

Machine Id CASE 15499 CR1202 - OUTER (S/N 98205) Component Front Right Final Drive Fluid GEAR OIL ISO 220 (--- GAL)

| RECOMMENDATION | REC | OMMEN | NDATION | |
|----------------|------------|-------|---------|--|
|----------------|------------|-------|---------|--|

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

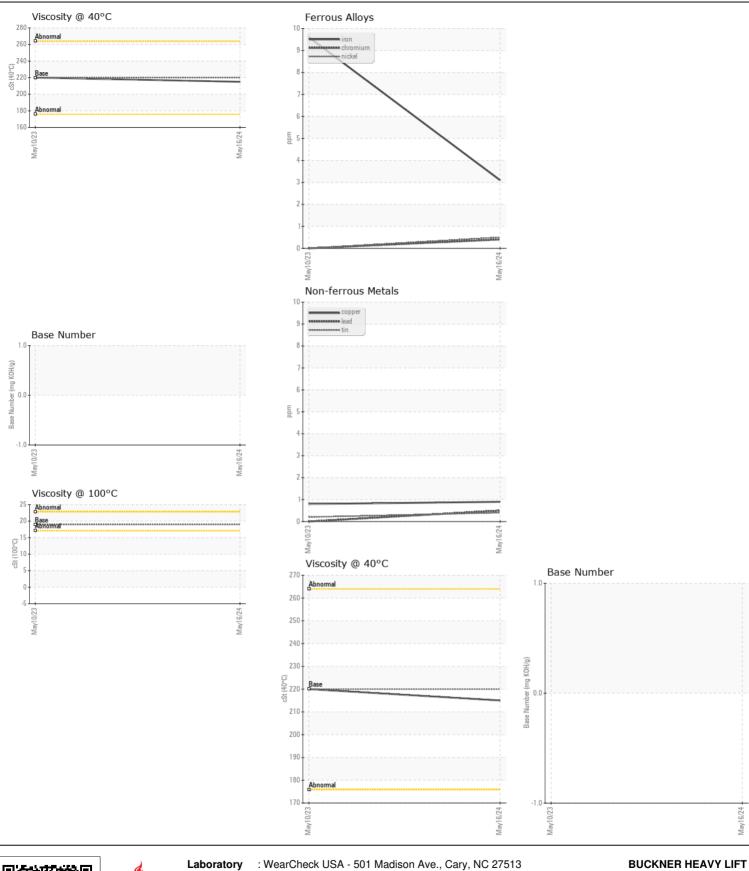
There is no indication of any contamination in the oil.

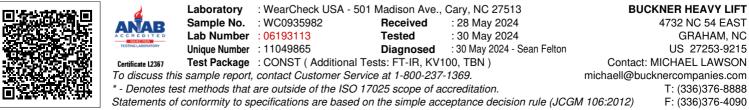
FLUID CONDITION

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

| TestUOMMethodLimit/AbCurrentHistory1History2Sample NumberClient Info16 May 202410 May 2023Sample DateClient Info1186611257Machine AgehrsClient Info10001410Oil AgehrsClient Info00Filter AgehrsClient InfoChangedChangedOil ChangedClient InfoChangedChangedFilter ChangedClient InfoChangedChangedSample StatusNORMALNORMALChromiumppmASTM D5185m>500310NickelppmASTM D5185m>10<10NickelppmASTM D5185m>50<10SilverppmASTM D5185m>50<10AluminumppmASTM D5185m>50<1<1VanadiumppmASTM D5185m>50<1<1VanadiumppmASTM D5185m>50<1<1VanadiumppmASTM D5185m>50<1<1VanadiumppmASTM D5185m>751<1VanadiumppmASTM D5185m>2011VanadiumppmASTM D5185m>201<1Vanadiumppm | | | | | | | |
|--|------------------|--------|-------------|-----------|-------------|-------------|----------|
| Sample DateClient InfoIs May 2023Machine AgehrsClient InfoI186611257Oil AgehrsClient InfoI0001410Filter AgehrsClient InfoCChangedChangedOil ChangedClient InfoCChangedChangedFilter ChangedClient InfoCChangedChangedSample StatusClient InfoCChangedChangedIronppmASTM D5185>500310NickelppmASTM D5185>10<10NickelppmASTM D5185>10<10SilverppmASTM D5185>10<10AluminumppmASTM D5185>25<100LeadppmASTM D5185>10<1<VanadiumppmASTM D5185>10<1<VanadiumppmASTM D5185>10<1<VanadiumppmASTM D5185>751<VanadiumppmASTM D5185>751<VanadiumppmASTM D5185>751<VanadiumppmASTM D5185>751<VanadiumppmASTM D5185>751< </th <th>Test</th> <th>UOM</th> <th>Method</th> <th>Limit/Abn</th> <th>Current</th> <th>History1</th> <th>History2</th> | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
| Machine AgeIrssClient InfoI 188611257Oil AgehrsClient InfoII0001410Filter AgehrsClient InfoChangedChangedGil ChangedClient InfoChangedChangedFilter ChangedQClient InfoChangedChangedSample StatusClient InfoMORMALNORMALIronppmASTM D5185m>500310IronppmASTM D5185m>10<10NickelppmASTM D5185m>10<10SilverppmASTM D5185m>25<10AluminumppmASTM D5185m>50<1<VanadiumppmASTM D5185m>50<1<VanadiumppmASTM D5185m>50<1<VanadiumppmASTM D5185m>50<1<VanadiumppmASTM D5185m>751<VanadiumppmASTM D5185m50<1<VanadiumppmASTM D5185m>751<VanadiumppmASTM D5185m501<VanadiumppmASTM D5185m501<VanadiumppmASTM D5185m501< <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>WC0935982</th> <th>WC0809303</th> <th></th> | Sample Number | | Client Info | | WC0935982 | WC0809303 | |
| Oil Age Filter Age Filter Age (Filter Anaged I resClient InfoIO001410Filter Changed Sample StatusClient InfoChangedChangedChangedFilter Changed Sample StatusClient InfoChangedChangedIronppmASTM D5185m>500310IronppmASTM D5185m>10<10NickelppmASTM D5185m>10<10NickelppmASTM D5185m>10<10TitaniumppmASTM D5185m>25<10AluminumppmASTM D5185m>25<10AluminumppmASTM D5185m>500<1<1VanduiumppmASTM D5185m>500<1<1VanduiumppmASTM D5185m>500<1<1ValduiumppmASTM D5185m>500<1<1ValduiumppmASTM D5185m>500<1<1ValduiumppmASTM D5185m>500<1<1ValduiumppmASTM D5185m>500<1<1ValduiumppmASTM D5185m>5001<1ValduiumppmASTM D5185m>20011SiliconppmASTM D5185m>20011 </th <th>Sample Date</th> <th></th> <th>Client Info</th> <th></th> <th>16 May 2024</th> <th>10 May 2023</th> <th></th> | Sample Date | | Client Info | | 16 May 2024 | 10 May 2023 | |
| Filter Age Oil ChangedhrsClient Info00Cilent InfoChangedChangedChangedChangedFilter ChangedClient InfoChangedChangedSample StatusNORMALNORMALIronppmASTM D5185m>500310ChromiumppmASTM D5185m>10<10NickelppmASTM D5185m>10<10NickelppmASTM D5185m>25<10AluminumppmASTM D5185m>25<10AluminumppmASTM D5185m>500<1<1AgandulumppmASTM D5185m>500<1<1VanadiumppmASTM D5185m>500<1<1VanadiumppmASTM D5185m>500<1<1VanadiumppmASTM D5185m>751<1VanadiumppmASTM D5185m>751<1ValorvisualNONENONENONENONESiliconppmASTM D5185m>2011SiliconppmASTM D5185m>2011SiliconppmASTM D5185m>2011SoliconppmASTM D5185m>2011 <tr< th=""><th>Machine Age</th><th>hrs</th><th>Client Info</th><th></th><th>11866</th><th>11257</th><th></th></tr<> | Machine Age | hrs | Client Info | | 11866 | 11257 | |
| Oil ChangedClient InfoChangedChange | Oil Age | hrs | Client Info | | 1000 | 1410 | |
| Filter Changed Sample StatusClient InfoChanged NORMALIronppmASTM D5185m>500310IronppmASTM D5185m>10<10NickelppmASTM D5185m>10<10NickelppmASTM D5185m>10<10SilverppmASTM D5185m>10<10AluminumppmASTM D5185m>25<10LeadppmASTM D5185m>25<10CopperppmASTM D5185m>25<10VanadiumppmASTM D5185m>20<1<1VanadiumppmASTM D5185m>10<1<1VanadiumppmASTM D5185m>70<1<1VanadiumppmASTM D5185m>751<1VanadiumppmASTM D5185m>751<1Yellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>2011PotassiumppmASTM D5185m>2011SiliconppmASTM D5185m>2011SoliconppmASTM D5185m>20NONENONESoliconppmASTM D5185m>20NONEN | Filter Age | hrs | Client Info | | 0 | 0 | |
| Sample StatusNORMALNORMALNORMALIronppmASTM D5185m>500310ChromiumppmASTM D5185m>10<10NickelppmASTM D5185m>10<10TitaniumppmASTM D5185m>10<10SilverppmASTM D5185m>25<10AluminumppmASTM D5185m>25<10LeadppmASTM D5185m>25<10CopperppmASTM D5185m>20<1<1VanadiumppmASTM D5185m>10<1<1VanadiumppmASTM D5185m>751<1VanadiumppmASTM D5185m>751<1Vellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>751<1PotassiumppmASTM D5185m>2011Silitscalar*VisualNONENONENONESand/Dirtscalar*VisualNORNORENONEAppearancescalar*VisualNORNORENORESodiumppmASTM D5185m100BoronppmASTM D5185m1500 <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Changed</th> <th>Changed</th> <th></th> | Oil Changed | | Client Info | | Changed | Changed | |
| Iron ppm ASTM D5185m >500 3 10 Chromium ppm ASTM D5185m >10 <1 0 Nickel ppm ASTM D5185m >10 <1 0 Titanium ppm ASTM D5185m >10 <1 0 Aluminum ppm ASTM D5185m >25 <1 0 Aluminum ppm ASTM D5185m >25 <1 0 Lead ppm ASTM D5185m >25 <1 0 Copper ppm ASTM D5185m >25 <1 0 Vanadium ppm ASTM D5185m >10 <1 0 Vanadium ppm ASTM D5185m >10 <1 0 Vanadium ppm ASTM D5185m >75 1 <1 Vanadium ppm ASTM D5185m >75 | Filter Changed | | Client Info | | Changed | Changed | |
| Chromium ppm ASTM D5185m >10 <1 | Sample Status | | | | NORMAL | NORMAL | |
| Chromium ppm ASTM D5185m >10 <1 | Iron | | | . 500 | 0 | 10 | |
| Nickel ppm ASTM D5185m >10 <1 | - | | | | - | | |
| Titanium ppm ASTM D5185m Silver ppm ASTM D5185m >25 <1 0 Aluminum ppm ASTM D5185m >25 <1 0 Lead ppm ASTM D5185m >25 <1 0 Copper ppm ASTM D5185m >50 <1 <1 0 Vanadium ppm ASTM D5185m >10 <1 <1 Vanadium ppm ASTM D5185m >10 <1 0 Vanadium ppm ASTM D5185m >10 <1 0 Vanadium ppm ASTM D5185m >75 1 <1 Vanadium ppm ASTM D5185m >75 1 <1 Vellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m | | | | | | | |
| Silver ppm ASTM D5185m 1 0 Aluminum ppm ASTM D5185m >25 <1 0 Lead ppm ASTM D5185m >25 <1 0 Copper ppm ASTM D5185m >50 <1 <1 0 Tin ppm ASTM D5185m >10 <1 <1 0 Vanadium ppm ASTM D5185m >10 <1 0 Vanadium ppm ASTM D5185m >10 <1 0 Vanadium ppm ASTM D5185m >75 1 <1 Vanadium ppm ASTM D5185m >75 1 <1 Vellow Metal scalar *Visual NONE NONE NONE Silicon ppm ASTM D5185m >20 NOR NONE NONE Sand/Dirt scalar </th <th></th> <th></th> <th></th> <th>>10</th> <th></th> <th></th> <th></th> | | | | >10 | | | |
| Aluminum ppm ASTM D5185m >25 <1 | | | | | | | |
| Lead ppm ASTM D5185m >25 <1 | | | | - OF | - | - | |
| Copper ppm ASTM D5185m >50 <1 | | | | | | - | |
| TinppmASTM D5185m>10<1 | | | | | | | |
| Vanadium ppm ASTM D5185m <1 | | | | | | | |
| White Metalscalar*VisualNONENONENONENONEYellow Metalscalar*VisualNONENONENONESiliconppmASTM D5185m>751<1PotassiumppmASTM D5185m>2011WaterWC Method>0.2NEGNEGSilitscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLSodiumppmASTM D5185m50820BoronppmASTM D5185m1500ManganeseppmASTM D5185m15<10ManganeseppmASTM D5185m5045PhosphorusppmASTM D5185m50428PhosphorusppmASTM D5185m100212SolifurppmASTM D5185m100212MagnesiumppmASTM D5185m100212PhosphorusppmASTM D5185m100212< | | | | >10 | | | |
| Yellow Metal scalar *Visual NONE NONE NONE NONE Silicon ppm ASTM D5185m >75 1 <1 Potassium ppm ASTM D5185m >20 1 1 Water WC Method >0.2 NEG NEG Silt scalar *Visual NONE NONE NONE Debris scalar *Visual NONE NONE NONE Sand/Dirt scalar *Visual NONE NONE NONE Appearance scalar *Visual NORML NORML NORML Odor scalar *Visual NORML NORML NORML Boron ppm ASTM D5185m 50 8 20 Barium ppm ASTM D5185m 15 0 Molybdenum ppm ASTM D5185m< | | | | | | - | |
| SiliconppmASTM D5185m>751<1 | | | | | | | |
| PotassiumppmASTM D5185m>2011WaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50820BoronppmASTM D5185m1500MalganeseppmASTM D5185m1500MagnesiumppmASTM D5185m50412PhosphorusppmASTM D5185m50445PhosphorusppmASTM D5185m100212SulfurppmASTM D5185m1250055927572 | Yellow Metal | scalar | " VISUAI | NONE | NONE | NONE | |
| VaterWC Method>0.2NEGNEGSiltscalar*VisualNONENONENONEDebrisscalar*VisualNONENONENONESand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*VisualNORMLNORMLNEGSodiumppmASTM D5185m50820BoronppmASTM D5185m1500MalganeseppmASTM D5185m15<10MagnesiumppmASTM D5185m5045PhosphorusppmASTM D5185m504.2PhosphorusppmASTM D5185m504.2SulfurppmASTM D5185m100212SulfurppmASTM D5185m100212 | Silicon | ppm | ASTM D5185m | >75 | 1 | <1 | |
| Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLCodorscalar*VisualNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50820BoronppmASTM D5185m1500MolybdenumppmASTM D5185m1500ManganeseppmASTM D5185m50412CalciumppmASTM D5185m50445PhosphorusppmASTM D5185m100212SulfurppmASTM D5185m100212 | Potassium | ppm | ASTM D5185m | >20 | 1 | 1 | |
| Debrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENORMNORMNORMAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50820BoronppmASTM D5185m1500BariumppmASTM D5185m1500MalganeseppmASTM D5185m50410MagnesiumppmASTM D5185m50428PhosphorusppmASTM D5185m350355428ZincppmASTM D5185m100212SulfurppmASTM D5185m125055927572 | Water | | WC Method | >0.2 | NEG | NEG | |
| Sand/Dirtscalar*VisualNONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m50820BoronppmASTM D5185m1500BariumppmASTM D5185m1500MolybdenumppmASTM D5185m50<10MagnesiumppmASTM D5185m50<10CalciumppmASTM D5185m50<45PhosphorusppmASTM D5185m100212ZincppmASTM D5185m100212SulfurppmASTM D5185m1250055927572 | Silt | scalar | *Visual | NONE | NONE | NONE | |
| Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m-<10BoronppmASTM D5185m50820BariumppmASTM D5185m1500MolybdenumppmASTM D5185m15<100ManganeseppmASTM D5185m50<10MagnesiumppmASTM D5185m50<45PhosphorusppmASTM D5185m50<45ZincppmASTM D5185m100212SulfurppmASTM D5185m1250S5927572 | Debris | scalar | *Visual | NONE | NONE | NONE | |
| Odorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGSodiumppmASTM D5185m<10BoronppmASTM D5185m50820BariumppmASTM D5185m1500MolybdenumppmASTM D5185m15<10ManganeseppmASTM D5185m50<10MagnesiumppmASTM D5185m50<12PhosphorusppmASTM D5185m50<45ZincppmASTM D5185m100212SulfurppmASTM D5185m125055927572 | Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | |
| Emulsified Water scalar *Visual >0.2 NEG NEG Sodium ppm ASTM D5185m <1 0 Boron ppm ASTM D5185m 50 8 20 Barium ppm ASTM D5185m 15 0 0 Molybdenum ppm ASTM D5185m 15 <1 0 Manganese ppm ASTM D5185m 15 <1 0 Magnesium ppm ASTM D5185m 50 <1 2 Phosphorus ppm ASTM D5185m 50 <1 2 Phosphorus ppm ASTM D5185m 50 <1 2 Zinc ppm ASTM D5185m 350 355 428 Sulfur ppm ASTM D5185m 100 2 12 | Appearance | scalar | *Visual | NORML | NORML | NORML | |
| Sodium ppm ASTM D5185m <1 | Odor | scalar | *Visual | NORML | NORML | NORML | |
| Boron ppm ASTM D5185m 50 8 20 Barium ppm ASTM D5185m 15 0 0 Molybdenum ppm ASTM D5185m 15 0 0 Manganese ppm ASTM D5185m 15 <1 0 Magnesium ppm ASTM D5185m 50 <1 2 Calcium ppm ASTM D5185m 50 <1 2 Phosphorus ppm ASTM D5185m 50 <4 5 Zinc ppm ASTM D5185m 100 2 12 Sulfur ppm ASTM D5185m 100 2 12 | Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | |
| Boron ppm ASTM D5185m 50 8 20 Barium ppm ASTM D5185m 15 0 0 Molybdenum ppm ASTM D5185m 15 0 0 Manganese ppm ASTM D5185m 15 <1 0 Magnesium ppm ASTM D5185m 50 <1 2 Calcium ppm ASTM D5185m 50 <1 2 Phosphorus ppm ASTM D5185m 50 <4 5 Zinc ppm ASTM D5185m 100 2 12 Sulfur ppm ASTM D5185m 100 2 12 | Sodium | ppm | ASTM D5185m | | <1 | 0 | |
| Barium ppm ASTM D5185m 15 0 0 Molybdenum ppm ASTM D5185m 15 <1 | | | ASTM D5185m | 50 | | 20 | |
| Manganese ppm ASTM D5185m <1 | Barium | | ASTM D5185m | 15 | 0 | 0 | |
| Manganese ppm ASTM D5185m <1 | Molybdenum | | ASTM D5185m | 15 | <1 | 0 | |
| Magnesium ppm ASTM D5185m 50 <1 | Manganese | | ASTM D5185m | | <1 | 0 | |
| Calcium ppm ASTM D5185m 50 4 5 Phosphorus ppm ASTM D5185m 350 355 428 Zinc ppm ASTM D5185m 100 2 12 Sulfur ppm ASTM D5185m 12500 5592 7572 | - | | ASTM D5185m | 50 | <1 | 2 | |
| Phosphorus ppm ASTM D5185m 350 355 428 Zinc ppm ASTM D5185m 100 2 12 Sulfur ppm ASTM D5185m 12500 5592 7572 | - | | ASTM D5185m | 50 | | 5 | |
| Zinc ppm ASTM D5185m 100 2 12 Sulfur ppm ASTM D5185m 12500 5592 7572 | Phosphorus | | ASTM D5185m | 350 | 355 | 428 | |
| Sulfur ppm ASTM D5185m 12500 5592 7572 | | | ASTM D5185m | | | 12 | |
| | Sulfur | | ASTM D5185m | 12500 | 5592 | 7572 | |
| | | | | | | | |

Contact/Location: MICHAEL LAWSON - BUCGRA





Contact/Location: MICHAEL LAWSON - BUCGRA Page 2 of 2