## **OIL ANALYSIS REPORT**

## EPA REGION 10 DANIEL/502754 VOLVO PENTA 2006020618 - CENTER DIESEL ENGINE

Sample No: VPA059624

**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

Sample Number		VPA059624	 	
Sample Date		22 Feb 2024	 	 Endor Marine LLC - Coastal Marine - 1521
Machine Hours		1235	 	 4300 11th Ave. NW
Oil Hours		0	 	 SEATTLE, WA
Oil Changed		Changed	 	 US 98107
Sample Status		ABNORMAL	 	 Contact: WILLOW YANARELLA
				service@coastalmarineengine.com
OIL CONDITION				T: (206)784-3703
Visc @ 100°C	cSt	13.5	 	 F: (206)784-8823
Base Number (BN)	mg KOH/g	 9.7	 	 
Oxidation (PA)	%	58	 	 Diagnosis
CONTAMINATION				Oil and filter change at the time of
LUNTAMINATION				sampling has been noted. No corrective action is recommended at
Water	%	NEG	 	 this time. Resample at the next
Soot %	%	<b>0.1</b>	 	 service interval to monitor.The
Nitration (PA)	%	48	 	 aluminum level is abnormal. All othe
Sulfation (PA)	%	52	 	 component wear rates are normal.
Glycol	%	NEG	 	 There is no indication of any
Fuel	%	<1.0	 	 contamination in the oil. The BN result indicates that there is suitable
Silicon	ppm	8	 	 alkalinity remaining in the oil. The
Sodium	ppm	2	 	 condition of the oil is acceptable for
Potassium	ppm	<b>1</b>	 	 the time in service.
WEAR METALS				
Iron	ppm	25	 	 
Copper	ppm	2	 	
Lead				
LCUU	ppm	<b>  </b> <1	 	
Tin	ppm ppm	■<1 ■<1	 	
Tin	ppm	<b>  </b> <1	 	
Tin Aluminum	ppm ppm	■ <1 ▲ 57	 	
Tin Aluminum Chromium	ppm ppm ppm	□ <1 ▲ 57 □ 4	 	
Tin Aluminum Chromium Molybdenum	ppm ppm ppm ppm	<ul> <li>&lt;1</li> <li>57</li> <li>4</li> <li>60</li> </ul>	 	
Tin Aluminum Chromium Molybdenum Nickel	ppm ppm ppm ppm ppm	<ul> <li>&lt;1</li> <li>57</li> <li>4</li> <li>60</li> <li>1</li> </ul>		
Tin Aluminum Chromium Molybdenum Nickel Titanium	ppm ppm ppm ppm ppm ppm	<pre>&lt;1 57 4 60 1 </pre>	   	
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver	ppm ppm ppm ppm ppm ppm	<pre>&lt;1 57 4 60 1 &lt;1 &lt;1 </pre>	     	
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese	ppm ppm ppm ppm ppm ppm ppm	<pre>&lt;1 </pre> 57 4 60 1  1  1  1  1  1  1  1  1  1	     	
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium	ppm ppm ppm ppm ppm ppm ppm ppm	<pre>&lt;1 </pre> 57 4 60 1  1  1  1  1  1  1  1  1  1	     	
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium ADDITIVES	ppm ppm ppm ppm ppm ppm ppm	<pre>&lt;1 </pre> 57  4  60  1  <1  <1  <1  <1  <1  <1  <1		
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium ADDITIVES Calcium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	<pre>&lt;1 </pre> 57  4  60  1  <1  <1  <1  <1  1010		
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium ADDITIVES Calcium Magnesium	ppm ppm ppm ppm ppm ppm ppm ppm	<pre>&lt;1 </pre> 57  4  60  1  <1  <1  <1  1  1  1010  938	Image: Second	
Tin Aluminum Chromium Molybdenum Nickel Titanium Silver Manganese Vanadium ADDITIVES Calcium Magnesium Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	<pre>&lt;1 </pre> 57  4  60  1  <1  <1  <1  1  <1  1  1010  938  1184		

Contact/Location: WILLOW YANARELLA - VP794951

29 Feb 2024

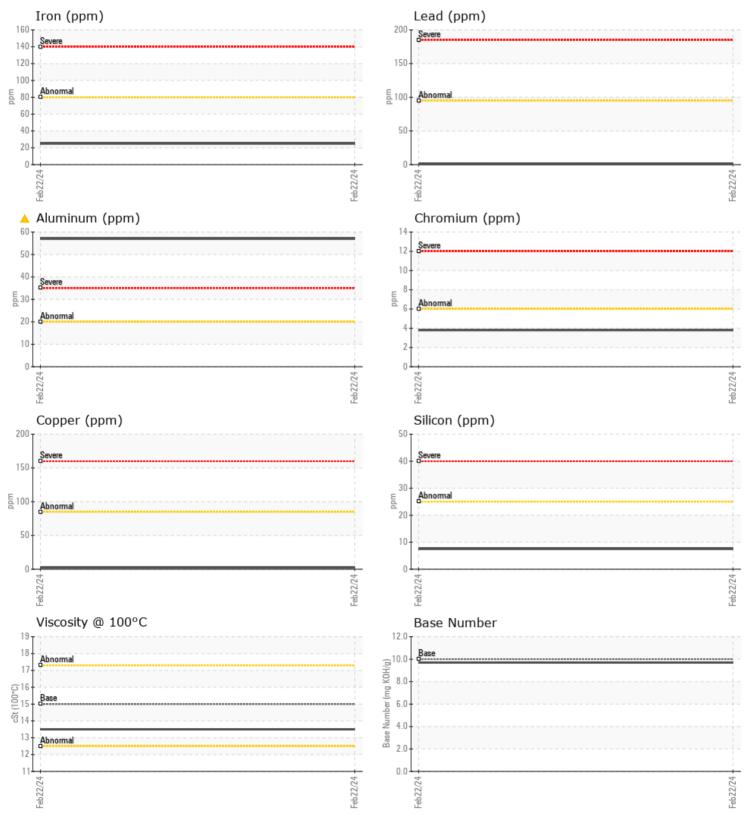
Report Date:



## **OIL ANALYSIS REPORT**



## GRAPHS



Report Id: VP794951 [WUSCAR] 06102667 (Generated: 03/04/2024 09:29:34) Rev: 1

Contact/Location: WILLOW YANARELLA - VP794951