

Analysis Report

Lube Type: CONOCO AW 46
Machine MFG: AIR PROD INC
Machine MOD: B175A
MachineType: Anti-Friction Bearing

Received: 2/21/2003 12:00:00AM
Report: 16-Nov-05 11:55:02AM
Sample No: 19 - 1 - 4 - 4
Analyst: MPB

ATTN: Jack Boilerman
 Lake Rd Plant
 1643 Fastcatte Rd
 McMacken, IN 60543

Problems:

*** HIGH IRON. *** HIGH LEAD. *** High WATER CONTENT. *** EXCESSIVE PARTICLE COUNT.

Customer Notes:

Filter change 1/5/03

Water content at .689% (6890 ppm) is likely the result of condensation or water ingress. Water contamination can lead to oil degradation, corrosion and reduction in load carrying capacity. If specific source of moisture cannot be located, inspect or install desiccant breathers. The particulate contamination exceeds our limits for a bearing (19/17/16). High particulate contamination will lead to abrasive wear and damage internal components. Reducing particle levels will significantly extend component life. Fluid contamination is a possible contributor to elevated wear metals.

	Reference	1/11/2003	12/7/2002	11/2/2002	10/19/2002
Lab No	107391	168113	168112	168111	168110
Oil Chng / Mach / Lube		N / C / C	N / N / M	N / N / N	N / N / N

SPECTROSCOPIC ANALYSIS (ppm) ASTM D 5185

Iron	0	86	26	6	2
Copper	2	0	0	0	0
Lead	1	50	10	3	3
Aluminum	1	0	0	0	0
Tin	1	0	0	0	0
Nickel	0	0	0	0	0
Chromium	1	0	0	0	0
Titanium	0	0	0	0	0
Vanadium	0	0	0	0	0
Silver	1	0	0	0	0
Silicon	1	14	7	9	6
Boron	3	0	0	0	0
Calcium	57	50	44	39	41
Magnesium	8	0	0	0	0
Phosphorous	287	329	318	341	321
Zinc	437	495	495	472	484
Barium	1	0	0	0	0
Molybdenum	0	0	0	0	0
Sodium	0	0	0	0	0
Potassium	0	0	0	0	0

VISCOSITY (centistokes) ASTM D 445

Vis 40	45.6	45.9	46.1	45.1	45.9
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FTIR SPECTROSCOPY (indexing numbers) JOAP Method

Anti Wear	12	12	12	12	12
Nitration	3	2	2	2	2
Other Fluid	117	118	118	117	117
Oxidation	2	2	3	2	2

PARTICLE COUNT (particles per ml) ISO 4406:99

ISO Code	15/ 14/ 11	21/ 19/ 17	19/ 17/ 15	18/ 17/ 13	17/ 16/ 13
>4 Micron	311	10156	2518	1456	899
>6 Micron	114	2695	789	654	401
>14 Micron	12	1256	198	78	52
>50 Micron	0	25	5	2	1
>100 Micron	0	12	2	0	0

SINGLE COMPONENT TESTS

Acid # mg KOH/g	0.56	0.35	0.31	0.27	0.25
Water %	0.001	0.689	0.325	0.043	0.009



