



# CONSTRUCTION EQUIPMENT

659045 MOSAIC CO VOLVO EC480 314327 - DIESEL ENGINE



**Sample No:** VCP428744  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** 659045 MOSAIC CO



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## SAMPLE INFORMATION

| Sample Number | VCP428744   | VCP425164   | VCP422277   | VCP397272   |
|---------------|-------------|-------------|-------------|-------------|
| Sample Date   | 18 Jan 2024 | 19 Aug 2023 | 31 Mar 2023 | 02 Dec 2022 |
| Machine Hours | 4658        | 4013        | 3549        | 3030        |
| Oil Hours     | 500         | 500         | 500         | 500         |
| Oil Changed   | Changed     | Changed     | Changed     | Changed     |
| Sample Status | ATTENTION   | ATTENTION   | ATTENTION   | NORMAL      |

## OIL CONDITION

| Visc @ 100°C     | cSt      | ▲ 12.3 | ▲ 12.1 | ▲ 12.1 | ■ 12.6 |
|------------------|----------|--------|--------|--------|--------|
| Base Number (BN) | mg KOH/g | ■ 7.7  | ■ 8.5  | ■ 8.2  | ■ 8.9  |
| Oxidation (PA)   | %        | 88     | 87     | 89     | 87     |

## CONTAMINATION

|                |     |       |       |       |       |
|----------------|-----|-------|-------|-------|-------|
| Water          | %   | NEG   | NEG   | NEG   | NEG   |
| Soot %         | %   | ■ 0.1 | ■ 0.1 | ■ 0.1 | ■ 0.1 |
| Nitration (PA) | %   | 86    | 75    | 80    | 81    |
| Sulfation (PA) | %   | 61    | 61    | 62    | 63    |
| Glycol         | %   | NEG   | NEG   | NEG   | NEG   |
| Fuel           | %   | <1.0  | <1.0  | ■ 1.9 | <1.0  |
| Silicon        | ppm | ■ 10  | ■ 10  | ■ 10  | ■ 13  |
| Sodium         | ppm | ■ 2   | ■ 2   | ■ 2   | ■ 4   |
| Potassium      | ppm | ■ 0   | ■ 0   | ■ 0   | ■ 0   |

## WEAR METALS

|            |     |      |      |      |      |
|------------|-----|------|------|------|------|
| Iron       | ppm | ■ 9  | ■ 9  | ■ 7  | ■ 10 |
| Copper     | ppm | ■ 3  | ■ 5  | ■ 2  | ■ 12 |
| Lead       | ppm | ■ <1 | ■ 1  | ■ 0  | ■ 1  |
| Tin        | ppm | ■ <1 | ■ 1  | ■ <1 | ■ 2  |
| Aluminum   | ppm | ■ 2  | ■ 4  | ■ 2  | ■ 2  |
| Chromium   | ppm | ■ 0  | ■ <1 | ■ <1 | ■ <1 |
| Molybdenum | ppm | ■ 41 | ■ 47 | ■ 59 | ■ 40 |
| Nickel     | ppm | ■ 0  | ■ 0  | ■ 0  | ■ 2  |
| Titanium   | ppm | 0    | <1   | <1   | <1   |
| Silver     | ppm | ■ 0  | ■ 0  | ■ 0  | ■ 0  |
| Manganese  | ppm | ■ 0  | ■ <1 | ■ 1  | ■ <1 |
| Vanadium   | ppm | 0    | 0    | 0    | 0    |

## ADDITIVES

|            |     |        |        |        |        |
|------------|-----|--------|--------|--------|--------|
| Calcium    | ppm | ■ 1732 | ■ 1727 | ■ 1733 | ■ 1639 |
| Magnesium  | ppm | ■ 524  | ■ 520  | ■ 537  | ■ 476  |
| Zinc       | ppm | ■ 1130 | ■ 1147 | ■ 1122 | ■ 1051 |
| Phosphorus | ppm | ■ 955  | ■ 924  | ■ 937  | ■ 819  |
| Barium     | ppm | ■ 0    | ■ 0    | ■ 0    | ■ 0    |
| Boron      | ppm | ■ 13   | ■ 20   | ■ 24   | ■ 15   |

## Diagnosis

Oil and filter change at the time of sampling has been noted. 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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

**Depot:** VOLVO0093  
**Unique No:** 10861616  
**Signed:** Sean Felton  
**Report Date:** 06 Feb 2024



# CONSTRUCTION EQUIPMENT



## VOLVO GRAPHS

