



VOLVO

OIL ANALYSIS REPORT

| | |
|-----------------|-----------------|
| WEAR | ABNORMAL |
| CONTAMINATION | SEVERE |
| FLUID CONDITION | ABNORMAL |



Machine Id
VOLVO G960 43149
Component
Hydraulic System
Fluid
VOLVO SUPER HYDRAULIC OIL 46 (--- GAL)

RECOMMENDATION

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where dirt can enter the system. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|----------|----------|
| Sample Number | | Client Info | | VCP394104 | --- | --- |
| Sample Date | | Client Info | | 26 Feb 2024 | --- | --- |
| Machine Age | hrs | Client Info | | 6405 | --- | --- |
| Oil Age | hrs | Client Info | | 6405 | --- | --- |
| Filter Age | hrs | Client Info | | 0 | --- | --- |
| Oil Changed | | Client Info | | Not Chngd | --- | --- |
| Filter Changed | | Client Info | | Not Chngd | --- | --- |
| Sample Status | | | | SEVERE | --- | --- |

WEAR

Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

| | | | | | | |
|--------------|--------|---------------|------|--------------|-----|-----|
| PQ | | ASTM D8184* | | 4 | --- | --- |
| Iron | ppm | ASTM D5185(m) | >50 | ▲ 56 | --- | --- |
| Chromium | ppm | ASTM D5185(m) | >20 | 1 | --- | --- |
| Nickel | ppm | ASTM D5185(m) | >10 | <1 | --- | --- |
| Titanium | ppm | ASTM D5185(m) | | 0 | --- | --- |
| Silver | ppm | ASTM D5185(m) | | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >20 | 7 | --- | --- |
| Lead | ppm | ASTM D5185(m) | >20 | <1 | --- | --- |
| Copper | ppm | ASTM D5185(m) | >150 | 3 | --- | --- |
| Tin | ppm | ASTM D5185(m) | >20 | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185(m) | | 0 | --- | --- |
| White Metal | scalar | Visual* | NONE | NONE | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | NONE | --- | --- |

CONTAMINATION

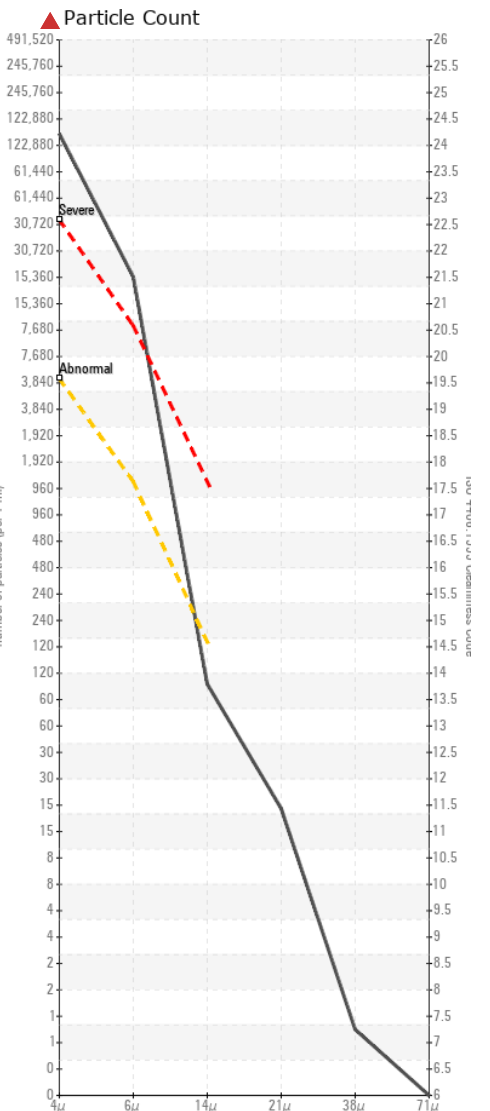
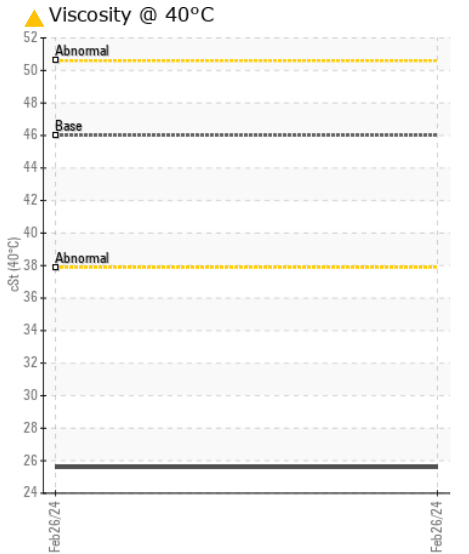
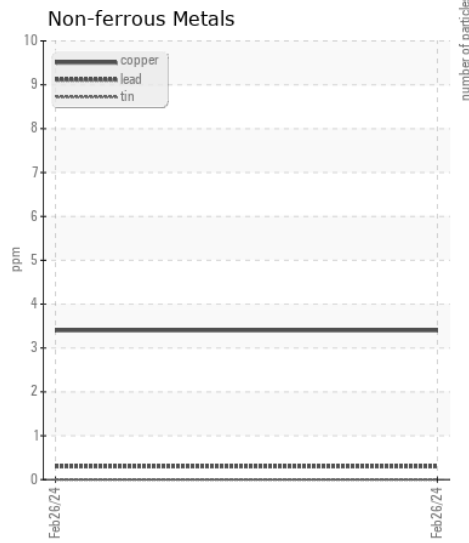
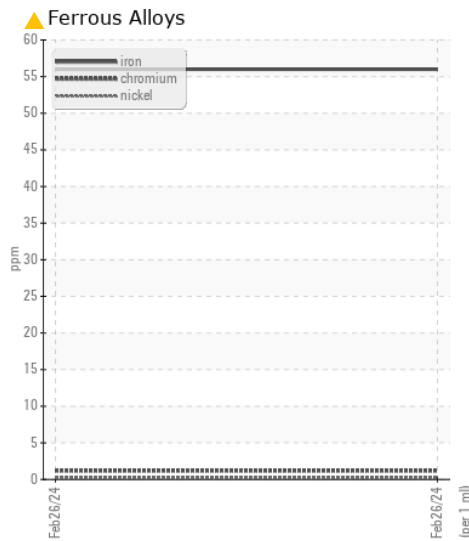
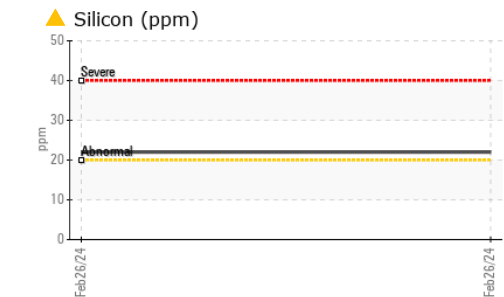
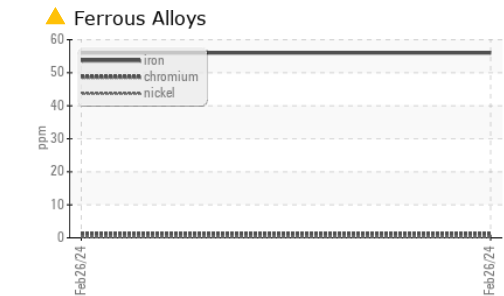
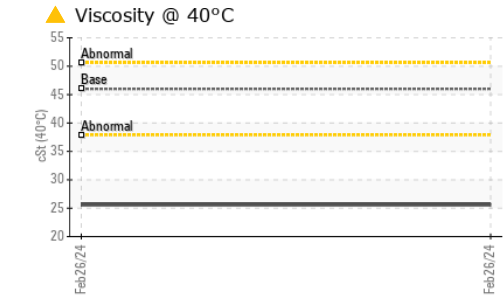
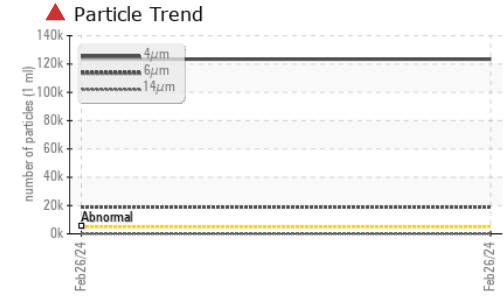
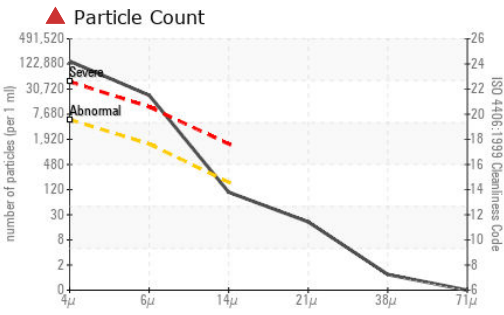
There is a high amount of silt (particulates < 14 microns in size) present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

| | | | | | | |
|------------------|--------|---------------|-----------|-------------------|-----|-----|
| Silicon | ppm | ASTM D5185(m) | >20 | ▲ 22 | --- | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | 3 | --- | --- |
| Water | | WC Method | >0.2 | NEG | --- | --- |
| Particles >4µm | | ASTM D7647 | >5000 | ▲ 123384 | --- | --- |
| Particles >6µm | | ASTM D7647 | >1300 | ▲ 18941 | --- | --- |
| Particles >14µm | | ASTM D7647 | >160 | 92 | --- | --- |
| Particles >21µm | | ASTM D7647 | >40 | 18 | --- | --- |
| Particles >38µm | | ASTM D7647 | >10 | 1 | --- | --- |
| Particles >71µm | | ASTM D7647 | >3 | 0 | --- | --- |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | ▲ 24/21/14 | --- | --- |
| Silt | scalar | Visual* | NONE | NONE | --- | --- |
| Debris | scalar | Visual* | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | NONE | --- | --- |
| Appearance | scalar | Visual* | NORML | NORML | --- | --- |
| Odor | scalar | Visual* | NORML | NORML | --- | --- |
| Emulsified Water | scalar | Visual* | >0.2 | NEG | --- | --- |

FLUID CONDITION

Viscosity of sample indicates oil is within ISO 22 range, advise investigate. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

| | | | | | | |
|-------------|-----|---------------|------|---------------|-----|-----|
| Sodium | ppm | ASTM D5185(m) | | 2 | --- | --- |
| Boron | ppm | ASTM D5185(m) | 14 | 17 | --- | --- |
| Barium | ppm | ASTM D5185(m) | 0.0 | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | 0.0 | 0 | --- | --- |
| Manganese | ppm | ASTM D5185(m) | 0.0 | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | 2.6 | 9 | --- | --- |
| Calcium | ppm | ASTM D5185(m) | 49 | 933 | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) | 354 | 493 | --- | --- |
| Zinc | ppm | ASTM D5185(m) | 419 | 597 | --- | --- |
| Sulfur | ppm | ASTM D5185(m) | 3719 | 2269 | --- | --- |
| Visc @ 40°C | cSt | ASTM D7279(m) | 46 | ▲ 25.6 | --- | --- |



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : VCP394104 **Received** : 27 Feb 2024
Lab Number : 02618414 **Tested** : 28 Feb 2024
Unique Number : 5735524 **Diagnosed** : 28 Feb 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: PQ, PrtCount)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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