



CONSTRUCTION EQUIPMENT

535390 VOLVO L110H 631617 - DIESEL ENGINE



Sample No: VCP444386
Oil Type: DIESEL ENGINE OIL SAE 40
Job No: 535390



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SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-----|-----|-----|
| Sample Number | VCP444386 | --- | --- | --- |
| Sample Date | 05 Jun 2024 | --- | --- | --- |
| Machine Hours | 8561 | --- | --- | --- |
| Oil Hours | 0 | --- | --- | --- |
| Oil Changed | N/A | --- | --- | --- |
| Sample Status | ABNORMAL | --- | --- | --- |



OIL CONDITION

| | | | | | |
|------------------|----------|--------|-----|-----|-----|
| Visc @ 100°C | cSt | █ 13.1 | --- | --- | --- |
| Base Number (BN) | mg KOH/g | █ 8.0 | --- | --- | --- |
| Oxidation (PA) | % | 77 | --- | --- | --- |



CONTAMINATION

| | | | | | |
|----------------|-----|------|-----|-----|-----|
| Water | % | NEG | --- | --- | --- |
| Soot % | % | █ 1 | --- | --- | --- |
| Nitration (PA) | % | 97 | --- | --- | --- |
| Sulfation (PA) | % | 65 | --- | --- | --- |
| Glycol | % | NEG | --- | --- | --- |
| Fuel | % | <1.0 | --- | --- | --- |
| Silicon | ppm | █ 18 | --- | --- | --- |
| Sodium | ppm | █ 5 | --- | --- | --- |
| Potassium | ppm | █ 5 | --- | --- | --- |



WEAR METALS

| | | | | | |
|------------|-----|------|-----|-----|-----|
| Iron | ppm | █ 50 | --- | --- | --- |
| Copper | ppm | █ 3 | --- | --- | --- |
| Lead | ppm | █ 2 | --- | --- | --- |
| Tin | ppm | █ 2 | --- | --- | --- |
| Aluminum | ppm | ▲ 21 | --- | --- | --- |
| Chromium | ppm | █ 3 | --- | --- | --- |
| Molybdenum | ppm | █ 64 | --- | --- | --- |
| Nickel | ppm | █ <1 | --- | --- | --- |
| Titanium | ppm | █ <1 | --- | --- | --- |
| Silver | ppm | █ 0 | --- | --- | --- |
| Manganese | ppm | █ <1 | --- | --- | --- |
| Vanadium | ppm | <1 | --- | --- | --- |



ADDITIVES

| | | | | | |
|------------|-----|--------|-----|-----|-----|
| Calcium | ppm | █ 1243 | --- | --- | --- |
| Magnesium | ppm | █ 868 | --- | --- | --- |
| Zinc | ppm | █ 1345 | --- | --- | --- |
| Phosphorus | ppm | █ 1119 | --- | --- | --- |
| Barium | ppm | █ 0 | --- | --- | --- |
| Boron | ppm | █ 25 | --- | --- | --- |

Diagnosis

No corrective action is recommended at this time. Resample at the next service interval to monitor. The aluminum level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot: VOLVO0093
Unique No: 11071680
Signed: Sean Felton
Report Date: 12 Jun 2024

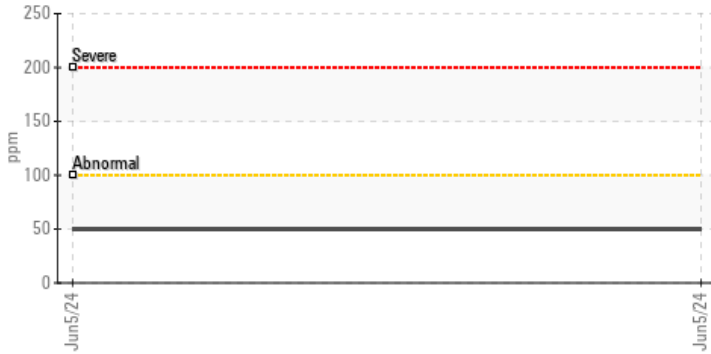


CONSTRUCTION EQUIPMENT

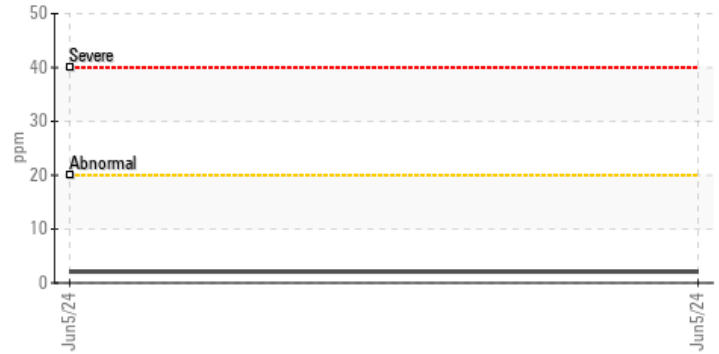


GRAPHS

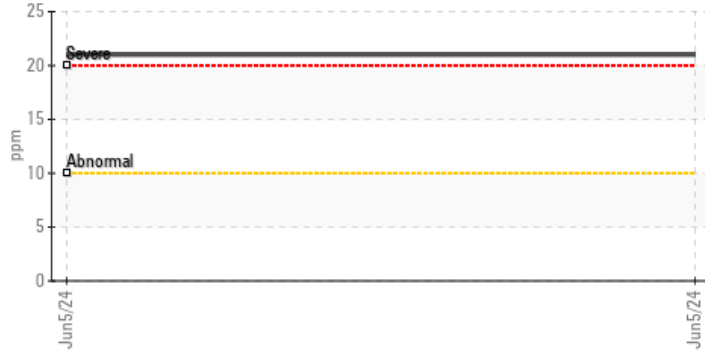
Iron (ppm)



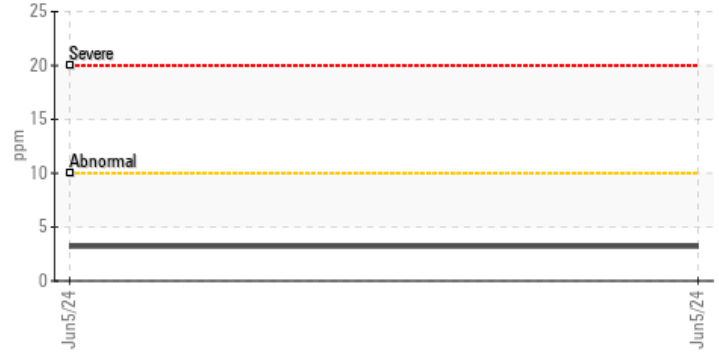
Lead (ppm)



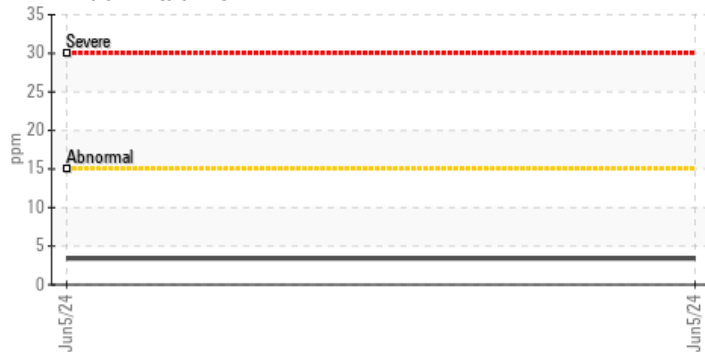
Aluminum (ppm)



Chromium (ppm)



Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



Base Number





CONSTRUCTION EQUIPMENT

535390 HILLSBOROUGH VOLVO L110H 631617 - TRANSMISSION (AUTO)



Sample No: VCP444387
Oil Type: DEXRON III
Job No: 535390 HILLSBOROUGH



SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-----|-----|-----|
| Sample Number | VCP444387 | --- | --- | --- |
| Sample Date | 05 Jun 2024 | --- | --- | --- |
| Machine Hours | 8561 | --- | --- | --- |
| Oil Hours | 0 | --- | --- | --- |
| Oil Changed | N/A | --- | --- | --- |
| Sample Status | NORMAL | --- | --- | --- |

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OIL CONDITION

| | | | | | |
|-------------|-----|--------|-----|-----|-----|
| Visc @ 40°C | cSt | █ 28.7 | --- | --- | --- |
|-------------|-----|--------|-----|-----|-----|



CONTAMINATION

| | | | | | |
|-----------|-----|-----|-----|-----|-----|
| Water | % | NEG | --- | --- | --- |
| Silicon | ppm | █ 3 | --- | --- | --- |
| Sodium | ppm | █ 3 | --- | --- | --- |
| Potassium | ppm | █ 3 | --- | --- | --- |

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the fluid. The condition of the fluid is acceptable for the time in service.



WEAR METALS

| | | | | | |
|------------|-----|------|-----|-----|-----|
| Iron | ppm | █ 13 | --- | --- | --- |
| Copper | ppm | █ 4 | --- | --- | --- |
| Lead | ppm | █ 0 | --- | --- | --- |
| Tin | ppm | █ <1 | --- | --- | --- |
| Aluminum | ppm | █ 3 | --- | --- | --- |
| Chromium | ppm | █ 0 | --- | --- | --- |
| Molybdenum | ppm | █ 0 | --- | --- | --- |
| Nickel | ppm | █ 0 | --- | --- | --- |
| Titanium | ppm | 0 | --- | --- | --- |
| Silver | ppm | █ 0 | --- | --- | --- |
| Manganese | ppm | █ 1 | --- | --- | --- |
| Vanadium | ppm | 0 | --- | --- | --- |



ADDITIVES

| | | | | | |
|------------|-----|-------|-----|-----|-----|
| Calcium | ppm | █ 121 | --- | --- | --- |
| Magnesium | ppm | █ 3 | --- | --- | --- |
| Zinc | ppm | █ 37 | --- | --- | --- |
| Phosphorus | ppm | █ 216 | --- | --- | --- |
| Barium | ppm | █ <1 | --- | --- | --- |
| Boron | ppm | █ 107 | --- | --- | --- |

Depot: VOLVO0093
Unique No: 11072674
Signed: Doug Bogart
Report Date: 12 Jun 2024



CONSTRUCTION EQUIPMENT

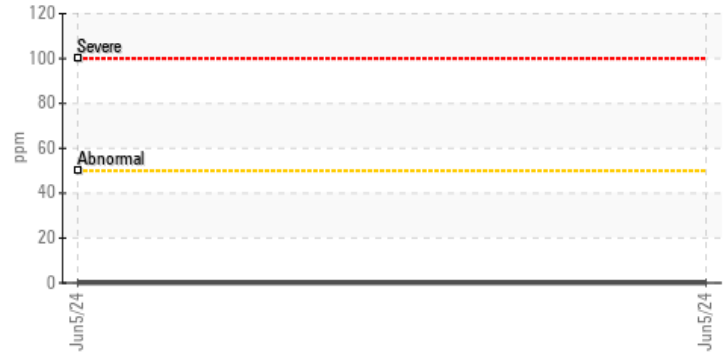


GRAPHS

Iron (ppm)



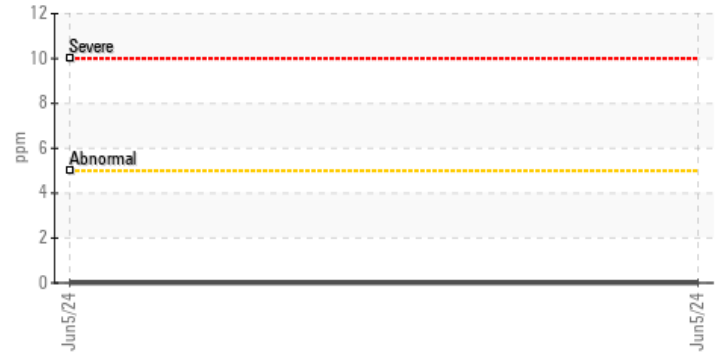
Lead (ppm)



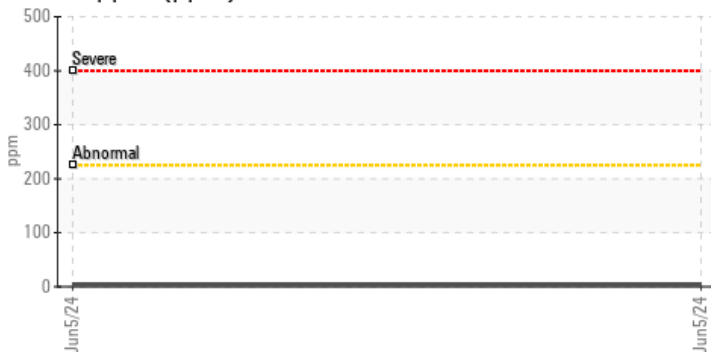
Aluminum (ppm)



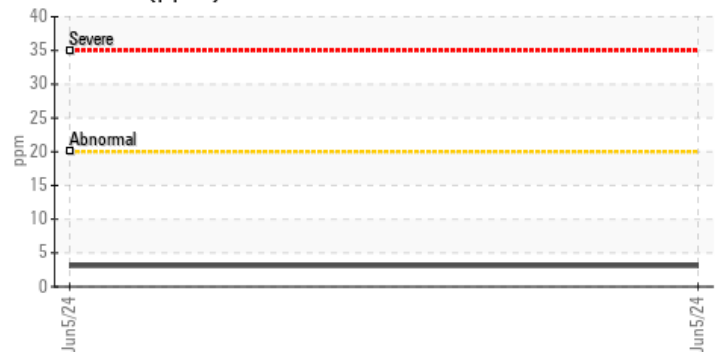
Chromium (ppm)



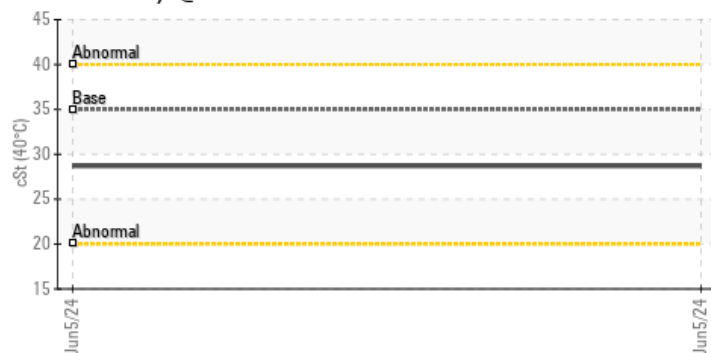
Copper (ppm)



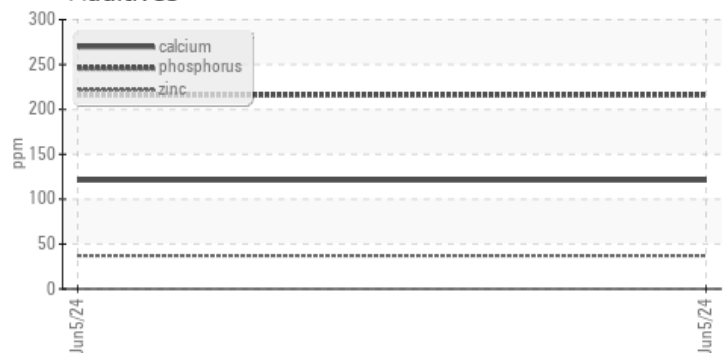
Silicon (ppm)



Viscosity @ 40°C



Additives





CONSTRUCTION EQUIPMENT

535390 VOLVO L110H 631617 - HYDRAULIC SYSTEM



Sample No: VCP444388
Oil Type: {unknown}
Job No: 535390



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SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-----|-----|-----|
| Sample Number | VCP444388 | --- | --- | --- |
| Sample Date | 05 Jun 2024 | --- | --- | --- |
| Machine Hours | 8561 | --- | --- | --- |
| Oil Hours | 0 | --- | --- | --- |
| Oil Changed | N/A | --- | --- | --- |
| Sample Status | SEVERE | --- | --- | --- |



OIL CONDITION

| | | | | | |
|------------------|----------|--------|-----|-----|-----|
| Visc @ 40°C | cSt | █ 45.7 | --- | --- | --- |
| Acid Number (AN) | mg KOH/g | █ 0.50 | --- | --- | --- |



CONTAMINATION

| | | | | | |
|-------------------|-----|----------|-----|-----|-----|
| Water | % | NEG | --- | --- | --- |
| Particles >4µm | | ▲ 44870 | --- | --- | --- |
| Particles >6µm | | ▲ 12851 | --- | --- | --- |
| Particles >14µm | | ▲ 1052 | --- | --- | --- |
| ISO 4406:1999 (c) | | 23/21/17 | --- | --- | --- |
| Silicon | ppm | █ 2 | --- | --- | --- |
| Sodium | ppm | █ 3 | --- | --- | --- |
| Potassium | ppm | █ 3 | --- | --- | --- |



WEAR METALS

| | | | | | |
|------------|-----|------|-----|-----|-----|
| Iron | ppm | █ 3 | --- | --- | --- |
| Copper | ppm | █ <1 | --- | --- | --- |
| Lead | ppm | █ 1 | --- | --- | --- |
| Tin | ppm | █ <1 | --- | --- | --- |
| Aluminum | ppm | █ <1 | --- | --- | --- |
| Chromium | ppm | █ <1 | --- | --- | --- |
| Molybdenum | ppm | 0 | --- | --- | --- |
| Nickel | ppm | █ 0 | --- | --- | --- |
| Titanium | ppm | 0 | --- | --- | --- |
| Silver | ppm | 0 | --- | --- | --- |
| Manganese | ppm | <1 | --- | --- | --- |
| Vanadium | ppm | 0 | --- | --- | --- |



ADDITIVES

| | | | | | |
|------------|-----|-----|-----|-----|-----|
| Calcium | ppm | 650 | --- | --- | --- |
| Magnesium | ppm | 10 | --- | --- | --- |
| Zinc | ppm | 618 | --- | --- | --- |
| Phosphorus | ppm | 511 | --- | --- | --- |
| Barium | ppm | <1 | --- | --- | --- |
| Boron | ppm | 0 | --- | --- | --- |

Diagnosis

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is a high amount of particulates (2 to 100 microns in size) present in the oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Depot: VOLVO0093
Unique No: 11071985
Signed: Wes Davis
Report Date: 12 Jun 2024

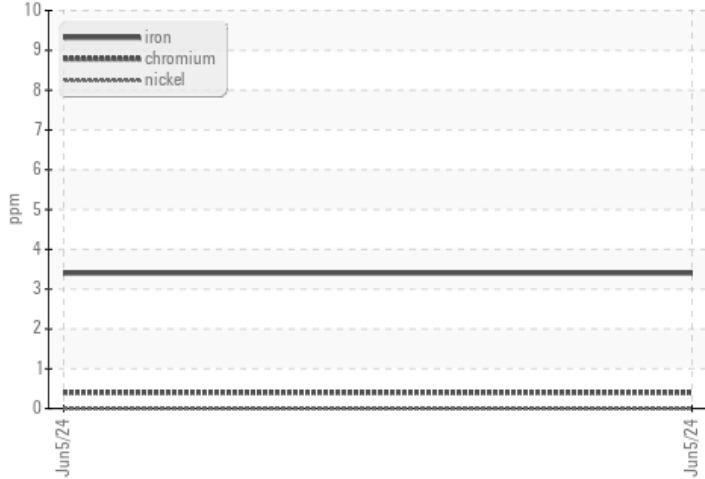


CONSTRUCTION EQUIPMENT

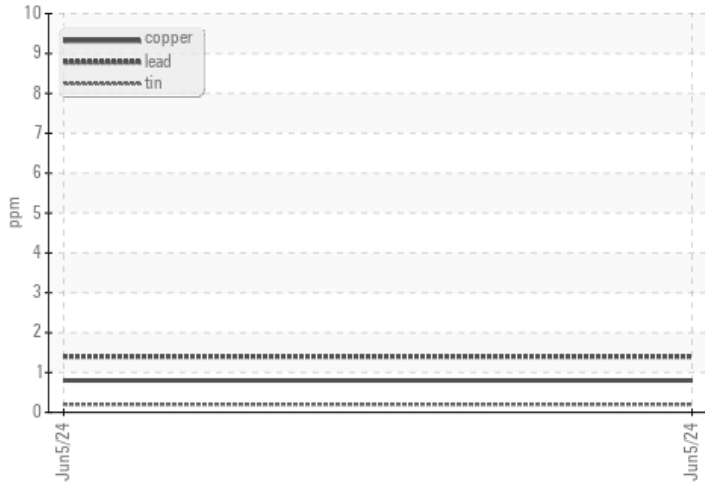


GRAPHS

Ferrous Alloys



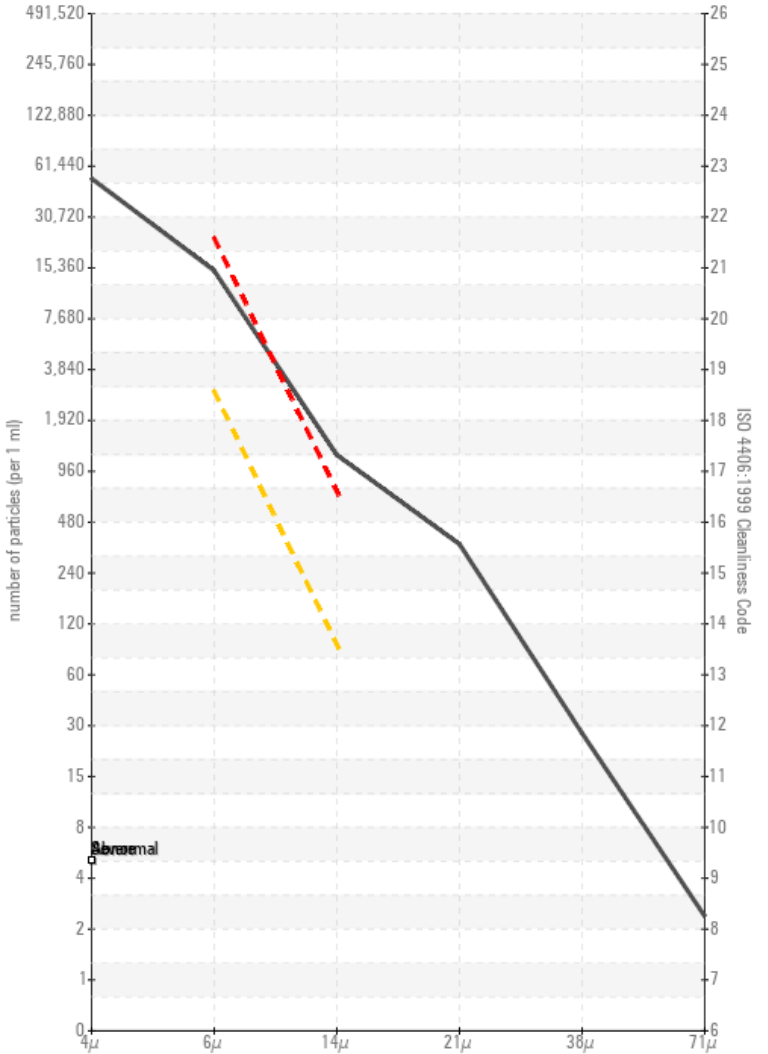
Non-ferrous Metals



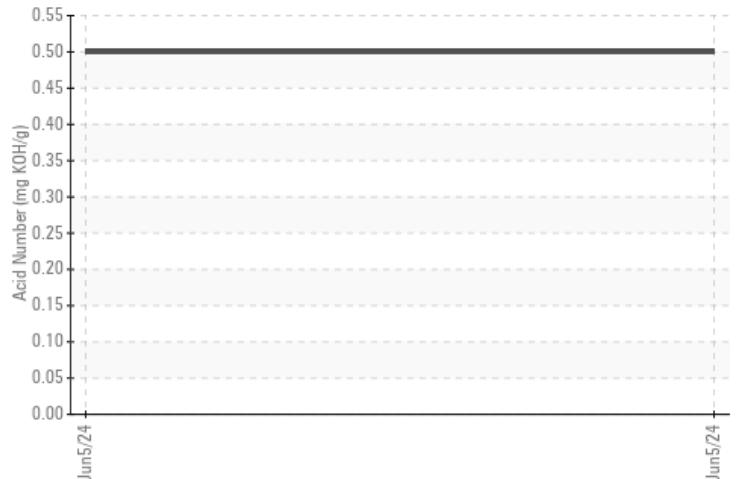
Viscosity @ 40°C



Particle Count



Acid Number





CONSTRUCTION EQUIPMENT

535390 VOLVO L110H 631617 - FRONT AXLE



Sample No: VCP443587
Oil Type: TRANSAXLE OIL SAE 75W80
Job No: 535390



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SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-----|-----|-----|
| Sample Number | VCP443587 | --- | --- | --- |
| Sample Date | 05 Jun 2024 | --- | --- | --- |
| Machine Hours | 8561 | --- | --- | --- |
| Oil Hours | 0 | --- | --- | --- |
| Oil Changed | N/A | --- | --- | --- |
| Sample Status | NORMAL | --- | --- | --- |



OIL CONDITION

| | | | | | |
|-------------|-----|--------|-----|-----|-----|
| Visc @ 40°C | cSt | █ 41.6 | --- | --- | --- |
|-------------|-----|--------|-----|-----|-----|



CONTAMINATION

| | | | | | |
|-----------|-----|------|-----|-----|-----|
| Water | % | NEG | --- | --- | --- |
| Silicon | ppm | █ 10 | --- | --- | --- |
| Sodium | ppm | █ 2 | --- | --- | --- |
| Potassium | ppm | █ 1 | --- | --- | --- |



WEAR METALS

| | | | | | |
|------------|-----|-------|-----|-----|-----|
| Iron | ppm | █ 178 | --- | --- | --- |
| Copper | ppm | █ <1 | --- | --- | --- |
| Lead | ppm | █ 0 | --- | --- | --- |
| Tin | ppm | █ 0 | --- | --- | --- |
| Aluminum | ppm | █ 2 | --- | --- | --- |
| Chromium | ppm | █ 2 | --- | --- | --- |
| Molybdenum | ppm | █ 2 | --- | --- | --- |
| Nickel | ppm | █ <1 | --- | --- | --- |
| Titanium | ppm | <1 | --- | --- | --- |
| Silver | ppm | 0 | --- | --- | --- |
| Manganese | ppm | █ 3 | --- | --- | --- |
| Vanadium | ppm | <1 | --- | --- | --- |



ADDITIVES

| | | | | | |
|------------|-----|--------|-----|-----|-----|
| Calcium | ppm | █ 3751 | --- | --- | --- |
| Magnesium | ppm | █ 8 | --- | --- | --- |
| Zinc | ppm | █ 1551 | --- | --- | --- |
| Phosphorus | ppm | █ 1365 | --- | --- | --- |
| Barium | ppm | █ 0 | --- | --- | --- |
| Boron | ppm | █ 141 | --- | --- | --- |

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

Depot: VOLVO0093
Unique No: 11072514
Signed: Don Baldrige
Report Date: 12 Jun 2024

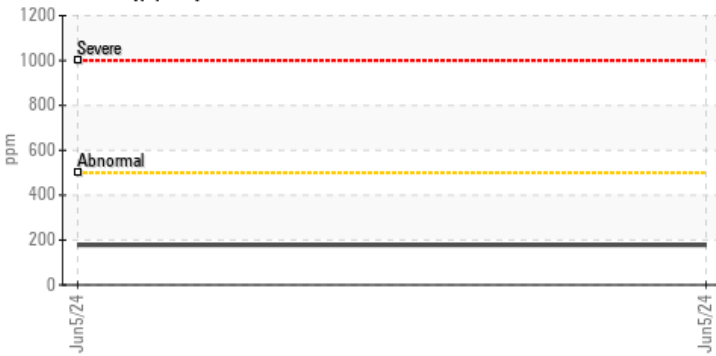


CONSTRUCTION EQUIPMENT



GRAPHS

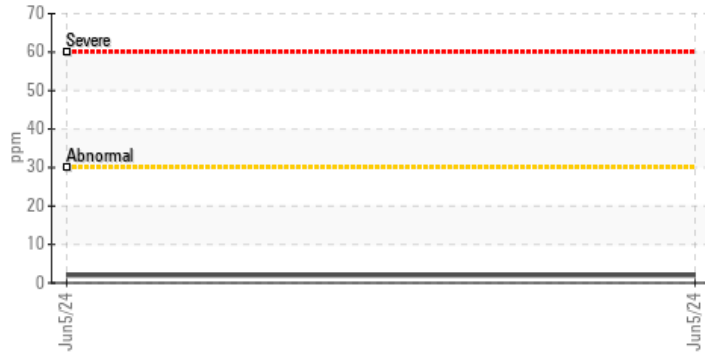
Iron (ppm)



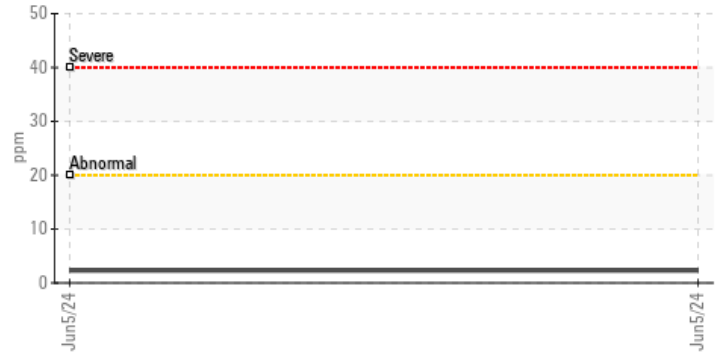
Lead (ppm)



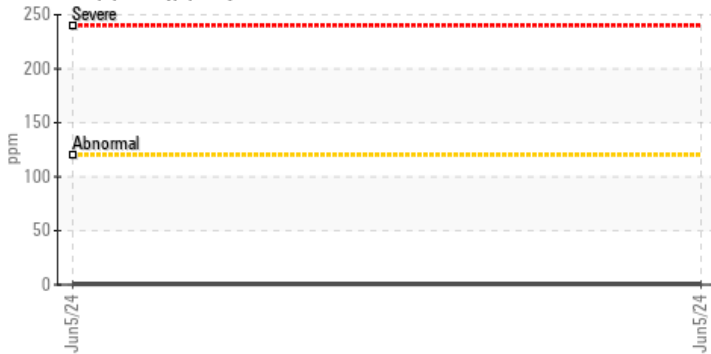
Aluminum (ppm)



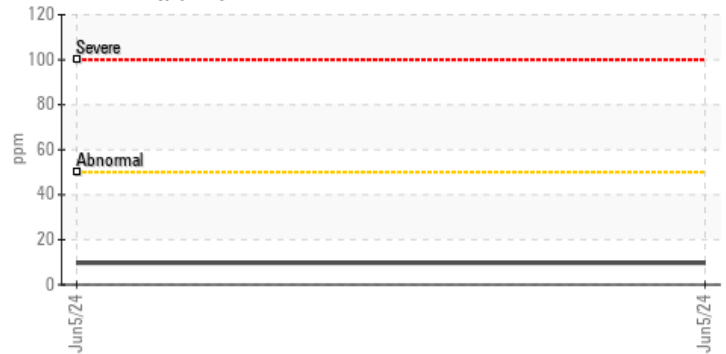
Chromium (ppm)



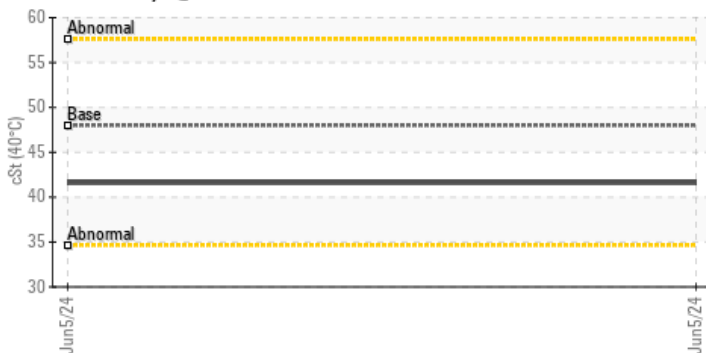
Copper (ppm)



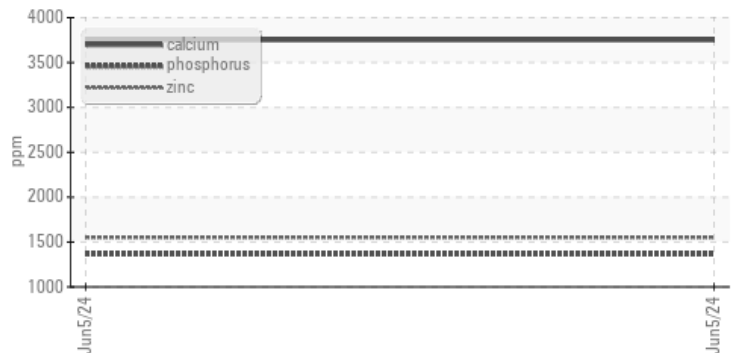
Silicon (ppm)



Viscosity @ 40°C



Additives





CONSTRUCTION EQUIPMENT

53539 VOLVO L110H 631617 - REAR AXLE



Sample No: VCP444383
Oil Type: {unknown}
Job No: 53539



SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-----|-----|-----|
| Sample Number | VCP444383 | --- | --- | --- |
| Sample Date | 05 Jun 2024 | --- | --- | --- |
| Machine Hours | 8561 | --- | --- | --- |
| Oil Hours | 0 | --- | --- | --- |
| Oil Changed | N/A | --- | --- | --- |
| Sample Status | NORMAL | --- | --- | --- |

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OIL CONDITION

| | | | | | |
|-------------|-----|--------|-----|-----|-----|
| Visc @ 40°C | cSt | ■ 42.0 | --- | --- | --- |
|-------------|-----|--------|-----|-----|-----|



CONTAMINATION

| | | | | | |
|-----------|-----|------|-----|-----|-----|
| Water | % | NEG | --- | --- | --- |
| Silicon | ppm | ■ 11 | --- | --- | --- |
| Sodium | ppm | ■ 2 | --- | --- | --- |
| Potassium | ppm | ■ 2 | --- | --- | --- |

Diagnosis

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.



WEAR METALS

| | | | | | |
|------------|-----|-------|-----|-----|-----|
| Iron | ppm | ■ 101 | --- | --- | --- |
| Copper | ppm | ■ <1 | --- | --- | --- |
| Lead | ppm | ■ 0 | --- | --- | --- |
| Tin | ppm | ■ 0 | --- | --- | --- |
| Aluminum | ppm | ■ 2 | --- | --- | --- |
| Chromium | ppm | ■ 1 | --- | --- | --- |
| Molybdenum | ppm | 1 | --- | --- | --- |
| Nickel | ppm | ■ <1 | --- | --- | --- |
| Titanium | ppm | <1 | --- | --- | --- |
| Silver | ppm | 0 | --- | --- | --- |
| Manganese | ppm | 2 | --- | --- | --- |
| Vanadium | ppm | <1 | --- | --- | --- |



ADDITIVES

| | | | | | |
|------------|-----|------|-----|-----|-----|
| Calcium | ppm | 4167 | --- | --- | --- |
| Magnesium | ppm | 9 | --- | --- | --- |
| Zinc | ppm | 1805 | --- | --- | --- |
| Phosphorus | ppm | 1616 | --- | --- | --- |
| Barium | ppm | 0 | --- | --- | --- |
| Boron | ppm | 152 | --- | --- | --- |

Depot: VOLVO0093
Unique No: 11072513
Signed: Don Baldrige
Report Date: 12 Jun 2024



CONSTRUCTION EQUIPMENT



VOLVO GRAPHS

