



# CONSTRUCTION EQUIPMENT

SWO-067874 VOLVO A60 340104 - DIESEL ENGINE



**Sample No:** VCP428821  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** SWO-067874



## SAMPLE INFORMATION

|               |                    |             |             |             |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | <b>VCP428821</b>   | VCP411749   | VCP405921   | VCP363659   |
| Sample Date   | <b>30 Nov 2023</b> | 24 Aug 2023 | 17 Apr 2023 | 08 Nov 2022 |
| Machine Hours | <b>9185</b>        | 8689        | 8086        | 7528        |
| Oil Hours     | <b>0</b>           | 0           | 0           | 0           |
| 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>12.9</b> | 12.9 | 13.0 | 13.2 |
| Base Number (BN) | mg KOH/g | <b>9.5</b>  | 9.8  | 8.9  | 11.3 |
| Oxidation (PA)   | %        | <b>72</b>   | 82   | 75   | 86   |



## CONTAMINATION

|                |     |                |      |      |      |
|----------------|-----|----------------|------|------|------|
| Water          | %   | <b>NEG</b>     | NEG  | NEG  | NEG  |
| Soot %         | %   | <b>0.3</b>     | 0.5  | 0.7  | 0.7  |
| Nitration (PA) | %   | <b>61</b>      | 66   | 69   | 72   |
| Sulfation (PA) | %   | <b>57</b>      | 63   | 61   | 67   |
| Glycol         | %   | <b>NEG</b>     | NEG  | NEG  | NEG  |
| Fuel           | %   | <b>&lt;1.0</b> | <1.0 | <1.0 | <1.0 |
| Silicon        | ppm | <b>8</b>       | 6    | 7    | 8    |
| Sodium         | ppm | <b>4</b>       | 2    | 5    | 4    |
| Potassium      | ppm | <b>2</b>       | 1    | 2    | 2    |



## WEAR METALS

|            |     |              |    |    |    |
|------------|-----|--------------|----|----|----|
| Iron       | ppm | <b>10</b>    | 9  | 12 | 11 |
| Copper     | ppm | <b>&lt;1</b> | <1 | 2  | 2  |
| Lead       | ppm | <b>0</b>     | <1 | <1 | 1  |
| Tin        | ppm | <b>0</b>     | <1 | <1 | 2  |
| Aluminum   | ppm | <b>5</b>     | 4  | 3  | 6  |
| Chromium   | ppm | <b>&lt;1</b> | <1 | <1 | <1 |
| Molybdenum | ppm | <b>63</b>    | 40 | 46 | 39 |
| Nickel     | ppm | <b>&lt;1</b> | <1 | <1 | <1 |
| Titanium   | ppm | <b>0</b>     | 0  | 0  | 0  |
| Silver     | ppm | <b>0</b>     | 0  | 0  | 0  |
| Manganese  | ppm | <b>0</b>     | <1 | <1 | <1 |
| Vanadium   | ppm | <b>0</b>     | 0  | 0  | 0  |



## ADDITIVES

|            |     |             |      |      |      |
|------------|-----|-------------|------|------|------|
| Calcium    | ppm | <b>1877</b> | 1587 | 1543 | 1642 |
| Magnesium  | ppm | <b>824</b>  | 485  | 652  | 513  |
| Zinc       | ppm | <b>1454</b> | 1043 | 1075 | 1076 |
| Phosphorus | ppm | <b>1155</b> | 882  | 877  | 925  |
| Barium     | ppm | <b>2</b>    | 0    | 0    | 0    |
| Boron      | ppm | <b>36</b>   | 32   | 22   | 33   |

## 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 acceptable for the time in service.

**Depot:** SAIBIR  
**Unique No:** 10776016  
**Signed:** Don Baldrige  
**Report Date:** 07 Dec 2023



# CONSTRUCTION EQUIPMENT



## GRAPHS

