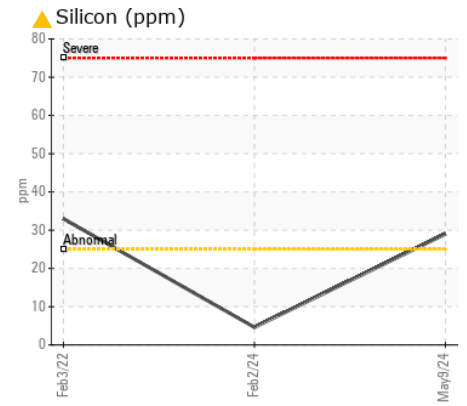
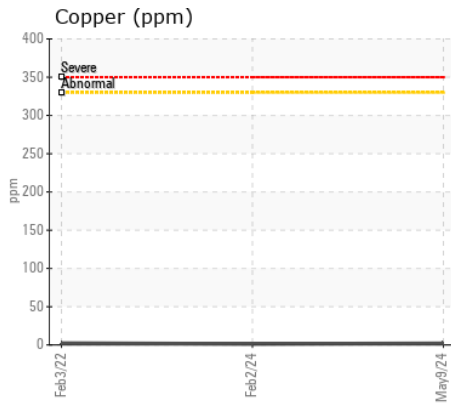
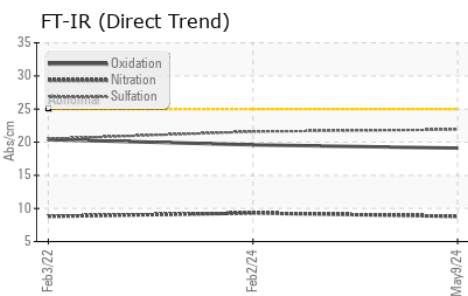
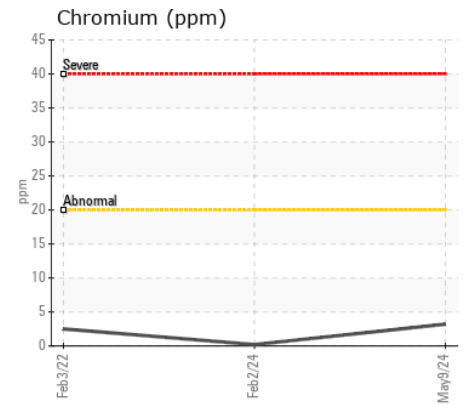
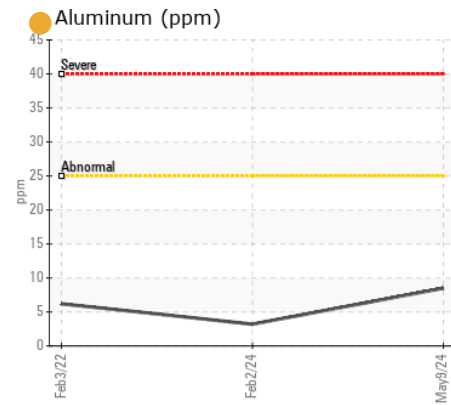
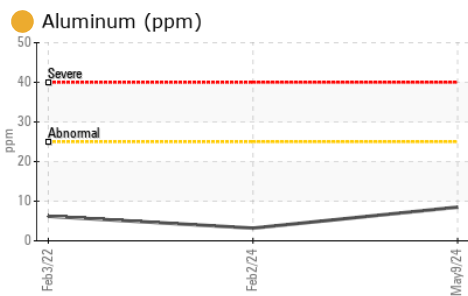
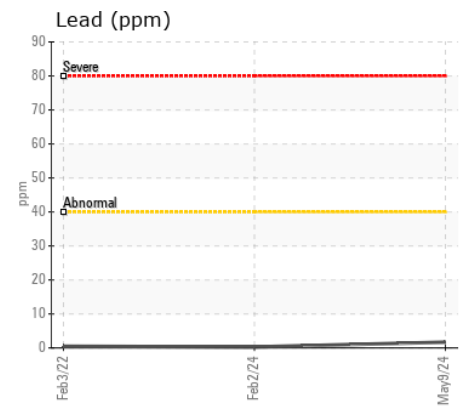
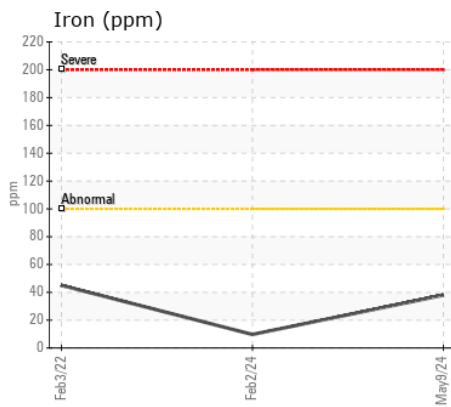
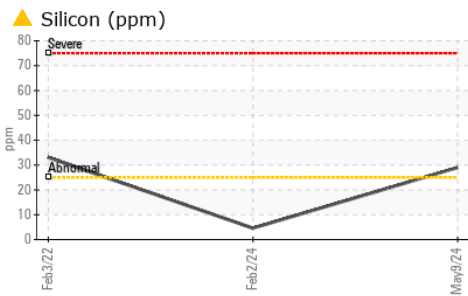
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

| | | | | | | |
|------------------|----------|-------------|-------|-------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 29 | 5 | 33 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 0 | 2 |
| Fuel | | WC Method | >6.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.5 | 0.5 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 8.8 | 9.3 | 8.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 21.9 | 21.6 | 20.5 |
| 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 | | 0 | 2 | 3 |
| Boron | ppm | ASTM D5185m | 2.5 | 45 | 27 | 72 |
| Barium | ppm | ASTM D5185m | 0.0 | 2 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0.7 | 50 | 50 | 44 |
| Manganese | ppm | ASTM D5185m | 0.0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 256 | 543 | 567 | 580 |
| Calcium | ppm | ASTM D5185m | 2057 | 1661 | 1629 | 1845 |
| Phosphorus | ppm | ASTM D5185m | 935 | 1042 | 980 | 825 |
| Zinc | ppm | ASTM D5185m | 1223 | 1128 | 1132 | 969 |
| Sulfur | ppm | ASTM D5185m | 4079 | 3334 | 2852 | 2166 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 19.1 | 19.6 | 20.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10 | 9.3 | 8.4 | 12.5 |
| Visc @ 100°C | cSt | ASTM D445 | 15.0 | 12.8 | 12.6 | 15.79 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VCP455205 **Received** : 13 May 2024
Lab Number : 06176849 **Tested** : 14 May 2024
Unique Number : 11022902 **Diagnosed** : 14 May 2024 - Sean Felton
Test Package : MOB 1 (Additional Tests: TBN)

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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)