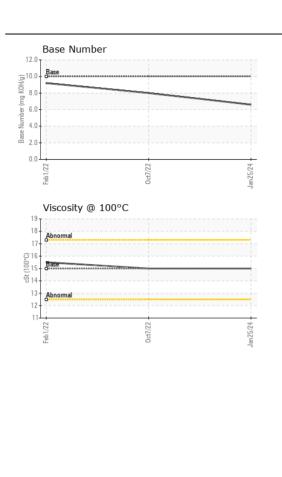
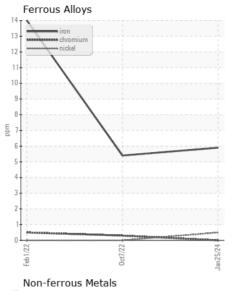
**WEAR** CONTAMINATION **FLUID CONDITION**  **NORMAL NORMAL NORMAL** 

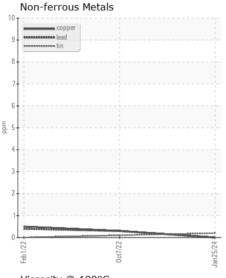
Machine Id **023-0192** 

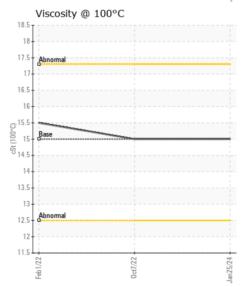
Component Diesel Engine

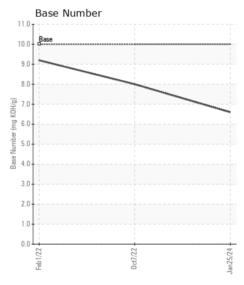
| RECOMMENDATION  | Test                       | UOM             | Method                     | Limit/Abn     | Current     | History1    | History2    |
|---|----------------------------|-----------------|----------------------------|---------------|-------------|-------------|-------------|
|   | Sample Number              |                 | Client Info                |               | WC0868352   | WC0698045   | WC059078    |
| Resample at the next service interval to monitor. Please specify the component make and model with your next sample.                      | Sample Date                |                 | Client Info                |               | 25 Jan 2024 | 07 Oct 2022 | 01 Feb 202  |
|   | Machine Age                | hrs             | Client Info                |               | 8889        | 8698        | 8640        |
|   | Oil Age                    | hrs             | Client Info                |               | 0           | 0           | 0           |
|   | Filter Age                 | hrs             | Client Info                |               | 0           | 0           | 0           |
|   | Oil Changed                |                 | Client Info                |               | Changed     | Changed     | Changed     |
|   | Filter Changed             |                 | Client Info                |               | Changed     | Changed     | Changed     |
|   | Sample Status              |                 |                            |               | NORMAL      | NORMAL      | NORMAL      |
| VEAR  | Iron                       | ppm             | ASTM D5185m                | >100          | 6           | 5           | 14          |
|   | Chromium                   | ppm             | ASTM D5185m                |               | 0           | <1          | <1          |
| All component wear rates are normal.  | Nickel                     | ppm             | ASTM D5185m                |               | <1          | 0           | 0           |
|   | Titanium                   | ppm             | ASTM D5185m                |               | 0           | 0           | 0           |
|   | Silver                     | ppm             | ASTM D5185m                | >3            | 0           | 0           | 0           |
|   | Aluminum                   | ppm             | ASTM D5185m                |               | 5           | 3           | 4           |
|   | Lead                       | ppm             | ASTM D5185m                |               | 0           | <1          | <1          |
|   | Copper                     | ppm             | ASTM D5185m                | >330          | 0           | <1          | <1          |
|   | Tin                        | ppm             | ASTM D5185m                | >15           | <1          | <1          | 0           |
|   | Vanadium                   | ppm             | ASTM D5185m                |               | <1          | 0           | 0           |
|   | White Metal                | scalar          | *Visual                    | NONE          | NONE        | NONE        | NONE        |
|   | Yellow Metal               | scalar          | *Visual                    | NONE          | NONE        | NONE        | NONE        |
| ONTAMINATION  | Silicon                    | ppm             | ASTM D5185m                | <b>&gt;25</b> | 10          | 10          | 10          |
| ONTAMINATION  | Potassium                  | ppm             | ASTM D5185m                |               | 1           | <1          | 6           |
| There is no indication of any contamination in the oil.   | Fuel                       | ррпп            | WC Method                  |               | -<br><1.0   | <1.0        | <1.0        |
|   | Water                      |                 | WC Method                  |               | NEG         | NEG         | NEG         |
|   | Glycol                     |                 | WC Method                  | 70.2          | NEG         | NEG         | NEG         |
|   | Soot %                     | %               | *ASTM D7844                | <b>\</b> 3    | 1           | 0.5         | 1.5         |
|   | Nitration                  | Abs/cm          | *ASTM D7624                | >20           | 9.6         | 9.0         | 9.7         |
|   | Sulfation                  | Abs/.1mm        | *ASTM D7415                |               | 19.2        | 19.7        | 24.2        |
|   | Silt                       | scalar          | *Visual                    | NONE          | NONE        | NONE        | NONE        |
|   | Debris                     | scalar          | *Visual                    | NONE          | NONE        | NONE        | NONE        |
|   | Sand/Dirt                  | scalar          | *Visual                    | NONE          | NONE        | NONE        | NON         |
|   | Appearance                 | scalar          | *Visual                    | NORML         | NORML       | NORML       | NORM        |
|   | Odor                       | scalar          | *Visual                    | NORML         | NORML       | NORML       | NORM        |
|   | Emulsified Water           |                 | *Visual                    | >0.2          | NEG         | NEG         | NEG         |
| LUID CONDITION  | Cadium                     |                 | ASTM D5185m                |               |             | .4          |             |
| LUID CONDITION  | Sodium                     | ppm             |                            |               | 2           | <1          | 2           |
| The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service. | Boron                      | ppm             | ASTM D5185m<br>ASTM D5185m |               | 79<br>0     | 101<br>0    | 183         |
|   | Barium                     | ppm             |                            | EO            |             |             | 0           |
|   | Molybdenum                 | ppm             | ASTM D5185m                | 50            | 75<br>0     | 66          | 0           |
|   | Manganese                  | ppm             | ASTM D5185m                | 1000          | 0<br>14     | <1<br>14    |             |
|   | Magnesium<br>Calcium       | ppm             | ASTM D5185m                |               |             |             | 26          |
|   |                            | ppm             | ASTM D5185m                |               | 2132        | 2190        | 2278        |
|   | Phosphorus                 | ppm             | ASTM D5185m                |               | 1007        | 982         | 960         |
|   | Zinc                       | ppm             | ASTM D5185m                |               | 1222        | 1122        | 1188        |
|   | Sulfur                     | ppm<br>Abo/ 1mm | ASTM D5185m                |               | 5024        | 5569        | 3047        |
|   | Oxidation Base Number (BN) | Abs/.1mm        | *ASTM D7414                |               | 14.1<br>6.6 | 14.9<br>8.0 | 18.6<br>9.2 |
|   |                            |                 |                            |               |             |             | 4/          |













Laboratory Sample No.

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

: WC0868352 Lab Number : 06088057 Unique Number : 10875502

Received **Tested** Diagnosed

Test Package : CONST (Additional Tests: TBN)

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.

SHIMMICK CONSTRUCTION

5535 TRAILHEAD DRIVE CHATTANOOGA, TN

US 37415

Contact: DANIEL LISELLA daniel.lisella@shimmick.com

T: F:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

: 13 Feb 2024

: 14 Feb 2024

: 14 Feb 2024 - Wes Davis