

# **OIL ANALYSIS REPORT**

Sample Rating Trend





[W02008242] Watchine Id VOLVO A30G 753133 Component Bogie/Center Axle

Fluid {not provided} (11 GAL)

## DIAGNOSIS

#### Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. (Customer Sample Comment: W02008242)

Area

### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

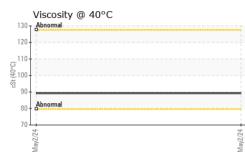
### Fluid Condition

The condition of the oil is acceptable for the time in service.

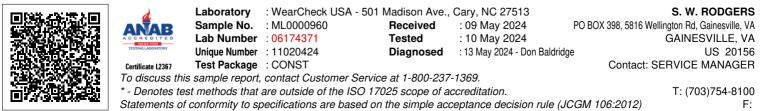
Oil Age     hr       Oil Changed     sample Status       CONTAMINATION       Water       WEAR METALS       Iron     pr       Oil Chromium     pr       Nickel     pr       Titanium     pr       Silver     pr       Aluminum     pr       Lead     pr       Copper     pr       Tin     pr       Cadmium     pr       Boron     pr       Molybdenum     pr       Magnesium     pr       Calcium     pr       Zinc     pr       Sulfur     pr	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base          limit/base         >0.2         limit/base         >900         >20         >10         >30         >50         >10         >30         >50         >10         Simit/base         >30         >50         >10         Simit/base         Simit/base         Simit/base	Current ML0000960 02 May 2024 821 821 Changed NORMAL 0 Current 308 7 4 308 7 4 308 7 4 308 7 4 3 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1	history1 <th>history2</th>	history2
Sample DateIMachine AgehrOil AgehrOil Changedsample StatusSample StatusICONTAMINATIONWEAR METALSWearIronprChromiumprNickelprTitaniumprSilverprAluminumprCopperprTinprCadmiumprBoronprBariumprMalybdenumprMagnesiumprCalciumprSulfurprSulfurpr	opm opm opm opm opm opm opm opm opm	Client Info Client Info Client Info Client Info Method WC Method MC Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>0.2 limit/base >900 >20 >10 >30 >50 >150 >20	02 May 2024 821 821 Changed NORMAL 0 <b>Current</b> 308 7 4 308 7 4 308 7 4 31 31 31 1 1 1 31 31 31 31 31 31 31 31	   history1  history1        -	   history2  history2        -
Machine AgehrOil AgehrOil ChangedhrSample StatusICONTAMINATIONIWaterIWaterIWearIOil ChromiumprNickelprTitaniumprSilverprAluminumprLeadprCopperprTinprCadmiumprBoronprBariumprMolybdenumprMagnesieprCalciumprPhosphorusprSulfurprSulfurpr	opm opm opm opm opm opm opm opm opm	Client Info Client Info Client Info Method WC Method MC Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>0.2 limit/base >900 >20 >10 >30 >50 >150 >20	821 821 Changed NORMAL Current NEG Current 308 7 4 <1 0 2 <1 31 1 1 1 <1 <1 <1	  history1  history1  	  history2 history2  history2        -
Oil AgehrOil Changedample StatusCONTAMINATIONWaterWEAR METALSIronprChromiumprNickelprTitaniumprSilverprAluminumprLeadprCopperprTinprCadmiumprBoronprBariumprMaganeseprMagnesiumprCalciumprZincprSulfurpr	opm opm opm opm opm opm opm opm opm	Client Info Client Info Client Info Method WC Method WC Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>0.2 limit/base >900 >20 >10 >30 >50 >150 >20	821 Changed NORMAL Current NEG Current 308 7 4 <1 0 2 <1 31 1 1 1 <1 <1 <1 <1	  history1  history1  	 history2  history2
Oil ChangedSample StatusCONTAMINATIONWaterWaterWEAR METALSIronppChromiumppNickelppTitaniumppSilverppAluminumppLeadppCopperppTinppCadmiumppBoronppBariumppMaganeseppCalciumppZincppSulfurpp	opm opm opm opm opm opm opm opm	Client Info method WC Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>0.2 limit/base >900 >20 >10 >30 >50 >150 >20	Changed NORMAL current NEG 308 7 4 <1 0 2 <1 31 1 1 <1 <1 <1 <1	 history1  history1        -	 history2  history2
Oil ChangedSample StatusCONTAMINATIONWaterWEAR METALSIronppChromiumppNickelppTitaniumppSilverppAluminumppLeadppCopperppTinppCadmiumppBoronppBariumppMalganeseppMagnesiumppCalciumppZincppSulfurpp	opm opm opm opm opm opm opm opm	method WC Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>0.2 limit/base >900 >20 >10 >30 >50 >150 >20	NORMAL current NEG 308 7 4 <1 0 2 <1 31 1 <1 <1 <1 <1	history1 history1	history2 h
Sample Status CONTAMINATION Water WEAR METALS Iron pp Chromium pp Nickel pp Titanium pp Silver pp Aluminum pp Lead pp Copper pp Tin pp Vanadium pp Cadmium pp Barium pp Molybdenum pp Manganese pp Magnesium pp Calcium pp Zinc pp Sulfur pp	opm opm opm opm opm opm opm opm	WC Method method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>0.2 limit/base >900 >20 >10 >30 >50 >150 >20	Current NEG 308 7 4 <1 0 2 <1 31 1 1 <1 <1 <1	history1 history1	history2  history2        -
Water         WEAR METALS         Iron       pp         Chromium       pp         Nickel       pp         Titanium       pp         Silver       pp         Aluminum       pp         Lead       pp         Copper       pp         Tin       pp         Vanadium       pp         Cadmium       pp         Boron       pp         Barium       pp         Malganese       pp         Magnesium       pp         Calcium       pp         Zinc       pp         Sulfur       pp	opm opm opm opm opm opm opm opm	WC Method method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>0.2 limit/base >900 >20 >10 >30 >50 >150 >20	NEG Current 308 7 4 <1 0 2 <1 31 1 <1 <1 <1 <1 <1	 history1        -	 history2        -
WEAR METALS         Iron       pp         Chromium       pp         Nickel       pp         Titanium       pp         Silver       pp         Aluminum       pp         Lead       pp         Copper       pp         Tin       pp         Vanadium       pp         Cadmium       pp         Boron       pp         Malybdenum       pp         Maganese       pp         Magnesium       pp         Calcium       pp         Zinc       pp         Sulfur       pp	opm opm opm opm opm opm opm opm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base >900 >20 >10 >30 >50 >150 >20	Current 308 7 4 <1 0 2 <1 31 1 <1 <1 <1 <1	history1	
Iron pr Chromium pr Nickel pr Titanium pr Silver pr Aluminum pr Lead pr Copper pr Tin pr Vanadium pr Cadmium pr ADDITIVES Boron pr Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr	opm opm opm opm opm opm opm opm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>900 >20 >10 >30 >50 >150 >20	308 7 4 <1 0 2 <1 31 1 1 <1 <1		
Chromium pr Nickel pr Titanium pr Silver pr Aluminum pr Lead pr Copper pr Tin pr Vanadium pr Cadmium pr ADDITIVES Boron pr Barium pr Malybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr	opm opm opm opm opm opm opm opm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >10 >30 >50 >150 >20	7 4 <1 0 2 <1 31 1 <1 <1 <1		
Nickel pr Titanium pr Silver pr Aluminum pr Lead pr Copper pr Tin pr Vanadium pr Cadmium pr ADDITIVES Boron pr Barium pr Malybdenum pr Magnesium pr Calcium pr Phosphorus pr Zinc pr	opm opm opm opm opm opm opm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>10 >30 >50 >150 >20	4 <1 0 2 <1 31 1 <1 <1 <1		
Titanium pr Silver pr Aluminum pr Lead pr Copper pr Tin pr Vanadium pr Cadmium pr ADDITIVES Boron pr Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr	opm opm opm opm opm opm opm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>30 >50 >150 >20	<1 0 2 <1 31 1 <1 <1 <1		   
Titanium pr Silver pr Aluminum pr Lead pr Copper pr Tin pr Vanadium pr ADDITIVES Boron pr Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr	opm opm opm opm opm opm opm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>50 >150 >20	0 2 <1 31 1 <1 <1	    	
Silver pr Aluminum pr Lead pr Copper pr Tin pr Vanadium pr Cadmium pr ADDITIVES Boron pr Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Calcium pr Calcium pr Sulfur pr	opm opm opm opm opm opm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>50 >150 >20	2 <1 31 1 <1 <1	   	  
Aluminum pr Lead pr Copper pr Tin pr Vanadium pr Cadmium pr ADDITIVES Boron pr Barium pr Molybdenum pr Maganesie pr Maganesium pr Calcium pr Phosphorus pr Zinc pr	opm opm opm opm opm opm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>50 >150 >20	2 <1 31 1 <1 <1		  
Lead pr Copper pr Tin pr Vanadium pr Cadmium pr ADDITIVES Boron pr Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr	opm opm opm opm opm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>50 >150 >20	<1 31 1 <1 <1		  
Copper pr Tin pr Vanadium pr Cadmium pr ADDITIVES Boron pr Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr	opm opm opm opm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>150 >20	31 1 <1 <1		
Tin pr Vanadium pr Cadmium pr ADDITIVES Boron pr Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr Sulfur pr	opm opm opm	ASTM D5185m ASTM D5185m ASTM D5185m	>20	1 <1 <1		
Vanadium pr Cadmium pr ADDITIVES Boron pr Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr Sulfur pr	opm opm	ASTM D5185m ASTM D5185m		<1 <1		
Cadmium pr ADDITIVES Boron pr Barium pr Molybdenum pr Magnesium pr Calcium pr Phosphorus pr Zinc pr Sulfur pr	opm	ASTM D5185m	limit/base	<1		
ADDITIVES Boron pr Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr Sulfur pr			limit/base			
Boron pr Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr Sulfur pr	nm	method	limit/base		history1	history2
Barium pr Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr Sulfur pr	nm					
Molybdenum pr Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr Sulfur pr	pm	ASTM D5185m		434		
Manganese pr Magnesium pr Calcium pr Phosphorus pr Zinc pr Sulfur pr	pm	ASTM D5185m		4		
Magnesium pr Calcium pr Phosphorus pr Zinc pr Sulfur pr	pm	ASTM D5185m		15		
Calcium pr Phosphorus pr Zinc pr Sulfur pr	pm	ASTM D5185m		10		
Phosphorus pr Zinc pr Sulfur pr	pm	ASTM D5185m		4		
Zinc pr Sulfur pr	pm	ASTM D5185m		1179		
Sulfur pr	pm	ASTM D5185m		2065		
	pm	ASTM D5185m		537		
	pm	ASTM D5185m		28783		
CONTAMINANTS	•	method	limit/base	current	history1	history2
		ASTM D5185m		8		
	pm		>00	-		
	pm	ASTM D5185m	. 00	2		
	pm	ASTM D5185m	>20	9		
VISUAL		method	limit/base	current	history1	history2
White Metal so	calar	*Visual	NONE	NONE		
Yellow Metal so	calar	*Visual	NONE	NONE		
Precipitate so	calar	*Visual	NONE	NONE		
Silt so	calar	*Visual	NONE	MODER		
Debris so	calar	*Visual	NONE	NONE		
Sand/Dirt so	calar	*Visual	NONE	NONE		
Appearance so		*Visual	NORML	NORML		
Odor so	calar		NORML	NORML		
	calar calar	*Visual				
Free Water so		*Visual *Visual	>0.2	NEG		



# **OIL ANALYSIS REPORT**



Non-ferrous Metals	ASTM D445 method	limit/base	89.2 current no image no image	no image	history2
Color Bottom GRAPHS Ferrous Alloys Non-ferrous Metals Viscosity @ 40°C Abnormal	method	limit/base	no image	no image	
Bottom  GRAPHS Ferrous Alloys  Formula  Formula					no image
GRAPHS Ferrous Alloys  Ferrous Alloys  Non-ferrous Metals  Viscosity @ 40°C  Abnomal			no image	no imade	
Ferrous Alloys					no image
Non-ferrous Metals					
Non-ferrous Metals					
Non-ferrous Metals					
Non-ferrous Metals					
Non-ferrous Metals					
Non-ferrous Metals					
Non-ferrous Metals					
Non-ferrous Metals					
Non-ferrous Metals					
Non-ferrous Metals		May2/24			
Viscosity @ 40°C		May			
Viscosity @ 40°C					
Viscosity @ 40°C					
Viscosity @ 40°C					
Viscosity @ 40°C					
Viscosity @ 40°C					
Viscosity @ 40°C					
Viscosity @ 40°C					
Viscosity @ 40°C	*****				
Viscosity @ 40°C		May2/24			
Abnormal		W			
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Abnormal					
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Submitted By: DARRELL ANDES Page 2 of 2