

Analysis Report

Component Information		Sample Information		Customer Information		
Machine Type:	Anti-Friction Bearing	Sump Size:	Unknown	Received:	09/22/2017	Lake Rd Plant
Lubricant:	CONOCO/AW 46	Report:	09/22/2017	Sample No.:	19 - 1 - 4 - 4	20338 Progress Drive
Machine MFG:	AIR PROD INC	Analyst/Test:	MMM / KFPATAFS	Contact:	Jack Boilerman	Strongsville, OH 44149
Machine MOD:	B175A					

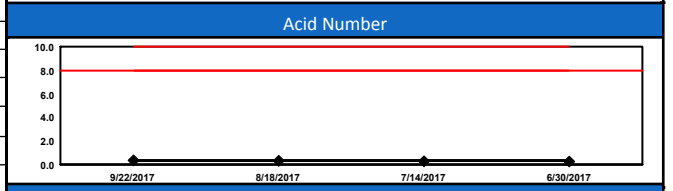
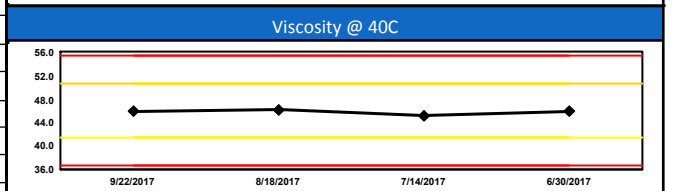
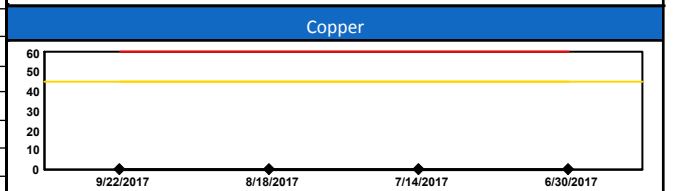
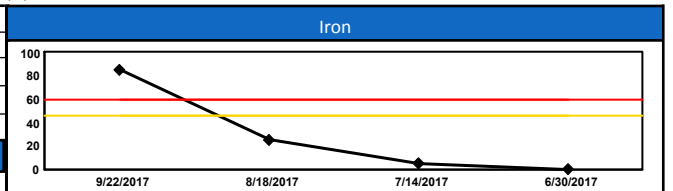
PROBLEMS
High Water Content
Excessive Wear
Excessive Particle Count

COMMENTS The level of water contamination 0.6890% is excessive and considered abnormal. Check for sources of water ingress and repair as necessary. The particle count for this bearing exceeds the limit (19/17/16) and is considered abnormal. Check for sources of particulate ingress first before changing filters. Fluid contamination is a possible contributor to elevated wear metals. The high level of wear (iron, lead) suggests that an abnormal wear mode exists. Check this bearing for excessive noise, vibration or high temperature.

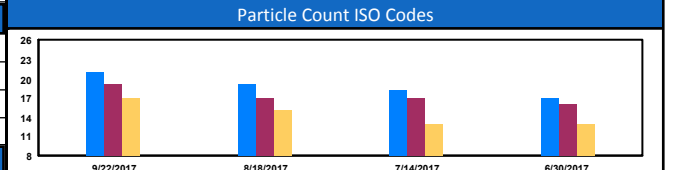
CUSTOMER NOTES Mach Hours: 2016 * Filter change 1/5/2016

Date Sampled	NEW OIL	9/22/2017	8/18/2017	7/14/2017	6/30/2017
Lab No	1278905	168113	168112	168111	168110
Machine / Lube Cond.		C / C	N / M	N / N	N / N
Lube Hours		2016	1176	336	0
Machine Hours		2016	1176	336	0

ELEMENTAL SPECTROSCOPY (ppm) ASTM D5185 Mod (-) indicates below detection limit						
Wear Metals	Iron	-	85	25	5	-
	Copper	-	-	-	-	-
	Lead	-	49	9	-	-
	Aluminum	-	-	-	-	-
	Tin	-	-	-	-	-
	Nickel	-	-	-	-	-
	Chromium	-	-	-	-	-
	Titanium	-	-	-	-	-
	Vanadium	-	-	-	-	-
	Silver	-	-	-	-	-
Additives	Calcium	174	50	44	39	41
	Magnesium	2	-	-	-	-
	Phosphorus	429	329	318	341	321
	Zinc	659	495	495	472	484
	Barium	-	-	-	-	-
Contaminants	Molybdenum	3	-	-	-	-
	Silicon	4	14	7	9	6
	Boron	-	-	-	-	-
	Lithium	-	-	-	-	-
	Sodium	-	-	-	-	-
Potassium	-	-	-	-	-	



FTIR SPECTROSCOPY (Indexing Numbers) ASTM E2412					
Oxidation	2	2	3	2	2
Nitration	3	2	2	2	2
Anti Wear	12	12	12	12	12
Other Fluid	40	118	118	117	117



PARTICLE COUNT (particles per ml) ISO 4406:99					
Pore Block Particle Count Alarm Limits Marginal (19/17/16)					
Pore Block ISO Code	18/16/13	21/19/17	19/17/15	18/17/13	17/16/13
>4 Micron	1543	10156	2518	1456	899
>6 Micron	600	2695	789	654	401
>14 Micron	45	1256	198	78	52
>50 Micron	2	25	5	2	1
>100 Micron	0	12	2	0	0

Date	Customer Corrective Actions
11/19/13	Changed oil ; Angela Ritchie
3/21/12	Corrected oil leak ;
6/3/10	Replaced bearing ;

VISCOSITY (centistokes) ASTM D445 MOD					
Viscosity@40°C	42.4	45.9	46.1	45.1	45.9
ACID NUMBER (mg KOH/g) ASTM D974 MOD					
Acid Number	0.94	0.35	0.31	0.27	0.25
WATER (%) a-ASTM D6304C b-IWI-134* c-Crackle d-IWI-135* e-IWI-370*					
Water		0.6890	0.3250	0.0430	0.0090

