

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

FREIGHTLINER 862537

Component Diesel Engine Fluid SAE 5W30 (--- 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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
|---------------|----------|---------------|------------|-------------|----------|----------|
| Sample Number | | Client Info | | PC0085522 | | |
| Sample Date | | Client Info | | 29 May 2024 | | |
| Machine Age | kms | Client Info | | 0 | | |
| Oil Age | kms | Client Info | | 0 | | |
| Oil Changed | | Client Info | | N/A | | |
| Sample Status | | | | NORMAL | | |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | | |
| Water | | WC Method | >0.2 | NEG | | |
| Glycol | | WC Method | | NEG | | |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185(m) | >80 | 17 | | |
| Chromium | ppm | ASTM D5185(m) | >5 | <1 | | |
| Nickel | ppm | ASTM D5185(m) | >2 | <1 | | |
| Titanium | ppm | ASTM D5185(m) | | 0 | | |
| Silver | ppm | ASTM D5185(m) | >3 | 0 | | |
| Aluminum | ppm | ASTM D5185(m) | >30 | 4 | | |
| Lead | ppm | ASTM D5185(m) | >30 | 0 | | |
| Copper | ppm | ASTM D5185(m) | >150 | 22 | | |
| Tin | ppm | ASTM D5185(m) | >5 | 0 | | |
| Antimony | ppm | ASTM D5185(m) | | 0 | | |
| Vanadium | ppm | ASTM D5185(m) | | 0 | | |
| Beryllium | ppm | ASTM D5185(m) | | 0 | | |
| Cadmium | ppm | ASTM D5185(m) | | 0 | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185(m) | | 85 | | |
| Barium | ppm | ASTM D5185(m) | | 0 | | |
| Molybdenum | ppm | ASTM D5185(m) | | 77 | | |
| Manganese | ppm | ASTM D5185(m) | | <1 | | |
| Magnesium | ppm | ASTM D5185(m) | | 578 | | |
| Calcium | ppm | ASTM D5185(m) | | 1339 | | |
| Phosphorus | ppm | ASTM D5185(m) | | 716 | | |
| Zinc | ppm | ASTM D5185(m) | | 837 | | |
| Sulfur | ppm | ASTM D5185(m) | | 2351 | | |
| Lithium | ppm | ASTM D5185(m) | | <1 | | |
| CONTAMINAN | TS | method | limit/base | current | history1 | history2 |
| Silicon | ppm | ASTM D5185(m) | >20 | 7 | | |
| Sodium | ppm | ASTM D5185(m) | | 4 | | |
| Potassium | ppm | ASTM D5185(m) | >20 | 1 | | |
| INFRA-RED | | method | limit/base | current | history1 | history2 |
| Soot % | % | ASTM D7844* | >3 | 0 | | |
| Nitration | Abs/cm | ASTM D7624* | >20 | 7.7 | | |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 22.5 | | |



35

30

3.0

(B/Number (mg KOH/g)) 1.5 1.0

Pice 0.5 0.0 May29/24

> 75· Abnormal

70

> 50 Abnormal 45 Mav29/24

14 13 Abnormal

(10°C) 11 (10°C) 11 (10°C) 11 Base Abnormal

75 Abnormal

70

65 (40°C) 25 25 Base

F

45 50

OIL ANALYSIS REPORT

| T-IR (Direct Trend) | FLUID DEGRAD | <u>A LION</u> | method | | | | history2 |
|--|--|--------------------------------------|--|--|---|----------|-------------------------------------|
| Oxidation | Oxidation | Abs/.1mm | ASTM D7414* | >25 | 11.6 | | |
| amorman Sulfation | Acid Number (AN) | | ASTM D974* | | 2.78 | | |
| | Base Number (BN) | mg KOH/g | ASTM D2896* | | 5.78 | | |
| | VISUAL | | method | limit/base | current | history1 | history2 |
| | White Metal | scalar | Visual* | NONE | NONE | | |
| - 124 | Yellow Metal | scalar | Visual* | NONE | NONE | | |
| May29/24 | Precipitate | scalar | Visual* | NONE | NONE | | |
| | Silt | scalar | Visual* | NONE | LIGHT | | |
| cid Number | Debris | scalar | Visual* | NONE | NONE | | |
| | Sand/Dirt | scalar | Visual* | NONE | NONE | | |
| | Appearance | scalar | Visual* | NORML | NORML | | |
| | Odor | scalar | Visual* | NORML | NORML | | |
| | Emulsified Water | scalar | Visual* | >0.2 | NEG | | |
| | Free Water | scalar | Visual* | | NEG | | |
| May29/24 | FLUID PROPE | RTIES | method | limit/base | current | history1 | history2 |
| May29/24 | Visc @ 40°C | cSt | ASTM D7279(m) | 60.0 | 55.2 | | |
| | Visc @ 100°C | cSt | ASTM D7279(m) | 11.0 | 9.8 | | |
| iscosity @ 40°C | Viscosity Index (VI) | Scale | ASTM D2270* | 177 | 164 | | |
| bnormal | GRAPHS | | | | | | |
| | Iron (ppm) | | | | Lead (ppm) | | |
| lase | 150 Severe | | | | 80 60 Severe | | |
| | Abnormal | | | mdd | | | |
| N | 50 | | | | 20 | | |
| Abnormal | 04 | | | /24 | 124 | | |
| May29/24 | May29/2. | | | May29/24 | /lay29 | | |
| Ma | Z Aluminum (ppm) | | | 2 | Chromium (p | om) | |
| /iscosity @ 100°C | 60 Severe | | | , - | ¹⁵ T | | |
| | | | | ε | 10 - Severe | | |
| Abnormal | E 40 Abnormal | | | mdd | 5 - Abnormal | | |
| Dana | 0 | | | - | | | |
| 3856 | -2/62/v | | | May29/24 | y29/2 | | |
| Abnormal | Ma | | | Ma | May | | |
| | Copper (ppm) | | | | Silicon (ppm) ⁴⁰ ⊺ Severe | | |
| 9 C ac 19 | 200 | | | | 30 | | |
| | Abnormal | | | mqq | | | |
| | 0 | | | | 10 | | |
| íiscosity @ 40°C | 29/24 | | | May29/24 | 29/24 | | |
| \bnomal | May | | | Mayi | Mayi | | |
| | Viscosity @ 100°C | | | (B/) | Base Number | | |
| Base | G 14 Abnormal | | | HOX WB KOH/d) | | | |
| | G12 Base Base Base | | | u ja | H.U + | | |
| | in the second se | | | Number | 2.0 | | |
| Abnormal | 54 124 | | | Base N | 1.0 47 | | |
| | May29 | | | May29 | Vlay29 | | |
| Laboratory Sample No. Laboratory Sample No. Laboratory Unique Number Test Package To discuss this sample report, Test denoted (*) outside scop | : 5800382 : MOB 2 (Additional Te | Recei Teste Diagn sts: KV40 | ved : 19 d : 20 osed : 20 0, TAN Auto | Jun 2024 Jun 2024 Jun 2024 - V , TAN Man, | Wes Davis VI, Visual) | | ississauga, CA L5J Sehshad Sa |

Report Id: PCA_129713 [WCAMIS] 02642843 (Generated: 06/20/2024 10:40:26) Rev: 1

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