



# [589948-20] VOLVO EC220 315909

Swing Drive

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

### RECOMMENDATION

The oil change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

| V | V | Ε | Α | R |  |
|---|---|---|---|---|--|
|   |   | - |   |   |  |

The copper level is abnormal. All other metal levels are typical for a new component breaking in.

#### CONTAMINATION

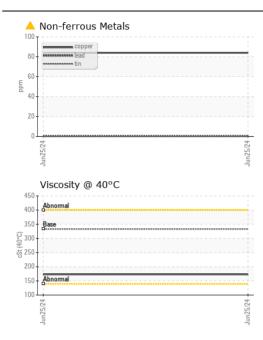
There is no indication of any contamination in the oil.

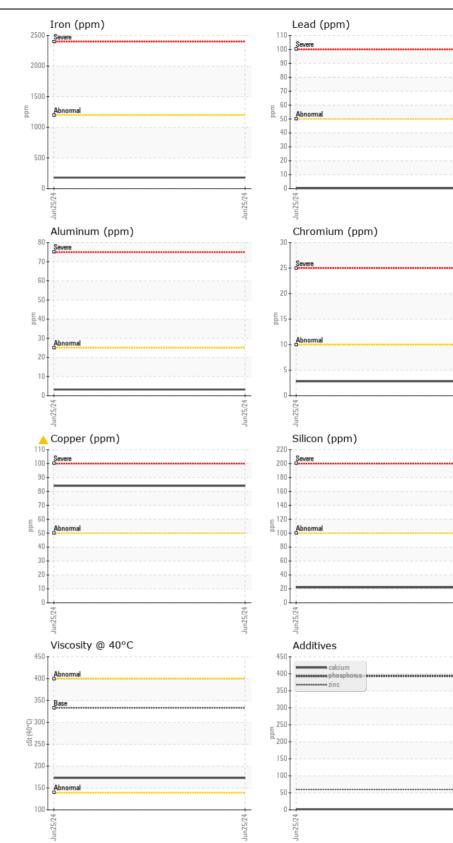
### FLUID CONDITION

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

| Test  | UOM   | Method  | Limit/Abn   | Current  | History1     | History2     |
|---|---|---|---|--|--------------|--------------|
| Sample Number   |   | Client Info   |   | VCP439098  |              |              |
| Sample Date   |   | Client Info   |   | 25 Jun 2024  |              |              |
| Machine Age   | hrs   | Client Info   |   | 1238   |              |              |
| Oil Age   | hrs   | Client Info   |   | 1238   |              |              |
| Filter Age  | hrs   | Client Info   |   | 0  |              |              |
| Oil Changed   |   | Client Info   |   | Changed  |              |              |
| Filter Changed  |   | Client Info   |   | N/A  |              |              |
| Sample Status   |   |   |   | ABNORMAL   |              |              |
|   |   |   |   |  |              |              |
| Iron  | ppm   | ASTM D5185m   | >1200   | 178  |              |              |
| Chromium  | ppm   | ASTM D5185m   | >10   | 3  |              |              |
| Nickel  | ppm   | ASTM D5185m   | >10   | <1   |              |              |
| Titanium  | ppm   | ASTM D5185m   |   | <1   |              |              |
| Silver  | ppm   | ASTM D5185m   |   | 0  |              |              |
| Aluminum  | ppm   | ASTM D5185m   | >25   | 3  |              |              |
| Lead  | ppm   | ASTM D5185m   | >50   | <1   |              |              |
| Copper  | ppm   | ASTM D5185m   | >50   | <mark>/</mark> 84  |              |              |
| Tin   | ppm   | ASTM D5185m   | >10   | 0  |              |              |
| Vanadium  | ppm   | ASTM D5185m   |   | 0  |              |              |
| White Metal   | scalar  | *Visual   | NONE  | NONE   |              |              |
| Yellow Metal  | scalar  | *Visual   | NONE  | NONE   |              |              |
|   |   |   |   |  |              |              |
| Silioon   | nnm   | ACTM DE10Em   | × 100   | 22   |              |              |
| Silicon   | ppm   | ASTM D5185m   | >100  | 22   |              |              |
| Potassium   | ppm<br>ppm  | ASTM D5185m   | >20   | 1  |              |              |
| Potassium<br>Water  | ppm   | ASTM D5185m<br>WC Method  | >20<br>>0.25  | 1<br>NEG   |              |              |
| Potassium<br>Water<br>Silt  | ppm<br>scalar   | ASTM D5185m<br>WC Method<br>*Visual   | >20<br>>0.25<br>NONE  | 1<br>NEG<br>NONE   |              |              |
| Potassium<br>Water<br>Silt<br>Debris  | ppm<br>scalar<br>scalar   | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual  | >20<br>>0.25<br>NONE<br>NONE  | 1<br>NEG<br>NONE<br>NONE   |              | <br><br>     |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt   | ppm<br>scalar<br>scalar<br>scalar   | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual   | >20<br>>0.25<br>NONE<br>NONE<br>NONE  | 1<br>NEG<br>NONE<br>NONE<br>NONE   | <br><br>     | <br><br>     |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance   | ppm<br>scalar<br>scalar<br>scalar<br>scalar   | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual  | >20<br>>0.25<br>NONE<br>NONE<br>NONE  | 1<br>NEG<br>NONE<br>NONE<br>NONE<br>NORML  | <br><br><br> | <br><br><br> |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor   | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar   | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual   | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>NORML  | 1<br>NEG<br>NONE<br>NONE<br>NONE<br>NORML<br>NORML   | <br><br>     | <br><br>     |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance   | ppm<br>scalar<br>scalar<br>scalar<br>scalar   | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual  | >20<br>>0.25<br>NONE<br>NONE<br>NONE  | 1<br>NEG<br>NONE<br>NONE<br>NONE<br>NORML  | <br><br><br> | <br><br><br> |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor   | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar   | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual   | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>NORML  | 1<br>NEG<br>NONE<br>NONE<br>NONE<br>NORML<br>NORML   | <br><br><br> | <br><br><br> |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor<br>Emulsified Water   | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar   | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual  | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>NORML  | 1<br>NEG<br>NONE<br>NONE<br>NORML<br>NORML<br>NEG  |              |              |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor<br>Emulsified Water<br>Sodium   | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar   | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>ASTM D5185m   | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>NORML<br>>0.25   | 1<br>NEG<br>NONE<br>NONE<br>NORML<br>NORML<br>NEG  |              |              |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor<br>Emulsified Water<br>Sodium<br>Boron  | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>ppm  | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>ASTM D5185m   | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>>0.25  | 1<br>NEG<br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br>2<br>6  |              |              |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor<br>Emulsified Water<br>Sodium<br>Boron<br>Barium  | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>ppm<br>ppm                                 | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>ASTM D5185m<br>ASTM D5185m  | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>NORML<br>>0.25   | 1<br>NEG<br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br>2<br>6<br>2   |              |              |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor<br>Emulsified Water<br>Sodium<br>Boron<br>Barium<br>Molybdenum  | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>ppm<br>ppm<br>ppm                                    | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | >20<br>>0.25<br>NONE<br>NORM<br>NORML<br>>0.25<br>1111<br>0.0   | 1<br>NEG<br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br>2<br>6<br>2<br>1  |              |              |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor<br>Emulsified Water<br>Sodium<br>Boron<br>Barium<br>Malybdenum<br>Manganese   | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>>0.25<br>1111<br>0.0<br>0.9<br>0.0                           | 1<br>NEG<br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br>2<br>6<br>2<br>1<br>7   |              |              |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor<br>Emulsified Water<br>Sodium<br>Boron<br>Barium<br>Malybdenum<br>Manganese<br>Magnesium                                  | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>NORML<br>>0.25<br>1111<br>0.0<br>0.9<br>0.0<br>39            | 1<br>NEG<br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br>2<br>6<br>2<br>1<br>7<br>2  |              |              |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor<br>Emulsified Water<br>Sodium<br>Boron<br>Barium<br>Malybdenum<br>Manganese<br>Magnesium                                  | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                               | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>NORML<br>>0.25<br>(111<br>0.0<br>0.9<br>0.0<br>39<br>93      | 1<br>NEG<br>NONE<br>NONE<br>NORML<br>NORML<br>2<br>6<br>2<br>6<br>2<br>1<br>7<br>2<br>2<br>1<br>7<br>2<br>2                    |              |              |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor<br>Emulsified Water<br>Sodium<br>Boron<br>Barium<br>Barium<br>Malybdenum<br>Manganese<br>Magnesium<br>Calcium             | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>>0.25<br>1111<br>0.0<br>0.0<br>0.0<br>39<br>93<br>920        | 1<br>NEG<br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br>2<br>6<br>2<br>6<br>2<br>1<br>7<br>2<br>2<br>1<br>7<br>2<br>2<br>2<br>393 |              |              |
| Potassium<br>Water<br>Silt<br>Debris<br>Sand/Dirt<br>Appearance<br>Odor<br>Emulsified Water<br>Sodium<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc | ppm<br>scalar<br>scalar<br>scalar<br>scalar<br>scalar<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | ASTM D5185m<br>WC Method<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>*Visual<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m                | >20<br>>0.25<br>NONE<br>NONE<br>NORML<br>>0.25<br>1111<br>0.0<br>0.9<br>0.9<br>39<br>93<br>920<br>104 | 1<br>NEG<br>NONE<br>NONE<br>NORML<br>NORML<br>NEG<br>2<br>6<br>2<br>1<br>7<br>2<br>2<br>2<br>2<br>393<br>60                    |              |              |

Contact/Location: N. FACEY - VOLVO0095





ALTA EQUIPMENT COMPANY Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. Received 5210 REESE ROAD : VCP439098 : 27 Jun 2024 Tested Lab Number : 06222607 DAVIE, FL : 28 Jun 2024 Unique Number : 11100804 : 29 Jun 2024 - Don Baldridge US 33314 Diagnosed Test Package : MOB 1 Contact: N. FACEY Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. nfacey@altaequipfl.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (954)581-4744 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F: (954)583-0318

Contact/Location: N. FACEY - VOLVO0095 Page 2 of 2