



# CONSTRUCTION EQUIPMENT

## W14409 VOLVO L110H 631888 - DIESEL ENGINE



**Sample No:** VCP424375  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** W14409



### SAMPLE INFORMATION

|               |                    |             |             |             |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | <b>VCP424375</b>   | VCP380816   | VCP382409   | VCP362553   |
| Sample Date   | <b>10 Jul 2023</b> | 27 Feb 2023 | 06 Dec 2022 | 25 Jul 2022 |
| Machine Hours | <b>6567</b>        | 6011        | 5509        | 5005        |
| Oil Hours     | <b>500</b>         | 500         | 500         | 500         |
| Oil Changed   | <b>Changed</b>     | Changed     | Changed     | Changed     |
| Sample Status | <b>NORMAL</b>      | NORMAL      | NORMAL      | NORMAL      |

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### OIL CONDITION

|                  |          |             |      |      |      |
|------------------|----------|-------------|------|------|------|
| Visc @ 100°C     | cSt      | <b>13.5</b> | 13.3 | 13.6 | 13.8 |
| Base Number (BN) | mg KOH/g | <b>10.2</b> | 10.7 | 10.7 | 11.1 |
| Oxidation (PA)   | %        | <b>90</b>   | 84   | 92   | 96   |



### CONTAMINATION

|                |     |                |      |      |      |
|----------------|-----|----------------|------|------|------|
| Soot %         | %   | <b>0.6</b>     | 0.4  | 0.4  | 0.5  |
| Nitration (PA) | %   | <b>71</b>      | 63   | 70   | 70   |
| Sulfation (PA) | %   | <b>66</b>      | 62   | 68   | 69   |
| Glycol         | %   | <b>NEG</b>     | NEG  | NEG  | NEG  |
| Fuel           | %   | <b>&lt;1.0</b> | <1.0 | <1.0 | <1.0 |
| Silicon        | ppm | <b>12</b>      | 8    | 13   | 14   |
| Sodium         | ppm | <b>3</b>       | 3    | <1   | 2    |
| Potassium      | ppm | <b>&lt;1</b>   | 0    | <1   | 0    |



### WEAR METALS

|            |     |              |    |    |    |
|------------|-----|--------------|----|----|----|
| Iron       | ppm | <b>15</b>    | 10 | 13 | 12 |
| Copper     | ppm | <b>2</b>     | <1 | 2  | 1  |
| Lead       | ppm | <b>&lt;1</b> | 0  | <1 | <1 |
| Tin        | ppm | <b>1</b>     | 0  | <1 | 1  |
| Aluminum   | ppm | <b>11</b>    | 8  | 11 | 12 |
| Chromium   | ppm | <b>&lt;1</b> | <1 | <1 | <1 |
| Molybdenum | ppm | <b>44</b>    | 39 | 45 | 40 |
| Nickel     | ppm | <b>&lt;1</b> | 0  | 0  | <1 |
| Titanium   | ppm | <b>&lt;1</b> | 0  | <1 | <1 |
| Silver     | ppm | <b>0</b>     | 0  | 0  | <1 |
| Manganese  | ppm | <b>&lt;1</b> | <1 | <1 | <1 |
| Vanadium   | ppm | <b>&lt;1</b> | 0  | 0  | <1 |



### ADDITIVES

|            |     |             |      |      |      |
|------------|-----|-------------|------|------|------|
| Calcium    | ppm | <b>1864</b> | 1713 | 1753 | 1582 |
| Magnesium  | ppm | <b>554</b>  | 488  | 507  | 502  |
| Zinc       | ppm | <b>1053</b> | 942  | 935  | 924  |
| Phosphorus | ppm | <b>850</b>  | 750  | 794  | 731  |
| Barium     | ppm | <b>0</b>    | 0    | 0    | 0    |
| Boron      | ppm | <b>30</b>   | 35   | 32   | 30   |

### Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

**Depot:** VOLVO0080  
**Unique No:** 10562287  
**Signed:** Don Baldrige  
**Report Date:** 19 Jul 2023



# CONSTRUCTION EQUIPMENT



## VOLVO GRAPHS

