



# OIL ANALYSIS REPORT

|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |

Area  
**AMR-St Louis**  
 Machine Id  
**574178 SENNEBOGEN 840M 840.0.1021**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>DJJ0020863</b>  | DJJ0020680  | DJJ0019313  |
| Sample Date    |     | Client Info |           | <b>05 Feb 2024</b> | 01 Sep 2023 | 21 Apr 2023 |
| Machine Age    | hrs | Client Info |           | <b>17789</b>       | 17174       | 16700       |
| Oil Age        | hrs | Client Info |           | <b>250</b>         | 250         | 0           |
| Filter Age     | hrs | Client Info |           | <b>250</b>         | 250         | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | N/A         |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | N/A         |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## WEAR

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | <b>16</b>    | 14   | 11   |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>2</b>     | 1    | 1    |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>&lt;1</b> | 0    | <1   |
| Titanium     | ppm    | ASTM D5185m |      | <b>2</b>     | <1   | 0    |
| Silver       | ppm    | ASTM D5185m | >3   | <b>0</b>     | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>4</b>     | 2    | <1   |
| Lead         | ppm    | ASTM D5185m | >40  | <b>1</b>     | 0    | <1   |
| Copper       | ppm    | ASTM D5185m | >330 | <b>&lt;1</b> | 1    | <1   |
| Tin          | ppm    | ASTM D5185m | >15  | <b>&lt;1</b> | <1   | 0    |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

## CONTAMINATION

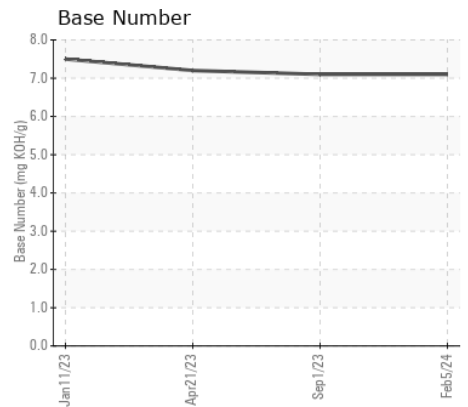
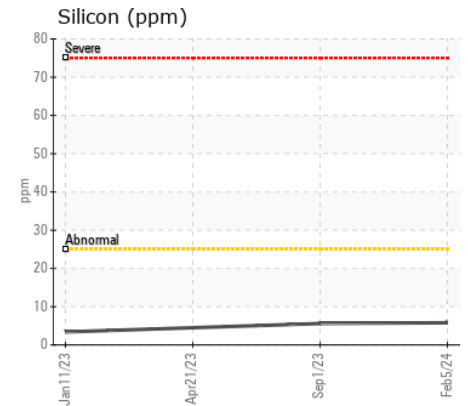
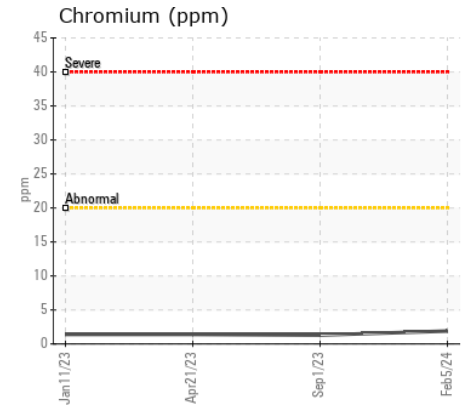
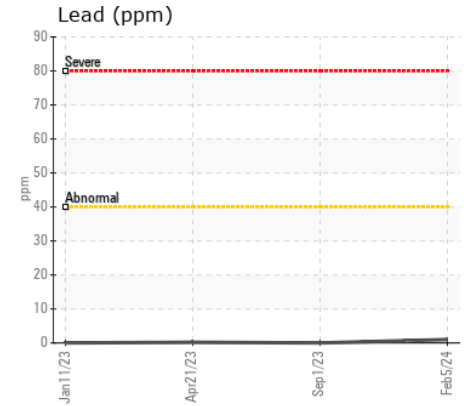
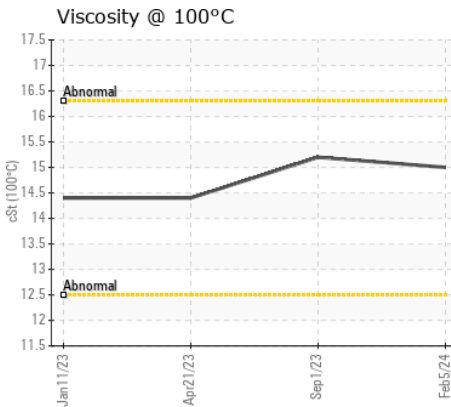
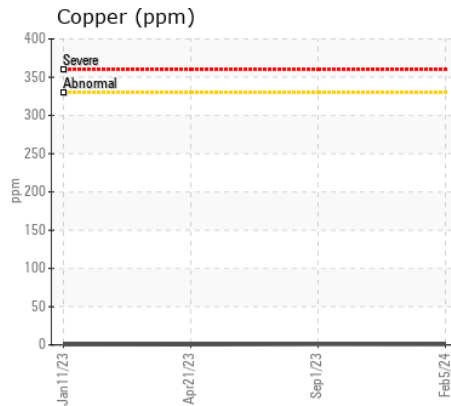
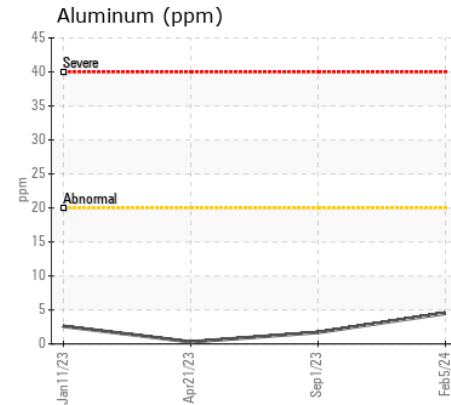
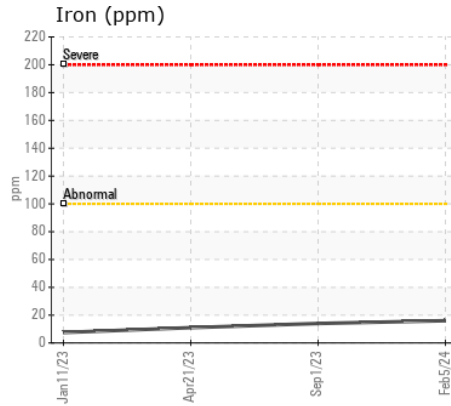
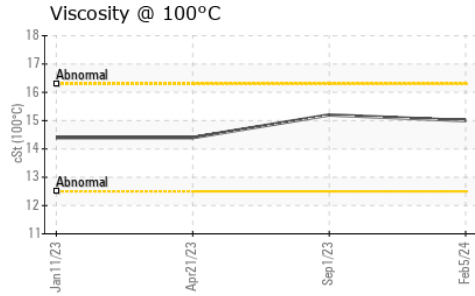
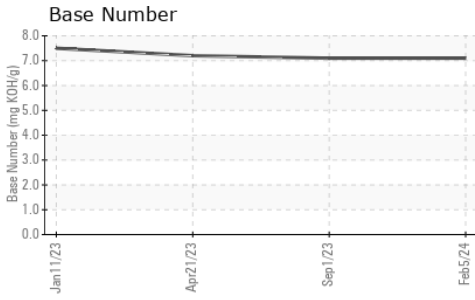
There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>6</b>       | 6     | 4     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>2</b>       | 2     | 2     |
| Fuel             |          | WC Method   | >5    | <b>&lt;1.0</b> | <1.0  | <1.0  |
| Water            |          | WC Method   | >0.2  | <b>NEG</b>     | NEG   | NEG   |
| Glycol           |          | WC Method   |       | <b>NEG</b>     | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 | >3    | <b>0.8</b>     | 0.9   | 0.6   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>10.3</b>    | 10.5  | 9.2   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>23.1</b>    | 23.1  | 22.5  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.2  | <b>NEG</b>     | 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 | >150 | <b>&lt;1</b> | 4    | 0    |
| Boron            | ppm      | ASTM D5185m |      | <b>165</b>   | 168  | 216  |
| Barium           | ppm      | ASTM D5185m |      | <b>0</b>     | 20   | 0    |
| Molybdenum       | ppm      | ASTM D5185m |      | <b>109</b>   | 91   | 96   |
| Manganese        | ppm      | ASTM D5185m |      | <b>&lt;1</b> | <1   | <1   |
| Magnesium        | ppm      | ASTM D5185m |      | <b>186</b>   | 210  | 209  |
| Calcium          | ppm      | ASTM D5185m |      | <b>2232</b>  | 1750 | 2023 |
| Phosphorus       | ppm      | ASTM D5185m |      | <b>1203</b>  | 988  | 1087 |
| Zinc             | ppm      | ASTM D5185m |      | <b>1457</b>  | 1208 | 1355 |
| Sulfur           | ppm      | ASTM D5185m |      | <b>4034</b>  | 4130 | 3567 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>18.7</b>  | 18.3 | 17.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896  |      | <b>7.1</b>   | 7.1  | 7.2  |
| Visc @ 100°C     | cSt      | ASTM D445   |      | <b>15.0</b>  | 15.2 | 14.4 |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DJJ0020863  
**Lab Number** : 06104766  
**Unique Number** : 10902996  
**Test Package** : MOBCE ( Additional Tests: TBN )

**Received** : 29 Feb 2024  
**Tested** : 01 Mar 2024  
**Diagnosed** : 01 Mar 2024 - Wes Davis

**ADVANTAGE METALS RECYCLING - ST LOUIS**  
 5 N MARKET  
 ST LOUIS, MO  
 US 63102

Contact: JEANETTE VAGO  
 jeanette.vago@advantagerecycling.com

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)

T:  
F: