



# CONSTRUCTION EQUIPMENT

## SW-21054-2 CASTLE VA VOLVO EC350EL 310786 - DIESEL ENGINE



**Sample No:** VCP419289  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** SW-21054-2 CASTLE VA



### SAMPLE INFORMATION

Sample Number	<b>VCP419289</b>	VCP400933	VCP383484	VCP345757
Sample Date	<b>06 Jul 2023</b>	20 Apr 2023	06 Jan 2023	18 Oct 2022
Machine Hours	<b>7380</b>	6846	6328	5869
Oil Hours	<b>540</b>	518	460	500
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	NORMAL

**ARNOLD MACHINERY COMPANY**  
 2975 WEST 2100 SOUTH  
 SALT LAKE CITY, UT  
 US 84119  
 Contact: TONY PAYAN  
 tpayan@arnoldmachinery.com  
 T: (801)972-4000  
 F: (801)975-9434



### OIL CONDITION

Visc @ 100°C	cSt	<b>12.3</b>	12.3	12.5	12.5
Base Number (BN)	mg KOH/g	<b>8.9</b>	8.4	9.2	10.1
Oxidation (PA)	%	<b>62</b>	60	65	69

### 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 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

Soot %	%	<b>0.2</b>	0.2	0.1	0.1
Nitration (PA)	%	<b>63</b>	66	65	72
Sulfation (PA)	%	<b>53</b>	52	54	58
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>3</b>	4	4	4
Sodium	ppm	<b>2</b>	2	<1	2
Potassium	ppm	<b>&lt;1</b>	<1	0	0



### WEAR METALS

Iron	ppm	<b>5</b>	6	4	3
Copper	ppm	<b>2</b>	2	1	<1
Lead	ppm	<b>&lt;1</b>	0	<1	0
Tin	ppm	<b>&lt;1</b>	0	<1	0
Aluminum	ppm	<b>&lt;1</b>	<1	<1	0
Chromium	ppm	<b>&lt;1</b>	0	<1	<1
Molybdenum	ppm	<b>63</b>	67	53	55
Nickel	ppm	<b>0</b>	0	<1	0
Titanium	ppm	<b>0</b>	0	0	0
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>&lt;1</b>	<1	<1	<1
Vanadium	ppm	<b>0</b>	0	0	<1



### ADDITIVES

Calcium	ppm	<b>1201</b>	1181	1218	1174
Magnesium	ppm	<b>1005</b>	1008	821	893
Zinc	ppm	<b>1346</b>	1316	1125	1202
Phosphorus	ppm	<b>1089</b>	1023	903	931
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>7</b>	9	9	0

**Depot:** VOLVO8770  
**Unique No:** 10559755  
**Signed:** Don Baldrige  
**Report Date:** 17 Jul 2023



# CONSTRUCTION EQUIPMENT



## GRAPHS

