



CONSTRUCTION EQUIPMENT

10531 VOLVO L110H 632316 - DIESEL ENGINE



Sample No: VCP408982
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: 10531



SAMPLE INFORMATION

Sample Number	VCP408982	VCP404051	VCP400491	VCP386041
Sample Date	28 Jun 2023	05 Apr 2023	18 Jan 2023	02 Nov 2022
Machine Hours	3074	2645	2000	1270
Oil Hours	0	500	500	500
Oil Changed	N/A	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

HMR ASSOCIATES
 PO BOX 485
 TOUGHKENAMON, PA
 US 19374
 Contact: SERVICE MANAGER



OIL CONDITION

Visc @ 100°C	cSt	13.6	13.3	13.6	13.1
Base Number (BN)	mg KOH/g	6.2	7.1	7.9	8.6
Oxidation (PA)	%	57	55	64	71

T:
 F: (610)268-2225

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.



CONTAMINATION

Soot %	%	0.3	0.3	0.3	0.4
Nitration (PA)	%	72	70	69	78
Sulfation (PA)	%	54	54	54	60
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	4	4	4	6
Sodium	ppm	2	2	2	<1
Potassium	ppm	2	0	1	3



WEAR METALS

Iron	ppm	15	18	20	22
Copper	ppm	1	2	4	18
Lead	ppm	0	0	1	1
Tin	ppm	<1	<1	2	2
Aluminum	ppm	4	3	7	15
Chromium	ppm	<1	<1	1	1
Molybdenum	ppm	16	31	49	26
Nickel	ppm	0	0	<1	0
Titanium	ppm	<1	<1	<1	<1
Silver	ppm	0	0	<1	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	2305	1770	1493	1949
Magnesium	ppm	187	434	762	300
Zinc	ppm	1234	1112	1282	1092
Phosphorus	ppm	987	906	1008	888
Barium	ppm	0	0	0	0
Boron	ppm	4	3	6	14

Depot: HMRTOU
Unique No: 10545736
Signed: Wes Davis
Report Date: 05 Jul 2023



CONSTRUCTION EQUIPMENT



GRAPHS

