



# CONSTRUCTION EQUIPMENT

## VOLVO EC220EL 3 10484 - DIESEL ENGINE



**Sample No:** VCP437847  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:**



### SAMPLE INFORMATION

Sample Number	<b>VCP437847</b>	VCP363465	VCP306436	VCP254418
Sample Date	<b>27 Feb 2024</b>	24 May 2022	01 Feb 2021	15 Aug 2019
Machine Hours	<b>2440</b>	1935	1354	892
Oil Hours	<b>0</b>	500	500	500
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>ABNORMAL</b>	ABNORMAL	NORMAL	NORMAL

### RIPA AND ASSOCIATES

10149 FISHER AVENUE  
 TAMPA, FL  
 US 33619  
 Contact: PM Services  
 PMServices@ripaconstruction.com  
 T:  
 F:



### OIL CONDITION

Visc @ 100°C	cSt	█ <b>13.4</b>	█ 12.9	█ 13.0	█ 13.3
Base Number (BN)	mg KOH/g	█ <b>9.8</b>	█ 10.1	---	---
Oxidation (PA)	%	<b>88</b>	83	84	82

### 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 acceptable for the time in service.



### CONTAMINATION

Water	%	<b>NEG</b>	NEG	█ 0.116	NEG
Soot %	%	█ <b>0.2</b>	█ 0.3	█ 0.2	█ 0.2
Nitration (PA)	%	<b>84</b>	87	73	68
Sulfation (PA)	%	<b>61</b>	61	61	59
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	█ <b>14</b>	█ 13	█ 15	█ 12
Sodium	ppm	█ <b>3</b>	█ 3	█ 0	█ 6
Potassium	ppm	█ <b>&lt;1</b>	█ 3	█ 1	█ 24



### WEAR METALS

Iron	ppm	█ <b>89</b>	█ 77	█ 87	█ 25
Copper	ppm	█ <b>4</b>	█ 3	█ 3	█ 2
Lead	ppm	█ <b>0</b>	█ <1	█ <1	█ 4
Tin	ppm	█ <b>1</b>	█ <1	█ <1	█ 0
Aluminum	ppm	▲ <b>17</b>	▲ 22	█ 11	█ 4
Chromium	ppm	█ <b>2</b>	█ 2	█ 2	█ 1
Molybdenum	ppm	█ <b>44</b>	█ 41	█ 47	█ 38
Nickel	ppm	█ <b>0</b>	█ 1	█ <1	█ 2
Titanium	ppm	<b>1</b>	█ 13	<1	<1
Silver	ppm	█ <b>0</b>	0	0	0
Manganese	ppm	█ <b>2</b>	█ 1	█ 1	█ 1
Vanadium	ppm	<b>0</b>	<1	0	<1



### ADDITIVES

Calcium	ppm	█ <b>1848</b>	█ 1656	█ 1786	█ 1753
Magnesium	ppm	█ <b>572</b>	█ 559	█ 578	█ 475
Zinc	ppm	█ <b>1252</b>	█ 1236	█ 983	█ 892
Phosphorus	ppm	█ <b>1053</b>	█ 1007	█ 910	█ 711
Barium	ppm	█ <b>0</b>	█ 0	█ 0	█ <1
Boron	ppm	█ <b>26</b>	█ 40	█ 26	█ 26

**Depot:** RIPTAM  
**Unique No:** 11018412  
**Signed:** Sean Felton  
**Report Date:** 10 May 2024



# CONSTRUCTION EQUIPMENT



## GRAPHS

