



# CONSTRUCTION EQUIPMENT

## W14863 VOLVO L110H 631654 - DIESEL ENGINE



**Sample No:** VCP441694  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** W14863



### SAMPLE INFORMATION

|               |                    |             |             |             |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | <b>VCP441694</b>   | VCP398343   | VCP295089   | VCP333338   |
| Sample Date   | <b>25 Oct 2023</b> | 02 Dec 2022 | 24 May 2022 | 11 Jan 2022 |
| Machine Hours | <b>6983</b>        | 6493        | 6013        | 5519        |
| Oil Hours     | <b>500</b>         | 0           | 500         | 500         |
| Oil Changed   | <b>Changed</b>     | Changed     | Changed     | Changed     |
| Sample Status | <b>ABNORMAL</b>    | ABNORMAL    | MARGINAL    | ABNORMAL    |

**HOUSBY HEAVY EQUIPMENT, LLC**  
 4410 SE 4 MILE DR  
 ANKENY, IA  
 US 50021  
 Contact: RANDY VANDERLEEST  
 rvanderleest@housby.com  
 T:  
 F: (515)964-2865



### OIL CONDITION

|                  |          |               |        |        |        |
|------------------|----------|---------------|--------|--------|--------|
| Visc @ 100°C     | cSt      | █ <b>12.7</b> | █ 12.9 | █ 13.5 | █ 13.1 |
| Base Number (BN) | mg KOH/g | █ <b>7.1</b>  | █ 11.2 | █ 10.3 | █ 9.9  |
| Oxidation (PA)   | %        | <b>93</b>     | 90     | 86     | 92     |



### CONTAMINATION

|                |     |                |       |       |       |
|----------------|-----|----------------|-------|-------|-------|
| Soot %         | %   | █ <b>0.5</b>   | █ 0.2 | █ 0.5 | █ 0.6 |
| Nitration (PA) | %   | <b>67</b>      | 58    | 68    | 68    |
| Sulfation (PA) | %   | <b>64</b>      | 67    | 64    | 69    |
| Glycol         | %   | <b>NEG</b>     | NEG   | NEG   | NEG   |
| Fuel           | %   | <b>&lt;1.0</b> | <1.0  | <1.0  | <1.0  |
| Silicon        | ppm | █ <b>17</b>    | █ 11  | █ 13  | ▲ 22  |
| Sodium         | ppm | █ <b>4</b>     | █ 5   | █ 3   | █ 3   |
| Potassium      | ppm | █ <b>&lt;1</b> | █ 0   | █ 0   | █ <1  |



### WEAR METALS

|            |     |                |      |      |      |
|------------|-----|----------------|------|------|------|
| Iron       | ppm | █ <b>21</b>    | █ 18 | █ 17 | █ 22 |
| Copper     | ppm | █ <b>3</b>     | █ 1  | █ 2  | █ 2  |
| Lead       | ppm | █ <b>0</b>     | █ <1 | █ 0  | █ <1 |
| Tin        | ppm | █ <b>&lt;1</b> | █ <1 | █ 1  | █ <1 |
| Aluminum   | ppm | ▲ <b>22</b>    | ▲ 15 | ▲ 18 | ▲ 26 |
| Chromium   | ppm | █ <b>1</b>     | █ 2  | █ <1 | █ 1  |
| Molybdenum | ppm | █ <b>43</b>    | █ 40 | █ 40 | █ 42 |
| Nickel     | ppm | █ <b>&lt;1</b> | █ <1 | █ <1 | █ <1 |
| Titanium   | ppm | <b>&lt;1</b>   | <1   | <1   | <1   |
| Silver     | ppm | █ <b>0</b>     | █ 0  | <1   | <1   |
| Manganese  | ppm | █ <b>&lt;1</b> | █ <1 | █ <1 | █ <1 |
| Vanadium   | ppm | <b>0</b>       | <1   | 0    | <1   |



### ADDITIVES

|            |     |               |        |        |        |
|------------|-----|---------------|--------|--------|--------|
| Calcium    | ppm | █ <b>1659</b> | █ 1636 | █ 1523 | █ 1665 |
| Magnesium  | ppm | █ <b>552</b>  | █ 497  | █ 424  | █ 501  |
| Zinc       | ppm | █ <b>1074</b> | █ 1042 | █ 951  | █ 1033 |
| Phosphorus | ppm | █ <b>856</b>  | █ 822  | █ 816  | █ 909  |
| Barium     | ppm | █ <b>0</b>    | █ 0    | █ 0    | █ 0    |
| Boron      | ppm | █ <b>33</b>   | █ 43   | █ 47   | █ 32   |

### Diagnosis

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. The aluminum level is abnormal. All other 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:** 10722516  
**Signed:** Sean Felton  
**Report Date:** 01 Nov 2023



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## VOLVO GRAPHS

