## **OIL ANALYSIS REPORT**

### COREY EAVES EAVES VOLVO PENTA A 1155709 - STARBOARD DIESEL ENGINE

Sample No: VPA060099

Oil Type: SHELL ROTELLA T 15W40

#### SAMPLE INFORMATION

Sample NumberVPA060099Sample Date09 Nov 2023Machine Hours00Oil HoursNormadeOil ChangedNormadeSample StatusNormadeOIL CONDITIONVisc © 100°CC\$t12.7Outation (PA)%13.3Outation (PA)%13.3Soot %%0.3Soot %%16.5Solutino (PA)%65Solutino (PA)%65Solutino (PA)%13Solutino (PA)%65Solutino (PA)%65Solutino (PA)%13Solutino (PA)%15Solutino (PA)%16Solutino (PA)%13Solutino (PA)%15Solutino (PA)%15 <td< th=""><th>SAMPLE INFORMAT</th><th>IUN</th><th></th><th></th><th></th></td<>	SAMPLE INFORMAT	IUN			
Machine Hours       150            Oil Hours       0            Single Status       NORMAL            Single Status       NORMAL            Oil Conged       Status       NORMAL            Single Status       NORMAL             Oil Contition              Oxidation (PA)       %       143             Contamination (PA)       %       0.3             Soot %       %       0.5             Sulfation (PA)       %       0.5             Soldium       ppm       18             Soldium       ppm       5             VEAR METALS	Sample Number		VPA060099	 	
Oil Hours         O              Oil Changed         Changed              Sample Status         NORMAL              OIL ConDITION               Visc @ 100°C         CSt         12.7              Oxidation (PA)         %         143              Cottamination (PA)         %         NEG              Soot %         %         0.3              Soot %         %         65              Suifation (PA)         %         A8              Suifation (PA)         %         A8              Suifation (PA)         %         A8              Suifation (PA)         %         <1.0	Sample Date		09 Nov 2023	 	
Oil Changed         Changed              Sample Status         NORMAL              OIL CONDITION               Base Number (BN)         mg KOH/g         II.5.2              Coldation (PA)         %         143              COTTAMINATION         ****               Water         %         NEG              Nitration (PA)         %         48              Sulfation (PA)         %         65              Sodium         ppm         I18	Machine Hours		150	 	
Sample Status         NORMAL              OIL CONDITION               Base Number (BN) mg KOH/g         5.2              Dxidation (PA)         %         143              COTTAMINATION         ***              Water         %         NEG              Soot %         ***         0.3              Soot %         ***         0.3              Soot %         ***         0.3              Suifation (PA)         %         48              Suifation (PA)         %         410              Sodium         ppm         18              Sodium         ppm         12              Lead         ppm         12	Oil Hours		0	 	
Sample Status         NORMAL              OIL CONDITION               Base Number (BN) mg KOH/g         5.2              Dxidation (PA)         %         143              COTTAMINATION         ***              Water         %         NEG              Soot %         ***         0.3              Soot %         ***         0.3              Soot %         ***         0.3              Suifation (PA)         %         48              Suifation (PA)         %         410              Sodium         ppm         18              Sodium         ppm         12              Lead         ppm         12	Oil Changed		Changed	 	
Visc @ 100°C       cSt       12.7           Base Number (BN)       mg KOH/g       5.2           Oxidation (PA)       %       143           CONTAMINATION       Water       %       NEG           Soot %       %       0.3            Nitration (PA)       %       48            Sulfation (PA)       %       65            Sulfation (PA)       %       48            Sulfation (PA)       %       65            Sulfation (PA)       %       48            Sulfation (PA)       %       65            Sulfation (PA)       %       <1.0	Sample Status		NORMAL	 	
Base Number (BN)       mg KOH/g       143            Oxidation (PA)       %       143            CONTAMINATION              Water       %       NEG            Soot %       %       0.3            Nitration (PA)       %       48            Sulfation (PA)       %       65            Fuel       %       <1.0	OIL CONDITION				
Oxidation (PA)         %         143              CONTAMINATION         Water         %         NEG              Soot %         %         0.3               Soot %         %         0.3               Soot %         %         0.3               Sulfation (PA)         %         48               Sulfation (PA)         %         65               Sulfation (PA)         %         610               Sulfation (PA)         %          610               Sulfation (PA)         %          613                Sulfation (PA)         ppm         15                Copper         ppm         16	Visc @ 100°C	cSt	12.7	 	
CONTAMINATION           Water         %         NEG              Soot %         %         0.3              Nitration (PA)         %         65              Glycol         %         NEG              Fuel         %         <1.0	Base Number (BN)	mg KOH/g	5.2	 	
Water         %         NEG             Soot %         %         0.3             Nitration (PA)         %         48             Sulfation (PA)         %         65             Glycol         %         NEG             Glycol         %         NEG             Sulfation (PA)         %         65             Glycol         %         NEG             Sulfation (PA)         %         <1.0	Oxidation (PA)	%	143	 	
Soot %       %       0.3            Nitration (PA)       %       48            Sulfation (PA)       %       65            Glycol       %       NEG            Fuel       %       <1.0	CONTAMINATION				
Soot %       %       0.3            Nitration (PA)       %       48            Sulfation (PA)       %       65            Glycol       %       NEG            Fuel       %       <1.0	Water	%	NEG	 	
Nitration (PA)       %       48            Sulfation (PA)       %       65            Glycol       %       NEG            Fuel       %       <1.0				 	
Sulfation (PA)         %         65              Glycol         %         NEG              Fuel         %         <1.0				 	
Glycol       %       NEG            Fuel       %       <1.0	. ,			 	
Fuel         %         <1.0              Silicon         ppm         18              Sodium         ppm         3              Potassium         ppm         2              WEAR METALS                WEAR METALS                Copper         ppm         115              Lead         ppm         5              Aluminum         ppm         16              Molybdenum         ppm         55              Nickel         ppm         1              Silver         ppm         0              Anadium         pm         1              Silver         ppm         10				 	
Sodium         ppm         3              Potassium         ppm         2              WEAR METALS               Iron         ppm         15              Copper         ppm         12              Lead         ppm         5              Aluminum         ppm         16              Molybdenum         ppm         16              Nickel         ppm         11              Nickel         ppm         1              Silver         ppm         0              Manganese         ppm         1              Vanadium         ppm         1087              Calcium         ppm         1087 <td></td> <td>%</td> <td>&lt;1.0</td> <td> </td> <td></td>		%	<1.0	 	
Sodium         ppm         3              Potassium         ppm         2              WEAR METALS               Iron         ppm         15              Copper         ppm         12              Lead         ppm         5              Aluminum         ppm         16              Molybdenum         ppm         2              Nickel         ppm         1              Nickel         ppm         0              Manganese         ppm         1              Vanadium         ppm         1087              Calcium         ppm         1087              Calcium         ppm         1087          <	Silicon	ppm	<b>18</b>	 	
WEAR METALS         Iron       ppm       15            Copper       ppm       12            Lead       ppm       5            Aluminum       ppm       16            Aluminum       ppm       2            Molybdenum       ppm       55            Nickel       ppm       1            Nickel       ppm       0            Silver       ppm       1            Manganese       ppm       1            Vanadium       ppm       <1	Sodium	ppm	3	 	
Iron       ppm       15            Copper       ppm       12            Lead       ppm       5            Tin       ppm       2            Aluminum       ppm       16            Chromium       ppm       2            Molybdenum       ppm       55            Nickel       ppm       11            Nickel       ppm       0            Silver       ppm       0            Manganese       ppm       1            Vanadium       ppm       1087            Calcium       ppm       1087            Magnesium       ppm       1087            Magnesium       ppm       1087	Potassium	ppm	2	 	
Copper         ppm         12              Lead         ppm         5              Tin         ppm         2              Aluminum         ppm         16              Chromium         ppm         2              Molybdenum         ppm         55              Nickel         ppm         1              Nickel         ppm         <1	WEAR METALS				
Lead       ppm       5            Tin       ppm       2            Aluminum       ppm       16            Chromium       ppm       2             Molybdenum       ppm       55             Nickel       ppm       11             Nickel       ppm       <1	Iron	ppm	<b>1</b> 5	 	
Tin         ppm         2              Aluminum         ppm         16              Chromium         ppm         2              Molybdenum         ppm         55              Nickel         ppm         11              Nickel         ppm         <11	Copper	ppm	<b>12</b>	 	
Aluminum       ppm       16           Chromium       ppm       2           Molybdenum       ppm       55            Nickel       ppm       1            Titanium       ppm       <1	Lead	ppm	5	 	
Chromium       ppm       2            Molybdenum       ppm       55            Nickel       ppm       1            Titanium       ppm       <1	Tin	ppm	2	 	
Molybdenum         ppm         55              Nickel         ppm         1              Titanium         ppm         <1	Aluminum	ppm	<b>16</b>	 	
Molybdenum         ppm         55               Nickel         ppm         1               Titanium         ppm         <1	Chromium	ppm	2	 	
Titanium       ppm       <1	Molybdenum	ppm	55	 	
Silver         ppm         0              Manganese         ppm         1              Vanadium         ppm         <1              ADDITIVES         Calcium         ppm         1087              Magnesium         ppm         1087              Magnesium         ppm         1189              Zinc         ppm         1199	Nickel	ppm	<b>1</b>	 	
Manganese         ppm         1              Vanadium         ppm         <1               ADDITIVES         Calcium         ppm         1087               Magnesium         ppm         877               Zinc         ppm         1199	Titanium	ppm	<b>  </b> <1	 	
Vanadium         ppm         <1              ADDITIVES         Calcium         ppm         1087              Magnesium         ppm         877               Zinc         ppm         1199	Silver	ppm	0	 	
ADDITIVES           Calcium         ppm         1087              Magnesium         ppm         877              Zinc         ppm         1199	Manganese	ppm	<b>1</b>	 	
Calcium         ppm         1087              Magnesium         ppm         877              Zinc         ppm         1199	Vanadium	ppm	<1	 	
Magnesium         ppm         877              Zinc         ppm         1199	ADDITIVES				
Magnesium         ppm         877              Zinc         ppm         1199	Calcium	ppm	<b>1087</b>	 	
Zinc ppm <b>1199</b>			_	 	
	•			 	
	Phosphorus		997	 	



700 Rushmore Ave MAMARONECK, NY US 10543 Contact: Patti Hornidge rushmore@mcmyacht.com T:

#### 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 acceptable for the time in service.

 Depot:
 VP153367

 Unique No:
 10752961

 Signed:
 Don Baldridge

 Report Date:
 23 Nov 2023

ppm

ppm

0 🔲

7

Barium

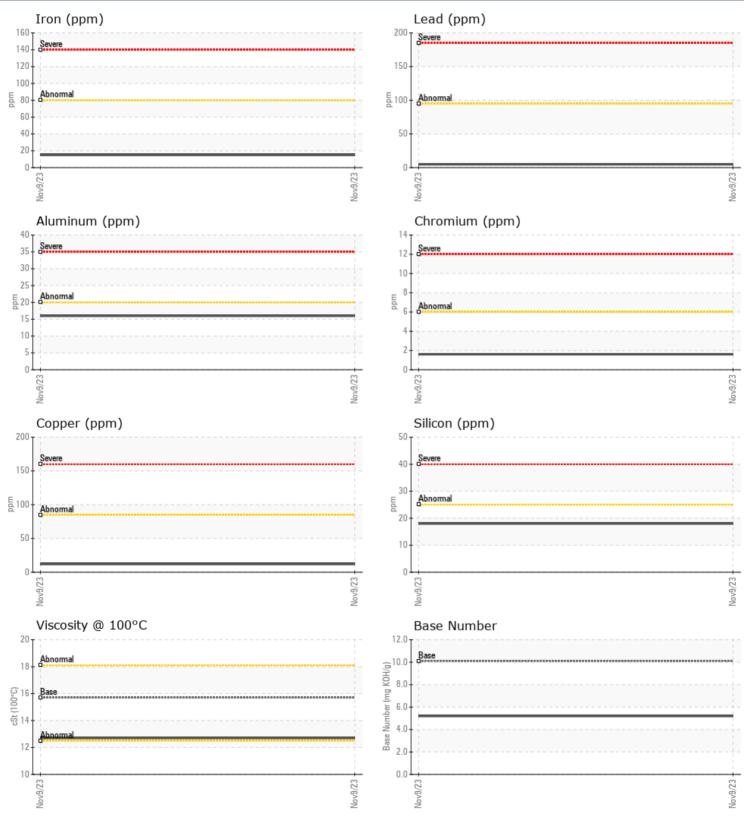
Boron

Contact/Location: Patti Hornidge - VP153367

# **OIL ANALYSIS REPORT**



#### GRAPHS



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