



Area **Ascendum Machinery** VOLVO EC220D EX-1 (S/N 210294)

Right Travel

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

Visc @ 40°C

cSt

ASTM D445 333

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.

	NIJI	

The oil viscosity is lower than normal. Confirm oil type. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		ASC0000944	VCP0004470	VCP356087
Sample Date		Client Info		13 Dec 2023	31 Oct 2022	06 Apr 2022
Machine Age	hrs	Client Info		9894	9436	9045
Oil Age	hrs	Client Info		458	391	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	N/A	Not Changd
Sample Status				SEVERE	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>1200	741	2 110	4 9108
Chromium	ppm	ASTM D5185m	>20	6	1 3	1
Nickel	ppm	ASTM D5185m	>5	<1	1	8
Titanium	ppm	ASTM D5185m		5	12	67
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>100	67	173	120
Lead	ppm	ASTM D5185m	>50	<1	<1	3
Copper	ppm	ASTM D5185m	>50	9	4	25
Tin	ppm	ASTM D5185m	>5	<1	0	2
Vanadium	ppm	ASTM D5185m		<1	<1	3
White Metal	scalar	*Visual	NONE	NONE	LIGHT	MODER
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>100	4 219	5 96	3 128
Silicon Potassium	ppm ppm	ASTM D5185m ASTM D5185m	>100 >20	▲ 219 8	▲ 596 15	▲ 3128 88
Silicon Potassium Water	ppm ppm	ASTM D5185m ASTM D5185m WC Method	>100 >20 >0.25	 219 8 NEG 	▲ 596 15 NEG	 3128 88 NEG
Silicon Potassium Water Silt	ppm ppm scalar	ASTM D5185m ASTM D5185m WC Method *Visual	>100 >20 >0.25 NONE	▲ 219 8 NEG LIGHT	▲ 596 15 NEG NONE	 3128 88 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	 219 8 NEG LIGHT NONE 	 596 15 NEG NONE NONE 	 3128 88 NEG NONE NONE
Silicon Potassium Water Silt Debris Sand/Dirt	ppm ppm scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual	>100 >20 >0.25 NONE NONE	 219 8 NEG LIGHT NONE NONE 	 596 15 NEG NONE NONE NONE 	 3128 88 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	>100 >20 >0.25 NONE NONE NORE	 219 8 NEG LIGHT NONE NORML 	 596 15 NEG NONE NONE NONE NORML 	 3128 88 NEG NONE NONE NONE HAZY
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	>100 >20 >0.25 NONE NONE NORML	 219 8 NEG LIGHT NONE NORML NORML 	 596 15 NEG NONE NONE NORE NORML NORML 	 3128 88 NEG NONE NONE NONE HAZY NORML
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm ppm scalar scalar scalar scalar scalar	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual	>100 >20 >0.25 NONE NONE NORML NORML >0.25	 219 8 NEG LIGHT NONE NORML NORML NEG 	 596 15 NEG NONE NONE NORML NEG 	 3128 88 NEG NONE NONE NONE HAZY NORML 0.2%
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 ASTM D5185m	>100 >20 >0.25 NONE NONE NORML NORML >0.25	 219 8 NEG LIGHT NONE NORML NORML NEG 9 	 596 15 NEG NONE NONE NORML NORML NEG 20 	 3128 88 NEG NONE NONE HAZY NORML 0.2% 121
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm ppm scalar scalar scalar scalar scalar scalar ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>100 >20 >0.25 NONE NORME NORML >0.25	 219 8 NEG LIGHT NONE NORML NORML NEG 9 93 	 596 15 NEG NONE NONE NORML NORML NEG 20 111 	 3128 88 NEG NONE NONE NONE HAZY NORML 0.2% 121 150
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 ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NONE NORML >0.25 111 0.0	 219 8 NEG LIGHT NONE NORML NORML NEG 9 93 0 	 596 15 NEG NONE NONE NORML NORML NEG 20 111 0 	 3128 88 NEG NONE NONE HAZY NORML 0.2% 121 150 0
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm ppm scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m ASTM D5185m VC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NONE NORML NORML >0.25	 219 8 NEG LIGHT NONE NORML NORML NEG 9 93 0 2 	 596 15 NEG NONE NONE NORML NORML NEG 20 111 0 2 	 3128 88 NEG NONE NONE HAZY NORML 0.2% 121 150 0 11
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm ppm scalar scalar scalar scalar scalar pcm ppm ppm ppm	ASTM D5185m ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NORME NORML >0.25 1111 0.0 0.9 0.9	 219 8 NEG LIGHT NONE NORML NORML NEG 9 93 0 2 5 	 596 15 NEG NONE NONE NORML NORML NORML 20 111 0 2 13 	 3128 88 NEG NONE NONE NONE NORML 0.2% 121 150 0 11 58
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium	ppm scalar 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	>100 >20 >0.25 NONE NONE NORML NORML >0.25 111 0.0 0.9 0.9 39	 219 8 NEG LIGHT NONE NORML NORML NEG 9 93 0 2 5 24 	 596 15 NEG NONE NONE NORML NORML NORML 20 111 0 2 13 28 	 3128 88 NEG NONE NONE HAZY NORML 0.2% 121 150 11 58 159
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m VC Method *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 93	 219 8 NEG LIGHT NONE NORML NORML NEG 9 93 0 2 5 24 597 	 596 15 NEG NONE NONE NORML NORML NEG 20 111 0 2 13 28 139 	 3128 88 NEG NONE NONE HAZY 0.2% 121 150 0 11 58 159 399
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m VC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NONE NORML >0.25 111 0.0 0.0 0.0 39 93 920	 219 8 NEG LIGHT NONE NORML NORML NEG 9 93 0 2 5 24 597 837 	 596 15 NEG NONE NONE NORML NORML NORML 20 111 0 2 13 28 139 990 	 3128 88 NEG NONE NONE HAZY 0.2% 121 150 0 11 58 159 399 1102
Silicon Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium Calcium Phosphorus	ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m VC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>100 >20 >0.25 NONE NONE NORML NORML >0.25 (0.0 0.9 (0.9 (0.9 (0.0 (0.9 (0.0) (0.9 (0.0) (219 8 NEG LIGHT NONE NORML NORML NEG 9 93 0 2 5 24 597 837 392 	 596 15 NEG NONE NONE NORML NORML NORML 20 111 22 13 28 139 990 44 	 3128 88 NEG NONE NONE NONE NORML 0.2% 121 150 0 11 58 159 399 1102 96

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: 18 Dec 2023 - Don Baldridge Unique Number : 10790139 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. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: CHARLIE CANIPE

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