LAB REPORT

Unit ID

Hydraulic excavator

Component

Bio-hydraulic fluid

Current sample number

1700781

OELCHECK GmbH · Postfach 1116 · 83094 Brannenburg

Example report Analysis scope: Analysis-Kit 3 (Bioset) Machine type: Manufacturer: Oil brand name: Oil quantity in system: A 900 Litronic Liebherr Panolin HLP Synth 46 280 I

Diagnosis for the current laboratory values

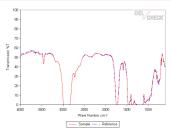
The mineral oil content is less than 2% due to oil change or mixture with a mineral-oil based hydraulic oil. Iron slightly increased by wear or corrosion. Slight copper increase caused by wear particles or corrosion. Such changes are not abnormal, but they should be followed up by trend analysis. Oil cleanliness is lower than recommended by component manufacturers. The value for silicon, which indicates dust, has increased. I recommend that you improve the oil cleanliness by changing the filter element or with a by-pass filtration. A cleaner oil is fit for further use. Otherwise the oil should be changed.

Dipl.-Ing. Rüdiger Krethe

ANALYSIS RESULTS **Current sample** Previous samples 1700781 LAB NUMBER 1700782 1700783 SAMPLE RATING 31.03.2014 Date tested 12.01.2015 11.10.2014 Date of sample taken 09.01.2015 06.10.2014 27.03.2014 Date of last oil change 20.03.2014 20.03.2014 20.03.2014 Top-up since change 20 0 0 509 Operating time since change h 1027 3 1027 509 3 Total operating time h Oil changed no no no WEAR Iron Fe mg/kg 12 4 0 Chrome 9 0 Сг mg/kg mg/kg 0 0 Tin Sn 1 Aluminum AI mg/kg n 0 0 Ni 0 0 0 Nickel mg/kg 0 0 Cu 11 Copper mg/kg Lead Pb mg/kg 1 0 0 Molybdenum Мо mg/kg 0 0 0 PQ index < 25 < 25 < 25 CONTAMINATION Silicon Si mg/kg 23 14 12 Potassium κ 0 0 mg/kg 0 Sodium 0 0 Na mg/kg 1 Water K. F ppm 773 476 319 **OIL CONDITION** Viscosity at 40°C mm²/s 46.41 46.37 46.21 Viscosity at 100°C 8.01 7.99 8.03 mm²/s 145 144 147 Viscosity index ADDITIVES 25 Calcium Ca mg/kg 24 21 Magnesium Mg mg/kg 3 3 2 0 0 в 0 Boron mg/kg Zinc Zn mg/kg 46 14 12 Phosphorus Р mg/kg 638 1633 1679 Barium Ba mg/kg 2 1 1 Sulphur 1024 1058 S mg/kg 1117 ADDITIONAL TESTS AN / NN mgKOH/g 1.08 0.85 0.67 919 920 920 Density 15°C kg/m³ 23/19/15 Cleanliness class ISO 4406 (1999) 20/17/13 18/16/11



Infrared Spectrum











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Sample Rating

Caution