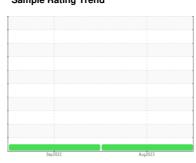


# **OIL ANALYSIS REPORT**

Sample Rating Trend



NORMAL



Machine Id **3632** Component **Diesel Engine** 

NOT GIVEN (--- GAL)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: Changed fluid and filters )

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

#### **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.

|  |  |  | Sep2022                                      | Aug <sup>2</sup> 023  |   |                          |
|--|--|--|--|---|---|--------------------------|
| SAMPLE INFORI  | MATION   | method   | limit/base                                   | current   | history1  | history2                 |
| Sample Number  |  | Client Info  |  | PCA0086461  | PCA0062444  |                          |
| Sample Date  |  | Client Info  |  | 07 Aug 2023   | 27 Sep 2022   |                          |
| Machine Age  | hrs  | Client Info  |  | 935   | 637   |                          |
| Oil Age  | hrs  | Client Info  |  | 935   | 637   |                          |
| Oil Changed  |  | Client Info  |  | Changed   | Changed   |                          |
| Sample Status  |  |  |  | NORMAL  | NORMAL  |                          |
| CONTAMINAT   | ION  | method   | limit/base                                   | current   | history1  | history2                 |
| Fuel   |  | WC Method  | >5   | <1.0  | <1.0  |                          |
| Glycol   |  | WC Method  |  | NEG   | NEG   |                          |
| WEAR METAL   | S  | method   | limit/base                                   | current   | history1  | history2                 |
|  |  |  |  |   | 9   | ,                        |
| Iron   | ppm  | ASTM D5185m  | >100   | 8   | 2   |                          |
| Chromium<br>Nickel   | ppm  | ASTM D5185m  | >20  | 2<br><1   | 0   |                          |
| Titanium   | ppm  | ASTM D5185m  | >4   | 0   | <1  |                          |
|  | ppm  |  | . 0  | 0   | 0   |                          |
| Silver<br>Aluminum   | ppm  | ASTM D5185m  | >3<br>>20                                    | 2   | 1   |                          |
|  | ppm  | ASTM D5185m<br>ASTM D5185m   | >40  | 6   | 4   |                          |
| Lead   | ppm  | ASTM D5185m  | >330   | 168   | 118   |                          |
| Copper   | ppm  |  |  |   |   |                          |
| Tin<br>Vanadium  | ppm  | ASTM D5185m<br>ASTM D5185m   | >15  | <1  | <1<br>0   |                          |
| Cadmium  | ppm  | ASTM D5185m  |  | 0   | 2   |                          |
|  | ppm  |  |  |   |   |                          |
| ADDITIVES  |  | method   | limit/base                                   | current   | history1  | history2                 |
| Boron  | ppm  | ASTM D5185m  |  | 5   | 6   |                          |
|  |  |  |  | ^   |   |                          |
| Barium   | ppm  | ASTM D5185m  |  | 0   | 0   |                          |
| Molybdenum   | ppm<br>ppm   | ASTM D5185m  |  | 59  | 60  |                          |
| Molybdenum<br>Manganese  |  | ASTM D5185m<br>ASTM D5185m   |  | 59<br><1  | 60 <1   |                          |
| Molybdenum<br>Manganese<br>Magnesium   | ppm<br>ppm<br>ppm  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  |  | 59<br><1<br>916   | 60<br><1<br>954   |                          |
| Molybdenum<br>Manganese<br>Magnesium<br>Calcium  | ppm<br>ppm<br>ppm  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   |  | 59<br><1<br>916<br>1038   | 60<br><1<br>954<br>1158   |                          |
| Molybdenum Manganese Magnesium Calcium Phosphorus  | ppm<br>ppm<br>ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  |  | 59<br><1<br>916<br>1038<br>1015                                   | 60<br><1<br>954<br>1158<br>1072   |                          |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc   | ppm<br>ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   |  | 59<br><1<br>916<br>1038<br>1015<br>1268                           | 60<br><1<br>954<br>1158<br>1072<br>1327                                     |                          |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  |  | 59<br><1<br>916<br>1038<br>1015                                   | 60<br><1<br>954<br>1158<br>1072   |                          |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | limit/base                                   | 59 <1 916 1038 1015 1268 3233 current                             | 60<br><1<br>954<br>1158<br>1072<br>1327<br>3671<br>history1                 |                          |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m  | limit/base                                   | 59 <1 916 1038 1015 1268 3233 current 4                           | 60<br><1<br>954<br>1158<br>1072<br>1327<br>3671<br>history1                 |                          |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m  | >25  | 59 <1 916 1038 1015 1268 3233 current 4 31                        | 60<br><1<br>954<br>1158<br>1072<br>1327<br>3671<br>history1<br>3            | <br><br><br><br>history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m  |  | 59 <1 916 1038 1015 1268 3233 current 4                           | 60<br><1<br>954<br>1158<br>1072<br>1327<br>3671<br>history1                 | <br><br><br><br>history2 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m  | >25  | 59 <1 916 1038 1015 1268 3233 current 4 31                        | 60<br><1<br>954<br>1158<br>1072<br>1327<br>3671<br>history1<br>3            | <br><br><br>history2     |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  CONTAMINAN Silicon Sodium Potassium                                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m  | >25<br>>20                                   | 59 <1 916 1038 1015 1268 3233 current 4 31 3                      | 60<br><1<br>954<br>1158<br>1072<br>1327<br>3671<br>history1<br>3<br>20<br>3 | history2                 |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED                            | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | ASTM D5185m  | >25<br>>20<br>limit/base<br>>3               | 59 <1 916 1038 1015 1268 3233 current 4 31 3                      | 60<br><1<br>954<br>1158<br>1072<br>1327<br>3671<br>history1<br>3<br>20<br>3 | history2 history2        |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %                    | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | ASTM D5185m  Method ASTM D5185m  | >25<br>>20<br>limit/base<br>>3               | 59 <1 916 1038 1015 1268 3233 current 4 31 3 current 0.2          | 60 <1 954 1158 1072 1327 3671 history1 3 20 3 history1 0.2                  | history2 history2        |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  CONTAMINAN Silicon Sodium Potassium  INFRA-RED Soot % Nitration         | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m  method ASTM D5185m  | >25<br>>20<br>limit/base<br>>3<br>>20        | 59 <1 916 1038 1015 1268 3233 current 4 31 3 current 0.2 9.0      | 60 <1 954 1158 1072 1327 3671 history1 3 20 3 history1 0.2 10.4             | history2 history2        |
| Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m  Method  ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D7415 | >25<br>>20<br>limit/base<br>>3<br>>20<br>>30 | 59 <1 916 1038 1015 1268 3233 current 4 31 3 current 0.2 9.0 20.6 | 60 <1 954 1158 1072 1327 3671 history1 3 20 3 history1 0.2 10.4 22.7        | history2 history2        |



## **OIL ANALYSIS REPORT**







Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** 

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : 05926542

: PCA0086461 : 10606489

Received Diagnosed

: 16 Aug 2023 : 17 Aug 2023 Diagnostician : Sean Felton

Test Package : MOB 1 (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. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Kemp Quarries - Kemp Stone - Fairland

18350 S 590 Rd Fairland, OK US 74343

Contact:

fairland@kempstone.com T:

F: