



|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |



Area

**[W/O 10731]**

Machine Id

**VOLVO L90H 626689**

Component

**Diesel Engine**

Fluid

**VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (5 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|----------|
| Sample Number  |     | Client Info |           | <b>ML0001321</b>   | VCP423111   | ---      |
| Sample Date    |     | Client Info |           | <b>02 May 2024</b> | 25 Oct 2023 | ---      |
| Machine Age    | hrs | Client Info |           | <b>1559</b>        | 624         | ---      |
| Oil Age        | hrs | Client Info |           | <b>624</b>         | 0           | ---      |
| Filter Age     | hrs | Client Info |           | <b>624</b>         | 0           | ---      |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | ---      |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | ---      |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | ---      |

**WEAR**

All component wear rates are normal.

|              |        |             |      |              |      |     |
|--------------|--------|-------------|------|--------------|------|-----|
| Iron         | ppm    | ASTM D5185m | >200 | <b>7</b>     | 37   | --- |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>1</b>     | 6    | --- |
| Nickel       | ppm    | ASTM D5185m | >5   | <b>&lt;1</b> | <1   | --- |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | <1   | --- |
| Silver       | ppm    | ASTM D5185m | >2   | <b>0</b>     | 0    | --- |
| Aluminum     | ppm    | ASTM D5185m | >30  | <b>4</b>     | 33   | --- |
| Lead         | ppm    | ASTM D5185m | >40  | <b>&lt;1</b> | 2    | --- |
| Copper       | ppm    | ASTM D5185m | >20  | <b>1</b>     | 12   | --- |
| Tin          | ppm    | ASTM D5185m | >20  | <b>1</b>     | 3    | --- |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | --- |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | --- |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | --- |

**CONTAMINATION**

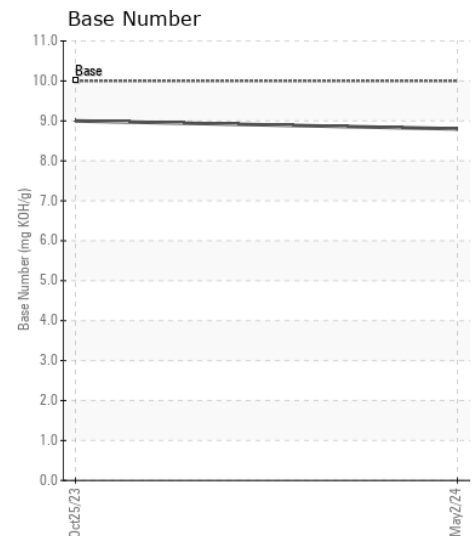
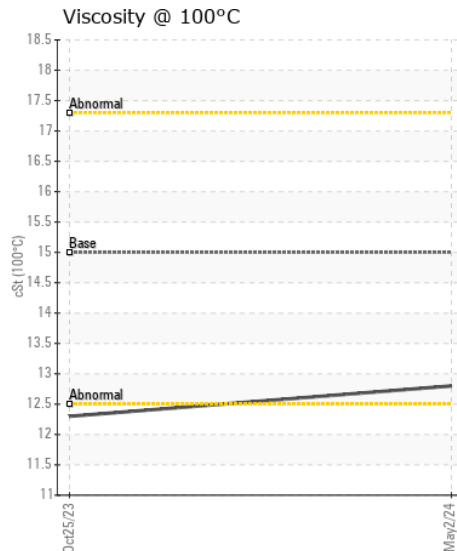
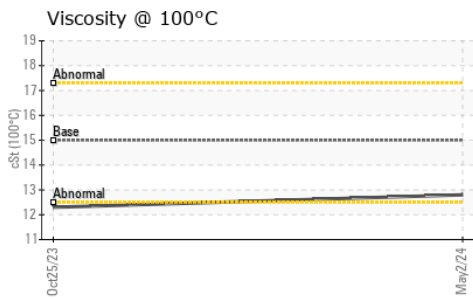
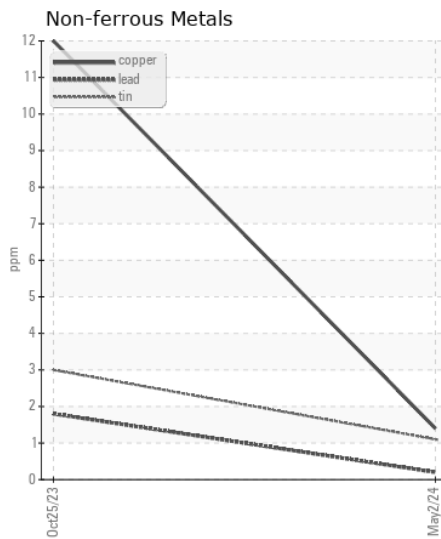
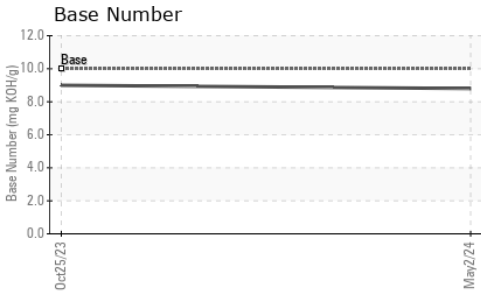
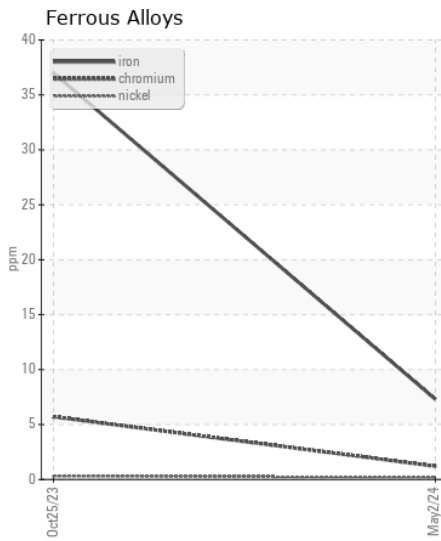
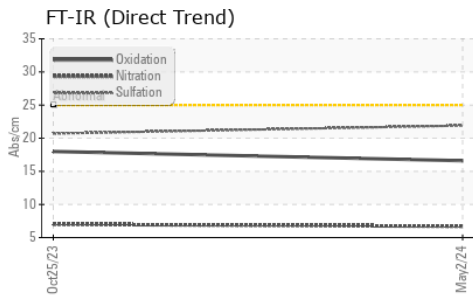
There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |     |
|------------------|----------|-------------|-------|----------------|-------|-----|
| Silicon          | ppm      | ASTM D5185m | >20   | <b>7</b>       | 19    | --- |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>2</b>       | 1     | --- |
| Fuel             |          | WC Method   | >6.0  | <b>&lt;1.0</b> | 0.9   | --- |
| Water            |          | WC Method   | >0.2  | <b>NEG</b>     | NEG   | --- |
| Glycol           |          | WC Method   |       | <b>NEG</b>     | NEG   | --- |
| Soot %           | %        | *ASTM D7844 | >3    | <b>0.1</b>     | 0.2   | --- |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>6.7</b>     | 7.0   | --- |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>21.9</b>    | 20.7  | --- |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | --- |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | --- |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | --- |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | --- |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | --- |
| Emulsified Water | scalar   | *Visual     | >0.2  | <b>NEG</b>     | NEG   | --- |

**FLUID CONDITION**

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

|                  |          |             |      |              |      |     |
|------------------|----------|-------------|------|--------------|------|-----|
| Sodium           | ppm      | ASTM D5185m |      | <b>0</b>     | 3    | --- |
| Boron            | ppm      | ASTM D5185m | 2.5  | <b>304</b>   | 44   | --- |
| Barium           | ppm      | ASTM D5185m | 0.0  | <b>2</b>     | 3    | --- |
| Molybdenum       | ppm      | ASTM D5185m | 0.7  | <b>102</b>   | 36   | --- |
| Manganese        | ppm      | ASTM D5185m | 0.0  | <b>&lt;1</b> | 7    | --- |
| Magnesium        | ppm      | ASTM D5185m | 256  | <b>553</b>   | 608  | --- |
| Calcium          | ppm      | ASTM D5185m | 2057 | <b>1490</b>  | 1442 | --- |
| Phosphorus       | ppm      | ASTM D5185m | 935  | <b>882</b>   | 940  | --- |
| Zinc             | ppm      | ASTM D5185m | 1223 | <b>990</b>   | 1123 | --- |
| Sulfur           | ppm      | ASTM D5185m | 4079 | <b>3001</b>  | 3405 | --- |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>16.6</b>  | 18.0 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 10   | <b>8.8</b>   | 9.0  | --- |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.0 | <b>12.8</b>  | 12.3 | --- |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : ML0001321

**Lab Number** : 06176441

**Unique Number** : 11022494

**Test Package** : CONST ( Additional Tests: TBN )

**Received** : 10 May 2024

**Tested** : 13 May 2024

**Diagnosed** : 14 May 2024 - Sean Felton

**IAA - INSURANCE AUTO AUCTIONS - METRO DC**

14149 BRANDYWINE RD

BRANDYWINE, MD

US 20613

Contact:

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)

T:

F: