

| GFL218 Machine Id 833041 Component Natural Gas Engine | |
|---|--|
| Alea | |

Resample at the next service interval to monitor.

ECOMMENDATION

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

WEAR

Metal levels are typical for a new component breaking in.

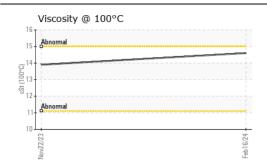
CONTAMINATION

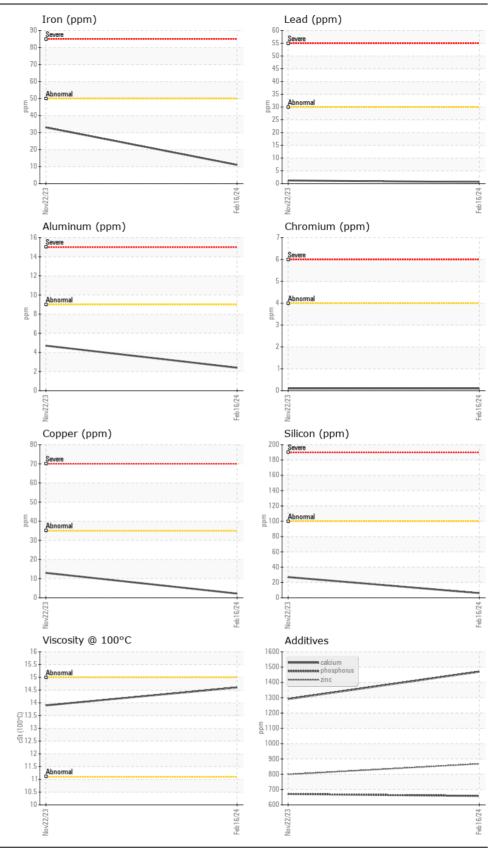
There is no indication of any contamination in the oil.

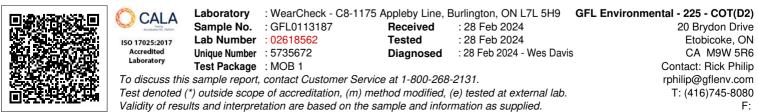
FLUID CONDITION

The condition of the oil is acceptable for the time in service.

| TestUOMMethodLimit/AnCurrentHistory1History2Sample NumberClient InfoGFL0113187GFL0103088Sample DateClient InfoIn 6 Feb 202422 Nov 2023Machine AgekmsClient Info00Filter AgekmsClient InfoO0Gli ChangedKmsClient InfoChangedChangedGli ChangedClient InfoChangedChangedFilter ChangedClient InfoChangedChangedSample StatusVVNORMALIronppmASTMD5185(m)>201133NickelppmASTMD5185(m)>2<1<NickelppmASTMD5185(m)>30<-1AluminumppmASTMD5185(m)>30<11AluminumppmASTMD5185(m)>30<11VanadiumppmASTMD5185(m)>4<1<SiliconppmASTMD5185(m)>202<1NameppmASTMD5185(m)>202<1SuitonppmASTMD5185(m)>202<1NordppmASTMD5185(m)>202<1NordppmASTMD5185(m)>202<1Nord <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> | | | | | | | |
|--|------------------|----------|---------------|-----------|-------------|-------------|----------|
| Sample DateClient InfoIfs Feb 202422 Nov 2023Machine AgekmsClient InfoI15296412Oil AgekmsClient Info00Filter AgekmsClient InfoChangedChangedOil ChangedClient InfoChangedChangedFilter ChangedClient InfoChangedChangedSample StatusNORMALNORMALIronppmASTM D5185(m)>501133NickelppmASTM D5185(m)>2<1<1NickelppmASTM D5185(m)>30<1SilverppmASTM D5185(m)>30<1AluminumppmASTM D5185(m)>30<11VanadiumppmASTM D5185(m)>30<11VanadiumppmASTM D5185(m)>4<1<1SiliconppmASTM D5185(m)>202<1SulfationppmASTM D5185(m)>2010.99.2SulfationppmASTM D5185(m)>2010.99.2SulfationppmASTM D5185(m)>2010.99.2SulfationppmASTM D5185(m)>2010.99.2SulfationAbs/rmASTM D5185(m)2010.9< | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
| Machine AgekmsClient InfoI15296412Oil AgekmsClient Info00Filter AgekmsClient InfoChangedChangedOil ChangedClient InfoChangedChangedFilter ChangedQClient InfoChangedChangedFilter ChangedIntoSample StatusNORMALNORMALIronppmASTMD5185(m)>501133NickelppmASTMD5185(m)>2<1<1NickelppmASTMD5185(m)>30<1SilverppmASTMD5185(m)>30<1AluminumppmASTMD5185(m)>30<11VanadiumppmASTMD5185(m)>30<11VanadiumppmASTMD5185(m)>4<1<1SiliconppmASTMD5185(m)>202<1SulfationAbs/cmASTMD5185(m)>202<1SulfationAbs/cmASTMD5185(m)>2010.99.2SulfationAbs/cmASTMD5185(m)>2010.99.2SulfationAbs/cmASTMD5185(m)>2010.99.2SulfationAbs/cmASTMD5185(m)>2010.99.2SulfationAbs/cmASTMD5185(m) <td< th=""><th>Sample Number</th><th></th><th>Client Info</th><th></th><th>GFL0113187</th><th>GFL0103088</th><th></th></td<> | Sample Number | | Client Info | | GFL0113187 | GFL0103088 | |
| Oil Age Filter AgeKmsClient InfoOOFilter AgekmsClient InfoChangedChangedGlangedClient InfoChangedChangedFilter ChangedClient InfoChangedChangedFilter ChangedClient InfoNORMALNORMALSample StatusNORMALNORMALNORMALIronppmASTND5185(m)>501133ChromiumppmASTND5185(m)>2<1<1NickelppmASTND5185(m)>30<1AluminumppmASTND5185(m)>30<11AluminumppmASTND5185(m)>30<11VanadiumppmASTND5185(m)>30<11SiliconppmASTND5185(m)>4<1<1VanadiumppmASTND5185(m)>+100627SuifationApsASTND5185(m)>-10RCGNarentwC Method>.01NEGSoot %%ASTND5185(m)>+100627SuifationApsASTND5185(m)>-1099.2NitrationAbs(-mASTND5185(m)2.01.0.99.2Soot %%ASTND5185(m)>.02.1.8Sodi | Sample Date | | Client Info | | 16 Feb 2024 | 22 Nov 2023 | |
| Filter Age Filter ChangedClient Info00Cil ChangedClient InfoChangedChangedFilter ChangedClient InfoChangedChangedSample StatusNORMALNORMALIronppmASTMD5185(m)>501133ChromiumppmASTMD5185(m)>2<1<1NickelppmASTMD5185(m)>2<1<1TitaniumppmASTMD5185(m)>30<1AluminumppmASTMD5185(m)>30<11AluminumppmASTMD5185(m)>30<11VanadiumppmASTMD5185(m)>30<11VanadiumppmASTMD5185(m)>202<1SiliconppmASTMD5185(m)>+10062.7VanadiumppmASTMD5185(m)>202<1NitrationAbs(-mASTMD5185(m)>202<1Soot %%ASTMD5185(m)>202.02NitrationAbs(-mASTMD5185(m)>2020.921.8Soot %%ASTMD5185(m)>.02Soot %%ASTMD5185(m)<02SodiumppmASTMD5185(m)<02 <td< th=""><th>Machine Age</th><th>kms</th><th>Client Info</th><th></th><th>11529</th><th>6412</th><th></th></td<> | Machine Age | kms | Client Info | | 11529 | 6412 | |
| Oli ChangedClient InfoChangedChangedChangedFilter ChangedClient InfoChangedChangedSample StatusClient InfoNORMALNORMALNORMALIronppmASTM D5185(m)>501133ChromiumppmASTM D5185(m)>4<1<1NickelppmASTM D5185(m)>2<1<1TitaniumppmASTM D5185(m)>30<1AluminumppmASTM D5185(m)>30<1AuminumppmASTM D5185(m)>30<11CopperppmASTM D5185(m)>30<11YanadiumppmASTM D5185(m)>4<1<1SiliconppmASTM D5185(m)>+10062.7SuitarionppmASTM D5185(m)>202<1YatarWC Method>0.1NEGNEGSoot %%ASTM D784400NitrationAbs/1mASTM D5185(m)>3020.921.8SodiumppmASTM D5185(m)S02MaterVisual*>0.1NEGNEGMaterVisual*>0.1NEG3MaterScalaVisual*>0.1NEG | Oil Age | kms | Client Info | | 0 | 0 | |
| Filter Changed Client Info Changed Changed Sample Status NORMAL NORMAL NORMAL Iron ppm ASTM D5/85(m) >50 11 33 Iron ppm ASTM D5/85(m) >4 <1 Chromium ppm ASTM D5/85(m) >2 <1 Nickel ppm ASTM D5/85(m) >2 <1 Titanium ppm ASTM D5/85(m) >3 0 <1 Aluminum ppm ASTM D5/85(m) >30 <1 1 Lead ppm ASTM D5/85(m) >30 <1 1 Vanadium ppm ASTM D5/85(m) >4 <1 <1 Vanadium ppm ASTM D5/85(m) >4 <1 <1 Silicon ppm ASTM D5/85(m) >20 2 <1 | Filter Age | kms | Client Info | | 0 | 0 | |
| Sample Status NORMAL NORMAL Iron ppm ASTM D5185(m) >50 11 33 Chromium ppm ASTM D5185(m) >4 <1 <1 Nickel ppm ASTM D5185(m) >2 <1 <1 Titanium ppm ASTM D5185(m) >2 <1 <1 Silver ppm ASTM D5185(m) >3 0 <1 Aluminum ppm ASTM D5185(m) >30 <1 1 Lead ppm ASTM D5185(m) >30 <1 1 Copper ppm ASTM D5185(m) >4 <1 <1 Vanadium ppm ASTM D5185(m) >4 <1 <1 Vanadium ppm ASTM D5185(m) >4 <1 <1 Vanadium ppm ASTM D5185(m) >20 2 <1 | Oil Changed | | Client Info | | Changed | Changed | |
| Iron ppm ASTM D5185(m) >50 11 33 Chromium ppm ASTM D5185(m) >4 <1 <1 Nickel ppm ASTM D5185(m) >2 <1 <1 Titanium ppm ASTM D5185(m) >2 <1 <1 Aluminum ppm ASTM D5185(m) >3 0 <1 Aluminum ppm ASTM D5185(m) >30 <1 1 Lead ppm ASTM D5185(m) >30 <1 1 Copper ppm ASTM D5185(m) >4 <1 <1 Vanadium ppm ASTM D5185(m) >4 <1 < Vanadium ppm ASTM D5185(m) >+100 6 27 Silicon ppm ASTM D5185(m) >20 2 <1 Vanadium ppm ASTM D5185(m) <th>Filter Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Changed</th> <th>Changed</th> <th></th> | Filter Changed | | Client Info | | Changed | Changed | |
| International prime ASTM D5165(m) >4 <1 | Sample Status | | | | NORMAL | NORMAL | |
| Imp ASTM D5165(m) >4 <1 | Iron | nom | ASTM D5185(m) | >50 | 11 | 33 | |
| Nickel ppm ASTM D5185(m) >2 <1 | - | | () | | | | |
| Titanium ppm ASTM D5185(m) O O Silver ppm ASTM D5185(m) >3 O <1 Aluminum ppm ASTM D5185(m) >3 O <1 Aluminum ppm ASTM D5185(m) >30 <1 1 Lead ppm ASTM D5185(m) >30 <1 1 Copper ppm ASTM D5185(m) >35 2 13 Vanadium ppm ASTM D5185(m) >4 <1 Vanadium ppm ASTM D5185(m) >4 <1 Vanadium ppm ASTM D5185(m) >20 2 <1 Vanadium ppm ASTM D5185(m) >20 2 <1 Water WC Method >0.1 NEG NEG Sulfation Abs/:m ASTM D7844* 0 0 Sulfa | | | · · / | | | | |
| Silver ppm ASTM D5185(m) >3 0 <1 | | | () | | | | |
| Aluminum ppm ASTM D5185(m) >9 2 5 Lead ppm ASTM D5185(m) >30 <1 1 Copper ppm ASTM D5185(m) >35 2 13 Tin ppm ASTM D5185(m) >4 <1 <1 Vanadium ppm ASTM D5185(m) >4 <1 <1 Vanadium ppm ASTM D5185(m) >4 <1 <1 Vanadium ppm ASTM D5185(m) >4 <1 <1 Vatar ppm ASTM D5185(m) >20 2 <1 Water WC Method >0.1 NEG NEG Soti % % ASTM D7184* 20 10.9 9.2 Sulfation Abs/rm ASTM D7182* >30 20.9 21.8 Sodium ppm ASTM D5185(m) 6 | | | (<i>1</i> | -3 | | | |
| Lead ppm ASTM D5185(m) >30 <1 | | | . , | - | - | | |
| Copper ppm ASTM D5185(m) >35 2 13 Tin ppm ASTM D5185(m) >4 <1 <1 Vanadium ppm ASTM D5185(m) >4 0 0 Silicon ppm ASTM D5185(m) >+100 6 27 Potassium ppm ASTM D5185(m) >20 2 <1 Water WC Method >0.1 NEG NEG Soot % % ASTM D7624* >20 10.9 9.2 Sulfation Abs/.1mm ASTM D715* >30 20.9 21.8 Sulfation Abs/.1mm ASTM D5185(m) 6 3 Sodium ppm ASTM D5185(m) 6 3 Sodium ppm ASTM D5185(m) 0 2 Molybdenum ppm ASTM D5185(m) 533 933 | | | · · / | | | | |
| Tin ppm ASTM D5185(m) >4 <1 | | | . , | | | | |
| Vanadium ppm ASTM D5185(m) 0 0 Silicon ppm ASTM D5185(m) >+100 6 27 Potassium ppm ASTM D5185(m) >20 2 <1 Water WC Method >0.1 NEG NEG Soot % % ASTM D7844* 0 0 Nitration Abs/cm ASTM D7624* >20 10.9 9.2 Sulfation Abs/.1mm ASTM D76185 30 20.9 21.8 Sodium ppm ASTM D5185(m) 6 3 Molybdenum ppm ASTM D5185(m) 0 | | | · / | | | | |
| Silicon ppm ASTM D5185(m) >+100 6 27 Potassium ppm ASTM D5185(m) >20 2 <1 Water WC Method >0.1 NEG NEG Soot % % ASTM D7844* 0 0 Nitration Abs/cm ASTM D7624* >20 10.9 9.2 Sulfation Abs/cm ASTM D7162* >30 20.9 21.8 Sodium ppm ASTM D5185(m) >0 2 Boron ppm ASTM D5185(m) 0 2 Molybdenum ppm ASTM D5185(m) | | | . , | 24 | | | |
| Potassium ppm ASTM D5185(m) >20 2 <1 | Variadium | ppin | | | | | |
| Water WC Method >0.1 NEG NEG Soot % % ASTM D7844* 0 0 Nitration Abs/cm ASTM D7624* >20 10.9 9.2 Sulfation Abs/.tmm ASTM D7624* >20 10.9 9.2 Sulfation Abs/.tmm ASTM D7624* >30 20.9 21.8 Emulsified Water scalar Visual* >0.1 NEG NEG Sodium ppm ASTM D5185(m) 6 3 Boron ppm ASTM D5185(m) 6 3 Malybdenum ppm ASTM D5185(m) 0 2 Manganese ppm ASTM D5185(m) 554 622 Magnesium ppm ASTM D5185(m) 1470 1291 Phosphorus ppm ASTM D5185(m) 658 671 Zinc ppm ASTM D5185(m) 868 7 | Silicon | ppm | ASTM D5185(m) | >+100 | 6 | 27 | |
| Soot % % ASTM D7844* 0 0 Nitration Abs/cm ASTM D7624* >20 10.9 9.2 Sulfation Abs/.1mm ASTM D7624* >30 20.9 21.8 Sulfation Abs/.1mm ASTM D7415* >30 20.9 21.8 Emulsified Water scalar Visual* >0.1 NEG NEG Sodium ppm ASTM D5185(m) 6 3 Boron ppm ASTM D5185(m) 0 2 Molybdenum ppm ASTM D5185(m) 0 2 Magnesium ppm ASTM D5185(m) < 61 7 Magnesium ppm ASTM D5185(m) 554 622 Phosphorus ppm ASTM D5185(m) 1470 1291 Zinc ppm ASTM D5185(m) 658 6 | Potassium | ppm | ASTM D5185(m) | >20 | 2 | <1 | |
| NitrationAbs/cmASTM D7624*>2010.99.2SulfationAbs/.1mmASTM D7415*>3020.921.8Emulsified WaterscalarVisual*>0.1NEGNEGSodiumppmASTM D5185(m)63BoronppmASTM D5185(m)63BariumppmASTM D5185(m)02MolybdenumppmASTM D5185(m)02ManganeseppmASTM D5185(m)<117MagnesiumppmASTM D5185(m)6586671PhosphorusppmASTM D5185(m)658799ZincppmASTM D5185(m)868799SulfurppmASTM D5185(m)11.417.0OxidationAbs/.1mmASTM D5185(m)11.417.0 | Water | | WC Method | >0.1 | NEG | NEG | |
| SulfationAbs/.1mmASTM D7415*>3020.921.8Emulsified WaterscalarVisual*>0.1NEGNEGSodiumppmASTM D5185(m)63BoronppmASTM D5185(m)8111BariumppmASTM D5185(m)02MolybdenumppmASTM D5185(m)02ManganeseppmASTM D5185(m)<117MagnesiumppmASTM D5185(m)6554622PhosphorusppmASTM D5185(m)14701291ZincppmASTM D5185(m)658671SulfurppmASTM D5185(m)868799SulfurppmASTM D5185(m)21052198OxidationAbs/.1mmASTM D7141*>2517.417.0 | Soot % | % | ASTM D7844* | | 0 | 0 | |
| Emulsified WaterscalarVisual*>0.1NEGNEGSodiumppmASTM D5185(m)63BoronppmASTM D5185(m)811BariumppmASTM D5185(m)02MolybdenumppmASTM D5185(m)02ManganeseppmASTM D5185(m)5393MagnesiumppmASTM D5185(m)<17CalciumppmASTM D5185(m)14701291PhosphorusppmASTM D5185(m)658671ZincppmASTM D5185(m)868799SulfurppmASTM D5185(m)21052198OxidationAbs/.1mASTM D7414*>2517.417.0 | Nitration | Abs/cm | ASTM D7624* | >20 | 10.9 | 9.2 | |
| Sodium ppm ASTM D5185(m) 6 3 Boron ppm ASTM D5185(m) 8 11 Barium ppm ASTM D5185(m) 0 2 Molybdenum ppm ASTM D5185(m) 0 2 Molybdenum ppm ASTM D5185(m) 53 93 Manganese ppm ASTM D5185(m) <1 7 Magnesium ppm ASTM D5185(m) <11 7 Calcium ppm ASTM D5185(m) <554 622 Phosphorus ppm ASTM D5185(m) 1470 1291 Zinc ppm ASTM D5185(m) 658 671 Sulfur ppm ASTM D5185(m) 868 799 Oxidation Abs/.1mm ASTM D5185(m) 2105 2198 | Sulfation | Abs/.1mm | ASTM D7415* | >30 | 20.9 | 21.8 | |
| Boron ppm ASTM D5185(m) 8 11 Barium ppm ASTM D5185(m) 0 2 Molybdenum ppm ASTM D5185(m) 0 2 Molybdenum ppm ASTM D5185(m) 53 93 Manganese ppm ASTM D5185(m) <1 7 Magnesium ppm ASTM D5185(m) <554 622 Calcium ppm ASTM D5185(m) 1470 1291 Phosphorus ppm ASTM D5185(m) 658 671 Zinc ppm ASTM D5185(m) 868 799 Sulfur ppm ASTM D5185(m) 2105 2198 Oxidation Abs/.1mm ASTM D7141*<>25 17.4 17.0 | Emulsified Water | scalar | Visual* | >0.1 | NEG | NEG | |
| Boron ppm ASTM D5185(m) 8 11 Barium ppm ASTM D5185(m) 0 2 Molybdenum ppm ASTM D5185(m) 0 2 Molybdenum ppm ASTM D5185(m) 53 93 Manganese ppm ASTM D5185(m) <1 7 Magnesium ppm ASTM D5185(m) <554 622 Calcium ppm ASTM D5185(m) 1470 1291 Phosphorus ppm ASTM D5185(m) 658 671 Zinc ppm ASTM D5185(m) 868 799 Sulfur ppm ASTM D5185(m) 2105 2198 Oxidation Abs/.1mm ASTM D7141*<>25 17.4 17.0 | Sodium | nom | ASTM D5185(m) | | 6 | 3 | |
| Barium ppm ASTM D5185(m) 0 2 Molybdenum ppm ASTM D5185(m) 53 93 Manganese ppm ASTM D5185(m) <1 7 Magnesium ppm ASTM D5185(m) <11 7 Magnesium ppm ASTM D5185(m) <554 622 Calcium ppm ASTM D5185(m) 1470 1291 Phosphorus ppm ASTM D5185(m) 658 671 Zinc ppm ASTM D5185(m) 868 799 Sulfur ppm ASTM D5185(m) 2105 2198 Oxidation Abs/.1mm ASTM D7414*<>25 17.4 17.0 | | | . , | | | | |
| Molybdenum ppm ASTM D5185(m) 53 93 Manganese ppm ASTM D5185(m) <1 7 Magnesium ppm ASTM D5185(m) 554 622 Calcium ppm ASTM D5185(m) 1470 1291 Phosphorus ppm ASTM D5185(m) 658 671 Zinc ppm ASTM D5185(m) 868 799 Sulfur ppm ASTM D5185(m) 2105 2198 Oxidation Abs/.1mm ASTM D7414*<>25 17.4 17.0 | | | · / | | | | |
| Manganese ppm ASTM D5185(m) <1 | | | . , | | | | |
| Magnesium ppm ASTM D5185(m) 554 622 Calcium ppm ASTM D5185(m) 1470 1291 Phosphorus ppm ASTM D5185(m) 658 671 Zinc ppm ASTM D5185(m) 868 799 Sulfur ppm ASTM D5185(m) 2105 2198 Oxidation Abs/.1mm ASTM D7414*<>25 17.4 17.0 | - | | | | | | |
| Calcium ppm ASTM D5185(m) 1470 1291 Phosphorus ppm ASTM D5185(m) 658 671 Zinc ppm ASTM D5185(m) 868 799 Sulfur ppm ASTM D5185(m) 2105 2198 Oxidation Abs/.1mm ASTM D7414*<>25 17.4 17.0 | - | | () | | | | |
| Phosphorus ppm ASTM D5185(m) 658 671 Zinc ppm ASTM D5185(m) 868 799 Sulfur ppm ASTM D5185(m) 2105 2198 Oxidation Abs/.1mm ASTM D7414*<>25 17.4 17.0 | - | | ASTM D5185(m) | | | 1291 | |
| Zinc ppm ASTM D5185(m) 868 799 Sulfur ppm ASTM D5185(m) 2105 2198 Oxidation Abs/.1mm ASTM D7414* >25 17.4 17.0 | Phosphorus | | ASTM D5185(m) | | 658 | 671 | |
| Sulfur ppm ASTM D5185(m) 2105 2198 Oxidation Abs/.1mm ASTM D7414* >25 17.4 17.0 | | | | | | 799 | |
| Oxidation Abs/.1mm ASTM D7414* >25 17.4 17.0 | Sulfur | | ASTM D5185(m) | | 2105 | 2198 | |
| Visc @ 100°C cSt ASTM D7279(m) 14.6 13.9 | | | | >25 | 17.4 | 17.0 | |
| | Visc @ 100°C | cSt | ASTM D7279(m) | | 14.6 | 13.9 | |







Submitted By: Kim McCall Page 2 of 2