

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

Machine Id **514043** Component **Diesel Engine** Filuid **PETRO CANADA DURON SAE 10W30 (--- GAL)**

| RECOMMENDATION | Test | UOM |
|-------------------------------------------------------------------|------------------------------------------------------|---------------------------------|
| Resample at the next service interval to monitor. | Sample Number | |
| | Sample Date | |
| | Machine Age | kms |
| | Oil Age | kms |
| | Filter Age | kms |
| | Oil Changed | |
| | Filter Changed | |
| | Sample Status | |
| | | |
| WEAR | Iron | ppm |
| | Iron Chromium | ppm ppm |
| WEAR Metal levels are typical for a new component breaking in. | | |
| | Chromium | ppm |
| | Chromium Nickel | ppm ppm |
| | Chromium Nickel Titanium | ppm ppm ppm |
| | Chromium Nickel Titanium Silver | ppm ppm ppm ppm |
| | Chromium Nickel Titanium Silver Aluminum | ppm ppm ppm ppm ppm |

| CONTAMINAT | |
|------------|--|
| | |

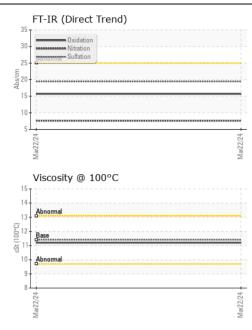
Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

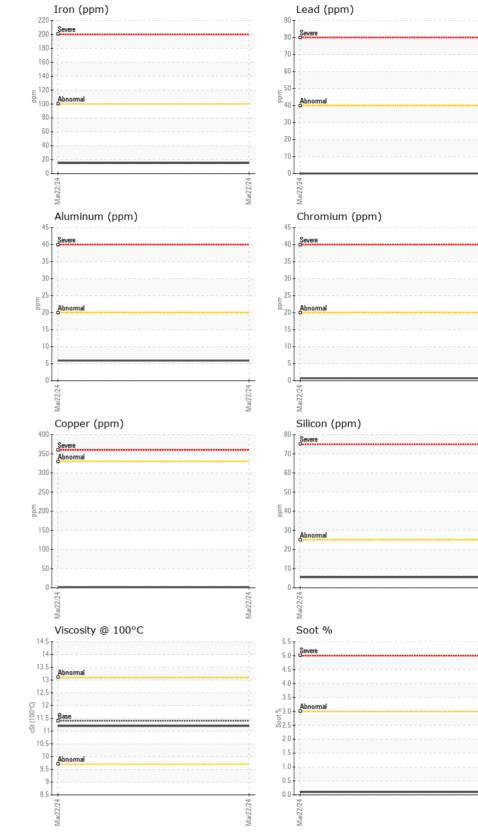
FLUID CONDITION

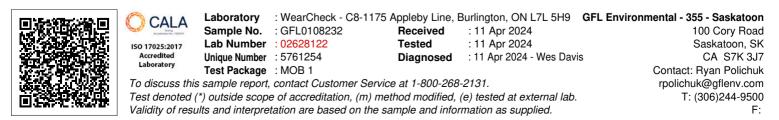
The condition of the oil is acceptable for the time in service.

| Test UOM Method Limit/An Current History1 History2 Sample Number Client Info GFL0108232 Machine Age kms Client Info 1789 Machine Age kms Client Info 500 Oil Age kms Client Info 500 Oil Age kms Client Info Changed Oil Changed Client Info Changed Sample Status V NORMAL Iron ppm ASTMD5185(m) >100 15 Silver ppm ASTMD5185(m) >4 0 Silver ppm ASTMD5185(m) >30 0 Silver ppm ASTMD5185(m) >40 0 Silver | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|---------------|-----------|-------------|----------|----------|
| Sample Date Client Info 2 Mar 2024 Machine Age kms Client Info 1789 Oil Age kms Client Info 500 Filter Age kms Client Info 500 Oil Changed Client Info Changed Filter Changed Client Info Changed Filter Changed Client Info Changed Sample Status Vision 10 15 Iron ppm ASTMD5186(m) >20 <1 Nickel ppm ASTMD5186(m) >20 <1 Nickel ppm ASTMD5186(m) >30 0 Aluminum ppm ASTMD5186(m) >30 0 Soliver ppm ASTMD5186(m) <t< th=""><th>Test</th><th>UOM</th><th>Method</th><th>Limit/Abn</th><th>Current</th><th>History1</th><th>History2</th></t<> | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
| Machine Age kms Client Info 1789 Oil Age kms Client Info 500 Filter Age kms Client Info Changed Oil Changed Client Info Changed Filter Changed Client Info Changed Sample Status NORMAL Iron ppm ASTM 05185(m) >10 15 Nickel ppm ASTM 05185(m) >20 <1 Nickel ppm ASTM 05185(m) >3 0 Aluminum ppm ASTM 05185(m) >30 0 Vanadium ppm ASTM 05185(m) >30 0 Silicon ppm ASTM 05185(m) >20 11 Vanadium ppm | Sample Number | | Client Info | | GFL0108232 | | |
| Oil Age kms Client Info 500 Filter Age kms Client Info 500 Oil Changed Client Info Changed Filter Changed Client Info Changed Sample Status NORMAL Iron ppm ASTMD5185(m) >100 15 Chromium ppm ASTMD5185(m) >20 <1 Nickel ppm ASTMD5185(m) >30 0 Aluminum ppm ASTMD5185(m) >30 0 Adminum ppm ASTMD5185(m) >30 2 Adminum ppm ASTMD5185(m) >30 2 Vanadium ppm ASTMD5185(m) >20 11 Silicon ppm <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>22 Mar 2024</th> <th></th> <th></th> | Sample Date | | Client Info | | 22 Mar 2024 | | |
| Oil Age kms Client Info 500 Filter Age kms Client Info 500 Oil Changed Client Info Changed Filter Changed M Client Info Changed Sample Status NORMAL Iron ppm ASTM05185(m) >100 15 Nickel ppm ASTM05185(m) >40 <1 Nickel ppm ASTM05185(m) >40 0 Nickel ppm ASTM05185(m) >20 6 Aluminum ppm ASTM05185(m) >20 6 Lead ppm ASTM05185(m) >20 11 Vanadium ppm ASTM05185(m) >20 11 Vanadium | Machine Age | kms | Client Info | | 1789 | | |
| Oil Changed Client Info Changed Filter Changed Client Info Changed Sample Status VORMAL Iron ppm ASTM D5185(m) >100 15 Nickel ppm ASTM D5185(m) >20 <1 Nickel ppm ASTM D5185(m) >20 <1 Nickel ppm ASTM D5185(m) >20 6 Aluminum ppm ASTM D5185(m) >30 0 Lead ppm ASTM D5185(m) >30 2 | Oil Age | kms | Client Info | | 500 | | |
| Filter Changed Sample Status Client Info Changed NORMAL Iron ppm ASTM D5185(m) >100 15 Chromium ppm ASTM D5185(m) >20 <1 Nickel ppm ASTM D5185(m) >20 <1 Nickel ppm ASTM D5185(m) >20 6 Silver ppm ASTM D5185(m) >30 0 Lead ppm ASTM D5185(m) >30 2 Vanadium ppm ASTM D5185(m) >30 2 Silicon ppm ASTM D5185(m) >20 6 Silicon ppm ASTM D5185(m) >20 11 Silicon ppm ASTM D5185(m) >20 11 Glycol WC Method >0. | Filter Age | kms | Client Info | | 500 | | |
| Sample Status NORMAL Iron ppm ASTM D5185(m) >100 15 Chromium ppm ASTM D5185(m) >20 <1 Nickel ppm ASTM D5185(m) >4 <1 Titanium ppm ASTM D5185(m) >3 0 Aluminum ppm ASTM D5185(m) >3 0 Lead ppm ASTM D5185(m) >40 0 Vanadium ppm ASTM D5185(m) >40 0 Vanadium ppm ASTM D5185(m) >20 6 Vanadium ppm ASTM D5185(m) >20 11 Vanadium ppm ASTM D5185(m) >20 11 Silicon ppm ASTM D5185(m) >20 11 | Oil Changed | | Client Info | | Changed | | |
| Iron ppm ASTM D5185(m) >100 15 Chromium ppm ASTM D5185(m) >20 <1 Nickel ppm ASTM D5185(m) >4 <1 Titanium ppm ASTM D5185(m) >3 0 Aluminum ppm ASTM D5185(m) >20 6 Lead ppm ASTM D5185(m) >20 6 Copper ppm ASTM D5185(m) >20 6 Vanadium ppm ASTM D5185(m) >20 1 Silicon ppm ASTM D5185(m) >20 11 Fuel WC Method >0 11 Glycol WC Method >0.2 NEG Sodt % % MSTM D7844 >3 | Filter Changed | | Client Info | | Changed | | |
| Imp ASTM D5185(m) >20 <1 | Sample Status | | | | NORMAL | | |
| Imp ASTM D5185(m) >20 <1 | | | | | | | |
| Nickel pm ASTM D5185(m) >4 <1 | - | | () | | | | |
| Titanium ppm ASTM D5185(m) 0 Silver ppm ASTM D5185(m) >3 0 Aluminum ppm ASTM D5185(m) >20 6 Lead ppm ASTM D5185(m) >40 0 Copper ppm ASTM D5185(m) >330 2 Vanadium ppm ASTM D5185(m) >330 2 Vanadium ppm ASTM D5185(m) >15 <1 Silicon ppm ASTM D5185(m) >20 11 Vanadium ppm ASTM D5185(m) >20 11 Silicon ppm ASTM D5185(m) >20 11 Fuel WC Method >0.2 NEG Glycol WC Method >0.2 NEG Soot % % ASTM D71415 >30 <t< th=""><th></th><th></th><th>· /</th><th></th><th></th><th></th><th></th></t<> | | | · / | | | | |
| Silver ppm ASTM D5185(m) >3 0 Aluminum ppm ASTM D5185(m) >20 6 Lead ppm ASTM D5185(m) >40 0 Copper ppm ASTM D5185(m) >330 2 Tin ppm ASTM D5185(m) >330 2 Vanadium ppm ASTM D5185(m) >25 6 Silicon ppm ASTM D5185(m) >25 6 Silicon ppm ASTM D5185(m) >20 11 Silicon ppm ASTM D5185(m) >20 11 Water WC Method >0.2 NEG Soot % % ASTM D5185(m) 1 Sodium ppm ASTM D5185(m) 1 <th< th=""><th></th><th></th><th>()</th><th>>4</th><th></th><th></th><th></th></th<> | | | () | >4 | | | |
| Aluminum ppm ASTM D5185(m) >20 6 Lead ppm ASTM D5185(m) >40 0 Copper ppm ASTM D5185(m) >330 2 Tin ppm ASTM D5185(m) >15 <1 Vanadium ppm ASTM D5185(m) >25 6 Silicon ppm ASTM D5185(m) >20 11 Fuel WC Method >5 <1.0 Water WC Method >0.2 NEG Soot % % ASTM D7844* >3 0.1 Solt % % ASTM D71624* >20 7.6 Sulfation Abs/tmm ASTM D71624* >0.2 NEG Sodium ppm ASTM D5185(m) 1 <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<> | | | | | | | |
| Lead ppm ASTM D5185(m) >40 0 Copper ppm ASTM D5185(m) >330 2 Tin ppm ASTM D5185(m) >15 <1 | | | () | | - | | |
| Copper ppm ASTM D5185(m) >330 2 Tin ppm ASTM D5185(m) >15 <1 Vanadium ppm ASTM D5185(m) >15 <1 Silicon ppm ASTM D5185(m) >20 11 Potassium ppm ASTM D5185(m) >20 11 Fuel WC Method >5 <1.0 Water WC Method >0.2 NEG Soot % % ASTM D7844* >3 0.1 Solt % % ASTM D7624* >30 19.4 Sulfation Abs/.1mm ASTM D7115* >30 19.4 Sodium ppm ASTM D5185(m) 1 1 Sodium ppm ASTM D5185(m) 1 | | ppm | (/ | | | | |
| Tin ppm ASTM D5185(m) >15 <1 | | | | | | | |
| Vanadium ppm ASTM D5185(m) 0 Silicon ppm ASTM D5185(m) >25 6 Potassium ppm ASTM D5185(m) >20 11 Fuel WC Method >5 <1.0 Water WC Method >0.2 NEG Glycol WC Method >0.2 NEG Soot % % ASTM D7624* >30 0.1 Sulfation Abs/cm ASTM D7624* >30 19.4 Sulfation Abs/.1mm ASTM D7624* >30 19.4 Sulfation Abs/.1mm ASTM D7624* >30 19.4 Sulfation Abs/.1mm ASTM D7624* >30 19.4 Sodium ppm ASTM D5185(m) 1 1 | | ppm | | | | | |
| Silicon ppm ASTM D5185(m) >25 6 Potassium ppm ASTM D5185(m) >20 11 Fuel WC Method >5 <1.0 Water Image: WC Method >0.2 NEG Glycol WC Method >0.2 NEG Soot % % ASTM D7844* >3 0.1 Soot % % ASTM D7844* >3 0.1 Sulfation Abs/.tmm ASTM D7624* >20 7.6 Sulfation Abs/.tmm ASTM D5185(m) 1 Sodium ppm ASTM D5185(m) 1 1 Boron ppm ASTM D5185(m) 1 0 Molybdenum ppm ASTM D5185(m) 1 1 | | | | >15 | | | |
| Potassium ppm ASTM D5185(m) >20 11 Fuel WC Method >5 <1.0 Water WC Method >0.2 NEG Glycol WC Method >0.2 NEG Soot % % ASTM D7844' >3 0.1 Nitration Abs/cm ASTM D7624' >20 7.6 Sulfation Abs/.1mm ASTM D7415' >30 19.4 Sodium ppm ASTM D5185(m) 1 Sodium ppm ASTM D5185(m) 1 1 Boron ppm ASTM D5185(m) 1 0 Molybdenum ppm ASTM D5185(m) 1 <1 Manganese ppm ASTM D5185(m) 1062 < | Vanadium | ppm | ASTM D5185(m) | | 0 | | |
| Potassium ppm ASTM D5185(m) >20 11 Fuel WC Method >5 <1.0 Water WC Method >0.2 NEG Glycol WC Method >0.2 NEG Soot % % ASTM D7844' >3 0.1 Nitration Abs/cm ASTM D7624' >20 7.6 Sulfation Abs/.1mm ASTM D7415' >30 19.4 Sodium ppm ASTM D5185(m) 1 Sodium ppm ASTM D5185(m) 1 1 Boron ppm ASTM D5185(m) 1 0 Molybdenum ppm ASTM D5185(m) 1 <1 Manganese ppm ASTM D5185(m) 1062 < | Silicon | ppm | ASTM D5185(m) | >25 | 6 | | |
| Fuel WC Method >5 <1.0 | Potassium | | ASTM D5185(m) | >20 | 11 | | |
| GlycolWC MethodNEGSoot %%ASTM D7844*>30.1NitrationAbs/cmASTM D7624*>207.6SulfationAbs/1mmASTM D7624*>3019.4Emulsified WaterscalarVisual*>0.2NEGSodiumppmASTM D5185(m)11BoronppmASTM D5185(m)11BariumppmASTM D5185(m)158MolybdenumppmASTM D5185(m)1 <fl><fl>MagnesiumppmASTM D5185(m)1<fl>PhosphorusppmASTM D5185(m)1002ZincppmASTM D5185(m)1102982SulfurppmASTM D5185(m)39032447OxidationAbs/.1mmASTM D5185(m)39032447</fl></fl></fl> | Fuel | | WC Method | >5 | <1.0 | | |
| Soot % % ASTM D7844* >3 0.1 Nitration Abs/cm ASTM D7624* >20 7.6 Sulfation Abs/.1mm ASTM D7624* >20 7.6 Sulfation Abs/.1mm ASTM D7415* >30 19.4 Emulsified Water scalar Visual* >0.2 NEG Sodium ppm ASTM D5185(m) 1 Boron ppm ASTM D5185(m) 1 0 Barium ppm ASTM D5185(m) 1 0 Molybdenum ppm ASTM D5185(m) 1 58 Magnesium ppm ASTM D5185(m) 1 <1 Magnesium ppm ASTM D5185(m) 10 969 Phosphorus | Water | | WC Method | >0.2 | NEG | | |
| NitrationAbs/cmASTM D7624*>207.6SulfationAbs/.1mmASTM D7415*>3019.4Emulsified WaterscalarVisual*>0.2NEGSodiumppmASTM D5185(m)11BoronppmASTM D5185(m)11BariumppmASTM D5185(m)10MolybdenumppmASTM D5185(m)1<58ManganeseppmASTM D5185(m)1<1MagnesiumppmASTM D5185(m)10969PhosphorusppmASTM D5185(m)1102982ZincppmASTM D5185(m)13511177SulfurppmASTM D5185(m)39032447OxidationAbs/.1mmASTM D7141*>2515.7 | Glycol | | WC Method | | NEG | | |
| SulfationAbs/.1mmASTM D7415*>3019.4Emulsified WaterscalarVisual*>0.2NEGSodiumppmASTM D5185(m)11BoronppmASTM D5185(m)11BariumppmASTM D5185(m)10MolybdenumppmASTM D5185(m)158ManganeseppmASTM D5185(m)1<11MagnesiumppmASTM D5185(m)10969PhosphorusppmASTM D5185(m)1102982ZincppmASTM D5185(m)13511177SulfurppmASTM D5185(m)39032447OxidationAbs/.1mmASTM D7414*>2515.7 | Soot % | % | ASTM D7844* | >3 | 0.1 | | |
| Emulsified Water scalar Visual* >0.2 NEG Sodium ppm ASTM D5185(m) 1 Boron ppm ASTM D5185(m) 1 1 Barium ppm ASTM D5185(m) 1 0 Molybdenum ppm ASTM D5185(m) 1 0 Manganese ppm ASTM D5185(m) 1 <ft><ft> Magnesium ppm ASTM D5185(m) 10 969 Calcium ppm ASTM D5185(m) 100 969 Phosphorus ppm ASTM D5185(m) 2942 1062 Zinc ppm ASTM D5185(m) 1351 1177 Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1m</ft></ft> | Nitration | Abs/cm | ASTM D7624* | >20 | 7.6 | | |
| Sodium ppm ASTM D5185(m) 1 Boron ppm ASTM D5185(m) 1 1 Barium ppm ASTM D5185(m) 1 0 Barium ppm ASTM D5185(m) 1 0 Molybdenum ppm ASTM D5185(m) 1 58 Manganese ppm ASTM D5185(m) 1 <1 Magnesium ppm ASTM D5185(m) 1 <1 Calcium ppm ASTM D5185(m) 10 969 Phosphorus ppm ASTM D5185(m) 100 969 Zinc ppm ASTM D5185(m) 102 982 Zinc ppm ASTM D5185(m) 1351 1177 Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1mm< | Sulfation | Abs/.1mm | ASTM D7415* | >30 | 19.4 | | |
| Boron ppm ASTM D5185(m) 1 1 Barium ppm ASTM D5185(m) 1 0 Molybdenum ppm ASTM D5185(m) 1 0 Manganese ppm ASTM D5185(m) 1 <1 Magnesium ppm ASTM D5185(m) 1 <1 Calcium ppm ASTM D5185(m) 10 969 Phosphorus ppm ASTM D5185(m) 2942 1062 Zinc ppm ASTM D5185(m) 1102 982 Sulfur ppm ASTM D5185(m) 1351 1177 Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1mm ASTM D7414* >25 15.7 | Emulsified Water | scalar | Visual* | >0.2 | NEG | | |
| Boron ppm ASTM D5185(m) 1 1 Barium ppm ASTM D5185(m) 1 0 Molybdenum ppm ASTM D5185(m) 1 0 Manganese ppm ASTM D5185(m) 1 <1 Magnesium ppm ASTM D5185(m) 1 <1 Calcium ppm ASTM D5185(m) 10 969 Phosphorus ppm ASTM D5185(m) 2942 1062 Zinc ppm ASTM D5185(m) 1102 982 Sulfur ppm ASTM D5185(m) 1351 1177 Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1mm ASTM D7414* >25 15.7 | | | | | | | |
| Barium ppm ASTM D5185(m) 1 0 Molybdenum ppm ASTM D5185(m) 1 58 Manganese ppm ASTM D5185(m) 1 <1 Magnesium ppm ASTM D5185(m) 10 969 Calcium ppm ASTM D5185(m) 10 962 Phosphorus ppm ASTM D5185(m) 1102 982 Zinc ppm ASTM D5185(m) 1351 1177 Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1mm ASTM D7414* >25 15.7 | | | . , | | | | |
| Molybdenum ppm ASTM D5185(m) 1 58 Manganese ppm ASTM D5185(m) 1 <1 Magnesium ppm ASTM D5185(m) 10 969 Calcium ppm ASTM D5185(m) 2942 1062 Phosphorus ppm ASTM D5185(m) 1102 982 Zinc ppm ASTM D5185(m) 1351 1177 Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1mm ASTM D7414* >25 15.7 | | ppm | | 1 | | | |
| Manganese ppm ASTM D5185(m) 1 <1 | | | | | | | |
| Magnesium ppm ASTM D5185(m) 10 969 Calcium ppm ASTM D5185(m) 2942 1062 Phosphorus ppm ASTM D5185(m) 1102 982 Zinc ppm ASTM D5185(m) 1351 1177 Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1mm ASTM D7414* >25 15.7 | | ppm | | | | | |
| Calcium ppm ASTM D5185(m) 2942 1062 Phosphorus ppm ASTM D5185(m) 1102 982 Zinc ppm ASTM D5185(m) 1351 1177 Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1mm ASTM D7414* >25 15.7 | 0 | ppm | | | | | |
| Phosphorus ppm ASTM D5185(m) 1102 982 Zinc ppm ASTM D5185(m) 1351 1177 Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1mm ASTM D7414* >25 15.7 | - | ppm | | | | | |
| Zinc ppm ASTM D5185(m) 1351 1177 Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1mm ASTM D7414* >25 15.7 | | ppm | () | | | | |
| Sulfur ppm ASTM D5185(m) 3903 2447 Oxidation Abs/.1mm ASTM D7414* >25 15.7 | | ppm | . , | | | | |
| Oxidation Abs/.1mm ASTM D7414* >25 15.7 | | | | | | | |
| | | | | | | | |
| Visc @ 100°C cSt ASTM D7279(m) 11.4 11.2 | | | | | | | |
| | Visc @ 100°C | cSt | ASTM D7279(m) | 11.4 | 11.2 | | |

Contact/Location: Ryan Polichuk - GFL355







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