



# CONSTRUCTION EQUIPMENT

## VOLVO L220H 2211 - DIESEL ENGINE



**Sample No:** VCP432418  
**Oil Type:** SHELL ROTELLA T3 15W40  
**Job No:**



### SAMPLE INFORMATION

Sample Number	VCP432418	VCP404566	VCP429286	VCP404570
Sample Date	17 Jan 2024	15 Dec 2023	15 Nov 2023	10 Oct 2023
Machine Hours	41843	41530	41238	40945
Oil Hours	313	292	293	294
Oil Changed	Changed	N/A	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

**COVANTA ENERGY**  
 141 CRANBERRY HWY  
 WEST WAREHAM, MA  
 US 02576  
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### OIL CONDITION

Visc @ 100°C	cSt	13.1	13.1	13.0	13.1
Base Number (BN)	mg KOH/g	6.3	6.5	6.5	6.6
Oxidation (PA)	%	43	44	45	47



### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	55	55	56	57
Sulfation (PA)	%	48	48	50	50
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	9	10	16	8
Sodium	ppm	2	3	0	3
Potassium	ppm	2	20	2	3



### WEAR METALS

Iron	ppm	3	1	7	2
Copper	ppm	<1	3	<1	1
Lead	ppm	<1	0	0	<1
Tin	ppm	<1	0	<1	<1
Aluminum	ppm	2	1	2	2
Chromium	ppm	<1	<1	1	<1
Molybdenum	ppm	18	24	27	20
Nickel	ppm	<1	1	4	2
Titanium	ppm	0	0	<1	0
Silver	ppm	0	0	0	<1
Manganese	ppm	<1	0	0	<1
Vanadium	ppm	<1	<1	0	0



### ADDITIVES

Calcium	ppm	2116	2053	2118	2188
Magnesium	ppm	92	105	146	134
Zinc	ppm	1141	1092	1077	1183
Phosphorus	ppm	994	961	902	995
Barium	ppm	0	0	0	0
Boron	ppm	17	21	28	20

### 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 suitable for further service.

**Depot:** COVWES  
**Unique No:** 10836666  
**Signed:** Wes Davis  
**Report Date:** 20 Jan 2024



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## GRAPHS

