WEAR CONTAMINATION FLUID CONDITION

NORMAL NORMAL

MADINE URCIUOLI [RICKY JOHNSON]

VOLVO PENTA 2300076852

Center Diesel Engine

VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- GAL)

RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Resample at the next service interval to monitor.	Sample Number		Client Info		VPA058332		
	Sample Date		Client Info		14 May 2024		
	Machine Age	hrs	Client Info		1351		
	Oil Age	hrs	Client Info		1351		
	Filter Age	hrs	Client Info		0		
	Oil Changed		Client Info		Changed		
	Filter Changed		Client Info		Changed		
	Sample Status				NORMAL		
WEAR	Iron	ppm	ASTM D5185m	>80	8		
All component wear rates are normal.	Chromium	ppm	ASTM D5185m	>6	0		
	Nickel	ppm	ASTM D5185m		<1		
	Titanium	ppm	ASTM D5185m	>2	0		
	Silver	ppm	ASTM D5185m		0		
	Aluminum	ppm	ASTM D5185m		5		
	Lead	ppm	ASTM D5185m		1		
	Copper	ppm	ASTM D5185m		<1		
	Tin	ppm	ASTM D5185m		<1		
	Vanadium	ppm	ASTM D5185m		0		
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
CONTAMINATION	Silicon	ppm	ASTM D5185m	>25	5		
There is no indication of any contamination in the oil.	Potassium	ppm	ASTM D5185m	>20	1		
	Fuel		WC Method	>4.0	<1.0		
	Water		WC Method	>0.1	NEG		
	Glycol		WC Method		NEG		
	Soot %	%	*ASTM D7844		0.1		
	Nitration	Abs/cm	*ASTM D7624	>20	4.4		
	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4		
	Silt	scalar	*Visual	NONE	NONE		
	Debris	scalar	*Visual	NONE	NONE		
	Sand/Dirt	scalar	*Visual	NONE	NONE		
	Appearance	scalar	*Visual	NORML	NORML		
	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.1	NEG		
FLUID CONDITION	Sodium	ppm	ASTM D5185m		2		
TEGID CONDITION	Boron	ppm	ASTM D5185m	2.5	533		
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.	Barium	ppm	ASTM D5185m		0		
	Molybdenum	ppm	ASTM D5185m		78		
	Manganese	ppm	ASTM D5185m		<1		
	Magnesium	ppm	ASTM D5185m		358		
	Calcium	ppm	ASTM D5185m		1343		
	Phosphorus	ppm	ASTM D5185m		1031		
	Zinc	ppm	ASTM D5185m		1246		
	Sulfur	ppm	ASTM D5185m		3700		
	Oxidation	Abs/.1mm	*ASTM D7414		13.4		
	Base Number (BN)		ASTM D2896		8.0		
	Dasc Nullipel (DIV)	my NOTI/y	70 INI D2030	10	5.0		





Certificate L2367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

: VPA058332 Lab Number : 06187235 Unique Number : 11043987

Received **Tested**

Diagnosed Test Package : MOB 1 (Additional Tests: TBN)

: 23 May 2024 : 23 May 2024 - Sean Felton

: 22 May 2024

Helmuts Marine Service 619 Canal Street SAN RAFAEL, CA US 94901-3545

Contact: NADINE URCIUOLI SERVICE@HELMUTSMARINE.COM T: x:

To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: x:

Contact/Location: NADINE URCIUOLI - VP152741