



DAVID KIRK CUMMINS 74034806 - STARBOARD DIESEL ENGINE

Sample No: VPA059810

Oil Type: SHELL ROTELLA T 15W40

Base Number (BN) mg KOH/g					
Sample Date 29 Oct 2023 30 Nov 2022	SAMPLE INFORMAT	TION			
Sample Date 29 Oct 2023 30 Nov 2022	Sample Number		VPA050810	\/D\\\\/\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
Machine Hours					
Oil Changed Changed Changed Sample Status NORMAL NORMAL Sample Status NORMAL NORMAL Sample Status NORMAL NORMAL Sample Status NORMAL NORMAL USD Color Status Sample Status NORMAL USD Color Status Sample Status COLOR Status 9 14.8 -	•				
Changed Chan					
NORMAL N					
Oil CONDITION Oils Oil Condition Oil C	_		_		
Nisc @ 100°C CSt	Sample Status		NORMAL	NORMAL	
Base Number (BN) mg KOH/g	OIL CONDITION				
CONTAMINATION Soot %	Visc @ 100°C	cSt	14.5	14.8	
CONTAMINATION Soot %	Base Number (BN)	mg KOH/g	■8.1	9.7	
Scot %	Oxidation (PA)	%	67	78	
Nitration (PA)	CONTAMINATION				
Nitration (PA)	Soot %	%	0.7	□0.8	
Sulfation (PA)					
Silicon Silicon Silicon Silicon Sodium Sodium	, ,				
Fuel % < <1.0 <1.0 <					
Solition	•				
Sodium					
New York New York					
WEAR METALS			_	_	
Tron	Potassium	ppm	6	<u></u> 8	
Copper ppm 54 67 <td>WEAR METALS</td> <td></td> <td></td> <td></td> <td></td>	WEAR METALS				
Lead	Iron	ppm	17	2 1	
Lead	Copper	ppm	■ 54	6 7	
Tin ppm 0	Lead				
Aluminum ppm 2 2 2 Chromium ppm 3 1 1 1 Molybdenum ppm 0 1 1 Nickel ppm 3 0 1 1 Silver ppm 0 0 1 1 Silver ppm 0 0 0 0	Tin		_		
Chromium ppm					
Molybdenum ppm			_		
Nickel ppm Image: square squa			_		
Titanium ppm 0 < < 1					
Silver ppm 0 0 Manganese ppm 0 0 0			_	_	
Manganese ppm <1 <1 Vanadium ppm 0 0 ADDITIVES Calcium ppm 1948 2319 Magnesium ppm 76 27 Zinc ppm 1083 1289 Phosphorus ppm 983 1030 Barium ppm 3 0					
Vanadium ppm 0 0 ADDITIVES Calcium ppm 1948 2319 Magnesium ppm 76 27 Zinc ppm 1083 1289 Phosphorus ppm 983 1030 Barium ppm 3 0					
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Calcium ppm 1948 2319 Magnesium ppm 76 27 Zinc ppm 1083 1289 Phosphorus ppm 983 1030 Barium ppm 3 0		ppm	0	0	
Magnesium ppm 76 27 Zinc ppm 1083 1289 Phosphorus ppm 983 1030 Barium ppm 3 0	ADDITIVES				
Zinc ppm 1083 1289 Phosphorus ppm 983 1030 Barium ppm 3 0	Calcium	ppm	1948	■2319	
Zinc ppm 1083 1289 Phosphorus ppm 983 1030 Barium ppm 3 0	Magnesium	ppm	76	■27	
Phosphorus ppm 983 1030 Barium ppm 3 0	Zinc		1083		
Barium ppm □3 □0				1 030	
=	Barium				
	Boron				

BAY MARINE

3 E MADISON ST WAUKEGAN, IL US 60085 Contact: BRENDAN COWHEY brendan@baymarine.net T: (847)336-2628 F:

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:VP1174336Unique No:10715312Signed:Don BaldridgeReport Date:31 Oct 2023

OIL ANALYSIS REPORT



