



# CONSTRUCTION EQUIPMENT

HILLSBOROUGH VOLVO EW160EL 324178 - DIESEL ENGINE



**Sample No:** VCP435613  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** HILLSBOROUGH



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## SAMPLE INFORMATION

|               |             |             |     |     |
|---------------|-------------|-------------|-----|-----|
| Sample Number | VCP435613   | VCP431775   | --- | --- |
| Sample Date   | 19 Feb 2024 | 07 Nov 2023 | --- | --- |
| Machine Hours | 929         | 479         | --- | --- |
| Oil Hours     | 0           | 479         | --- | --- |
| Oil Changed   | N/A         | Changed     | --- | --- |
| Sample Status | NORMAL      | ATTENTION   | --- | --- |



## OIL CONDITION

|                  |          |        |        |     |     |
|------------------|----------|--------|--------|-----|-----|
| Visc @ 100°C     | cSt      | █ 12.8 | ● 10.7 | --- | --- |
| Base Number (BN) | mg KOH/g | █ 9.5  | █ 9.6  | --- | --- |
| Oxidation (PA)   | %        | 73     | 82     | --- | --- |



## CONTAMINATION

|                |     |       |       |     |     |
|----------------|-----|-------|-------|-----|-----|
| Water          | %   | NEG   | NEG   | --- | --- |
| Soot %         | %   | █ 0.1 | █ 0.1 | --- | --- |
| Nitration (PA) | %   | 53    | 53    | --- | --- |
| Sulfation (PA) | %   | 57    | 61    | --- | --- |
| Glycol         | %   | NEG   | NEG   | --- | --- |
| Fuel           | %   | <1.0  | █ 0.4 | --- | --- |
| Silicon        | ppm | █ 29  | █ 25  | --- | --- |
| Sodium         | ppm | █ 2   | █ 4   | --- | --- |
| Potassium      | ppm | █ 3   | █ 2   | --- | --- |



## WEAR METALS

|            |     |      |      |     |     |
|------------|-----|------|------|-----|-----|
| Iron       | ppm | █ 9  | █ 14 | --- | --- |
| Copper     | ppm | █ 2  | █ 6  | --- | --- |
| Lead       | ppm | █ <1 | █ <1 | --- | --- |
| Tin        | ppm | █ 1  | █ 2  | --- | --- |
| Aluminum   | ppm | █ 2  | █ 4  | --- | --- |
| Chromium   | ppm | █ 1  | █ 1  | --- | --- |
| Molybdenum | ppm | █ 45 | █ 34 | --- | --- |
| Nickel     | ppm | █ 2  | █ 5  | --- | --- |
| Titanium   | ppm | <1   | 0    | --- | --- |
| Silver     | ppm | █ 0  | █ 0  | --- | --- |
| Manganese  | ppm | █ 1  | █ 4  | --- | --- |
| Vanadium   | ppm | <1   | 0    | --- | --- |



## ADDITIVES

|            |     |        |        |     |     |
|------------|-----|--------|--------|-----|-----|
| Calcium    | ppm | █ 1319 | █ 1448 | --- | --- |
| Magnesium  | ppm | █ 585  | █ 496  | --- | --- |
| Zinc       | ppm | █ 1083 | █ 1039 | --- | --- |
| Phosphorus | ppm | █ 910  | █ 866  | --- | --- |
| Barium     | ppm | █ 2    | █ 0    | --- | --- |
| Boron      | ppm | █ 31   | █ 48   | --- | --- |

## Diagnosis

Resample at the next service interval to monitor. Metal levels are typical for a new component breaking in. 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:** VOLVO0093  
**Unique No:** 10900460  
**Signed:** Wes Davis  
**Report Date:** 28 Feb 2024



# CONSTRUCTION EQUIPMENT



## GRAPHS

