

Machine Id **PETERBILT 846-4379** Component **Diesel Engine** Fluid **DIESEL ENGINE OIL SAE 15W40 (--- QTS)**

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

WEAR

All component wear rates are normal.

CONTAMINATION

Elevated aluminum (Al) 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. Light fuel dilution occurring.

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The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

| Sample Date Client Info 18 Apr 2024 30 Jan 2024 05 Oct 2023 Machine Age mls Client Info 172634 165572 153652 Oil Age mls Client Info 21628 14566 2656 Filter Age mls Client Info 21628 14566 2656 Oil Changed Client Info Filtered Not Changed Not Changed | | | | | ~~~~ | | |
|---|------------------|----------|-------------|-----------|-------------|-------------|-------------|
| Sample DateClient InfoI8 Apr 20230 Jan 202405 Oct 2023Machine AgemisClient Info21628145662656Filter AgemisClient Info21628145662656Filter AgemisClient InfoClaragedNot ChangedNot ChangedSample StatusClient InfoChangedNot ChangedNot ChangedSample StatusClient InfoABNORMALNORMALNORMALIronppmASTM D5185m>1037289ChromiumppmASTM D5185m>20<100SilverppmASTM D5185m>20<100SilverppmASTM D5185m>20<110CopperppmASTM D5185m>20<1111CopperppmASTM D5185m>4<11<1ValdowppmASTM D5185m>4<11<1ValdowppmASTM D5185m>4<11<1ValdowppmASTM D5185m>4<11<1ValdowppmASTM D5185m>237345SiliconppmASTM D5185m>30773ValdowppmASTM D5185m>307345Fuel%ASTM D5185m>307345SiliconppmASTM D5185m>20NONENONENONESil | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
| Machine Age mis Client Info 172634 165572 153652 Oil Age mis Client Info 21628 14566 2566 Filter Age mis Client Info 21628 14566 2656 Filter Changed Client Info Filtered Not Changd Not Changd Not Changd Sample Status Client Info ABNORMAL NorRMAL NORMAL NORMAL Iron ppm ASTM D5185m >110 37 28 9 Chromium ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 1 1 <1 Copper ppm ASTM D5185m >4 <1 1 <1 Vanadium ppm ASTM D5185m >30 7 7 3 Vellow Metal scalar "Visual NONE NONE NONE | Sample Number | | Client Info | | RPL0019335 | RPL0017635 | RPL0015502 |
| Oil AgemisClient Info21628145662556Filter AgemisClient InfoFilteredNot ChangdNot ChangdNot ChangdFilter ChangedClient InfoChangedNot ChangdNot ChangdNot ChangdNot ChangdSample StatusASTM D5185m>110 37 2.89ChromiumppmASTM D5185m>20<10NickelppmASTM D5185m>20<10SilverppmASTM D5185m>20<10AluminumppmASTM D5185m>2000AluminumppmASTM D5185m>2000AluminumppmASTM D5185m>4-11<1VanadiumppmASTM D5185m>4-11<1VanadiumppmASTM D5185m>30773VanadiumppmASTM D5185m>30773VanadiumppmASTM D5185m>30773VanadiumppmASTM D5185m>30773VanadiumppmASTM D5185m>30773VanadiumppmASTM D5185m>30773VanadiumppmASTM D5185m>30773VanadiumppmASTM D5185m>30773VanadiumppmASTM D5185m>30< | Sample Date | | Client Info | | 18 Apr 2024 | 30 Jan 2024 | 05 Oct 2023 |
| Filter AgemisClient Info21628145662656Oil ChangedClient InfoFilteredNot ChangedNot ChangedFilter ChangedClient InfoChangedNot ChangedNot ChangedSample StatusClient InfoGhangedNot ChangedNot ChangedIronppmASTM D5185m>110 37 289ChromiumppmASTM D5185m>20<10NickelppmASTM D5185m>20<10SilverppmASTM D5185m>2000AluminumppmASTM D5185m>2515142LeadppmASTM D5185m>5<11<1CopperppmASTM D5185m>5<11<1VanadiumppmASTM D5185m>5<11<1VanadiumppmASTM D5185m>203735SiliconppmASTM D5185m>2037345SulfacionppmASTM D5185m>2037345Sulfacion%ASTM D5185m>2037345Sulfacion%ASTM D5185m>2037345Sulfacion%ASTM D5185m>20361.01.0WaterWCC MethodNONENONENONENONESulfacion%ASTM D5185m2010.93.1.01.0 | Machine Age | mls | Client Info | | 172634 | 165572 | 153652 |
| Oil ChangedClient InfoFilteredNot Changed Not ChangedNot Changed Not ChangedFilter ChangedClient InfoChanged ABNORMALNot Changed Not ChangedNot Changed Not ChangedSample StatusSample StatusABNORMALNORMALNorRMALIronppmASTM D5185m ASTM D5185m37289ChromiumppmASTM D5185m ASTM D5185m20<10NickelppmASTM D5185m ASTM D5185m2515142LeadppmASTM D5185m ASTM D5185m553<1<1CopperppmASTM D5185m ASTM D5185mA1<1<1NineppmASTM D5185m ASTM D5185mA1<1<1VanadiumppmASTM D5185m ASTM D5185mA1<1<1VanadiumppmASTM D5185m ASTM D5185mS0773Valond Metalscalar"VisualNONENONENONENONESiliconppmASTM D5185m ASTM D5185mS0773Valond Metalscalar"VisualNONENORENORENORESiliconppmASTM D5185m ASTM D5185mS0373455SuliconppmASTM D5185m ASTM D5185mS03023.210.010.0SiliconppmASTM D5185m ASTM D5185mS010.0NORENORESolicy% </th <th>Oil Age</th> <th>mls</th> <th>Client Info</th> <th></th> <th>21628</th> <th>14566</th> <th>2656</th> | Oil Age | mls | Client Info | | 21628 | 14566 | 2656 |
| Filter Changed Sample StatusClient InfoChanged ABNORMALNot Changed NORMALNot Changed NORMALIronppmASTM D5185m>110372.89ChromiumppmASTM D5185m>2.20<10NickelppmASTM D5185m>2.20<10TitaniumppmASTM D5185m>2.2000SilverppmASTM D5185m>2.210142LeadppmASTM D5185m>4.553<11CopperppmASTM D5185m>4.553<10VinadiumppmASTM D5185m>4.511<11VanadiumppmASTM D5185m>307733Vellow MetalscalarvisualNONENONENONENONENONEVellow MetalscalarvisualNONENONENONENONENONESiliconppmASTM D5185m>307733PotassiumppmASTM D5185m>307,7333Fuel%ASTM D5185m>307,73331SiliconppmASTM D5185m>307,7333313331333133313331333133 <th>Filter Age</th> <th>mls</th> <th>Client Info</th> <th></th> <th>21628</th> <th>14566</th> <th>2656</th> | Filter Age | mls | Client Info | | 21628 | 14566 | 2656 |
| Sample StatusABNORMALNORMALNORMALNORMALIronppmASTM D5185m<>1037289ChromiumppmASTM D5185m<>20<10NickelppmASTM D5185m<>20<10TitaniumppmASTM D5185m<>20<10SilverppmASTM D5185m<>2000AluminumppmASTM D5185m<>2515142LeadppmASTM D5185m>4<11<1CopperppmASTM D5185m>4<11<1VanadiumppmASTM D5185m>4<11<1VanadiumppmASTM D5185m>4<11<1VanadiumppmASTM D5185m>4<11<1VanadiumppmASTM D5185m>30773Yellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185m>2037345Fuel%ASTM D5185m>2037345Fuel%ASTM D5185m>3077.50.1NitrationAbs/rm'ASTM D7824>2010.99.56.1SuffatoAbs/rm'ASTM D7824>300.70.50.1NitrationAbs/rm'ASTM D7824>300.7NONENONESotd/W%'ASTM D7824>30 <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Filtered</th> <th>Not Changd</th> <th>Not Changd</th> | Oil Changed | | Client Info | | Filtered | Not Changd | Not Changd |
| Iron ppm ASTM D5185m >110 37 28 9 Chromium ppm ASTM D5185m >4 2 2 <1 Nickel ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 15 14 2 Lead ppm ASTM D5185m >4 <1 1 <1 Copper ppm ASTM D5185m >4 <1 1 <1 Vanadium ppm ASTM D5185m >30 7 7 3 Vanadium ppm ASTM D5185m >30 7 7 3 Vanadium ppm ASTM D5185m >30 7 7 3 Vanadium ppm ASTM D5185m >30 7 7 | Filter Changed | | Client Info | | Changed | Not Changd | Not Changd |
| Chromium ppm ASTM D5185m >4 2 2 <1 | Sample Status | | | | ABNORMAL | NORMAL | NORMAL |
| Chromium ppm ASTM D5185m >4 2 2 <1 | | | | | | | |
| Nickel ppm ASTM D5185m >2 0 <1 | - | ppm | | | - | | |
| Titanium ppm ASTM D5185m C 0 <1 | | | | | _ | _ | |
| SilverppmASTM D5185m>2000AluminumppmASTM D5185m>2515142LeadppmASTM D5185m>4553<1CopperppmASTM D5185m>4553<1TinppmASTM D5185m>4<11<1VanadiumppmASTM D5185m>4<11<1VanadiumppmASTM D5185m>4<11<1VanadiumppmASTM D5185m>30773Vellow Metalscalar*VisualNONENONENONENONEVellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185m>2037345Fuel%ASTM D5185m>2037345VaterWC Method>0.2NEGNEGNEGSoot %%*ASTM D7824>300.70.50.1NitrationAbs/tmm*ASTM D7145>3023.321.219.0SilfationAbs/tmm*ASTM D7145>3023.321.219.0SilfationAbs/tmm*ASTM D7145>3023.321.219.0SilfationAbs/tmm*ASTM D7145>3023.321.219.0SodiumppmASTM D5185m100NONENONENONESodiumppmASTM D5185m100 <td< th=""><th></th><th>ppm</th><th></th><th>>2</th><th>-</th><th></th><th></th></td<> | | ppm | | >2 | - | | |
| Aluminum ppm ASTM D5185m >25 15 144 2 Lead ppm ASTM D5185m >45 5 3 <1 Copper ppm ASTM D5185m >45 <1 2 1 Tin ppm ASTM D5185m >4 <1 1 <1 Vanadium ppm ASTM D5185m >4 <1 1 <1 Vanadium ppm ASTM D5185m >4 <1 1 <1 Vanadium ppm ASTM D5185m >4 <1 1 <1 <1 Vanadium ppm ASTM D5185m >30 7 7 3 Yellow Metal scalar *Visual NONE NONE NONE NONE NONE Silicon ppm ASTM D5185m >30 7 7 3 Silicon %0 'ASTM D784 >30 0.7 0.5 0.1 Silifation | | ppm | | | - | | |
| Lead ppm ASTM D5185m >45 5 3 <1 | | | | | - | ÷ | |
| CopperppmASTM D5185m>85<1 | | ppm | | | - | | |
| TinppmASTM D5185m>4<1 | | | | | | | |
| Name ppm ASTM D5185m O <1 | | | | | | | |
| White Metalscalar*VisualNONENONENONENONENONEYellow Metalscalar*VisualNONENONENONENONENONESiliconppmASTM D5185m>30773PotassiumppmASTM D5185m>2037345Fuel%ASTM D5185m>2037345Fuel%ASTM D5185m>2037345GlycolWC Method>0.2NEGNEGNEGSoot %%*ASTM D7844>30.70.50.1NitrationAbs/cm*ASTM D7624>2010.99.56.1SulfationAbs/cm*ASTM D7624>2010.99.56.1SulfationAbs/cm*ASTM D715>3023.321.219.0Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNORMNORMLNORMLNORMLAppearancescalar*VisualNORMNORMLNORMLNORMLGoronppmASTM D5185m158201BoronppmASTM D5185m1006184456ManganeseppmASTM D5185m10010337863CalciumppmASTM D5185m300108614731003Phosphorus <t< th=""><th></th><th></th><th></th><th>>4</th><th></th><th></th><th></th></t<> | | | | >4 | | | |
| Yellow Metal scalar *Visual NONE NONE NONE NONE Silicon ppm ASTM D5185m >30 7 34 5 Fuel % ASTM D5185m >20 37 344 5 Fuel % ASTM D5185m >20 37 34 5 Glycol WC Method >0.2 NEG NEG NEG Sed Soot % % *ASTM D7844 >3 0.7 0.5 0.1 Nitration Abs/cm< *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/fm *ASTM D7415 >30 23.3 21.2 19.0 Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORI NORML NORML NORML Cor scalar *Visual NORI< | | | | | - | | |
| Silicon ppm ASTM D5185m >30 7 7 3 Potassium ppm ASTM D5185m >20 37 34 5 Fuel % ASTM D5185m >20 37 34 5 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG Soot % % 'ASTM D7844 >3 0.7 0.5 0.1 Nitration Abs/cm<'ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/tm<'ASTM D7115 >30 23.3 21.2 19.0 Silt scalar 'Visual NONE NONE NONE NONE Debris scalar 'Visual NONE NONE NONE NORML NORML Appearance scalar 'Visual NORM NORML NORML NORML Gloron ppm ASTM D5185m >158 2 <1 | | scalar | | | - | | |
| Potassium ppm ASTM D5185m >20 37 34 5 Fuel % ASTM D3524 >5 ▲ 2.8 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG Soot % % *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/tmm *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/tmm *ASTM D764 >30 23.3 21.2 19.0 Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Boron ppm ASTM D5185m 108 | Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Potassium ppm ASTM D5185m >20 37 34 5 Fuel % ASTM D3524 >5 ▲ 2.8 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG Soot % % *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/tmm *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/tmm *ASTM D764 >30 23.3 21.2 19.0 Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML Boron ppm ASTM D5185m 108 | Silioon | 0000 | ACTM DE105m | . 20 | 7 | 7 | 0 |
| Fuel % ASTM D3524 >5 2.8 <1.0 | | | | | | | |
| Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG NEG Soot % % *ASTM D7844 >3 0.7 0.5 0.1 Nitration Abs/cm *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/cm *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/.imm *ASTM D7415 >30 23.3 21.2 19.0 Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NORM NORML NORML NORML Appearance scalar *Visual NORM NORML NORML NORML Odor scalar *Visual NOR NORM NORML NORML Boron ppm ASTM D5185m 25 | | | | | | | |
| Glycol WC Method NEG NEG NEG Soot % % *ASTM D7844 >3 0.7 0.5 0.1 Nitration Abs/cm *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/tmm *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/tmm *ASTM D7615 >30 23.3 21.2 19.0 Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE Sand/Dirt scalar *Visual NOR NORML NORML NORML Appearance scalar *Visual NOR NORML NORML NORML Odor scalar *Visual NOR NORML NORML NORML Barium ppm ASTM D5185m >158 2 0 1 Barium ppm ASTM D5185m 100 </th <th></th> <th>70</th> <th></th> <th></th> <th></th> <th></th> <th></th> | | 70 | | | | | |
| Soot % % *ASTM D7844 >3 0.7 0.5 0.1 Nitration Abs/cm *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/lmm *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/lmm *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/lmm *ASTM D7624 >20 23.3 21.2 19.0 Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NOR NORML NORML NORML NORML Appearance scalar *Visual NOR NORML NORML NORML NORML Cdor scalar *Visual >0.2 NEG NEG NEG Sodium ppm ASTM D5185m 158 2 | | | | >0.2 | | | |
| Nitration Abs/cm *ASTM D7624 >20 10.9 9.5 6.1 Sulfation Abs/1mm *ASTM D7615 >30 23.3 21.2 19.0 Silt scalar *Visual NONE NONE NONE NONE NONE Debris scalar *Visual NONE NONE NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE NONE NONE Appearance scalar *Visual NORML NORML NORML NORML NORML NORML Odor scalar *Visual NORML NORML NORML NORML NORML Emulsified Water scalar *Visual >0.2 NEG NEG NEG Sodium ppm ASTM D5185m >158 2 0 1 Baron ppm ASTM D5185m 100 611 84 56 Manganese ppm ASTM D5185m | - | 0/ | | . ? | | | |
| SulfationAbs/.1mm*ASTM D7415>3023.321.219.0Siltscalar*VisualNONENONENONENONENONEDebrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>158201BoronppmASTM D5185m2502<11BariumppmASTM D5185m1000<10MolybdenumppmASTM D5185m10061184456ManganeseppmASTM D5185m3000108614731003PhosphorusppmASTM D5185m115010081383906ZincppmASTM D5185m1350122117091102SulfurppmASTM D5185m4250314245542821OxidationAbs/.1mm*ASTM D7414>2518.817.214.7Base Number (BN)mg KOHgASTM D28968.56.07.99.3 | | | | | - | | |
| Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>158201BoronppmASTM D5185m100<10MolybdenumppmASTM D5185m10061184456ManganeseppmASTM D5185m10061184356CalciumppmASTM D5185m110010337863CalciumppmASTM D5185m1150100813333906ZincppmASTM D5185m1350122117.091102SulfurppmASTM D5185m4250314245542821OxidationAbs/.1mm'ASTM D7414>2518.817.214.7Base Number (BN)mg KHgASTM D28968.56.07.99.3 | | | | | | | |
| Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLCdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>158201BoronppmASTM D5185m1000<10MolybdenumppmASTM D5185m10061184456ManganeseppmASTM D5185m4509311337863CalciumppmASTM D5185m115010081383906ZincppmASTM D5185m1350122117091102SulfurppmASTM D5185m4250314245542821OxidationAbs/.1mm*ASTM D7414>2518.817.214.7Base Number (BN)mg KOHgASTM D28968.56.07.99.3 | | | | | | | |
| Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>158201BoronppmASTM D5185m100<10MolybdenumppmASTM D5185m100618456ManganeseppmASTM D5185m100618456MagnesiumppmASTM D5185m4509311337863CalciumppmASTM D5185m115010081383906ZincppmASTM D5185m1350122117.091102SulfurppmASTM D5185m4250314245542821OxidationAbs/.mm*ASTM D7414>2518.817.214.7 | | | | | | | |
| Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>158201BoronppmASTM D5185m1000<10MolybdenumppmASTM D5185m100618456ManganeseppmASTM D5185m4509311337863CalciumppmASTM D5185m3000108614731003PhosphorusppmASTM D5185m1350122117091102SulfurppmASTM D5185m4250314245542821OxidationAbs/.tmm*ASTM D7414>2518.817.214.7Base Number (BN)mg KOHlgASTM D28968.56.07.99.3 | | | | | _ | | |
| Odorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>158201BoronppmASTM D5185m2502<11BariumppmASTM D5185m100<10MolybdenumppmASTM D5185m100618456ManganeseppmASTM D5185m4509311337863CalciumppmASTM D5185m3000108614731003PhosphorusppmASTM D5185m1350122117091102SulfurppmASTM D5185m4250314245542821OxidationAbs/.tmm*ASTM D7414>2518.817.214.7Base Number (BN)mg K0HgASTM D28968.56.07.99.3 | | | | | - | | |
| Emulsified Water scalar *Visual >0.2 NEG NEG NEG Sodium ppm ASTM D5185m >158 2 0 1 Boron ppm ASTM D5185m 250 2 <1 1 Barium ppm ASTM D5185m 10 0 <1 0 Molybdenum ppm ASTM D5185m 100 61 84 56 Manganese ppm ASTM D5185m 100 61 84 56 Magnesium ppm ASTM D5185m 450 931 1337 863 Calcium ppm ASTM D5185m 3000 1086 1473 1003 Phosphorus ppm ASTM D5185m 1350 1221 1709 1102 Sulfur ppm ASTM D5185m 4250 3142 4554 2821 Oxidation Abs/.tmm 'ASTM D7414 >25 18.8 17.2 14.7 | | | | | - | | |
| Sodium ppm ASTM D5185m >158 2 0 1 Boron ppm ASTM D5185m 250 2 <1 1 Barium ppm ASTM D5185m 10 0 <1 0 Molybdenum ppm ASTM D5185m 100 61 84 56 Manganese ppm ASTM D5185m 100 61 84 56 Magnesium ppm ASTM D5185m 450 931 1337 863 Calcium ppm ASTM D5185m 3000 1086 1473 1003 Phosphorus ppm ASTM D5185m 150 1008 1383 906 Zinc ppm ASTM D5185m 1350 1221 1709 1102 Sulfur ppm ASTM D5185m 4250 3142 4554 2821 Oxidation Abs/.1mm 'ASTM D7414 >25 18.8 17.2 14.7 | | | | | | | |
| Boron ppm ASTM D5185m 250 2 <1 | | Scalar | visual | 20.2 | | NEG | NLU |
| Barium ppm ASTM D5185m 10 0 <1 | Sodium | ppm | ASTM D5185m | >158 | 2 | 0 | 1 |
| Barium ppm ASTM D5185m 10 0 <1 | Boron | ppm | ASTM D5185m | 250 | 2 | <1 | 1 |
| Molybdenum ppm ASTM D5185m 100 61 84 56 Manganese ppm ASTM D5185m <1 | Barium | | ASTM D5185m | 10 | 0 | <1 | 0 |
| Magnesium ppm ASTM D5185m 450 931 1337 863 Calcium ppm ASTM D5185m 3000 1086 1473 1003 Phosphorus ppm ASTM D5185m 1150 1008 1383 906 Zinc ppm ASTM D5185m 1350 1221 1709 1102 Sulfur ppm ASTM D5185m 4250 3142 4554 2821 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 17.2 14.7 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.0 7.9 9.3 | Molybdenum | | ASTM D5185m | 100 | 61 | 84 | 56 |
| Calcium ppm ASTM D5185m 3000 1086 1473 1003 Phosphorus ppm ASTM D5185m 1150 1008 1383 906 Zinc ppm ASTM D5185m 1350 1221 1709 1102 Sulfur ppm ASTM D5185m 4250 3142 4554 2821 Oxidation Abs/.tmm *ASTM D7414 >25 18.8 17.2 14.7 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.0 7.9 9.3 | Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Phosphorus ppm ASTM D5185m 1150 1008 1383 906 Zinc ppm ASTM D5185m 1350 1221 1709 1102 Sulfur ppm ASTM D5185m 4250 3142 4554 2821 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 17.2 14.7 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.0 7.9 9.3 | Magnesium | ppm | ASTM D5185m | 450 | 931 | 1337 | 863 |
| Zinc ppm ASTM D5185m 1350 1221 1709 1102 Sulfur ppm ASTM D5185m 4250 3142 4554 2821 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 17.2 14.7 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.0 7.9 9.3 | Calcium | ppm | ASTM D5185m | 3000 | 1086 | 1473 | 1003 |
| Sulfur ppm ASTM D5185m 4250 3142 4554 2821 Oxidation Abs/.1mm *ASTM D7414 >25 18.8 17.2 14.7 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.0 7.9 9.3 | Phosphorus | ppm | ASTM D5185m | 1150 | 1008 | 1383 | 906 |
| Oxidation Abs/.1mm *ASTM D7414 >25 18.8 17.2 14.7 Base Number (BN) mg KOH/g ASTM D2896 8.5 6.0 7.9 9.3 | Zinc | ppm | ASTM D5185m | 1350 | 1221 | 1709 | 1102 |
| Base Number (BN) mg KOH/g ASTM D2896 8.5 6.0 7.9 9.3 | Sulfur | ppm | ASTM D5185m | 4250 | 3142 | 4554 | 2821 |
| | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 18.8 | 17.2 | 14.7 |
| | Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 6.0 | 7.9 | 9.3 |
| | Visc @ 100°C | | ASTM D445 | 14.4 | 🔺 11.7 🌙 | 12.6 | 12.9 |



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