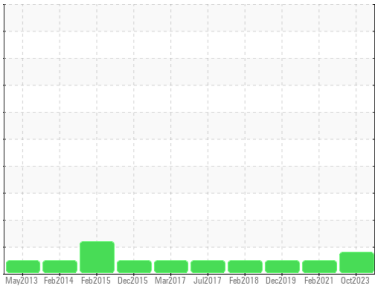
# PROBLEM SUMMARY

Area
**AMR-Cheyenne**
Machine Id
**VOLVO EC480DL 210241**
Component
**Hydraulic System**
Fluid
**CHEVRON HYDRAULIC OIL AW ISO 46 (--- GAL)**

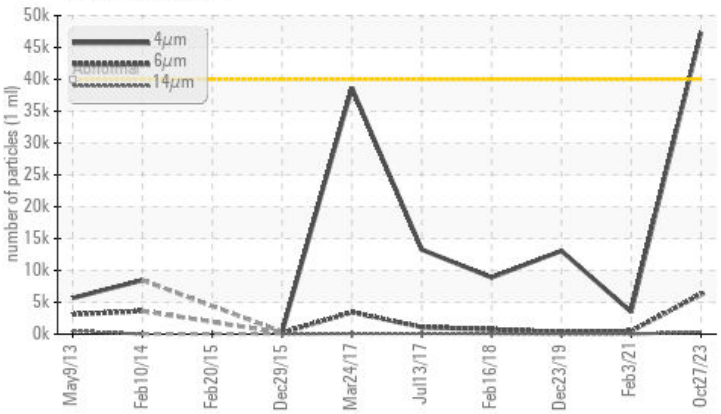
**Sample Rating Trend**




**ISO**

## COMPONENT CONDITION SUMMARY

Particle Trend




## RECOMMENDATION

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

## PROBLEMATIC TEST RESULTS

| | | | | | | |
|---|---|---|---|---|---|---|
| Sample Status | | | | **ATTENTION** | NORMAL | NORMAL |
| Particles >4µm | | ASTM D7647 | >40000 | ▲ **47355** | 3485 | 13073 |
| Oil Cleanliness | | ISO 4406 (c) | >22/20/18 | ▲ **23/20/15** | 19/16/11 | 21/15/10 |

**Customer Id:** ADVKANKS
**Sample No.:** DJJ0020584
**Lab Number:** 06011450
**Test Package:** CONST

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Don Baldridge +1
don.b505@comcast.net

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

**03 Feb 2021 Diag: Don Baldridge**

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**23 Dec 2019 Diag: Jonathan Hester**

NORMAL

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 amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

**16 Feb 2018 Diag: Jonathan Hester**

NORMAL

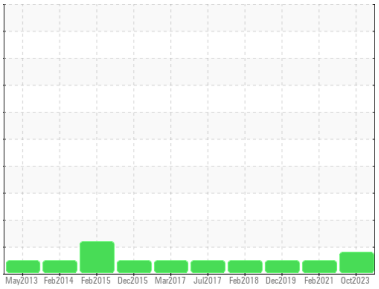
Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

# OIL ANALYSIS REPORT

Area
**AMR-Cheyenne**
Machine Id
**VOLVO EC480DL 210241**
Component
**Hydraulic System**
Fluid
**CHEVRON HYDRAULIC OIL AW ISO 46 (--- GAL)**

Sample Rating Trend




ISO

## DIAGNOSIS

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

**Wear**
All component wear rates are normal.

**Contamination**
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

**Fluid Condition**
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **DJJ0020584** | DJJ0005629 | DJJ028600 |
| Sample Date | | Client Info | | **27 Oct 2023** | 03 Feb 2021 | 23 Dec 2019 |
| Machine Age | hrs | Client Info | | **8694** | 2714 | 5153 |
| Oil Age | hrs | Client Info | | **0** | 714 | 0 |
| Oil Changed | | Client Info | | **Not Changd** | Not Changd | Not Changd |
| Sample Status | | | | **ATTENTION** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.1 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >25 | **4** | 4 | 6 |
| Chromium | ppm | ASTM D5185m | >10 | **<1** | 2 | 1 |
| Nickel | ppm | ASTM D5185m | >10 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **0** | <1 | <1 |
| Lead | ppm | ASTM D5185m | >20 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >150 | **2** | 2 | 7 |
| Tin | ppm | ASTM D5185m | >10 | **0** | 0 | <1 |
| Antimony | ppm | ASTM D5185m | | **---** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

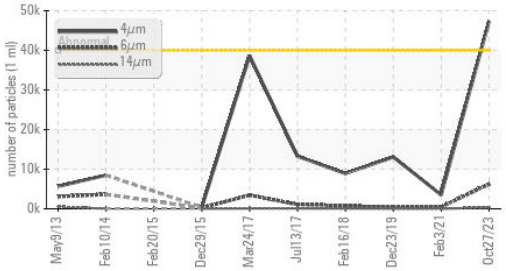
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **20** | <1 | 2 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Manganese | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | | **0** | 0 | 2 |
| Calcium | ppm | ASTM D5185m | | **708** | 82 | 152 |
| Phosphorus | ppm | ASTM D5185m | | **489** | 340 | 330 |
| Zinc | ppm | ASTM D5185m | | **616** | 406 | 423 |
| Sulfur | ppm | ASTM D5185m | | **1433** | 718 | 953 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >50 | **4** | 1 | 2 |
| Sodium | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 0 | <1 |

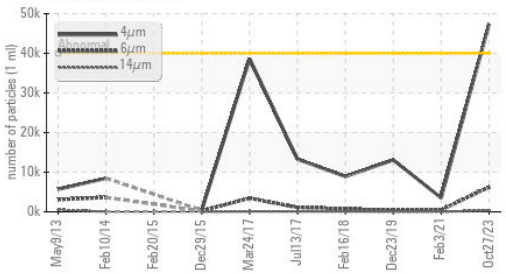
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >40000 | ▲ **47355** | 3485 | 13073 |
| Particles >6µm | | ASTM D7647 | >10000 | **6229** | 487 | 308 |
| Particles >14µm | | ASTM D7647 | >2500 | **305** | 15 | 8 |
| Particles >21µm | | ASTM D7647 | >640 | **76** | 2 | 3 |
| Particles >38µm | | ASTM D7647 | >160 | **1** | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >40 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >22/20/18 | ▲ **23/20/15** | 19/16/11 | 21/15/10 |

# OIL ANALYSIS REPORT

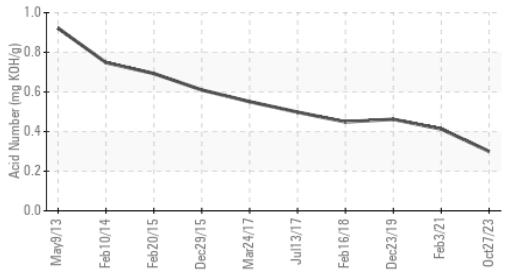
Particle Trend



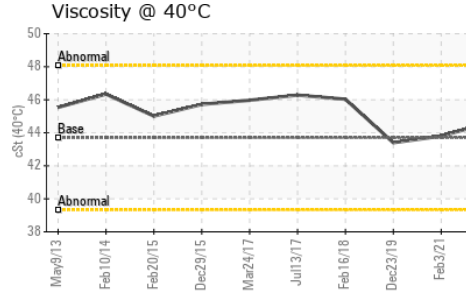

Particle Trend




Acid Number




Viscosity @ 40°C




| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **0.30** | 0.413 | 0.462 |

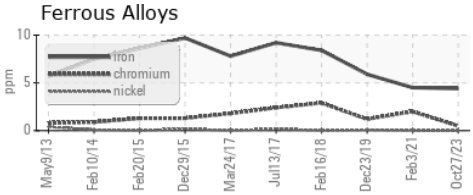
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **LIGHT** | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 43.7 | **44.6** | 43.8 | 43.4 |

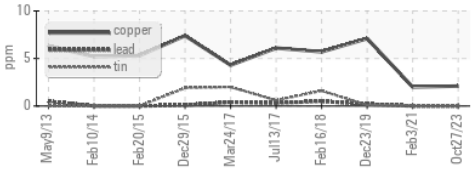
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | | | |
| Bottom | | | | | |

## GRAPHS

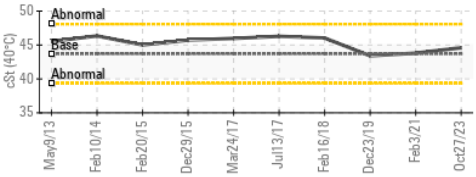
Ferrous Alloys



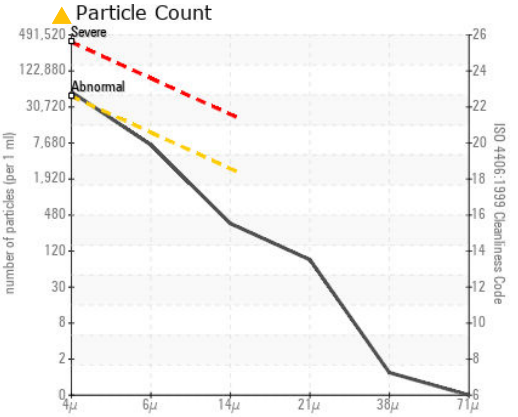

Non-ferrous Metals



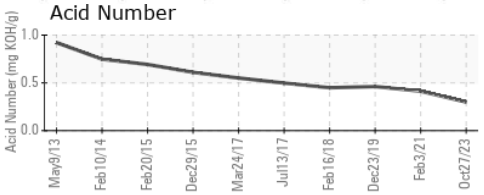

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : DJJ0020584
**Lab Number** : 06011450
**Unique Number** : 10750594
**Test Package** : CONST

**Received** : 17 Nov 2023
**Diagnosed** : 21 Nov 2023
**Diagnostician** : Don Baldridge

*To discuss this sample report, contact Customer Service at 1-800-237-1369.*
** - 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)*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