# WEAR ABNORMAL CONTAMINATION ABNORMAL FLUID CONDITION NORMAL



#### [W02008527] Machine Id VOLVO EC350 314481 Component Front Front Right Final Drive

VOLVO PREMIUM GEAR OIL 85W-140 GL-5 (2 GAL)

### RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. ( Customer Sample Comment: W02008527 )



Gear wear is indicated.

### CONTAMINATION

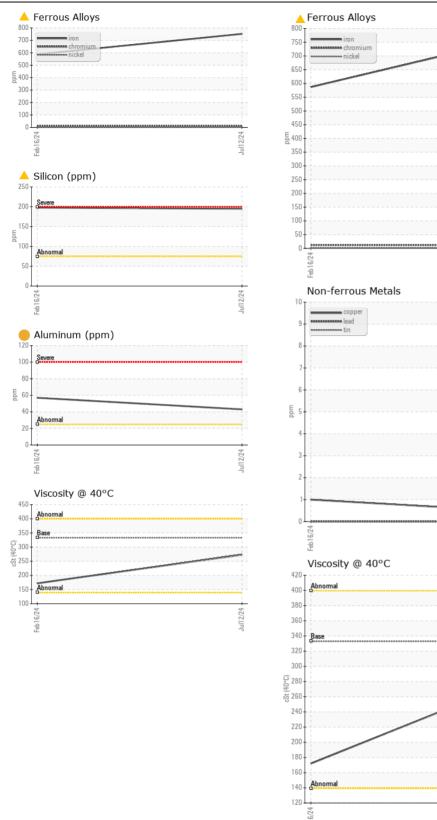
Elemental levels of silicon (Si) and aluminum (AI) indicate aluminasilicate (coarse dirt) ingress.

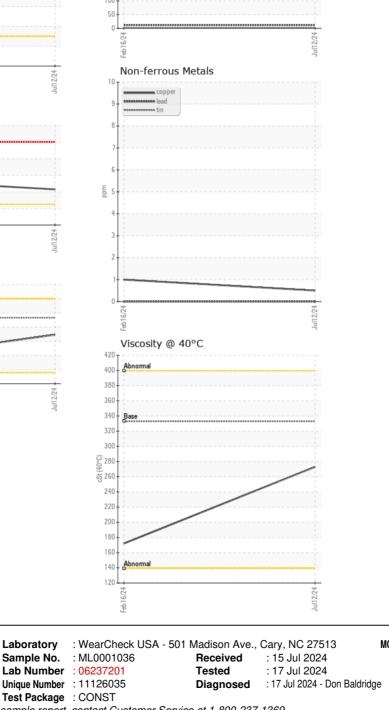
## FLUID CONDITION

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

Sample Number Sample NumberClient InfoMICO01036WC0087338	Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample DateClient Info12 Jul 202416 Feb 2024Machine AgehrsClient Info20641536Oil AgehrsClient Info528500Filter AgehrsClient InfoCChangedChangedOil ChangedClient InfoCChangedNAFilter ChangedClient InfoCChangedNASample StatusClient InfoCChangedNAIronppmASTM D5185>500A 752A 587NickelppmASTM D5185>10A 12NickelppmASTM D5185>10A 12SilverppmASTM D5185>100AluminumppmASTM D5185>5000AuninumppmASTM D5185>50A 11CopperppmASTM D5185>50A 141TinppmASTM D5185>50A 141VanadiumppmASTM D5185>50A 141VanadiumppmASTM D5185>50A 18VanadiumppmASTM D5185>50A 198VanadiumppmASTM D5185>50A 198VanadiumppmASTM D5185>50A 198-						,	,
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Chromium         ppm         ASTM D5185m         >10         ▲ 12            Nickel         ppm         ASTM D5185m         >10         1         <12            Titanium         ppm         ASTM D5185m         >10         1         <1            Silver         ppm         ASTM D5185m         >25         • 43         • 57            Aluminum         ppm         ASTM D5185m         >25         • 43         • 57            Lead         ppm         ASTM D5185m         >50         <11         1            Vanadium         ppm         ASTM D5185m         >50         <11         1            Vanadium         ppm         ASTM D5185m         >50         <11         1            Vanadium         ppm         ASTM D5185m         >10         0         0            Vanadium         ppm         ASTM D5185m         >10         NONE         NONE            Vanadium         ppm         ASTM D5185m         >20         9         111            Vellow Metal         scalar         'Visual         NO	-						
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Silver         ppm         ASTM D5185m         >0         0            Aluminum         ppm         ASTM D5185m         >25         43         577            Lead         ppm         ASTM D5185m         >25         0         0            Copper         ppm         ASTM D5185m         >50         <1         1            Tin         ppm         ASTM D5185m         >10         0         0            Vanadium         ppm         ASTM D5185m         >10         0         0            White Metal         scalar         *Visual         NONE         MODER         NONE            Yellow Metal         scalar         *Visual         NONE         MODER         NONE            Silicon         ppm         ASTM D5185m         >20         9         11            Water         WC Method         >0.2         NEG         NEG            Silit         scalar         *Visual         NONE         NONE         NONE            Sand/Dirt         scalar         *Visual         NORM         NORM	Nickel	ppm	ASTM D5185m	>10	1	<1	
Aluminum         ppm         ASTM D5185m         >25         43         57	Titanium	ppm	ASTM D5185m		5	6	
Lead         ppm         ASTM D5185m         >25         0         0            Copper         ppm         ASTM D5185m         >50         <1	Silver	ppm	ASTM D5185m		0	0	
Copper         ppm         ASTM D5185m         >50         <1	Aluminum	ppm	ASTM D5185m	>25	<b>4</b> 3	57	
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Sodium         ppm         ASTM D5185m         2         1            Boron         ppm         ASTM D5185m         111         109         0            Barium         ppm         ASTM D5185m         0.0         0         133            Barium         ppm         ASTM D5185m         0.0         0         133            Molybdenum         ppm         ASTM D5185m         0.9         <1         1            Manganese         ppm         ASTM D5185m         0.0         7         8            Magnesium         ppm         ASTM D5185m         93         12         5            Calcium         ppm         ASTM D5185m         93         25         17            Phosphorus         ppm         ASTM D5185m         920         1042         336            Zinc         ppm         ASTM D5185m         104         16         0            Sulfur         ppm         ASTM D5185m         2017         35852         16141	Potassium Water Silt Debris Sand/Dirt	ppm scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual	>20 >0.2 NONE NONE NONE	9 NEG NONE NONE NONE	11 NEG MODER NONE NONE	  
Boron         ppm         ASTM D5185m         111         109         0            Barium         ppm         ASTM D5185m         0.0         0         13            Molybdenum         ppm         ASTM D5185m         0.9         <1         1            Manganese         ppm         ASTM D5185m         0.9         <1         1            Magnesium         ppm         ASTM D5185m         0.0         7         8            Calcium         ppm         ASTM D5185m         39         12         5            Phosphorus         ppm         ASTM D5185m         93         25         177            Zinc         ppm         ASTM D5185m         920         1042         336            Sulfur         ppm         ASTM D5185m         104         16         0	Potassium Water Silt Debris Sand/Dirt Appearance	ppm scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual	>20 >0.2 NONE NONE NONE NORML	9 NEG NONE NONE NONE NORML	11 NEG MODER NONE NONE NORML	   
Boron         ppm         ASTM D5185m         111         109         0            Barium         ppm         ASTM D5185m         0.0         0         13            Molybdenum         ppm         ASTM D5185m         0.9         <1         1            Manganese         ppm         ASTM D5185m         0.9         <1         1            Magnesium         ppm         ASTM D5185m         0.0         7         8            Calcium         ppm         ASTM D5185m         39         12         5            Phosphorus         ppm         ASTM D5185m         93         25         177            Zinc         ppm         ASTM D5185m         920         1042         336            Sulfur         ppm         ASTM D5185m         104         16         0	Potassium Water Silt Debris Sand/Dirt Appearance Odor	ppm scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual	>20 >0.2 NONE NONE NORML NORML	9 NEG NONE NONE NORE NORML	11 NEG MODER NONE NONE NORML NORML	   
Molybdenum         ppm         ASTM D5185m         0.9         <1	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>20 >0.2 NONE NONE NORML NORML	9 NEG NONE NONE NORE NORML NEG	11 NEG MODER NONE NORE NORML NORML NEG	   
Molybdenum         ppm         ASTM D5185m         0.9         <1	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >0.2 NONE NONE NORML NORML >0.2	9 NEG NONE NONE NORML NORML NEG 2	11 NEG MODER NONE NORML NORML NEG 1	   
Manganese         ppm         ASTM D5185m         0.0         7         8            Magnesium         ppm         ASTM D5185m         39         12         5            Calcium         ppm         ASTM D5185m         93         25         17            Phosphorus         ppm         ASTM D5185m         920         1042         336            Zinc         ppm         ASTM D5185m         104         16         0            Sulfur         ppm         ASTM D5185m         20179 <b>35852</b> 16141	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm scalar scalar scalar scalar scalar scalar ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;0.2</li> <li>1111</li> </ul>	9 NEG NONE NONE NORML NORML NEG 2 109	11 NEG MODER NONE NORML NORML NEG 1 0	
Magnesium         ppm         ASTM D5185m         39         12         5            Calcium         ppm         ASTM D5185m         93         25         177            Phosphorus         ppm         ASTM D5185m         920         1042         336            Zinc         ppm         ASTM D5185m         104         16         0            Sulfur         ppm         ASTM D5185m         20179         35852         16141	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;0.2</li> <li>1111</li> <li>0.0</li> </ul>	9 NEG NONE NONE NORML NORML NEG 2 109 0	11 NEG MODER NONE NORML NORML NEG 1 0 13	
Calcium         ppm         ASTM D5185m         93         25         17            Phosphorus         ppm         ASTM D5185m         920         1042         336            Zinc         ppm         ASTM D5185m         104         16         0            Sulfur         ppm         ASTM D5185m         20179 <b>35852</b> 16141	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORML</li> <li>&gt;0.2</li> <li>1111</li> <li>0.0</li> <li>0.9</li> </ul>	9 NEG NONE NONE NORML NORML NEG 2 109 0 <1	11 NEG MODER NONE NORML NORML NEG 1 0 13 1	
Phosphorus         ppm         ASTM D5185m         920         1042         336            Zinc         ppm         ASTM D5185m         104         16         0            Sulfur         ppm         ASTM D5185m         20179         35852         16141	Potassium Water Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORML</li> <li>&gt;0.2</li> <li>1111</li> <li>0.0</li> <li>0.9</li> <li>0.0</li> </ul>	9 NEG NONE NONE NORML NORML NEG 2 109 0 <1 7	11 NEG MODER NONE NORML NORML NEG 1 0 13 1 8	
Zinc         ppm         ASTM D5185m         104         16         0            Sulfur         ppm         ASTM D5185m         20179         35852         16141	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Barium Molybdenum Manganese Magnesium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;0.2</li> <li>1111</li> <li>0.0</li> <li>0.9</li> <li>0.0</li> <li>39</li> </ul>	9 NEG NONE NONE NORML NORML NEG 2 109 0 <1 7 12	11 NEG MODER NONE NORML NORML NEG 1 0 13 1 8 5	
Sulfur         ppm         ASTM D5185m         20179         35852         16141	Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Barium Molybdenum Manganese Magnesium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;0.2</li> <li>1111</li> <li>0.0</li> <li>0.9</li> <li>0.0</li> <li>39</li> <li>93</li> </ul>	9 NEG NONE NONE NORML NORML NEG 2 109 0 <1 7 12 25	11 NEG MODER NONE NORML NORML NEG 1 0 13 1 8 5 5 17	
	Potassium Water Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORME</li> <li>NORML</li> <li>&gt;0.2</li> <li>1111</li> <li>0.0</li> <li>0.9</li> <li>0.0</li> <li>39</li> <li>93</li> <li>920</li> </ul>	9 NEG NONE NONE NORML NORML NEG 2 109 0 <10 7 12 25 1042	11 NEG MODER NONE NORML NORML NEG 1 0 13 1 8 5 17 336	
	Potassium Water Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Boron Barium Malybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	<ul> <li>&gt;20</li> <li>&gt;0.2</li> <li>&gt;0.2</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>&gt;0.2</li> <li>111</li> <li>0.0</li> <li>0.9</li> <li>0.0</li> <li>39</li> <li>93</li> <li>920</li> <li>104</li> </ul>	9 NEG NONE NONE NORML NORML NEG 2 109 0 <1 7 12 25 1042 16	11 NEG MODER NONE NORML NORML NEG 1 0 13 1 8 5 17 336 0	

Submitted By: DARRELL ANDES





MCCLUNG-LOGAN EQUIPMENT CO - MANASSAS 8450 QUARRY ROAD MANASSAS, VA US 20110 Contact: DARRELL ANDES dandes@mcclung-logan.com T: F: (703)393-7844



Laboratory

Sample No.

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