



## Area **Ascendum Machinery** VOLVO EC220E EX-7 (S/N 310467) Component Swing Drive

VOLVO PREMIUM GEAR OIL 85W-140 GL-5 (--- 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. We recommend an early resample to monitor this condition.

## WEAR

All component wear rates are normal.

## CONTAMINATION

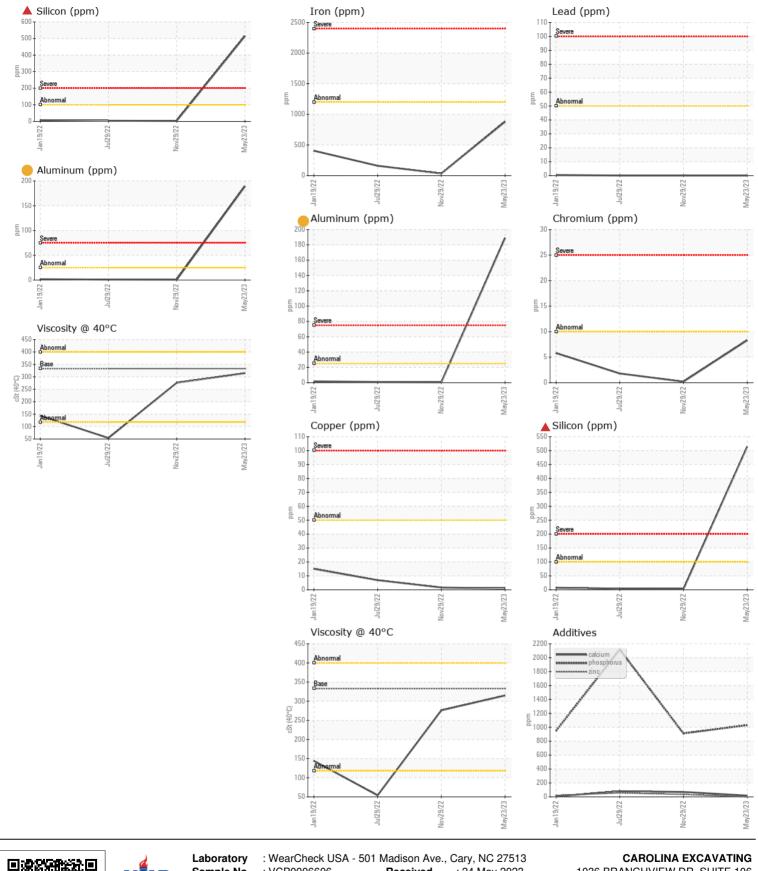
Elemental levels of silicon (Si) and aluminum (Al) indicate aluminasilicate (coarse dirt) ingress.

## **FLUID CONDITION**

The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VCP0006606	VCP0004383	VCP0002406
Sample Date		Client Info		23 May 2023	29 Nov 2022	29 Jul 2022
Machine Age	hrs	Client Info		4959	4503	3999
Oil Age	hrs	Client Info		456	504	3999
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	None	N/A
Sample Status				SEVERE	NORMAL	ATTENTION
Iron	ppm	ASTM D5185m	>1200	879	33	160
Chromium	ppm	ASTM D5185m	>10	8	<1	2
Nickel	ppm	ASTM D5185m	>10	<1	0	<1
Titanium	ppm	ASTM D5185m		10	<1	<1
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>25	<mark> </mark> 189	<1	<1
Lead	ppm	ASTM D5185m	>50	0	0	0
Copper	ppm	ASTM D5185m	>50	1	2	7
Tin	ppm	ASTM D5185m	>10	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	MODER	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal Silicon	scalar ppm	*Visual ASTM D5185m	NONE >100	NONE 514	NONE 3	NONE 4
Silicon	ppm	ASTM D5185m	>100	<b>▲</b> 514	3	4
Silicon Potassium	ppm	ASTM D5185m ASTM D5185m	>100 >20	▲ 514 17	3 0	4
Silicon Potassium Water	ppm ppm	ASTM D5185m ASTM D5185m WC Method	>100 >20 >0.25	▲ 514 17 NEG	3 0 NEG	4 0 NEG
Silicon Potassium Water Silt	ppm ppm scalar	ASTM D5185m ASTM D5185m WC Method *Visual	>100 >20 >0.25 NONE	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> </ul>	3 0 NEG NONE	4 0 NEG NONE
Silicon Potassium Water Silt Debris	ppm ppm scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>100 >20 >0.25 NONE NONE	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> </ul>	3 0 NEG NONE NONE	4 0 NEG NONE NONE
Silicon Potassium Water Silt Debris Sand/Dirt	ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual	>100 >20 >0.25 NONE NONE NONE	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> </ul>	3 0 NEG NONE NONE NONE	4 0 NEG NONE NONE NONE
Silicon Potassium Water Silt Debris Sand/Dirt Appearance	ppm ppm scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual	>100 >20 >0.25 NONE NONE NONE NORML	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> </ul>	3 0 NEG NONE NONE NONE NORML	4 0 NEG NONE NONE NONE NORML
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor	ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual	>100 >20 >0.25 NONE NONE NONE NORML NORML	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORE</li> <li>NORML</li> <li>NORML</li> </ul>	3 0 NEG NONE NONE NONE NORML NORML	4 0 NEG NONE NONE NONE NORML NORML
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>100 >20 >0.25 NONE NONE NONE NORML NORML	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORE</li> <li>NORML</li> <li>NEG</li> </ul>	3 0 NEG NONE NONE NONE NORML NORML NEG	4 0 NEG NONE NONE NONE NORML NORML
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>100 >20 >0.25 NONE NONE NORML NORML >0.25	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>3</li> </ul>	3 0 NEG NONE NONE NORML NORML NEG 1	4 0 NEG NONE NONE NORML NORML NEG 0
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm ppm scalar scalar scalar scalar scalar scalar gpm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>100 >20 >0.25 NONE NORME NORML >0.25	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NORE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>3</li> <li>178</li> </ul>	3 0 NEG NONE NONE NORML NORML NEG 1 178	4 0 NEG NONE NONE NORML NORML NEG 0 255
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NONE NORML NORML >0.25	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>3</li> <li>178</li> <li>0</li> </ul>	3 0 NEG NONE NONE NORML NORML NEG 1 178 0	4 0 NEG NONE NONE NORML NORML NEG 0 255 0
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NORML NORML >0.25 1111 0.0	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>3</li> <li>178</li> <li>0</li> <li>1</li> </ul>	3 0 NEG NONE NONE NORML NORML NEG 1 178 0 1	4 0 NEG NONE NONE NORML NORML NEG 0 255 0 1
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm ppm scalar scalar scalar scalar scalar gpm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NORME NORML >0.25 1111 0.0 0.9 0.0	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NORE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>3</li> <li>178</li> <li>0</li> <li>1</li> <li>6</li> </ul>	3 0 NEG NONE NONE NORML NORML NEG 1 178 0 1 178	4 0 NEG NONE NONE NORML NORML NEG 0 255 0 1 225
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NONE NORML NORML >0.25 1111 0.0 0.9 0.0 39	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>3</li> <li>178</li> <li>0</li> <li>1</li> <li>6</li> <li>9</li> </ul>	3 0 NEG NONE NONE NORML NORML NEG 1 178 0 1 178 0 1 4 16	4 0 NEG NONE NONE NORML NORML NEG 0 255 0 1 255 0 1 2 25 0
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NORML NORML >0.25 1111 0.0 0.9 0.0 39 93	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>3</li> <li>178</li> <li>0</li> <li>1</li> <li>6</li> <li>9</li> <li>18</li> </ul>	3 0 NEG NONE NONE NORML NORML NEG 1 178 0 1 178 0 1 178 0 1 178	4 0 NEG NONE NONE NORML NORML NEG 0 255 0 1 255 0 1 255 0 0 1 255 0 0 8 1
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NORME NORML >0.25 111 0.0 0.9 0.0 39 93 920	<ul> <li>514</li> <li>17</li> <li>NEG</li> <li>NONE</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>NEG</li> <li>3</li> <li>178</li> <li>0</li> <li>1</li> <li>6</li> <li>9</li> <li>18</li> <li>1030</li> </ul>	3 0 NEG NONE NONE NORML NORML NEG 1 178 0 1 178 0 1 178 0 1 178 0 1 178 0 1 178 0 1 178 0 1 178 0 1 178 0 1 178 0 1 178 0	4 0 NEG NONE NONE NORML NORML NEG 0 255 0 255 0 1 255 0 1 2 255 0 0 81 2

Submitted By: CHARLIE CANIPE



: VCP0006606 1036 BRANCHVIEW DR, SUITE 106 Sample No. Received : 24 May 2023 Lab Number : 05856394 CONCORD, NC Tested : 25 May 2023 : 26 May 2023 - Don Baldridge US 28025 Unique Number : 10485749 Diagnosed Test Package : MOBCE Contact: KEVIN LADGERWOOD Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. kevin@carlinaexcavation.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

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

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