



# ASCENDUM

## OIL ANALYSIS REPORT

|                 |        |
|-----------------|--------|
| WEAR            | NORMAL |
| CONTAMINATION   | NORMAL |
| FLUID CONDITION | NORMAL |



Machine Id  
**VOLVO A45G 13409 (S/N 353519)**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 30 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

| Test           | UOM | Method      | Limit/Abn | Current     | History1    | History2    |
|----------------|-----|-------------|-----------|-------------|-------------|-------------|
| Sample Number  |     | Client Info |           | ASC0010101  | ASC0002905  | ASC0008507  |
| Sample Date    |     | Client Info |           | 14 May 2024 | 06 Apr 2024 | 24 Feb 2024 |
| Machine Age    | hrs | Client Info |           | 2942        | 2389        | 1995        |
| Oil Age        | hrs | Client Info |           | 2548        | 394         | 0           |
| Filter Age     | hrs | Client Info |           | 0           | 0           | 0           |
| Oil Changed    |     | Client Info |           | N/A         | N/A         | Changed     |
| Filter Changed |     | Client Info |           | N/A         | N/A         | Changed     |
| Sample Status  |     |             |           | NORMAL      | NORMAL      | NORMAL      |

### WEAR

All component wear rates are normal.

|              |        |             |      |      |      |      |
|--------------|--------|-------------|------|------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | 10   | 11   | 15   |
| Chromium     | ppm    | ASTM D5185m | >20  | 0    | <1   | <1   |
| Nickel       | ppm    | ASTM D5185m | >2   | 1    | 2    | 1    |
| Titanium     | ppm    | ASTM D5185m |      | 0    | 2    | 0    |
| Silver       | ppm    | ASTM D5185m | >2   | 0    | <1   | 0    |
| Aluminum     | ppm    | ASTM D5185m | >25  | 2    | 3    | 3    |
| Lead         | ppm    | ASTM D5185m | >40  | <1   | <1   | 1    |
| Copper       | ppm    | ASTM D5185m | >330 | 3    | 5    | 15   |
| Tin          | ppm    | ASTM D5185m | >15  | 1    | 2    | 1    |
| Vanadium     | ppm    | ASTM D5185m |      | 0    | <1   | 0    |
| White Metal  | scalar | *Visual     | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | NONE | NONE | NONE |

### CONTAMINATION

There is no indication of any contamination in the oil.

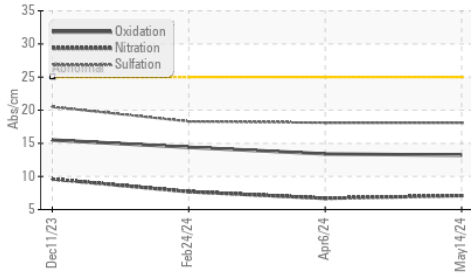
|                  |          |             |       |       |       |       |
|------------------|----------|-------------|-------|-------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | 4     | 5     | 6     |
| Potassium        | ppm      | ASTM D5185m | >20   | 2     | 2     | 1     |
| Fuel             |          | WC Method   | >6.0  | <1.0  | <1.0  | <1.0  |
| Water            |          | WC Method   | >0.2  | NEG   | NEG   | NEG   |
| Glycol           |          | WC Method   |       | NEG   | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 | >3    | 0.4   | 0.3   | 0.4   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | 7.1   | 6.7   | 7.7   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | 18.1  | 18.1  | 18.3  |
| Silt             | scalar   | *Visual     | NONE  | NONE  | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | NONE  | 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     | >0.2  | NEG   | NEG   | NEG   |

### FLUID CONDITION

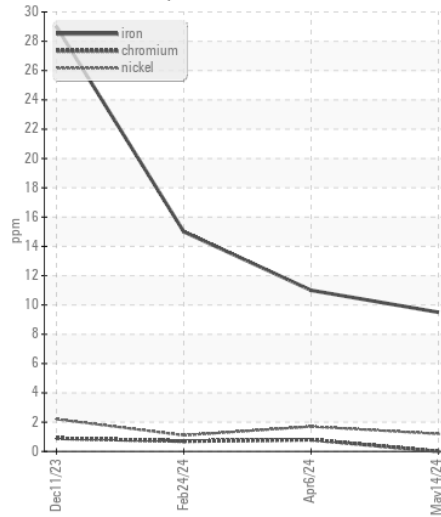
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             |      |      |      |      |
|------------------|----------|-------------|------|------|------|------|
| Sodium           | ppm      | ASTM D5185m | >75  | 2    | 0    | 2    |
| Boron            | ppm      | ASTM D5185m | 250  | 2    | 3    | 2    |
| Barium           | ppm      | ASTM D5185m | 10   | 0    | 0    | 0    |
| Molybdenum       | ppm      | ASTM D5185m | 100  | 59   | 60   | 64   |
| Manganese        | ppm      | ASTM D5185m |      | <1   | <1   | <1   |
| Magnesium        | ppm      | ASTM D5185m | 450  | 887  | 846  | 970  |
| Calcium          | ppm      | ASTM D5185m | 3000 | 1037 | 1039 | 1138 |
| Phosphorus       | ppm      | ASTM D5185m | 1150 | 997  | 899  | 1070 |
| Zinc             | ppm      | ASTM D5185m | 1350 | 1175 | 1124 | 1248 |
| Sulfur           | ppm      | ASTM D5185m | 4250 | 3287 | 2918 | 3194 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | 13.2 | 13.4 | 14.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 8.5  | 8.2  | 8.4  | 7.5  |
| Visc @ 100°C     | cSt      | ASTM D445   | 10.9 | 12.2 | 12.6 | 12.3 |

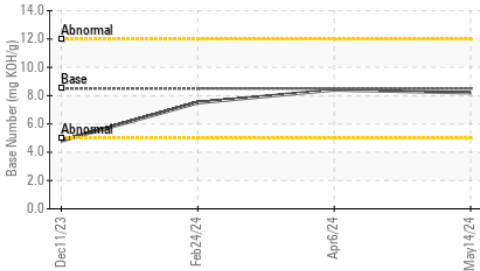
**FT-IR (Direct Trend)**



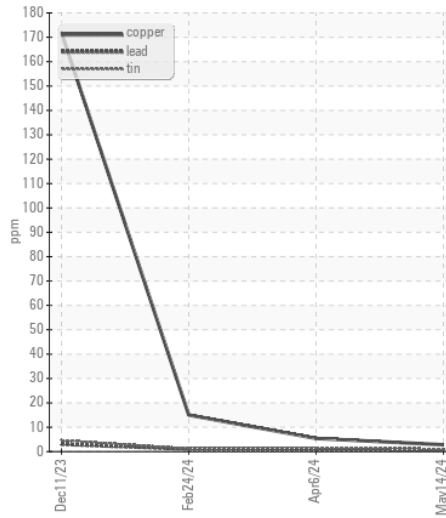
**Ferrous Alloys**



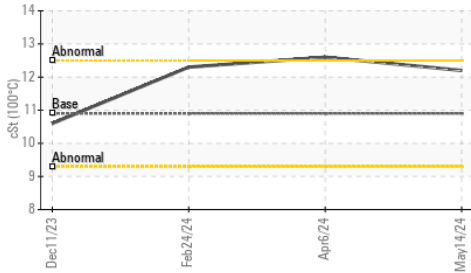
**Base Number**



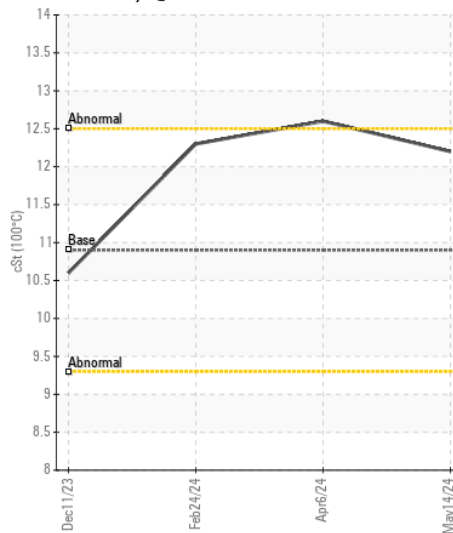
**Non-ferrous Metals**



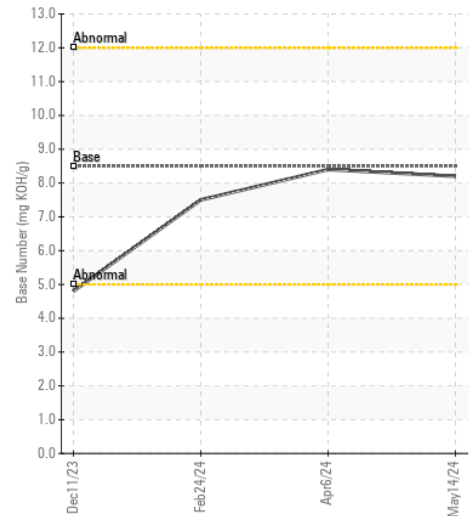
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : ASC0010101

**Lab Number** : 06193733

**Unique Number** : 11050485

**Test Package** : CONST ( Additional Tests: TBN )

**Received** : 29 May 2024

**Tested** : 30 May 2024

**Diagnosed** : 30 May 2024 - Wes Davis

**117 - ASCENDUM MACHINERY INC - GREENVILLE**

2002 N GREENE ST

GREENVILLE, NC

US 27834

Contact: ALLEN WILLIAMS

allen.williams@ascendummachinery.com

T:

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)

F: (704)494-8197