

| WEAR | NORMAL |
|-----------------|--------|
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

LIEBHERR LH60M 1217-94975

Rear Differential

GEAR OIL SAE 80W90 (--- GAL)

| RECOMMENDATION | REC | COM | MEN | DATI | ON |
|----------------|------------|-----|-----|------|----|
|----------------|------------|-----|-----|------|----|

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

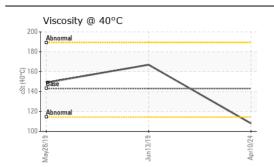
There is no indication of any contamination in the oil.

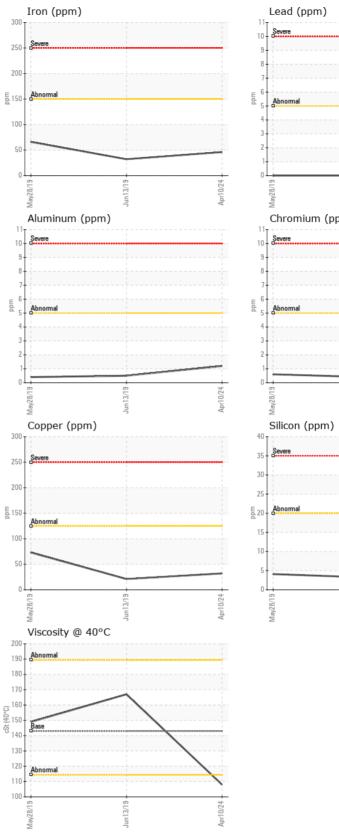
FLUID CONDITION

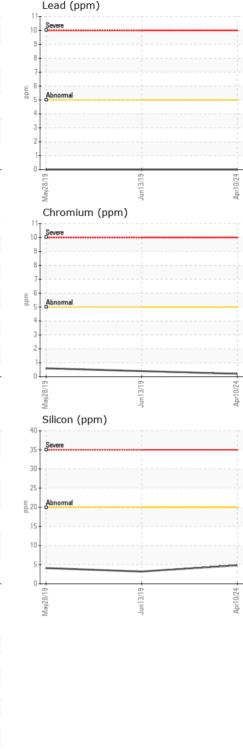
The condition of the oil is acceptable for the time in service.

| TestUOMMethodLimitAbCurrentHistory1History2Sample NumberClient InfoIAHAC155912LHMC119904LHMC116191Sample DateClient InfoIA 97 202413 Jun 201928 May 2019Machine AgehrsClient InfoB26852690Oil AgehrsClient InfoO00Filter AgehrsClient InfoChangedN/AN/AFilter ChangedClient InfoKNAN/AN/ASample StatusClient InfoKNANORMALNORMALIronppmASTM D5185>100<1NickelppmASTM D5185>100<1NickelppmASTM D5185>100<1NickelppmASTM D5185>500<1SilverppmASTM D5185>500<1AuminumppmASTM D5185>51<1<1LeadppmASTM D5185>51<1<1VanadiumppmASTM D5185>51<1<1ProtassiumppmASTM D5185>51<1<1Yellow Metalscalar"VisualNONENONENONENONESiliconppmASTM D5185>20918.00VanadiumppmASTM D5185>20918.00VanadiumppmASTM D5185>209 <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> | | | | | | | |
|---|------------------|--------|-------------|-----------|-------------|-------------|-------------|
| Sample DateClient InfoI0 Apr 202413 Jun 201928 May 2019Machine AgehrsClient Info826852690Oil AgehrsClient Info000Filter AgehrsClient InfoCChangedN/AN/AFilter ChangedClient InfoCChangedN/AN/ASample StatusClient InfoM/AN/AN/AN/ASample StatusClient InfoM/AN/AN/AIronppmASTM D5185>150463266ChromiumppmASTM D5185>100<1<1NickelppmASTM D5185>100<1<1NickelppmASTM D5185>501<1<1ItaniumppmASTM D5185>5000<1AluminumppmASTM D5185>501<1<1LeadppmASTM D5185>50100VanadiumppmASTM D5185>50100VanadiumppmASTM D5185>50100VanadiumppmASTM D5185>50100VanadiumppmASTM D5185>50100VanadiumppmASTM D5185>50100VanadiumppmASTM D5185>20910VanadiumppmASTM D5185>20< | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
| Machine AgehrsClient InfoB26852690Oil AgehrsClient Info000Filter AgehrsClient InfoChangedN/AN/AOil ChangedClient InfoN/AN/AN/AFilter ChangedClient InfoN/AN/AN/ASample StatusClient InfoN/AN/AN/AIronppmASTM D5185m>150463266ChromiumppmASTM D5185m>100<1<1NickelppmASTM D5185m>100<1<1NickelppmASTM D5185m>5010<1<1AlumiumppmASTM D5185m>5010<1<1LeadppmASTM D5185m>50100<1CopperppmASTM D5185m>50100<1VanadiumppmASTM D5185m>50100<1Vellow Metalscalar'VisualNONENONENONENONESiliconppmASTM D5185mscal1000<1Vellow Metalscalar'VisualNONENONENONENONESiliconppmASTM D5185mscalarNONENONENONENONESiliconppmASTM D5185mscalarNONENONENONENONESiliconppmASTM D5185mscalarNONENONENONE </th <th>Sample Number</th> <th></th> <th>Client Info</th> <th></th> <th>LHMC155912</th> <th>LHMC119904</th> <th>LHMC116191</th> | Sample Number | | Client Info | | LHMC155912 | LHMC119904 | LHMC116191 |
| Oil Age Filter AgehrsClient InfoO0Filter AgehrsClient InfoChangedN/AN/AFilter ChangedClient InfoN/AN/AN/AFilter ChangedClient InfoN/AN/AN/ASample StatusStill D518s>150463266ChromiumppmASTM D518s5541<1<1NickelppmASTM D518s100<1<1NickelppmASTM D518s0<1<1<1NickelppmASTM D518s00<1<1LeadppmASTM D518s551<1<1<1LeadppmASTM D518s55100<1VandaumppmASTM D518s55100<1VandaumppmASTM D518s55100<1VandaumppmASTM D518s52100<1Valdowscalar'VisualNONENONENONENONENONESiliconppmASTM D518s520100<1NONESiliconppmASTM D518s5201NONENONENONENONESiliconppmASTM D518s5201NONENONENONENONESiliconppmASTM D518s5201NONENONENONENONESil | Sample Date | | Client Info | | 10 Apr 2024 | 13 Jun 2019 | 28 May 2019 |
| Filter Age Oil ChangedhrsClient InfoOOOOil ChangedClient InfoKAngedN/AN/AFilter ChangedClient InfoN/AN/AN/ASample StatusNORMALNORMALNORMALNORMALIronppmASTM D5185m>150463266ChromiumppmASTM D5185m>100<1<1NickelppmASTM D5185m>100<1<1NickelppmASTM D5185m>100<1<1ItaniumppmASTM D5185m>5000<1AluminumppmASTM D5185m>5000<1LeadppmASTM D5185m>513221173TinppmASTM D5185m>5000<1VanadiumppmASTM D5185m>5000<1VanadiumppmASTM D5185m>2034NONEVellow Metalscalar'VisualNONENONENONENONESiliconppmASTM D5185m>209180VaterWC Method>0.2NEGNONENONESiliconppmASTM D5185m>209180SoliconppmASTM D5185m>209180SoliconppmASTM D5185m>20NONENONESoliconppmASTM D5185m>20 <th>Machine Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>8268</th> <th>5269</th> <th>0</th> | Machine Age | hrs | Client Info | | 8268 | 5269 | 0 |
| Cili Changed Filter ChangedClient InfoChangedI/AN/AN/AFilter ChangedClient InfoN/AN/AN/AN/ASample StatusNORMALNORMALNORMALNORMALNORMALIronppmASTM D5185m>150463266ChromiumppmASTM D5185m>100<1<1NickelppmASTM D5185m>100<10SilverppmASTM D5185m>5000<1AluminumppmASTM D5185m>551000CopperppmASTM D5185m>551000CopperppmASTM D5185m>50000VanadiumppmASTM D5185m>50000VanadiumppmASTM D5185m>501000Vellow Metalscalar'VisualNONENONENONENONESiliconppmASTM D5185m>209180VaterWC Method>0.2NCMENONENONESilitonscalar'VisualNONENONENONENONEDebrisscalar'VisualNORMNORMLNORMLNORMLASTM D5185m>10NORMLNORMLNORMLNORMLNORMLDebrisscalar'VisualNORMNORMLNORMLNORMLAstm D5185m>10St35 | Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter ChangelClient InfoN/AN/AN/ASample StatusClient InfoN/ANORMALNORMALIronppmASTM D5185>150463266ChromiumppmASTM D5185>100<1<1NickelppmASTM D5185>100<1<1NickelppmASTM D5185>100<1<1SilverppmASTM D5185500<1AluminumppmASTM D5185>500<1LeadppmASTM D5185>53221173TinppmASTM D5185>5<10<1VanadiumppmASTM D5185>5<10<1VanadiumppmASTM D5185>5<10<1Vellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185>20534PotassiumppmASTM D5185>20534PotassiumppmASTM D5185>209180SiliconppmASTM D5185>20S34PotassiumppmASTM D5185>20S34PotassiumppmASTM D5185>20S34Astm D5185>20SS340GotarivisualNONENONENONE <th>Filter Age</th> <th>hrs</th> <th>Client Info</th> <th></th> <th>0</th> <th>0</th> <th>0</th> | Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Sample StatusNORMALNORMALNORMALNORMALIronppmASTM D5185>150463266ChromiumppmASTM D5185>100<1<1NickelppmASTM D5185>100<1<1NickelppmASTM D5185>100<1<1TitaniumppmASTM D5185500<1AluminumppmASTM D5185>500<1LeadppmASTM D5185>53221473TinppmASTM D5185>5<100VanadiumppmASTM D5185>5<100VanadiumppmASTM D5185>5<100Vellow Metalscalar*VisualNONENONENONEILGHTVellow Metalscalar*VisualNONENONENONENONESiliconppmASTM D5185>20534PotassiumppmASTM D5185>209180WatervisualNONENONENONENONENONESand/Dirtscalar*VisualNORNORENORENOREAppearancescalar*VisualNORNORENORENOREAppearancescalar*VisualNORNORENORENOREAppearancescalar*VisualNORNORENORENORE <th>Oil Changed</th> <th></th> <th>Client Info</th> <th></th> <th>Changed</th> <th>N/A</th> <th>N/A</th> | Oil Changed | | Client Info | | Changed | N/A | N/A |
| IronppmASTM D5185m>150463266ChromiumppmASTM D5185m>50<1<1<1NickelppmASTM D5185m>1000<1<1TitaniumppmASTM D5185m<00<1<1AluminumppmASTM D5185m<51<1<1LeadppmASTM D5185m>5000<1LeadppmASTM D5185m>532217373TinppmASTM D5185m>5<100<1VanadiumppmASTM D5185m>5<100<1VisualNDNENONENONENONENONENONENONEVilte Metalscalar*VisualNONENONENONENONENONESiliconppmASTM D5185m>20 9 180WaterWC Metho>0.2NEGNORENORENORESiliconppmASTM D5185m>20 9 180WaterWC Metho0.2NEGNORENORENORESolitscalar*VisualNORNORENORENORESolitscalar*VisualNORNORENORENORESolitscalar*VisualNORNORENORENORESolitscalar*VisualNORNORENORENORESolitscalar< | Filter Changed | | Client Info | | N/A | N/A | N/A |
| Chromium ppm ASTM D5185m >50 <1 | Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Chromium ppm ASTM D5185m >50 <1 | | | | | | | |
| NickelppmASTM D5185m>100<1 | - | | | | - | - | |
| TitaniumppmASTM D5185m0<1 | | | | | | | |
| SilverppmASTM D5185m00<1 | | | | >10 | - | | |
| AluminumppmASTM D5185m>51<1 | | | | | | | |
| Lead ppm ASTM D5185m >5 0 0 0 Copper ppm ASTM D5185m >125 32 21 73 Tin ppm ASTM D5185m >5 <1 0 0 Vanadium ppm ASTM D5185m >5 <1 0 0 <1 White Metal scalar *Visual NONE NONE NONE NONE NONE Silicon ppm ASTM D5185m >20 9 18 0 Vater WC Method >0.2 NEG NEG NEG Silit scalar *Visual NONE NONE NONE NORE Debris scalar *Visual NONE NONE NONE NONE Appearance scalar *Visual NORM NORML NORML NORML Odor scalar *Visual NORM NORML NORML NORML Appearance scalar *V | | | | - | - | - | |
| Copper ppm ASTM D5185m >125 32 21 73 Tin ppm ASTM D5185m >5 <1 0 0 Vanadium ppm ASTM D5185m >5 <1 0 0 White Metal scalar *Visual NONE NONE NONE NONE Yellow Metal scalar *Visual NONE NONE NONE NONE Silicon ppm ASTM D5185m >20 5 3 4 Potassium ppm ASTM D5185m >20 9 18 0 Water WC Method >0.2 NEG NEG NEG Silt scalar *Visual NONE NONE NONE NONE Debris scalar *Visual NONE NORML NORML NORML Appearance scalar *Visual NORML NORML NORML NORML Codor scalar *Visual NO2 | | | | | - | | |
| TinppmASTM D5185m>5<1 | | | | | - | | ÷ |
| VanadiumppmASTM D5185m00<1 | | | | | | | |
| White Metalscalar*VisualNONENONENONENONELIGHTYellow Metalscalar*VisualNONENONENONENONENONENONESiliconppmASTM D5185m>20 5 34PotassiumppmASTM D5185m>20 9 180WaterWC Method>0.2NEGNEGNEGSilitscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMNORMLNORMLNORMLOdorscalar*VisualNORMNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>170<123BariumppmASTM D5185m2003422285MolybdenumppmASTM D5185m128380MaganeseppmASTM D5185m1283375PhosphorusppmASTM D5185m165012103951008ZincppmASTM D5185m1252954936SulfurppmASTM D5185m1252954936 | | | | >5 | | - | |
| Yellow Metalscalar*VisualNONENONENONENONENONESiliconppmASTM D5185m>20534PotassiumppmASTM D5185m>209180WaterWC Method>0.2NEGNEGNEGSiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONELIGHTNONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLGoronppmASTM D5185m>170<123BoronppmASTM D5185m2003422285MolybdenumppmASTM D5185m12800ManganeseppmASTM D5185m128380CalciumppmASTM D5185m165012103951008ZincppmASTM D5185m1252954936SulfurppmASTM D5185m12529541924177 | | | | NONE | | | |
| SiliconppmASTM D5185m>20534PotassiumppmASTM D5185m>209180WaterWC Method>0.2NEGNEGNEGSiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONENONENONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLSodiumppmASTM D5185m>170<1 | | | | | | - | |
| PotassiumppmASTM D5185m>209180WaterWC Method>0.2NEGNEGNEGSiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONELIGHTNONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>170<123BoronppmASTM D5185m2003422285MolybdenumppmASTM D5185m128300ManganeseppmASTM D5185m1283375PhosphorusppmASTM D5185m150558375PhosphorusppmASTM D5185m1252954936SulfurppmASTM D5185m1252954936 | Yellow Metal | scalar | ^Visual | NONE | NONE | NONE | NONE |
| WaterWC Method>0.2NEGNEGNEGSiltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONELIGHTNONESand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>170<123BoronppmASTM D5185m2003422285MolybdenumppmASTM D5185m128300MagnesiumppmASTM D5185m1283375PhosphorusppmASTM D5185m150558375PhosphorusppmASTM D5185m1252954936SulfurppmASTM D5185m1252954924177 | Silicon | ppm | ASTM D5185m | >20 | 5 | 3 | 4 |
| Siltscalar*VisualNONENONENONENONEDebrisscalar*VisualNONENONELIGHTNONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>170<123BoronppmASTM D5185m2003422285MolybdenumppmASTM D5185m128300ManganeseppmASTM D5185m128380CalciumppmASTM D5185m150558375PhosphorusppmASTM D5185m1252954936SulfurppmASTM D5185m1252954924177 | Potassium | ppm | ASTM D5185m | >20 | 9 | 18 | 0 |
| Debrisscalar*VisualNONENONELIGHTNONESand/Dirtscalar*VisualNONENONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>170<123BoronppmASTM D5185m2003422285MolybdenumppmASTM D5185m12800ManganeseppmASTM D5185m128380CalciumppmASTM D5185m150558375PhosphorusppmASTM D5185m1252954936SulfurppmASTM D5185m1252954924177 | Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Sand/Dirtscalar*VisualNONENONENONENONEAppearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>170<123BoronppmASTM D5185m40015235BariumppmASTM D5185m200342285MolybdenumppmASTM D5185m12800ManganeseppmASTM D5185m128380CalciumppmASTM D5185m150558375PhosphorusppmASTM D5185m165012103951008ZincppmASTM D5185m1252954936SulfurppmASTM D5185m22500179701168224177 | Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearancescalar*VisualNORMLNORMLNORMLNORMLNORMLOdorscalar*VisualNORMLNORMLNORMLNORMLNORMLNORMLEmulsified Waterscalar*Visual>0.2NEGNEGNEGSodiumppmASTM D5185m>170<123BoronppmASTM D5185m40015235BariumppmASTM D5185m200342285MolybdenumppmASTM D5185m12800ManganeseppmASTM D5185m128380CalciumppmASTM D5185m150558375PhosphorusppmASTM D5185m165012103951008ZincppmASTM D5185m1252954936SulfurppmASTM D5185m22500179701168224177 | Debris | scalar | *Visual | NONE | NONE | LIGHT | NONE |
| Normal Normal< | Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Emulsified Water scalar *Visual >0.2 NEG NEG NEG Sodium ppm ASTM D5185m >170 <1 2 3 Boron ppm ASTM D5185m 400 152 3 5 Barium ppm ASTM D5185m 200 3 42 285 Molybdenum ppm ASTM D5185m 12 8 0 0 Manganese ppm ASTM D5185m 12 83 8 0 Calcium ppm ASTM D5185m 150 558 37 5 Phosphorus ppm ASTM D5185m 125 295 49 36 Zinc ppm ASTM D5185m 125 295 49 36 Sulfur ppm ASTM D5185m 125 295 49 24177 | Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Sodium ppm ASTM D5185m >170 <1 | Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Boron ppm ASTM D5185m 400 152 3 5 Barium ppm ASTM D5185m 200 3 42 285 Molybdenum ppm ASTM D5185m 200 3 42 285 Molybdenum ppm ASTM D5185m 12 8 0 0 Manganese ppm ASTM D5185m 12 83 8 0 Calcium ppm ASTM D5185m 12 83 37 5 Phosphorus ppm ASTM D5185m 150 558 37 5 Phosphorus ppm ASTM D5185m 1650 1210 395 1008 Zinc ppm ASTM D5185m 125 295 49 36 Sulfur ppm ASTM D5185m 22500 17970 11682 24177 | Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| Boron ppm ASTM D5185m 400 152 3 5 Barium ppm ASTM D5185m 200 3 42 285 Molybdenum ppm ASTM D5185m 200 3 42 285 Molybdenum ppm ASTM D5185m 12 8 0 0 Manganese ppm ASTM D5185m 12 83 8 0 Calcium ppm ASTM D5185m 12 83 37 5 Phosphorus ppm ASTM D5185m 150 558 37 5 Phosphorus ppm ASTM D5185m 1650 1210 395 1008 Zinc ppm ASTM D5185m 125 295 49 36 Sulfur ppm ASTM D5185m 22500 17970 11682 24177 | Sodium | maa | ASTM D5185m | >170 | <1 | 2 | 3 |
| Barium ppm ASTM D5185m 200 3 42 285 Molybdenum ppm ASTM D5185m 12 8 0 0 Manganese ppm ASTM D5185m 12 83 8 0 Magnesium ppm ASTM D5185m 12 83 8 0 Calcium ppm ASTM D5185m 150 558 37 5 Phosphorus ppm ASTM D5185m 1650 1210 395 1008 Zinc ppm ASTM D5185m 125 295 49 36 Sulfur ppm ASTM D5185m 2500 17970 11682 24177 | | | ASTM D5185m | | | | |
| Molybdenum ppm ASTM D5185m 12 8 0 0 Manganese ppm ASTM D5185m 12 8 0 <1 1 Magnesium ppm ASTM D5185m 12 83 8 0 Calcium ppm ASTM D5185m 150 558 37 5 Phosphorus ppm ASTM D5185m 1650 1210 395 1008 Zinc ppm ASTM D5185m 125 295 49 36 Sulfur ppm ASTM D5185m 22500 17970 11682 24177 | | | | | | | |
| Manganese ppm ASTM D5185m 0 <1 | Molvbdenum | | | | | 0 | |
| Magnesium ppm ASTM D5185m 12 83 8 0 Calcium ppm ASTM D5185m 150 558 37 5 Phosphorus ppm ASTM D5185m 1650 1210 395 1008 Zinc ppm ASTM D5185m 125 295 49 36 Sulfur ppm ASTM D5185m 22500 17970 11682 24177 | - | | | | | | |
| Calcium ppm ASTM D5185m 150 558 37 5 Phosphorus ppm ASTM D5185m 1650 1210 395 1008 Zinc ppm ASTM D5185m 125 295 49 36 Sulfur ppm ASTM D5185m 22500 17970 11682 24177 | 0 | | | 12 | | | |
| Phosphorus ppm ASTM D5185m 1650 1210 395 1008 Zinc ppm ASTM D5185m 125 295 49 36 Sulfur ppm ASTM D5185m 22500 17970 11682 24177 | - | | | | | | |
| Zinc ppm ASTM D5185m 125 295 49 36 Sulfur ppm ASTM D5185m 22500 17970 11682 24177 | | | | | | | |
| Sulfur ppm ASTM D5185m 22500 17970 11682 24177 | Phosphorus | ppm | ASTM D5185m | 1650 | 1210 | 395 | 1000 |
| | | | | | | | |
| | Zinc | ppm | ASTM D5185m | 125 | 295 | 49 | 36 |

Contact/Location: SERVICE MANAGER - AMELAP







Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. Received : LHMC155912 : 16 Apr 2024 Lab Number : 06151342 Tested : 19 Apr 2024 Diagnosed Unique Number : 10981420 : 19 Apr 2024 - Sean Felton Test Package : MOB 1 (Additional Tests: PQ) Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

AMERICAN STATE EQUIPMENT CO. (RENTAL TO ARCELOR MITTAL) 138 HWY 3217 LAPLACE, LA US 70068 Contact: SERVICE MANAGER

T: (414)541-8700

F:

ŭ

Contact/Location: SERVICE MANAGER - AMELAP Page 2 of 2