

## Machine Id 141541 Component **Diesel Engine** DIESEL ENGINE OIL SAE 15W40 (--- GAL)

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

## **WEAR**

All component wear rates are normal.

## CONTAMINATION

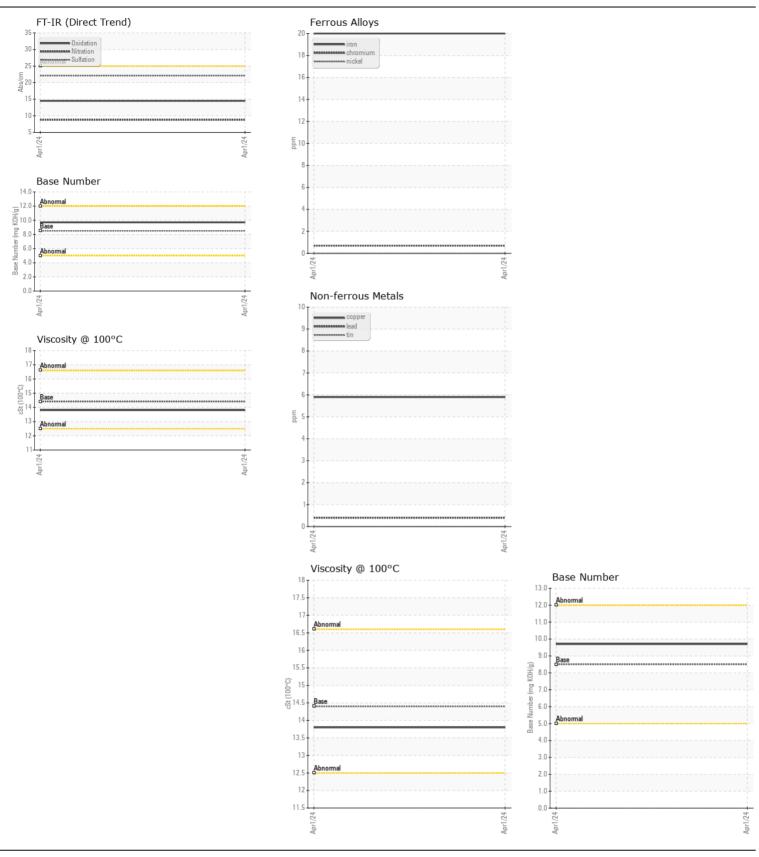
**FLUID CONDITION** 

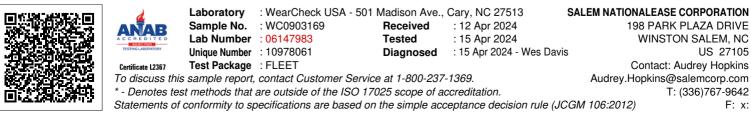
Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

The BN result indicates that there is suitable alkalinity remaining in the

oil. The condition of the oil is suitable for further service.

| Test               | UOM          | Method                     | Limit/Abn | Current      | History1 | History2 |
|--------------------|--------------|----------------------------|-----------|--------------|----------|----------|
| Sample Number      |              | Client Info                |           | WC0903169    |          |          |
| Sample Date        |              | Client Info                |           | 01 Apr 2024  |          |          |
| Machine Age        | mls          | Client Info                |           | 111228       |          |          |
| Oil Age            | mls          | Client Info                |           | 60000        |          |          |
| Filter Age         | mls          | Client Info                |           | 60000        |          |          |
| Oil Changed        |              | Client Info                |           | Changed      |          |          |
| Filter Changed     |              | Client Info                |           | Changed      |          |          |
| Sample Status      |              |                            |           | NORMAL       |          |          |
|                    |              |                            |           |              |          |          |
| Iron               | ppm          | ASTM D5185m                | >100      | 20           |          |          |
| Chromium           | ppm          | ASTM D5185m                | >20       | <1           |          |          |
| Nickel             | ppm          | ASTM D5185m                | >4        | 0            |          |          |
| Titanium           | ppm          | ASTM D5185m                |           | 0            |          |          |
| Silver             | ppm          | ASTM D5185m                | >3        | 0            |          |          |
| Aluminum           | ppm          | ASTM D5185m                | >20       | 3            |          |          |
| Lead               | ppm          | ASTM D5185m                | >40       | <1           |          |          |
| Copper             | ppm          | ASTM D5185m                | >330      | 6            |          |          |
| Tin                | ppm          | ASTM D5185m                | >15       | 0            |          |          |
| Vanadium           | ppm          | ASTM D5185m                |           | <1           |          |          |
| White Metal        | scalar       | *Visual                    | NONE      | NONE         |          |          |
| Yellow Metal       | scalar       | *Visual                    | NONE      | NONE         |          |          |
| Silicon            |              |                            | 05        | F            |          |          |
|                    | ppm          | ASTM D5185m<br>ASTM D5185m | >25       | 5<br>10      |          |          |
| Potassium<br>Fuel  | ppm          | WC Method                  | >20<br>>5 | -            |          |          |
|                    |              |                            |           | <1.0         |          |          |
| Water              |              | WC Method<br>WC Method     | >0.2      | NEG          |          |          |
| Glycol<br>Soot %   | %            | *ASTM D7844                | . 0       | NEG<br>1.8   |          |          |
| Nitration          | 70<br>Abs/cm | *ASTM D7644                | >3<br>>20 |              |          |          |
| Sulfation          | Abs/.1mm     | *ASTM D7624                | >20       | 8.8<br>22.1  |          |          |
| Silt               |              |                            |           |              |          |          |
|                    | scalar       | *Visual                    | NONE      | NONE<br>NONE |          |          |
| Debris             | scalar       | *Visual                    | NONE      | -            |          |          |
| Sand/Dirt          | scalar       | *Visual                    | NONE      | NONE         |          |          |
| Appearance<br>Odor | scalar       | *Visual                    | NORML     | NORML        |          |          |
| Emulsified Water   | scalar       | *Visual                    | >0.2      | NORML<br>NEG |          |          |
|                    | scalar       | *Visual                    | >0.2      | NEG          |          |          |
| Sodium             | ppm          | ASTM D5185m                | >158      | 3            |          |          |
| Boron              | ppm          | ASTM D5185m                | 250       | 8            |          |          |
| Barium             | ppm          | ASTM D5185m                | 10        | <1           |          |          |
| Molybdenum         | ppm          | ASTM D5185m                | 100       | 56           |          |          |
| Manganese          | ppm          | ASTM D5185m                |           | <1           |          |          |
| Magnesium          | ppm          | ASTM D5185m                | 450       | 865          |          |          |
| Calcium            | ppm          | ASTM D5185m                | 3000      | 1185         |          |          |
| Phosphorus         | ppm          | ASTM D5185m                | 1150      | 979          |          |          |
| Zinc               | ppm          | ASTM D5185m                | 1350      | 1126         |          |          |
| Sulfur             | ppm          | ASTM D5185m                | 4250      | 3338         |          |          |
| Oxidation          | Abs/.1mm     | *ASTM D7414                | >25       | 14.5         |          |          |
| Base Number (BN)   | mg KOH/g     | ASTM D2896                 | 8.5       | 9.7          |          |          |
| Visc @ 100°C       | cSt          | ASTM D445                  | 14.4      | 13.8         |          |          |
|                    |              |                            |           |              |          |          |





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