

# **OIL ANALYSIS REPORT**

Sample Rating Trend







Machine Id **1926738** Component **Diesel Engine** Fluid

{not provided} (--- GAL)

## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

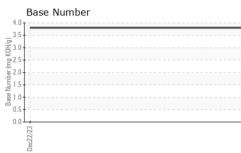
### Fluid Condition

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

| SAMPLE INFORI                 | MATION               | method                    | limit/base | current     | history1 | history2 |
|-------------------------------|----------------------|---------------------------|------------|-------------|----------|----------|
| Sample Number                 |                      | Client Info               |            | PCA0112293  |          |          |
| Sample Date                   |                      | Client Info               |            | 22 Dec 2023 |          |          |
| Machine Age                   | hrs                  | Client Info               |            | 0           |          |          |
| Oil Age                       | hrs                  | Client Info               |            | 0           |          |          |
| Oil Changed                   |                      | Client Info               |            | N/A         |          |          |
| Sample Status                 |                      |                           |            | NORMAL      |          |          |
| CONTAMINAT                    | ION                  | method                    | limit/base | current     | history1 | history2 |
| Water                         |                      | WC Method                 | >0.2       | NEG         |          |          |
| Glycol                        |                      | WC Method                 |            | NEG         |          |          |
| WEAR METAL                    | S                    | method                    | limit/base | current     | history1 | history2 |
| Iron                          | ppm                  | ASTM D5185m               | >100       | 47          |          |          |
| Chromium                      | ppm                  | ASTM D5185m               | >20        | <1          |          |          |
| Nickel                        | ppm                  | ASTM D5185m               | >4         | <1          |          |          |
| Titanium                      | ppm                  | ASTM D5185m               |            | 0           |          |          |
| Silver                        | ppm                  | ASTM D5185m               | >3         | <1          |          |          |
| Aluminum                      | ppm                  | ASTM D5185m               | >20        | 6           |          |          |
| Lead                          | ppm                  | ASTM D5185m               | >40        | 3           |          |          |
| Copper                        | ppm                  | ASTM D5185m               | >330       | 9           |          |          |
| Tin                           | ppm                  | ASTM D5185m               | >15        | 2           |          |          |
| Vanadium                      | ppm                  | ASTM D5185m               |            | 0           |          |          |
| Cadmium                       | ppm                  | ASTM D5185m               |            | 0           |          |          |
| ADDITIVES                     |                      | method                    | limit/base | current     | history1 | history2 |
| Boron                         | ppm                  | ASTM D5185m               |            | 0           |          |          |
| Barium                        | ppm                  | ASTM D5185m               |            | 0           |          |          |
| Molybdenum                    | ppm                  | ASTM D5185m               |            | 58          |          |          |
| Manganese                     | ppm                  | ASTM D5185m               |            | 1           |          |          |
| Magnesium                     | ppm                  | ASTM D5185m               |            | 928         |          |          |
| Calcium                       | ppm                  | ASTM D5185m               |            | 1005        |          |          |
| Phosphorus                    | ppm                  | ASTM D5185m               |            | 948         |          |          |
| Zinc                          | ppm                  | ASTM D5185m               |            | 1249        |          |          |
| Sulfur                        | ppm                  | ASTM D5185m               |            | 2509        |          |          |
| CONTAMINAN                    | TS                   | method                    | limit/base | current     | history1 | history2 |
| Silicon                       | ppm                  | ASTM D5185m               | >25        | 7           |          |          |
| Sodium                        | ppm                  | ASTM D5185m               |            | 10          |          |          |
| Potassium                     | ppm                  | ASTM D5185m               | >20        | <1          |          |          |
| Fuel                          | %                    | ASTM D3524                | >5         | <1.0        |          |          |
| INFRA-RED                     |                      | method                    | limit/base | current     | history1 | history2 |
| Soot %                        | %                    | *ASTM D7844               | >3         | 0.6         |          |          |
| Nitration                     | Abs/cm               | *ASTM D7624               | >20        | 11.0        |          |          |
| Sulfation                     | Abs/.1mm             | *ASTM D7415               | >30        | 23.9        |          |          |
| FLUID DEGRA                   | DATION               | method                    | limit/base | current     | history1 | history2 |
|                               |                      |                           |            |             |          |          |
| Oxidation                     | Abs/.1mm             | *ASTM D7414               | >25        | 20.3        |          |          |
| Oxidation<br>Base Number (BN) | Abs/.1mm<br>mg KOH/g | *ASTM D7414<br>ASTM D2896 | >25        | 20.3<br>3.8 |          |          |



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|  | VISUAL                 |  | method  | limit/base  | current        |                                | history2   |
|--|------------------------|--|---|---|----------------|--------------------------------|--|
|  | White Metal            | scalar   | *Visual   | NONE  | NONE           |                                |  |
|  | Yellow Metal           | scalar   | *Visual   | NONE  | NONE           |                                |  |
|  | Precipitate            | scalar   | *Visual   | NONE  | NONE           |                                |  |
|  | Silt                   | scalar   | *Visual   | NONE  | NONE           |                                |  |
|  | Debris                 | scalar   | *Visual   | NONE  | NONE           |                                |  |
|  | Sand/Dirt              | scalar   | *Visual   | NONE  | NONE           |                                |  |
| Dec22723   | Appearance             | scalar   | *Visual   | NORML   | NORML          |                                |  |
| Lec'   | Odor                   | scalar   | *Visual   | NORML   | NORML          |                                |  |
|  | Emulsified Water       | scalar   | *Visual   | >0.2  | NEG            |                                |  |
|  | Free Water             | scalar   | *Visual   |   | NEG            |                                |  |
|  | FLUID PROPE            | RTIES  | method  | limit/base  | current        | history1                       | history2   |
|  | Visc @ 100°C           | cSt  | ASTM D445   |   | 11.1           |                                |  |
|  | GRAPHS                 |  |   |   |                |                                |  |
|  | Ferrous Alloys         |  |   |   |                |                                |  |
|  | 50 T                   |  |   |   |                |                                |  |
|  | 40 +                   |  |   |   |                |                                |  |
|  | 40 T                   |  |   |   |                |                                |  |
|  | 30-                    |  |   |   |                |                                |  |
|  | E d                    |  |   |   |                |                                |  |
|  | 20-                    |  |   |   |                |                                |  |
|  | 10                     |  |   |   |                |                                |  |
|  | 0                      |  |   |   |                |                                |  |
|  |                        |  |   |   |                |                                |  |
|  | Dec22/23               |  |   | Dec22/23  |                |                                |  |
|  | Non-ferrous Meta       | ls   |   |   |                |                                |  |
|  | <sup>10</sup> T        |  |   |   |                |                                |  |
|  | second lead            |  |   |   |                |                                |  |
|  | ennesses tin           |  |   |   |                |                                |  |
|  | 6                      |  |   |   |                |                                |  |
|  | E d                    |  |   |   |                |                                |  |
|  |                        |  |   |   |                |                                |  |
|  | 2 -                    |  |   |   |                |                                |  |
|  |                        |  |   |   |                |                                |  |
|  |                        |  |   |   |                |                                |  |
|  |                        |  |   | 22  |                |                                |  |
|  | Dec22/23               |  |   | Dec22/23  |                |                                |  |
|  | Q                      | 2  |   | Dec22/23  | De la Nuerte a |                                |  |
|  | Viscosity @ 100°C      | 2  |   | Dec272,22   | Base Number    |                                |  |
|  | □<br>Viscosity @ 100°0 | 2  |   |   | Base Number    |                                |  |
|  | Viscosity @ 100°C      | 2  |   | 4.0   |                |                                |  |
|  | Viscosity @ 100°C      | 2  |   | 4.0   |                |                                |  |
|  | Viscosity @ 100°C      | 2  |   | 4.0   |                |                                |  |
|  | Viscosity @ 100°C      | 2  |   | 4.0<br>3.5<br>0,000<br>2.5<br>4,000<br>2.0<br>4,000<br>2.0<br>1,1,5<br>1,5<br>1,5<br>2,0<br>1,5<br>2,0<br>1,5<br>2,0<br>1,5<br>2,5<br>1,5<br>2,5<br>1,5<br>1,5<br>1,5<br>1,5<br>1,5<br>1,5<br>1,5<br>1,5<br>1,5<br>1  |                |                                |  |
|  | Viscosity @ 100°C      | 2  |   | 4.0   |                |                                |  |
|  | Viscosity @ 100°C      | 2  |   | 4.0<br>3.5<br>(0)(0)(0)<br>0)(0)(0)<br>0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0   |                |                                |  |
|  | Viscosity @ 100°C      |  |   | 4.0<br>3.5<br>0)HOD 22.5<br>102 200<br>102 200<br>100<br>102 200<br>102 200<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100   |                |                                |  |
|  | Viscosity @ 100°C      |  |   | 4.0<br>3.5<br>0)HOD 22.5<br>102 200<br>102 200<br>100<br>102 200<br>102 200<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100   |                |                                |  |
|  | Viscosity @ 100°C      |  |   | 4.0<br>3.5<br>(0)(0)(0)<br>0)(0)(0)<br>0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0   |                |                                |  |
| Laboratorv   | Viscosity @ 100°C      |  | son Ave Ca  | 4.0<br>3.5<br>(6)(HOX 2.5<br>Jul) Jul 2.0<br>Jul 1.5<br>888 J.0<br>0.5<br>0.0<br>0.5<br>0.0   | Dec2/2/3       | PERDUE FA                      | RMS - DILLC  |
| Laboratory<br>Sample No.                                 | Viscosity @ 100°C      | 501 Madia  | <b>d</b> :11.   | 4.0<br>3.5<br>0/HOJ DU<br>1.0<br>1.0<br>0.5<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0.0<br>0  | Dec2/2/3       |                                | HWY 9 WE   |
| Sample No.<br>Lab Number                                 | Viscosity @ 100°C      | 501 Madia<br>Recieved<br>Diagnose  | d :11.<br>ed :15.   | 4.0<br>3.5<br>0/HOJ Duly 2.5<br>1.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.0<br>0.5<br>0.5   | Dec2/2/3       |                                | HWY 9 WE<br>DILLON, S  |
| Sample No.<br>Lab Number<br>Unique Numbe                 | Viscosity @ 100°C      | 501 Madia<br>Recieved<br>Diagnose<br>Diagnose                                    | d :11.<br>ed :15.<br>ti <b>cian</b> :Jon                                | 4.0<br>3.5<br>9400 205<br>9400 205<br>9400000000000000000000000000000000000   | Dec2/2/3       | 2047                           | HWY 9 WE<br>DILLON, 9<br>US 295  |
| Sample No.<br>Lab Number<br>Unique Numbe<br>Test Package | Viscosity @ 100°C      | 501 Madis<br>Recieved<br>Diagnose<br>Diagnost<br>Tests: Fu                       | d : 11 .<br>ed : 15 .<br>tician : Jon<br>ielDilution, Po                | 4.0<br>3.5<br>9400 2025<br>9400 2025<br>9400 2025<br>9400 2025<br>9400 2025<br>9400 2025<br>9400 2024<br>9400 2025<br>9400 2000 2000<br>9400 2000<br>9400 2000 2000<br>9400 2000<br>94000000000000000000000000000000000 | Dec2/2/3       | 2047<br>Contact:               | HWY 9 WE<br>DILLON, 9<br>US 295<br>KEVIN HOOI  |
| Sample No.<br>Lab Number<br>Unique Numbe                 | Viscosity @ 100°C      | 501 Madis<br>Recieved<br>Diagnose<br>Diagnost<br>Tests: Fu<br><i>rice at 1-8</i> | d : 11 .<br>ed : 15 .<br>tician : Jon<br>elDilution, Pe<br>800-237-1369 | 4.0<br>3.5<br>9400 yrug 2.0<br>9400 yru   | Dec2/2/3       | 2047<br>Contact:<br>kevin.hook | RMS - DILLC<br>'HWY 9 WES<br>DILLON, S<br>US 295<br>KEVIN HOOF<br>s@perdue.cc<br>(843)841-80 |

Viscosity @ 100°C 18 17-16 () 15 () 10 () 14 () 13 () 15 Abnorma 12 11 10. Dec22/23

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