

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

FREIGHTLINER 635850

Component Gasoline 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 condition of the oil is suitable for further service.

| SAMPLE INFORI | MATION | method | limit/base | current | history1 | history2 |
|---------------|----------|---------------|------------|-------------|-------------|----------|
| Sample Number | | Client Info | | PC0085538 | PC0085554 | |
| Sample Date | | Client Info | | 19 Mar 2024 | 17 Jan 2024 | |
| Machine Age | kms | Client Info | | 95890 | 91872 | |
| Oil Age | kms | Client Info | | 8000 | 0 | |
| Oil Changed | | Client Info | | N/A | N/A | |
| Sample Status | | | | NORMAL | NORMAL | |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >4.0 | <1.0 | <1.0 | |
| Water | | WC Method | >0.2 | NEG | NEG | |
| Glycol | | WC Method | | NEG | NEG | |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185(m) | >150 | 17 | 4 | |
| Chromium | ppm | ASTM D5185(m) | >20 | 0 | 0 | |
| Nickel | ppm | ASTM D5185(m) | >5 | 0 | <1 | |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | |
| Silver | ppm | ASTM D5185(m) | >2 | 0 | 0 | |
| Aluminum | ppm | ASTM D5185(m) | >40 | 2 | 2 | |
| Lead | ppm | ASTM D5185(m) | >50 | 0 | <1 | |
| Copper | ppm | ASTM D5185(m) | >155 | 16 | 11 | |
| Tin | ppm | ASTM D5185(m) | >10 | 0 | 0 | |
| Antimony | ppm | ASTM D5185(m) | | 0 | 0 | |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | |
| Beryllium | ppm | ASTM D5185(m) | | 0 | 0 | |
| Cadmium | ppm | ASTM D5185(m) | | 0 | 0 | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185(m) | | 42 | 79 | |
| Barium | ppm | ASTM D5185(m) | | 0 | 0 | |
| Molybdenum | ppm | ASTM D5185(m) | | 67 | 67 | |
| Manganese | ppm | ASTM D5185(m) | | <1 | 0 | |
| Magnesium | ppm | ASTM D5185(m) | | 605 | 635 | |
| Calcium | ppm | ASTM D5185(m) | | 1141 | 1185 | |
| Phosphorus | ppm | ASTM D5185(m) | | 650 | 736 | |
| Zinc | ppm | ASTM D5185(m) | | 814 | 840 | |
| Sulfur | ppm | ASTM D5185(m) | | 2183 | 2432 | |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | |
| CONTAMINAN | TS | method | limit/base | current | history1 | history2 |
| Silicon | ppm | ASTM D5185(m) | >30 | 16 | 24 | |
| Sodium | ppm | ASTM D5185(m) | >400 | 2 | 2 | |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | <1 | |
| INFRA-RED | | method | limit/base | current | history1 | history2 |
| Soot % | % | ASTM D7844* | | 0 | 0 | |
| Nitration | Abs/cm | ASTM D7624* | >20 | 12.0 | 8.7 | |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 22.7 | 19.0 | |
| | | | | | | |



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75 Abnormal

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> 50 Abnormal

> 14 13 - Abnormal

() 11 33 10 Abnormal

Jan 17/24

Abnormal

70

Janl

FT-IR (Direct Trend)

Oxidation

Nitration Sulfation

Viscosity @ 40°C

Viscosity @ 100°C

Viscosity @ 40°C

OIL ANALYSIS REPORT

| FLUID DEGRAI | DATION | method | limit/base | current | history1 | history2 |
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| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 17.9 | 14.3 | |
| Base Number (BN) | mg KOH/g | ASTM D2896* | | 6.06 | 7.74 | |
| VISUAL | | method | limit/base | current | history1 | history2 |
| White Metal | scalar | Visual* | NONE | VLITE | NONE | |
| | | | | | | |
| | | | NONE | | | |
| Silt | | Visual* | | | NONE | |
| Debris | scalar | Visual* | NONE | NONE | NONE | |
| Sand/Dirt | scalar | Visual* | NONE | VLITE | VLITE | |
| 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 PROPE | RTIES | method | limit/base | current | history1 | history2 |
| | | ASTM D7279(m) | 60.0 | 58.5 | 57.0 | |
| - | | . , | | 10.0 | | |
| | Scale | , | | 158 | 163 | |
| | | | | | | |
| | | | | Lead (ppm) | | |
| 600 L | | | | Severe | | |
| 400 - Severe | | | | 1 9 | | |
| 200 - Abnormal | | | | Abnormal | | |
| 0 | | | 0 | | | |
| 17/24 | | | 19/24 | 17/24 | | |
| Jan | | | Mai | | | |
| Aluminum (ppm) | | | 60 | | om) | |
| | | | | Smiller | | |
| a 50 Abnormal | | | L L L L L L L L L L L L L L L L L L L | A | | |
| | | | 20 | - 0 | | |
| 24 0 | | | 24 | 24 | | |
| an 17/ | | | flar19/ | an17/ | | |
| Conner (nnm) | | | 2 | Silicon (nnm) | | |
| 300 Severe | | | 80 | | | |
| | | | 60 | | | |
| da 🖣 | | | | Abnormal | | |
| 0 | | | 20 | | | |
| 17/24 | | | | 7/24 | | |
| Jan | | | Mar | Jan | | |
| Viscosity @ 100°C | 2 | | (B | Base Number | | |
| Abnormal | | | Hoy 6.0 | | | |
| 212- Base 310- Abnormal | | | 80.U | | | |
| | | | ag 4.0 | - | | |
| ಕ್ಷ 10 - Abnormal | | | | L., | | |
| 8 | | | 4 0 | | | |
| 8 | | | ar19/24 | n17/2 | | |
| 8 8 4 4 10 10 10 10 10 10 10 10 10 10 10 10 10 | | | Mar19/24 | Jan 17/24 | | |
| Jan 17/24 | 5 Anniah | Line Rudia | Mar19/ | Jan17// | | |
| : WearCheck - C8-117 | | | gton, ON L7L | Jan17// | | |
| Jan 17/24 | 5 Appleby Recei Teste | ved : 01 | Mar19/ | Jan17// | 2900 ST | UPS CANAD EELES AVE ONCORD, C |
| : WearCheck - C8-117 : PC0085538 r : 02632534 r : 5773687 | Recei Teste Diagn | ved : 01 d : 02 losed : 02 | gton, ON L7L May 2024 | _ 5H9 | 2900 ST C | EELES AVE ONCORD, C CA L4K 3 |
| : WearCheck - C8-117: : PC0085538 r : 02632534 r : 5773687 e : MOB 2 (Additional Te | Recei Teste Diagn ests: KV4 | ved : 01 d : 02 iosed : 02 0, VI) : 02 | gton, ON L7L May 2024 2 May 2024 May 2024 - W | _ 5H9 | 2900 ST C | EELES AVE |
| : WearCheck - C8-117 : PC0085538 r : 02632534 r : 5773687 | Recei Teste Diagn ests: KV4 ice at 1-8 | ved : 01 d : 02 losed : 02 0, VI) 00-268-213 | gton, ON L7L May 2024 2 May 2024 May 2024 - W 7. | - 5H9 les Davis | 2900 ST C | EELES AVE ONCORD, C CA L4K 3 |
| | Base Number (BN) VISUAL White Metal Yellow Metal Precipitate Silt Debris Sand/Dirt Appearance Odor Emulsified Water Free Water FLUID PROPE Visc @ 40°C Visc @ 100°C Viscosity Index (VI) GRAPHS Iron (ppm) Muminum (ppm) Copper (ppm) Severe Abnormal Copper (ppm) Severe Copper (ppm) Copper (ppm) Severe Copper (ppm) Severe Copper (ppm) Copper (ppm) | Base Number (BN) mg KOHg VISUAL White Metal scalar Yellow Metal scalar Precipitate scalar Silt scalar Debris scalar Sand/Dirt scalar Appearance scalar Codor scalar Free Water scalar Free Water scalar FLUID PROPERTIES Visc @ 40°C cSt Visc @ 100°C cSt Viscosity Index (VI) Scale GRAPHS Iron (ppm) M M M M M M M M M M M M M | Base Number (BN) mg KOHg ASTM D2896* VISUAL method White Metal scalar Visual* Precipitate scalar Visual* Precipitate scalar Visual* Debris scalar Visual* Debris scalar Visual* Sand/Dirt scalar Visual* Appearance scalar Visual* Codor scalar Visual* Free Water scalar Visual* FLUID PROPERTIES method Visc @ 40°C cSt ASTM D7279(m) Viscosity Index (VI) Scale ASTM D7279(m) Viscosity Index (VI) Scale ASTM D2270* GRAPHS Iron (ppm) Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal Mammal | Base Number (BN) mg KOHg ASTM D2896" VISUAL method limit/base White Metal scalar Visual* NONE Yellow Metal scalar Visual* NONE Precipitate scalar Visual* NONE Silt scalar Visual* NONE Debris scalar Visual* NONE Sand/Dirt scalar Visual* NONE Appearance scalar Visual* NORML Odor scalar Visual* NORML Codor scalar Visual* NORML Emulsified Water scalar Visual* >0.2 Free Water scalar Visual* >0.2 Visc @ 40°C cSt ASTM D7279(m) 60.0 Visc @ 100°C cSt ASTM D7279(m) 60.0 Viscosity Index (VI) Scale ASTM D7279(m) 11.0 Viscosity Index (VI) Scale ASTM D7279(m) 60.0 GRAPHS fuminum (ppm) fuminum fuminum fuminum Mod <td>Base Number (BN) mg KOHig ASTM D2896' 6.06 VISUAL method limit/base current White Metal scalar Visual* NONE VLITE Yellow Metal scalar Visual* NONE NONE Precipitate scalar Visual* NONE NONE Sitt scalar Visual* NONE NONE Debris scalar Visual* NONE NONE Appearance scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Codor scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Codor scalar Visual* NORML NORML Visual* NORML NORML NORML NORML Visual* NORML NORML NORML NORML Visual* Scalar Visual* NOE NEG Fluit Precevate scalar Scalar None None</td> <td>Base Number (BN) mg KOHg ASTM D2296" 6.06 7.74 VISUAL method limit/base current history1 White Metal scalar Visual* NONE VLITE NONE Yellow Metal scalar Visual* NONE NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE NONE Debris scalar Visual* NONE NONE NONE NONE Sand/Dirt scalar Visual* NORML NORML NORML NORML Odor scalar Visual* NORML NORML NORML NORML Odor scalar Visual* NORML NORML NORML NORML Emulsified Water scalar Visual* NOE NEG NEG NEG Visc @ 40°C cSt ASIM D22701 177 158 163 GRAPHS Iron (ppm) fill <td< td=""></td<></td> | Base Number (BN) mg KOHig ASTM D2896' 6.06 VISUAL method limit/base current White Metal scalar Visual* NONE VLITE Yellow Metal scalar Visual* NONE NONE Precipitate scalar Visual* NONE NONE Sitt scalar Visual* NONE NONE Debris scalar Visual* NONE NONE Appearance scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Codor scalar Visual* NORML NORML Odor scalar Visual* NORML NORML Codor scalar Visual* NORML NORML Visual* NORML NORML NORML NORML Visual* NORML NORML NORML NORML Visual* Scalar Visual* NOE NEG Fluit Precevate scalar Scalar None None | Base Number (BN) mg KOHg ASTM D2296" 6.06 7.74 VISUAL method limit/base current history1 White Metal scalar Visual* NONE VLITE NONE Yellow Metal scalar Visual* NONE NONE NONE NONE Precipitate scalar Visual* NONE NONE NONE NONE Debris scalar Visual* NONE NONE NONE NONE Sand/Dirt scalar Visual* NORML NORML NORML NORML Odor scalar Visual* NORML NORML NORML NORML Odor scalar Visual* NORML NORML NORML NORML Emulsified Water scalar Visual* NOE NEG NEG NEG Visc @ 40°C cSt ASIM D22701 177 158 163 GRAPHS Iron (ppm) fill <td< td=""></td<> |

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