

**REAL BIG POWER PARTNERS**  
Sherwin Alumina  
Falls Work, OH

**CRITICAL**

Sample ID: GPP-0370349302-BFP-1B  
Equip. Desc.: BFP-1B Sulzer Pump  
Lubricant Type: Chevron AW-46  
Reservoir Cap.: 70.00 Gal(s) 264.95 Ltr(s)  
Machine Time: 21,457.3 Hr(s)  
Lube Time: 1,587.6 Hr(s)

Sample Date: 1/15/2009  
Received Date: 1/19/2009  
Test Date: 1/21/2009  
Prev. Sample: 12/6/2008 **M**  
First Sample: 4/9/2001  
No. Samples: 93

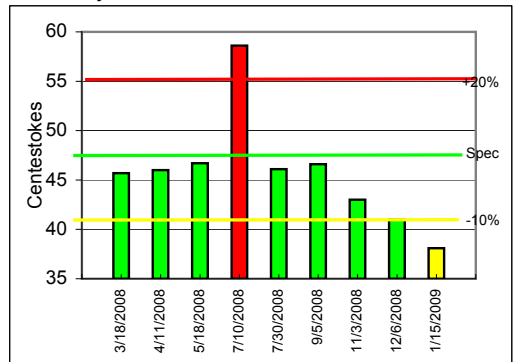
**Recommendation(s):**

CHANGE OIL to correct LOW viscosity, as well as reduce high levels of Iron, Aluminum, Copper, Oxidation, Nitration, Solvents and water contamination. Oxidation has increased from 0.61 to 2.87 to 4.89 Abs/cm, Nitrates decreased from 0.00 to 6.10 Abs/cm, Sulfates increased from 0.88 to 1.07 Abs/cm while Solvents continue to increased from 1.31 to 11.11 Abs/cm.

**PHYSICAL PROPERTIES**

Sample Date(s)	07/30/08	09/05/08	11/03/08	12/06/08	01/15/09	REF.
Viscosity D-2983	46.1	46.6	43.0	41.0	38.1	46.0
Water-IR ppm	293	385	Neg	Neg	1,245	≤ 700
Oxidation Abs/cm	0.70	1.54	0.61	2.87	4.89	≤ 0.20
Nitration Abs/cm	0.21	1.56	0.31	0.00	6.10	≤ 0.40
Sulfates Abs/cm	0.61	1.03	0.17	0.88	1.07	≤ 0.10
Solvents Abs/cm	0.75	0.52	0.00	1.31	11.11	≤ 0.10
TAN D-974 mg KOH	--	--	0.23	--	--	≤ 2.00
Flash D-92 °F	--	--	405	--	--	≥ 400
R-BOT D-2272 min.	--	--	1,879	--	--	≥ 500

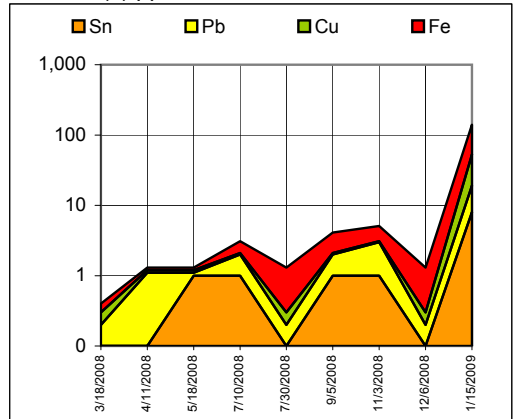
Viscosity cSt 40°C ASTM-D-445



**ELEMENTAL ANALYSIS**

WEAR ELEMENTS (ppm)							REF.
Iron <sup>26</sup> (Fe) 55.84	1	2	2	1	87	4	
Chromium <sup>14</sup> (Cr) 51.99	0	0	0	0	0	0	
Aluminum <sup>13</sup> (Al) 26.98	0	0	0	0	67	0	
Copper <sup>9</sup> (Cu) 63.54	0	0	0	0	34	0	
Lead <sup>82</sup> (Pb) 207	0	1	2	0	11	3	
Tin <sup>58</sup> (Sn) 118.6	0	1	1	0	8	1	
Silver <sup>17</sup> (Ag) 107.86	0	0	0	0	0	0	
Nickel <sup>20</sup> (Ni) 58.71	0	0	1	0	0	0	
ADDITIVE PACKAGE ELEMENTS (ppm)							
Molybdenum <sup>42</sup> (Mo) 95.94	0	1	1	0	0	0	
Magnesium <sup>2</sup> (Mg) 24.30	0	0	0	0	12	4	
Calcium <sup>20</sup> (Ca) 40.08	46	54	51	51	66	3	
Barium <sup>16</sup> (Ba) 137.3	0	0	0	0	0	0	
Phosphorus <sup>15</sup> (P) 30.973	313	328	321	312	367	500	
Zinc <sup>30</sup> (Zn) 65.38	406	308	340	318	285	700	
CONTAMINANT ELEMENTS (ppm)							
Sodium <sup>11</sup> (Na) 22.98	0	0	0	0	0	0	
Silicon <sup>14</sup> (Si) 28.08	0	1	1	0	0	0	
Potassium <sup>19</sup> (K) 39.09	0	0	0	0	0	0	
Boron <sup>5</sup> (B) 10.81	0	0	0	0	0	0	
TRACE METAL ELEMENTS (ppm)							
Vanadium <sup>23</sup> (V) 50.94	0	0	0	0	0	0	
Titanium <sup>22</sup> (Ti) 47.90	0	0	0	0	0	0	
Cadmium <sup>8</sup> (Cd) 112.4	0	0	0	0	0	0	

Element(s) ppm



Oxidation, Nitration, Sulfates & Solvents

