

# **OIL ANALYSIS REPORT**



## Machine Id **4359** Component **Diesel Engine** Fluid **DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

#### DIAGNOSIS

## Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

# Wear

Metal levels are typical for a new component breaking in.

# 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 INFORM  | NATION   | method   | limit/base  | current   | history1   | history2   |
|--|--|--|---|---|--|--|
| Sample Number  |  | Client Info  |   | WC0906193   |  |  |
| Sample Date  |  | Client Info  |   | 19 Mar 2024   |  |  |
| Machine Age  | mls  | Client Info  |   | 71500   |  |  |
| Oil Age  | mls  | Client Info  |   | 0   |  |  |
| Oil Changed  |  | Client Info  |   | Changed   |  |  |
| Sample Status  |  |  |   | NORMAL  |  |  |
| CONTAMINATION  | N  | method   | limit/base  | current   | history1   | history2   |
| Fuel   |  | WC Method  | >5  | <1.0  |  |  |
| Water  |  | WC Method  | >0.2  | NEG   |  |  |
| Glycol   |  | WC Method  |   | NEG   |  |  |
| -  |  |  |   | -   |  |  |
| WEAR METALS  |  | method   | limit/base  | current   | history1   | history2   |
| Iron   | ppm  | ASTM D5185m  | >100  | 3   |  |  |
| Chromium   | ppm  | ASTM D5185m  | >20   | <1  |  |  |
| Nickel   | ppm  | ASTM D5185m  | >4  | 1   |  |  |
| Titanium   | ppm  | ASTM D5185m  |   | <1  |  |  |
| Silver   | ppm  | ASTM D5185m  | >3  | <1  |  |  |
| Aluminum   | ppm  | ASTM D5185m  | >20   | 1   |  |  |
| Lead   | ppm  | ASTM D5185m  | >40   | 1   |  |  |
| Copper   | ppm  | ASTM D5185m  | >330  | <1  |  |  |
| Tin  | ppm  | ASTM D5185m  | >15   | 1   |  |  |
| Vanadium   | ppm  | ASTM D5185m  |   | <1  |  |  |
| Cadmium  | ppm  | ASTM D5185m  |   | 1   |  |  |
| ADDITIVES  |  | method   | limit/base  | current   | history1   | history2   |
| Boron  | ppm  | ASTM D5185m  | 250   | 1   |  |  |
| Barium   | ppm  | ASTM D5185m  | 10  | 0   |  |  |
| Molybdenum   |  |  |   | •   |  |  |
|  | ppm  | ASTM D5185m  | 100   | 56  |  |  |
| Manganese  | ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m   | 100   | -   |  |  |
| -  |  |  | 100<br>450  | 56  |  |  |
| Manganese  | ppm  | ASTM D5185m  |   | 56<br>1   |  |  |
| Manganese<br>Magnesium   | ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m   | 450   | 56<br>1<br>873  |  |  |
| Manganese<br>Magnesium<br>Calcium  | ppm<br>ppm<br>ppm  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 450<br>3000   | 56<br>1<br>873<br>990   |  |  |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus  | ppm<br>ppm<br>ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 450<br>3000<br>1150   | 56<br>1<br>873<br>990<br>935  | <br><br>   | <br><br>   |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc  | 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  | 450<br>3000<br>1150<br>1350   | 56<br>1<br>873<br>990<br>935<br>1132  | <br><br>   | <br><br><br>   |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur  | 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   | 450<br>3000<br>1150<br>1350<br>4250   | 56<br>1<br>873<br>990<br>935<br>1132<br>3181  | <br><br><br>   | <br><br><br>   |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS  | 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   | 450<br>3000<br>1150<br>1350<br>4250<br>limit/base<br>>25  | 56<br>1<br>873<br>990<br>935<br>1132<br>3181<br>current   | <br><br><br><br>history1                                     | <br><br><br><br><br>history2                                 |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon   | 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><b>method</b><br>ASTM D5185m  | 450<br>3000<br>1150<br>1350<br>4250<br>limit/base<br>>25  | 56<br>1<br>873<br>990<br>935<br>1132<br>3181<br>current<br>4  | <br><br><br><br>history1<br>                                 | <br><br><br><br><br>history2                                 |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium   | 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><b>method</b><br>ASTM D5185m<br>ASTM D5185m   | 450<br>3000<br>1150<br>1350<br>4250<br><b>limit/base</b><br>>25<br>>158   | 56<br>1<br>873<br>990<br>935<br>1132<br>3181<br>current<br>4<br>1   | <br><br><br><br>history1<br>                                 | <br><br><br><br><br>history2<br>                             |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium  | 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<br>ASTM D5185m  | 450<br>3000<br>1150<br>1350<br>4250<br><b>limit/base</b><br>>25<br>>158<br>>20  | 56<br>1<br>873<br>990<br>935<br>1132<br>3181<br>current<br>4<br>1<br>2  | <br><br><br><br>history1<br><br>                             | <br><br><br><br>history2<br><br>                             |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED                                     | ppm<br>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<br>ASTM D5185m<br>ASTM D5185m   | 450<br>3000<br>1150<br>1350<br>4250<br><b>imit/base</b><br>>25<br>>158<br>>20<br><b>imit/base</b>                           | 56<br>1<br>873<br>990<br>935<br>1132<br>3181<br>current<br>4<br>1<br>2<br>current                                     | <br><br><br><br>history1<br><br><br>history1                 | <br><br><br><br>history2<br><br><br>history2                 |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %                           | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm        | ASTM D5185m<br>ASTM D5185m                              | 450<br>3000<br>1150<br>1350<br>4250<br><b>Imit/base</b><br>>25<br>>158<br>>20<br><b>Imit/base</b><br>>3                     | 56<br>1<br>873<br>990<br>935<br>1132<br>3181<br>current<br>4<br>1<br>2<br>current<br>0.1                              | <br><br><br><br>history1<br><br><br>history1<br><br>history1 | <br><br><br><br>history2<br><br><br>history2<br>history2     |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration              | ppm<br>ppm<br>ppm<br>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<br>ASTM D5185m<br>ASTM D5185m<br>*ASTM D7844                              | 450<br>3000<br>1150<br>1350<br>4250<br><b>imit/base</b><br>>25<br>>158<br>>20<br><b>imit/base</b><br>>3<br>>20              | 56<br>1<br>873<br>990<br>935<br>1132<br>3181<br>current<br>4<br>1<br>2<br>current<br>0.1<br>4.8                       | <br><br><br><br><br>history1<br><br>history1<br><br>history1 | <br><br><br><br><br>history2<br><br><br>history2             |
| Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration<br>Sulfation | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m<br>ASTM D7844<br>*ASTM D7844<br>*ASTM D7624 | 450<br>3000<br>1150<br>1350<br>4250<br><b>imit/base</b><br>>25<br>>158<br>>20<br><b>imit/base</b><br>>3<br>>20<br>>3<br>>20 | 56<br>1<br>873<br>990<br>935<br>1132<br>3181<br><u>current</u><br>4<br>1<br>2<br><u>current</u><br>0.1<br>4.8<br>17.3 | <br><br><br><br><br>history1<br><br>history1<br><br>history1 | <br><br><br><br><br>history2<br><br>history2<br><br>history2 |



30

Abs

10

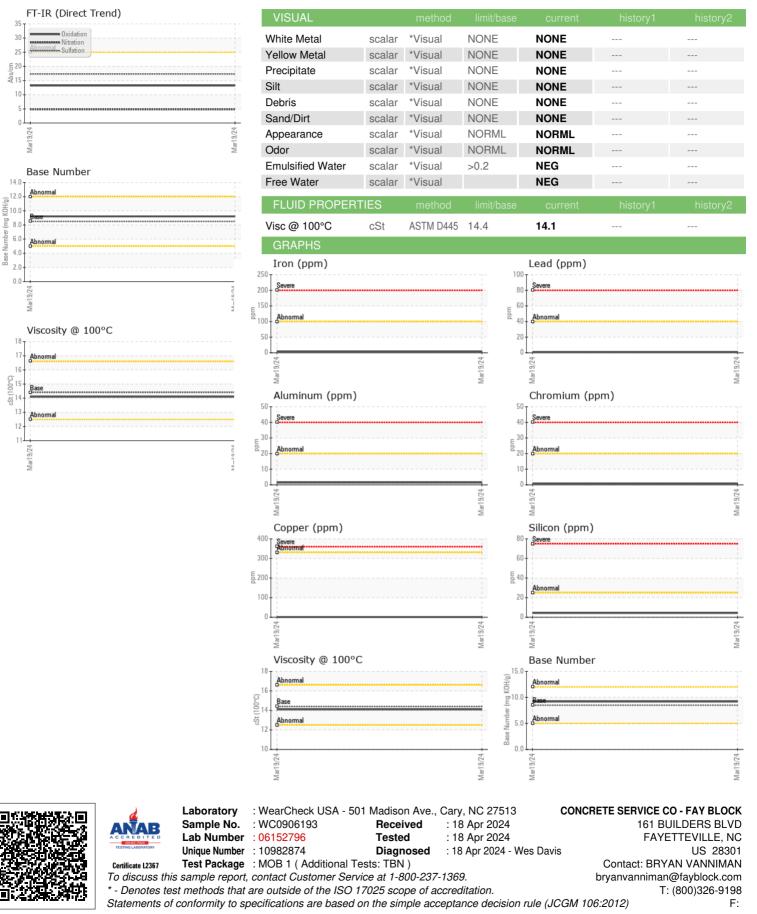
14

2.0

0.0

16 cSt (100°C)

# **OIL ANALYSIS REPORT**



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Contact/Location: BRYAN VANNIMAN - CONFAY