OIL ANALYSIS REPORT


2460

## Diesel Engine

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 INFORMATION |  | method | limit/base | current | history1 | history2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Sample Number |  | Client Info |  | WC0744199 | WC0694223 | --- |
| Sample Date |  | Client Info |  | 03 Jan 2023 | 21 Oct 2022 | --- |
| Machine Age | mls | Client Info |  | 15622 | 450 | --- |
| Oil Age | mls | Client Info |  | 0 | 450 | --- |
| Oil Changed |  | Client Info |  | N/A | N/A | --- |
| Sample Status |  |  |  | NORMAL | NORMAL | --- |
| CONTAMINATION |  | method | limit/base | current | history1 | history2 |
| Fuel |  | WC Method | $>5$ | <1.0 | $<1.0$ | --- |
| Water |  | WC Method | $>0.2$ | NEG | NEG | --- |
| Glycol |  | WC Method |  | NEG | NEG | --- |
| WEAR METALS |  | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >100 | 36 | 19 | --- |
| Chromium | ppm | ASTM D5185m | $>20$ | 1 | <1 | --- |
| Nickel | ppm | ASTM D5185m | >4 | <1 | 1 | --- |
| Titanium | ppm | ASTM D5185m |  | 0 | 0 | --- |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | --- |
| Aluminum | ppm | ASTM D5185m | $>20$ | 2 | 4 | --- |
| Lead | ppm | ASTM D5185m | $>40$ | 2 | $<1$ | --- |
| Copper | ppm | ASTM D5185m | >330 | 1 | 1 | --- |
| Tin | ppm | ASTM D5185m | $>15$ | 0 | <1 | --- |
| Vanadium | ppm | ASTM D5185m |  | 0 | 0 | --- |
| Cadmium | ppm | ASTM D5185m |  | <1 | 0 | --- |


| ADDITIVES |  | method | limit/base | current | history1 | history2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Boron | ppm | ASTM D5185m | 250 | $<1$ | 6 | --- |
| Barium | ppm | ASTM D5185m | 10 | 0 | $<1$ | --- |
| Molybdenum | ppm | ASTM D5185m | 100 | 61 | 57 | --- |
| Manganese | ppm | ASTM D5185m |  | <1 | $<1$ | --- |
| Magnesium | ppm | ASTM D5185m | 450 | 975 | 846 | --- |
| Calcium | ppm | ASTM D5185m | 3000 | 1105 | 1090 | --- |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1079 | 956 | --- |
| Zinc | ppm | ASTM D5185m | 1350 | 1280 | 1170 | --- |
| Sulfur | ppm | ASTM D5185m | 4250 | 3319 | 3304 | --- |
| CONTAMINANTS |  | method | limit/base | current | history1 | history2 |
| Silicon | ppm | ASTM D5185m | >25 | 3 | 6 | --- |
| Sodium | ppm | ASTM D5185m | >158 | 1 | 0 | --- |
| Potassium | ppm | ASTM D5185m | >20 | 1 | 2 | --- |
| INFRA-RED |  | method | limit/base | current | history1 | history2 |
| Soot \% | \% | *ASTM D7844 | >3 | 0.2 | 0.2 | --- |
| Nitration | Abs/cm | *ASTM D7624 | $>20$ | 7.0 | 9.4 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.2 | 20.0 | --- |
| FLUID DEGRADATION |  | method | limit/base | current | history1 | history2 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.0 | 15.9 | --- |
| Base Number (BN) | $\mathrm{mg} \mathrm{KOH} / \mathrm{g}$ | ASTM D2896 | 8.5 | 9.1 | 9.1 | --- |

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| VISUAL |  | method | limitbase | current | history1 | history2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| White Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | --- |
| Silt | scalar | *Visual | NONE | NONE | NONE | --- |
| Debris | scalar | *Visual | NONE | NONE | NONE | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | --- |
| Appearance | scalar | *Visual | NORML | NORML | NORML | --- |
| Odor | scalar | *Visual | NORML | NORML | NORML | --- |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | --- |
| Free Water | scalar | *Visual |  | NEG | NEG | --- |


| FLUID PROPERTIES | method | limitbase | current | history1 | history2 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Visc @ $100^{\circ} \mathrm{C}$ | cSt | ASTM D445 | 14.4 | $\mathbf{1 4 . 3}$ | 13.4 | --- |
| GRAPHS |  |  |  |  |  |  |



Aluminum (ppm)


Copper (ppm)




Chromium (ppm)


Silicon (ppm)



| Sample No. | $:$ WC0744199 | Received | $: 07$ Dec 2023 |
| :--- | :--- | :--- | :--- |
| Lab Number | $: 06027295$ | Diagnosed | $: 08$ Dec 2023 |
| Unique Number | $: 10777086$ | Diagnostician | : Wes Davis |

