

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

VRABECK [VRABECK] Machine Id VOLVO PENTA A1037751

Starboard Diesel Engine

{not provided} (--- GAL)

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VPA062751		
Sample Date		Client Info		20 Jun 2024		
Machine Age	hrs	Client Info		0		
Oil Age	hrs	Client Info		0		
Filter Age	hrs	Client Info		0		
Oil Changed		Client Info		N/A		
Filter Changed		Client Info		N/A		
Sample Status				NORMAL		
Iron	ppm			14		
Chromium	ppm	ASTM D5185m	>6	<1		
Nickel	ppm	ASTM D5185m	>2	1		
Titanium	ppm	ASTM D5185m	>2	<1		
Silver	ppm	ASTM D5185m	>2	<1		
Aluminum	ppm	ASTM D5185m	>20	3		
Lead	ppm	ASTM D5185m	>95	1		
Copper	ppm	ASTM D5185m	>85	3		
Tin	ppm	ASTM D5185m	>9	<1		
Vanadium	ppm	ASTM D5185m		<1		
White Metal	scalar	*Visual	NONE	NONE		
Yellow Metal	scalar	*Visual	NONE	NONE		
	ppm					
	ppm		>20	2		
			>4.0	<1.0		
			>0.1			
-						
	%					
Nitration	Abs/cm					
Sulfation	Abs/.1mm	*ASTM D7415	>30			
	scalar	*Visual	NONE			
	scalar	*Visual	NONE	NONE		
Sand/Dirt	scalar	*Visual				
Appearance	scalar	*Visual	NORML			
	scalar	*Visual	NORML	NORML		
Emulsified Water	scalar	*Visual	>0.1	NEG		
Cadium				0		
-						
-						
Sulfur Oxidation	ppm					
		*ASTM D7414	05	12.1		
	Sample Number Sample Date Machine Age Oil Age Filter Age Oil Changed Filter Changed Sample Status Iron Chromium Nickel Titanium Silver Aluminum Lead Copper Tin Vanadium White Metal Yellow Metal Yellow Metal Yellow Metal Yellow Metal Silicon Potassium Fuel Water Glycol Soot % Nitration Sulfation Silt Debris Sand/Dirt Appearance Odor	Sample NumberSample DateMachine AgehrsOil AgehrsFilter AgehrsOil ChangedFilter ChangedFilter Changedsample StatusIronppmChromiumppmNickelppmTitaniumppmSilverppmAluminumppmLeadppmVanadiumppmVanadiumppmVanadiumppmFuelscalarSiliconppmFuelyellow MetalSoot %%NitrationAbs/cmSulfationAbs/cmSulfationAbs/lmmSiltscalarSoot %%NitrationAbs/lmmSiltscalarSodiumppmMapearancescalarAppearancescalarSodiumppmManganeseppmManganeseppmManganeseppmSulfurppmSulfurppm	Sample NumberClient InfoSample DateClient InfoMachine AgehrsClient InfoOil AgehrsClient InfoFilter AgehrsClient InfoOil ChangedClient InfoFilter ChangedClient InfoSample StatusClient InfoSample StatusSilverIronppmASTM D5185mNickelppmASTM D5185mNickelppmASTM D5185mAluminumppmASTM D5185mLeadppmASTM D5185mCopperppmASTM D5185mVanadiumppmASTM D5185mVanadiumppmASTM D5185mVanadiumppmASTM D5185mFuelWC MethodSiliconppmASTM D5185mFuelWC MethodGlycolWC MethodSoot %%*ASTM D5185mFuelWC MethodSiltscalar*VisualSiltscalar*VisualSiltscalar*VisualSoot %%*ASTM D7624SulfationAbs/:Imm*ASTM D7624SulfationAbs/:Imm*ASTM D5185mBoronppmASTM D5185mBariumppmASTM D5185mMalganeseppmASTM D5185mMagnesiumppmASTM D5185mMagnesiumppmASTM D5185mPhosphorusppmASTM D5185mSulfurppmASTM D5185mMagnesiumppm	Sample NumberClient InfoSample DateClient InfoMachine AgehrsClient InfoOil AgehrsClient InfoFilter AgehrsClient InfoOil ChangedClient InfoFilter ChangedClient InfoSample StatusSample StatusIronppmASTM D5185mNickelppmASTM D5185mNickelppmASTM D5185mSilverppmASTM D5185mSilverppmASTM D5185mAuminumppmASTM D5185mSopperppmASTM D5185mTinppmASTM D5185mVanadiumppmASTM D5185mVanadiumppmASTM D5185mVellow Metalscalar*VisualSiliconppmASTM D5185mVellow Metalscalar*VisualNONESoot %%*ASTM D5185mSuiliconAbs/cm*ASTM D7624VarationAbs/cm*ASTM D7624Soot %%*ASTM D7624Soot %%*ASTM D7624Soot %%*ASTM D7624Soot %%*ASTM D7624SuifationAbs/cm*ASTM D7624Appearancescalar*VisualNORESand/Dirtscalar*VisualAppearancescalar*VisualAppearancescalar*VisualAppearancescalar*VisualAppearancescalar*VisualBoronppm <td< th=""><th>Sample NumberClient InfoVPA062751Sample DateClient Info20 Jun 2024Machine AgehrsClient Info0Oil AgehrsClient Info0Filter AgehrsClient InfoN/AFilter ChangedClient InfoN/ASample StatusClient InfoN/ASample StatusSample StatusNORMALIronppmASTM D5185m>6<1NickelppmASTM D5185m>2<1NickelppmASTM D5185m>2<1SilverppmASTM D5185m>2<1SilverppmASTM D5185m>2<1CopperppmASTM D5185m>2<1CopperppmASTM D5185m>2<1VanadiumppmASTM D5185m>2<1VanadiumppmASTM D5185m>2<1Vhite Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>202<1SulfationAbs/tmm'ASTM D7624>20<1.0WaterWC Method>.0.1NEGNONESoot %'%'ASTM D7624>20<6.5SulfationAbs/tmm'ASTM D7624>20<6.5SulfationAbs/tmm'ASTM D7624>20<6.5SodiumppmASTM D5185m<0<1Debrissca</th><th>Sample Number Client Info VPA062751 Sample Date Client Info 20 Jun 2024 Machine Age hrs Client Info 0 Oil Age hrs Client Info 0 Filter Age hrs Client Info N/A Oil Changed Client Info N/A Sample Status VPA062751 Iron ppm ASTM D5185m >80 14 Sample Status vortables >2 1 Nickel ppm ASTM D5185m >2 <1 Nickel ppm ASTM D5185m >2 <1 Aluminum ppm ASTM D5185m >2 3 Lead ppm ASTM D5185m >8 3 Vanadium ppm ASTM D5185m >20 2 Vanadium ppm ASTM D5185m</th></td<>	Sample NumberClient InfoVPA062751Sample DateClient Info20 Jun 2024Machine AgehrsClient Info0Oil AgehrsClient Info0Filter AgehrsClient InfoN/AFilter ChangedClient InfoN/ASample StatusClient InfoN/ASample StatusSample StatusNORMALIronppmASTM D5185m>6<1NickelppmASTM D5185m>2<1NickelppmASTM D5185m>2<1SilverppmASTM D5185m>2<1SilverppmASTM D5185m>2<1CopperppmASTM D5185m>2<1CopperppmASTM D5185m>2<1VanadiumppmASTM D5185m>2<1VanadiumppmASTM D5185m>2<1Vhite Metalscalar*VisualNONENONEYellow Metalscalar*VisualNONENONESiliconppmASTM D5185m>202<1SulfationAbs/tmm'ASTM D7624>20<1.0WaterWC Method>.0.1NEGNONESoot %'%'ASTM D7624>20<6.5SulfationAbs/tmm'ASTM D7624>20<6.5SulfationAbs/tmm'ASTM D7624>20<6.5SodiumppmASTM D5185m<0<1Debrissca	Sample Number Client Info VPA062751 Sample Date Client Info 20 Jun 2024 Machine Age hrs Client Info 0 Oil Age hrs Client Info 0 Filter Age hrs Client Info N/A Oil Changed Client Info N/A Sample Status VPA062751 Iron ppm ASTM D5185m >80 14 Sample Status vortables >2 1 Nickel ppm ASTM D5185m >2 <1 Nickel ppm ASTM D5185m >2 <1 Aluminum ppm ASTM D5185m >2 3 Lead ppm ASTM D5185m >8 3 Vanadium ppm ASTM D5185m >20 2 Vanadium ppm ASTM D5185m

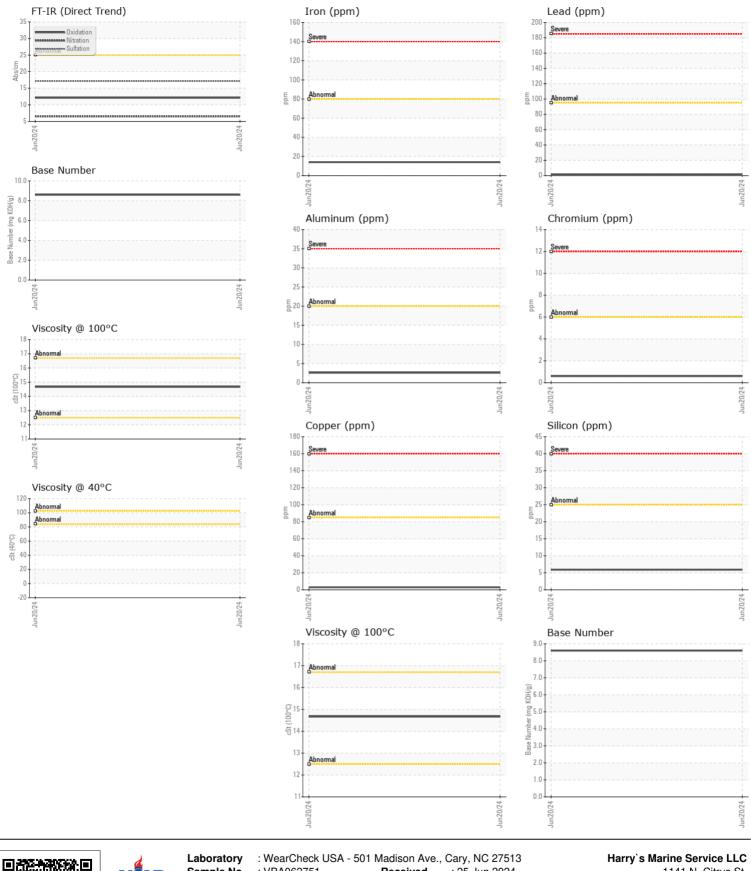
Base Number (BN) mg KOH/g ASTM D2896

ASTM D445

Visc @ 100°C cSt

8.6

14.67



Sample No. Received 1141 N. Citrus St. : VPA062751 : 25 Jun 2024 Lab Number : 06220335 Tested : 25 Jun 2024 Orange, CA Unique Number : 11098532 Diagnosed : 25 Jun 2024 - Doug Bogart US 92887 Test Package : MOB 1 (Additional Tests: KV40, TBN) Contact: TARAH AULD Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. info@harrysmarine.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (714)771-7899 F: Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: TARAH AULD - VP867279 Page 2 of 2