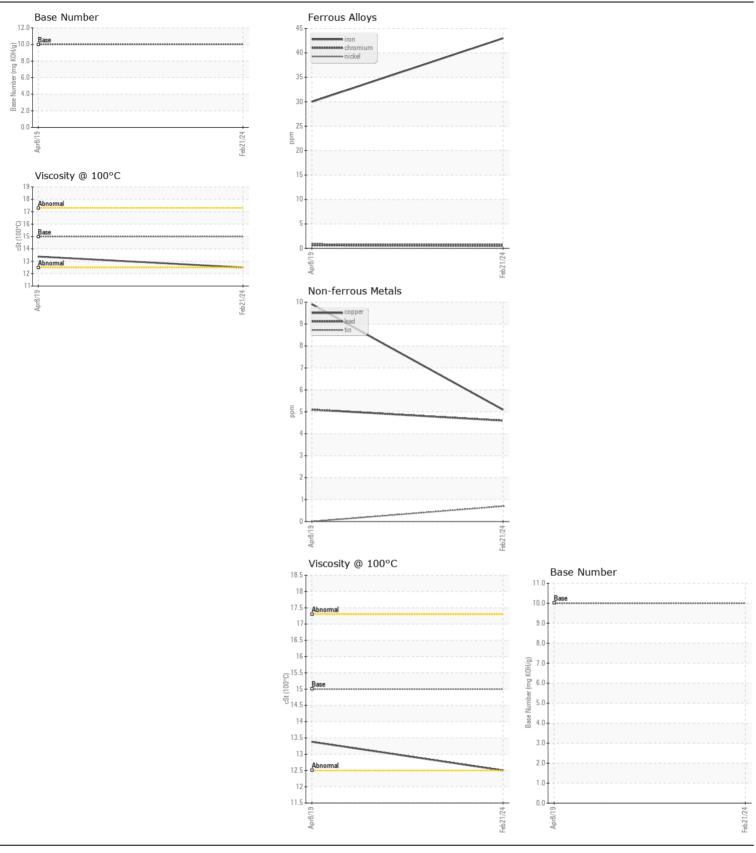
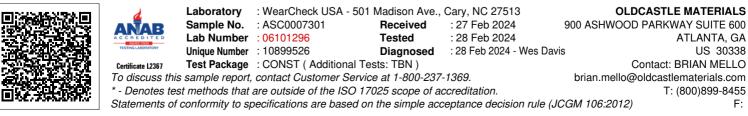


Area Ascendum Machinery/Greensboro, NC Wachine Id VOLVO L90C L90CV63157 Component Diesel Engine Fluid VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- GAL)

Tots UOM Method Unitary Hatory Mathina Click Infe Click Infe <t< th=""><th>VOLVO ULIRA DIESEL ENGIN</th><th></th><th></th><th>5-3 (6</th><th>IAL)</th><th></th><th></th><th></th></t<>	VOLVO ULIRA DIESEL ENGIN			5-3 (6	IAL)			
Barangle Aumère Client Info 21 Feb2 (000) VCP211921	RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Machine Age First Client Info 3180 av 3033		Sample Number		Client Info			VCP241937	
Nick Not Clinithol Sep Sep Company Sep Windows Clinithol Clinithol Changed	Resample at the next service interval to monitor.	Sample Date		Client Info		21 Feb 2024	08 Apr 2019	
Filter Age Ins Client Info Changed O 0 0 0 0 OL Oranged Client Info Changed Changed <td< th=""><th></th><th>Machine Age</th><th>hrs</th><th>Client Info</th><th></th><th>31348</th><th>30389</th><th></th></td<>		Machine Age	hrs	Client Info		31348	30389	
Oil Changed Filter Changed Sample Status Changed Changed Changed Sample Status Changed Changed Changed Changed NORMAI.		Oil Age	hrs	Client Info		959	0	
Fliter Changed Sample Status Clean inde NorMAL Changed NorMAL Changed NorMAL		Filter Age	hrs	Client Info		0	0	
Sample Status NORMA NORMA		Oil Changed		Client Info		Changed	Changed	
View Iron ppm ASIM 0518m >200 43 30 All component wear rates are normal. Promotium ppm ASIM 0518m >20 <1 <1 Nickel ppm ASIM 0518m >5 <1 <1 Silver ppm ASIM 0518m >20 0 0 All minium ppm ASIM 0518m >20 0 0 Aluminium ppm ASIM 0518m >20 5 10 Aluminium ppm ASIM 0518m >20 5 10 Vanadium ppm ASIM 0518m >20 5 10 Vanadium ppm ASIM 0518m >20 5 10 Vanadium ppm ASIM 0518m >20 5 14 Vanadium ppm ASIM 0518m >20 5 13 Vanadium <t< th=""><th></th><th>Filter Changed</th><th></th><th>Client Info</th><th></th><th>Changed</th><th>Changed</th><th></th></t<>		Filter Changed		Client Info		Changed	Changed	
All component wear rates are normal. Chromium ppm ASTU D515m 20 <1		Sample Status				NORMAL	NORMAL	
All component wear rates are normal. Chromium ppm ASTU D515m 20 <1								
All component wear rates are normal. Nickel ppm ASTM 05185m -5								
Nicket pptil Astit Distant cl cl< cl< <th></th> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td>								
Silver ppm ATM 0515m >20 0 0					>5			
Aluminum pp ASTM D585m >30 2 3 Lead ppm ASTM D585m >40 5 5 Lead ppm ASTM D585m >20 5 10 Vanadium ppm ASTM D585m >20 -11 0 Vanadium ppm ASTM D585m >20 -11 0 White Metal scalar Visual NONE NONE NONE CONTAMINATION Silicon ppm ASTM D585m >20 5 13 There is no indication of any contamination in the oil. Silicon ppm ASTM D585m >20 5 13 Water CW Wold biolison >20 5 13 Water WOL Method >0 20 Silicon Solit scalar Visual NONE NONE -					0			
Lead ppm ASTM D585m >-40 5 5 Copper ppm ASTM D585m >20 5 10 Tin ppm ASTM D585m >20 5 10 Vanadium ppm ASTM D585m >20 5 10 Vanadium ppm ASTM D585m >20 5 10 Vanadium ppm ASTM D585m >20 NONE NONE NONE Value Scalar 'Visual NONE NONE NONE Value Vol Motiod >0 Value Vol Wol Method >0.0 Gycol Wol Method >0.0 NONE NONE Stift con #sitim 'ASTM D784 >30 1.6 1.1 Stift con #sitim 'ASTM D784 >30 2.5.4 <								
Copper ppm ASTM D5[5m] -20 5 10								
Tin ppm ASTM D5185m >20 <1								
Vanadium ppm ASTM D5186m O 0 White Metal scalar "Visual NONE NONE <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>								
White Metal scalar Visual NONE NONE NONE Vellow Metal scalar Visual NONE N					>20			
Yellow Metal scalar VVisual NONE NONE					NONE	-		
Silicon ppm ASTM D5185m >20 5 4 Potassium ppm ASTM D5185m >20 5 13 Fuel WC Method >6.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG Glycol WC Method >0.2 NEG NEG Silicon ppm ASTM D5185m >20 12.6 11.2 Silicon Abs/cm 'ASTM D744 >3 1.6 1.1 Silication Abs/cm 'ASTM D745 >20 12.6 11.2 Silication Abs/cm 'ASTM D745 >30 2.5.4 2.4 Silication Abs/cm 'ASTM D745 >30 2.6.4 ' Silication Abs/cm 'ASTM D745 >30 2.6.4 ' Silication Scalar 'Visual NORL NORL <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>								
Potassium ppm ASTM D518m 2.0 5 1.3		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Potassium ppm ASTM D518m 2.0 5 1.3	CONTAMINATION	Silicon	nnm	ASTM D5185m	>20	5	4	
There is no indication of any contamination in the oil. Fuel WC Method >6.0 <1.0 <0 Water WC Method >0.2 NEG NEG < Gl Glycol WC Method >0.2 NEG NEG < Solot% % %STM D744 >20 11.2 Sulfation Abs/tm YISUAl NONE NONE NONE NONE Solit scalar Visual NONE NONE NONE NONE Appearance scalar Visual NORM NORM NORM NORM NORM The BN result indicates that there is suitable alkalinity remaining in the oil is suitable for further service. Sodium ppm ASTM D5185m 0.0 0 Manganese ppm ASTM D5185	CONTAMINATION							
Water WC Method >0.2 NEG NEG Glycol WC Method >0.2 NEG NEG Soot % % 'ASTM D7844 >3 1.6 1.1 Nitration Abs/cm 'STM D7624 >20 12.6 11.2 Sulfation Abs/m 'STM D7624 >20 12.6 11.2 Sulfation Abs/m 'STM D7624 >20 12.6 11.2 Sulfation Abs/m 'STM D7615 >30 25.4 23.4 Sulfation Abs/m 'Stiaul NONE NONE NONE Sand/Dir< scalar 'Visual NORM NORM NORM Appearance scalar 'Visual NORM NORM Emulsified Water scalar 'Visual NORM NORM FLUID CONDITION Sodium pm </th <th rowspan="10">There is no indication of any contamination in the oil.</th> <th></th> <th>ppm</th> <th></th> <th></th> <th></th> <th></th> <th></th>	There is no indication of any contamination in the oil.		ppm					
Glycol WC Method NEG NEG Soot % % ASTM D784 >3 1.6 1.1 Nitration Abs/cm 'ASTM D784 >30 12.6 11.2 Sulfation Abs/tmm 'ASTM D741 >30 25.4 23.4 Sulfation Abs/tmm 'ASTM D741 >30 25.4 23.4 Silt scalar 'Visual NONE NONE NONE Debris scalar 'Visual NONE NONE NONE Appearance scalar 'Visual NORM NORML Odor scalar 'Visual NORM NORML FLUID CONDITION Sodium ppm ASTM D5185m 0.0 0 Barium ppm ASTM D5185m 0.0 0 Magnases ppm ASTM D5185m 0.0								
Soot % % *ASTM D7844 >3 1.6 1.1 Nitration Abs(m *ASTM D7624 >20 12.6 11.2 Sulfation Abs(m *ASTM D7624 >30 25.4 23.4 Sulfation Abs(m *ASTM D7415 >30 25.4 23.4 Silf scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NOR NOR NOR Appearance scalar *Visual NOR NOR Cdor scalar *Visual NOR NOR FLUID CONDITION Sodium pp ASTM D5185m 1 4 Boron pp ASTM D5185m 0.0 0 0 Mayaanese <td< th=""><th></th><th></th><th></th><th>20.L</th><th></th><th></th><th></th></td<>					20.L			
Nitration Abs/cm 'ASTM D7624 >20 12.6 11.2 Sulfation Abs/tm 'ASTM D7615 >30 25.4 23.4 Silt scalar 'Visual NONE NONE NONE NONE Debris scalar 'Visual NONE NONE NONE Appearance scalar 'Visual NORL NORL NORL Appearance scalar 'Visual NORL NORL Appearance scalar 'Visual NORL NORL Odor scalar 'Visual NORL NORL The BN result indicates that there is suitable alkalinity remaining in the oil is suitable for further service. Sodium ppm ASTM D5185m 0.0 0 Barium ppm ASTM D5185m 0.0 <1 -1 Magnesium ppm ASTM D5185m 0.0 <1 <th></th> <th>%</th> <th></th> <th>>3</th> <th></th> <th></th> <th></th>			%		>3			
Sulfation Abs/.trm ASTM D7415 >30 25.4 23.4 Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Debris scalar *Visual NORML NORML NORML Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Boron ppm ASTM D5185m 0.0 0 0 0 Molybdenum ppm ASTM D5185m 0.0 0 0 -								
Siltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMNORMLNORMLNORMLNORMLAppearancescalar*VisualNORMNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLCodorscalar*VisualNORMLNORMLNORMLNORMLFLUID CONDITIONSodiumppmASTM D5185m2.52859BoronppmASTM D5185m0.000BariumppmASTM D5185m0.00MaganeseppmASTM D5185m0.748300MagnesiumppmASTM D5185m0.0PhosphorusppmASTM D5185m305837836ZincppmASTM D5185m31231009955SulfurppmASTM D5185m407928592533SulfurppmASTM D5185m407928592533SulfurppmASTM D5185m407928592533Sulfur								
Debrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMNORMNORMLNORMLNORMLNORMLAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORML								
Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGFLUID CONDITIONSodiumppmASTM D5185m2.52859BoronppmASTM D5185m0.000BariumppmASTM D5185m0.000MolybdenumppmASTM D5185m0.00MagnesseppmASTM D5185m0.01<1MagnesiumppmASTM D5185m2.5717541831MagnesiumppmASTM D5185m2.5717541831MagnesiumppmASTM D5185m2.5717541831MagnesiumppmASTM D5185m12231009959SulfurppmASTM D5185m12231009959SulfurppmASTM D5185m407928592533OxidationAbs/Im'ASTM D5185m407262Base Number (BN)mg KOHgASTM D2886106.2Base Number (BN)mg KOHgASTM D2886106.2								
Appearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGFLUID CONDITIONSodiumppmASTM D5185m2.52859BoronppmASTM D5185m0.000BariumppmASTM D5185m0.000MalganeseppmASTM D5185m0.04830MagnesiumppmASTM D5185m0.01MagnesiumppmASTM D5185m0.0PhosphorusppmASTM D5185m0.0SulfurppmASTM D5185m12231009959SulfurppmASTM D5185m407928592533OxidationAbs/1mm'ASTM D7141>2524.122Base Number (BN)mg K0HgASTM D286106.2								
Odor Emulsified Waterscalar*VisualNORMLNORMLNORMLNORMLNORMLFLUID CONDITIONThe BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.SodiumppmASTM D5185m14Boron BariumppmASTM D5185m0.000Molybdenum MaganeseppmASTM D5185m0.000Maganese CalciumppmASTM D5185m0.0<1<1Magnesium SulfurppmASTM D5185m256475389Phosphorus SulfurppmASTM D5185m12231009959Sulfur OxidationASTM D5185m407928592533Base Number (BN) mg KOHgASTM D2886106.2							-	
Emulsified Waterscalar*Visual>0.2NEGNEGFLUID CONDITIONThe BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.SodiumppmASTM D5185m2.52859BariumppmASTM D5185m0.000MolybdenumppmASTM D5185m0.748300MaganeseppmASTM D5185m0.0<1<1MagnesiumppmASTM D5185m256475389CalciumppmASTM D5185m205717541831PhosphorusppmASTM D5185m9358378450SulfurppmASTM D5185m12231009959SulfurppmASTM D5185m407928592533OxidationAbs/1mm*ASTM D7141>2524.122Base Number (BN)mg KOHgASTM D2896106.2								
FLUID CONDITIONSodiumppmASTM D5185m14BoronppmASTM D5185m2.52859BariumppmASTM D5185m0.000BariumppmASTM D5185m0.000MolybdenumppmASTM D5185m0.048300MaganeseppmASTM D5185m0.0<1<1MagnesiumppmASTM D5185m2.56475389CalciumppmASTM D5185m205717541831PhosphorusppmASTM D5185m205717541831ZincppmASTM D5185m12231009959SulfurppmASTM D5185m407928592533OxidationAbs/.1mm<*ASTM D7414>2524.122Base Number (BN)mg KOHgASTM D2896106.2								
BoronppmASTM D5185m2.52859BariumppmASTM D5185m0.000MolybdenumppmASTM D5185m0.74830ManganeseppmASTM D5185m0.0<1<1MagnesiumppmASTM D5185m2.5475389CalciumppmASTM D5185m205717541831PhosphorusppmASTM D5185m935837845ZincppmASTM D5185m12231009959SulfurppmASTM D5185m407928592533OxidationAbs/1mm*ASTM D7141>2524.122Base Number (BN)mg KOHgASTM D2886106.2								
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.BariumppmASTM D5185m0.00MolybdenumppmASTM D5185m0.74830ManganeseppmASTM D5185m0.0<1<1MagnesiumppmASTM D5185m256475389CalciumppmASTM D5185m205717541831PhosphorusppmASTM D5185m935837845ZincppmASTM D5185m12231009959SulfurppmASTM D5185m407928592533OxidationAbs/.1mm*ASTM D7141>2524.122Base Number (BN)mg KOH'gASTM D2896106.2	FLUID CONDITION	Sodium	ppm	ASTM D5185m		1	4	
oil. The condition of the oil is suitable for further service. Barum ppm ASIM DS185m 0.0 0 0 Molybdenum ppm ASIM D5185m 0.7 48 30 Manganese ppm ASIM D5185m 0.0 <1 <1 Magnesium ppm ASIM D5185m 256 475 389 Calcium ppm ASIM D5185m 2057 1754 1831 Phosphorus ppm ASIM D5185m 935 837 845 Zinc ppm ASIM D5185m 1223 1009 959 Sulfur ppm ASIM D5185m 4079 2859 2533 Oxidation Abs/.1mm *ASIM D7141 >25 24.1 22 Base Number (BN) mg KOHg ASIM D2896 10 6.2	The DN second factor description is sufficient a first second state in the	Boron	ppm	ASTM D5185m	2.5	28	59	
Molybdenum ppm ASIM D5185m 0.7 48 30 Manganese ppm ASIM D5185m 0.0 <1	, , ,	Barium	ppm	ASTM D5185m	0.0	0	0	
Magnesium ppm ASTM D5185m 256 475 389 Calcium ppm ASTM D5185m 2057 1754 1831 Phosphorus ppm ASTM D5185m 935 837 845 Zinc ppm ASTM D5185m 1223 1009 959 Sulfur ppm ASTM D5185m 4079 2859 2533 Oxidation Abs/.1mm *ASTM D7414 >25 24.1 22 Base Number (BN) mg KOH/g ASTM D2896 10 6.2		Molybdenum	ppm	ASTM D5185m	0.7	48	30	
Calcium ppm ASTM D5185m 2057 1754 1831 Phosphorus ppm ASTM D5185m 935 837 8453 Zinc ppm ASTM D5185m 1223 1009 959 Sulfur ppm ASTM D5185m 4079 2859 2533 Oxidation Abs/.1mm *ASTM D7414 >25 24.1 22 Base Number (BN) mg KOH/g ASTM D2896 10 6.2		Manganese	ppm	ASTM D5185m	0.0	<1	<1	
Phosphorus ppm ASTM D5185m 935 837 845 Zinc ppm ASTM D5185m 1223 1009 959 Sulfur ppm ASTM D5185m 4079 2859 2533 Oxidation Abs/.1mm *ASTM D7414 >25 24.1 22 Base Number (BN) mg KOHg ASTM D2896 10 6.2		Magnesium	ppm	ASTM D5185m	256	475	389	
Zinc ppm ASTM D5185m 1223 1009 959 Sulfur ppm ASTM D5185m 4079 2859 2533 Oxidation Abs/.1mm *ASTM D7141 >25 24.1 22 Base Number (BN) mg KOH/g ASTM D2896 10 6.2		Calcium	ppm	ASTM D5185m	2057	1754	1831	
Sulfur ppm ASTM D5185m 4079 2859 2533 Oxidation Abs/.1mm *ASTM D7414 >25 24.1 22 Base Number (BN) mg KOH/g ASTM D2896 10 6.2		Phosphorus	ppm	ASTM D5185m	935	837	845	
Oxidation Abs/.1mm *ASTM D7414 >25 24.1 22 Base Number (BN) mg KOH/g ASTM D2896 10 6.2		Zinc	ppm	ASTM D5185m	1223	1009	959	
Base Number (BN) mg KOH/g ASTM D2896 10 6.2		Sulfur	ppm	ASTM D5185m	4079	2859	2533	
		Oxidation	Abs/.1mm	*ASTM D7414	>25	24.1	22	
Visc @ 100°C cSt ASTM D445 15.0 13.38		Base Number (BN)	mg KOH/g	ASTM D2896	10	6.2		
		Visc @ 100°C	cSt	ASTM D445	15.0	12.5	13.38	





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Submitted By: KARRINGTON RENDLEMAN