

OIL ANALYSIS REPORT

Sample Rating Trend





VOLVO A40G 342441

Component Diesel Engine

CHEVRON DELO 400 MULTIGRADE 15W40 (--- QTS)

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DIAGNOSIS	SAMPLE INFORMA		method	limit/base		history1	history2
Recommendation	Sample Number		Client Info		ML0001748	VCP429150	
Oil and filter change at the time of sampling has been noted. Resample at the next service interval	Sample Date		Client Info		19 Jun 2024	13 Oct 2023	
to monitor.	0		Client Info		5950	5519	
	U		Client Info		0	0	
Wear	Oil Changed		Client Info		Changed	Changed	
All component wear rates are normal.	Sample Status				ATTENTION	NORMAL	
Contamination Fuel content negligible. There is no indication of	CONTAMINATION		method	limit/base	current	history1	history2
any contamination in the oil.	Water			>0.2	NEG	NEG	
Fluid Condition	Glycol		WC Method		NEG	NEG	
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in	WEAR METALS		method	limit/base	current	history1	history2
the oil. Confirm oil type.	Iron	ppm	ASTM D5185m	>200	7	4	
	Chromium	ppm	ASTM D5185m	>20	0	0	
	Nickel	ppm	ASTM D5185m	>10	0	0	
	Titanium	ppm	ASTM D5185m		<1	0	
	Silver	ppm	ASTM D5185m	>2	0	0	
	Aluminum	ppm	ASTM D5185m	>30	2	2	
	Lead	ppm	ASTM D5185m	>40	1	0	
	Copper	ppm	ASTM D5185m	>20	1	<1	
	Tin	ppm	ASTM D5185m	>20	0	<1	
	Vanadium	ppm	ASTM D5185m		<1	0	
	Cadmium	ppm	ASTM D5185m		0	0	
	ADDITIVES		les ette e et	limit/base	ourropt	Internet and	In the terms of
	ADDITIVES		method	limit/base	current	history1	history2
	_	ppm		151	342	5	nistory2
	Boron			151			
	Boron Barium	ppm	ASTM D5185m	151 0.4	342	5	
	Boron p Barium p Molybdenum p	ppm ppm	ASTM D5185m ASTM D5185m	151 0.4	342 0	5 0	
	Boron p Barium p Molybdenum p Manganese p	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250	342 0 86	5 0 58	
	Boron parium par	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250	342 0 86 <1	5 0 58 <1	
	Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250 0	342 0 86 <1 498	5 0 58 <1 952	
	Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250 0 2046	342 0 86 <1 498 1550	5 0 58 <1 952 1161	
	Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p Zinc p	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043	342 0 86 <1 498 1550 1158	5 0 58 <1 952 1161 1118	
	Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p Zinc p	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043 943	342 0 86 <1 498 1550 1158 1402	5 0 58 <1 952 1161 1118 1331	
	BoronBariumBariumMolybdenumManganeseMagnesiumCalciumPhosphorusZincSulfurCONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base	342 0 86 <1 498 1550 1158 1402 4172	5 0 58 <1 952 1161 1118 1331 3433	
	Boron Barium P Barium Molybdenum P Manganese P Magnesium P Calcium P Calcium P Dhosphorus P Zinc P Sulfur P Sulfur S Sulfur P	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	151 0.4 250 0 2046 1043 943 5012 limit/base	342 0 86 <1 498 1550 1158 1402 4172 current	5 0 58 <1 952 1161 1118 1331 3433 history1	 history2
	Boron p Barium p Molybdenum p Manganese p Magnesium p Calcium p Phosphorus p Zinc p Sulfur p CONTAMINANTS Silicon p Sodium p	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 imit/base >20	342 0 86 <1 498 1550 1158 1402 4172 current 5	5 0 58 <1 952 1161 1118 1331 3433 history1 4	 history2
	BoronFBariumFBariumFMolybdenumFMagnesiumFCalciumFCalciumFZincFZincFSulfurFSulfurFSiliconFSodiumFPotassiumF	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base >20	342 0 86 <1 498 1550 1158 1402 4172 <u>current</u> 5 2	5 0 58 <1 952 1161 1118 1331 3433 history1 4 0	 history2
	BoronFBariumFBariumFMolybdenumFMagnesiumFCalciumFCalciumFZincFZincFSulfurFSulfurFSiliconFSodiumFPotassiumF	ppm	ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base >20	342 0 86 <1 498 1550 1158 1402 4172 current 5 2 2 2 1.2	5 0 58 <1 952 1161 1118 1331 3433 history1 4 0 <1	 history2
	BoronFBariumFMolybdenumFMagnesiumFCalciumFCalciumFZincFSulfurFCONTAMINANTSSiliconFSodiumFPotassiumFFuelC	ppm	ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base >20 >20 >20 >3.0	342 0 86 <1 498 1550 1158 1402 4172 current 5 2 2 2 1.2 current	5 0 58 <1 952 1161 1118 1331 3433 history1 4 0 <1 <1.0 kistory1	 history2 history2
	BoronFBariumFMolybdenumFMagnesiumFCalciumFCalciumFZincFSulfurFCONTAMINANTSSiliconFSodiumFPotassiumFFuelCINFRA-REDSoot %	ppm	ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 limit/base >20 >20 >3.0 limit/base >3	342 0 86 <1 498 1550 1158 1402 4172 current 5 2 2 2 1.2 current 0.1	5 0 58 <1 952 1161 1118 1331 3433 history1 4 0 <1 <1.0 kistory1 0.1	 history2 history2
	BoronFBariumFBariumFMolybdenumFMagnesiumFCalciumFCalciumFZincFSulfurFSulfurFSoliconFSodiumFFuelFSoot %FNitrationF	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 imit/base >20 >20 >3.0 imit/base >3 >3 >20	342 0 86 <1 498 1550 1158 1402 4172 current 5 2 2 2 1.2 current	5 0 58 <1 952 1161 1118 1331 3433 history1 4 0 <1 <1.0 kistory1	 history2 history2
	BoronFBariumFBariumFMolybdenumFMagnesiumFCalciumFCalciumFZincFZincFSulfurFSulfurFSodiumFPotassiumFFuelCINFRA-REDSoot %NitrationFSulfationF	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 imit/base >20 >20 >3.0 imit/base >3 >3 >20	342 0 86 <1 498 1550 1158 1402 4172 <u>current</u> 5 2 2 2 1.2 <u>current</u> 0.1 7.3	5 0 58 <1 952 1161 1118 1331 3433 history1 4 0 <1 <1.0 history1 0.1 6.4	 history2 history2 history2
	BoronFBariumFMolybdenumFManganeseFMagnesiumFCalciumFPhosphorusFZincFSulfurFSulfurFSoliconFSodiumFFuelFSoot %FNitrationFSulfationF	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	151 0.4 250 0 2046 1043 943 5012 imit/base >20 >3.0 imit/base >3 >20 3.0	342 0 86 <1 498 1550 1158 1402 4172 Current 5 2 2 2 1.2 Current 0.1 7.3 21.1 Current	5 0 58 <1 952 1161 1118 1331 3433 history1 4 0 <1 <1.0 history1 0.1 6.4 17.1 history1	
	BoronFBariumFMolybdenumFManganeseFMagnesiumFCalciumFPhosphorusFZincFSulfurFSulfurFSiliconFSodiumFPotassiumFFuelFSoot %FSulfationFLUID DEGRADAT	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7814	151 0.4 250 0 2046 1043 943 5012 imit/base >20 >20 >3.0 imit/base >3 >20 >30 imit/base	342 0 86 <1 498 1550 1158 1402 4172 current 5 2 2 1.2 current 0.1 7.3 21.1	5 0 58 <1 952 1161 1118 1331 3433 history1 4 0 <1 <1.0 history1 0.1 6.4 17.1	 history2 history2 history2



OIL ANALYSIS REPORT

Fuel Dilution		VISUAL		method	limit/base	e current	history1	history2
6.0 - Severe		White Metal	scalar	*Visual	NONE	NONE	NONE	
5.0-		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
글4.0		Precipitate	scalar	*Visual	NONE	NONE	NONE	
⁴² 3.0 - Abnormal	-	Silt	scalar	*Visual	NONE	NONE	NONE	
2.0-		Debris	scalar	*Visual	NONE	NONE	NONE	
1.0-		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
0.0	24	Appearance	scalar	*Visual	NORML	NORML	NORML	
Jun 19/2	Jun 19/24	Odor	scalar	*Visual	NORML	NORML	NORML	
	~	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
FT-IR (Direct Trend)					20.2			
35 30 Oxidation		Free Water	scalar	*Visual		NEG	NEG	
25 - 4 Sulfation		FLUID PROPER		method	limit/base		history1	history2
8 20 - 9 9	************	Visc @ 100°C	cSt	ASTM D445	14.4	12.2	13.2	
15		GRAPHS						
10-		Ferrous Alloys						
5	5 ⁴	iron						
0ct13/23	Jun19/24	8 - chromium						
Ō	7							
FT-IR (Direct Trend)		u dd						
35 Oxidation		4						
30 - Nitration								
25		2						
8 20 - 9 9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	0						
15-		0ct13/23			Jun19/24			
10-		0ct1			Juni			
5		Non-ferrous Meta	als					
0ct13/23	Y C/ 0 1	10 copper 1						
Oct		8 and						
Base Number		ensesses tin						
		6-						
_12.0		u dd						
(b)H00.								
E 8.0-		2						
-0.0 per								
80 4.U -		23 23			19/24			
2.0		0ct13/23			Jun19,			
0.0	K C G	Viscosity @ 100°	С		-7 -	Paco Number		
0ct1		18			1	Base Number		
		17 Abnormal				2.0		
		16 -				10.0		
		© 15			g KOF			
		(2) 15 Base 53 14			er (m	8.0		
		· · · · · · · · · · · · · · · · · · ·			Number (mg KOH/g)	6.0 -		
		13 Abnormal				4.0		
		12			the second s	2.0		
		11				0.0		
		0ct13/23			Jun 19/24	0ct13/23		Jun 19/24
		0			Jun	00		Jun
	Lab Number Unique Number ificate L2367 Test Package	: 11088512 : CONST (Additional)	Receit Teste Diagr Tests: Fue	ived : 20 d : 24 nosed : 24 elDilution, Pe) Jun 2024 4 Jun 2024 Jun 2024 - D ercentFuel,	on Baldridge TBN)	BRII Contact:	EX HIGHWAY DGEVILLE, DE US 19933 MATT CLARK
	discuss this sample report, Denotes test methods that						MCLARK@mccl	ung-logan.com (302)337-3400

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