



Manchester Tank & Equipment Elkhart, Indiana

Aluminum Draw Lubricant Replacement
Indiana Partners for Pollution Prevention
June 4th, 2014

P2 Opportunity - Original Process

- The facility was using a mineral oil draw lubricant (TufDraw HPAL) to form aluminum heads.
- Formed heads were pre-cleaned with a detergent then rinsed with a caustic solution in a two-stage parts washer, which overflows to the Elkhart POTW.
- Annual potential to eliminate:
 - 4,435 pounds of detergent (Additive 10W)
 - 2,741 pounds of draw lubricant (TufDraw)
 - 11,749 pounds of oil-soaked absorbent matting

Original Process - Absorbent Matting



Original Process - Absorbent Matting



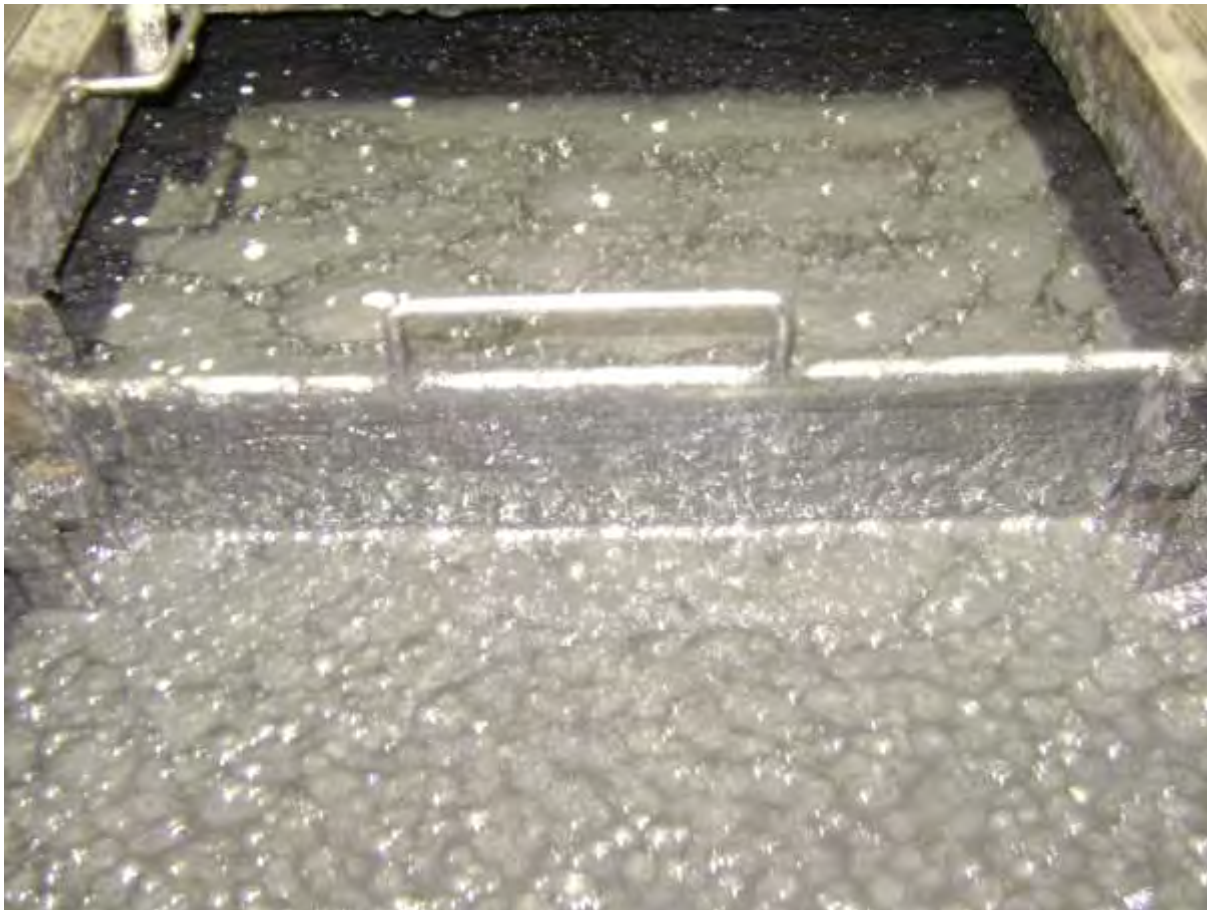
Original Process - Oily Heads



Original Process - Pre-Cleaning



Original Process - Oily Residue in Washer



P2 Opportunity - Proposed Process

- The facility had previously purchased aluminum blanks already coated with a food-grade polyethylene lubricant. During these attempts in 2007 and 2008, it was determined that the blanks coated prior to arrival would add too much cost to the product.
- For the P2 Challenge, we decided to evaluate new options for in-house application.

Aluminum Draw Lubricant Team

- Steve Jacobson – Environmental Manager
- Roger Morningstar – Operations Manager
- George Quetot – Plant 2 Supervisor
- Rusty Stoeckinger – Maintenance Supervisor
- Matt Horvath – Plant 2 Maintenance
- Honorato Diaz – Operator
- Orlando Ramirez - Operator

Dry Lube P2 - Timeline

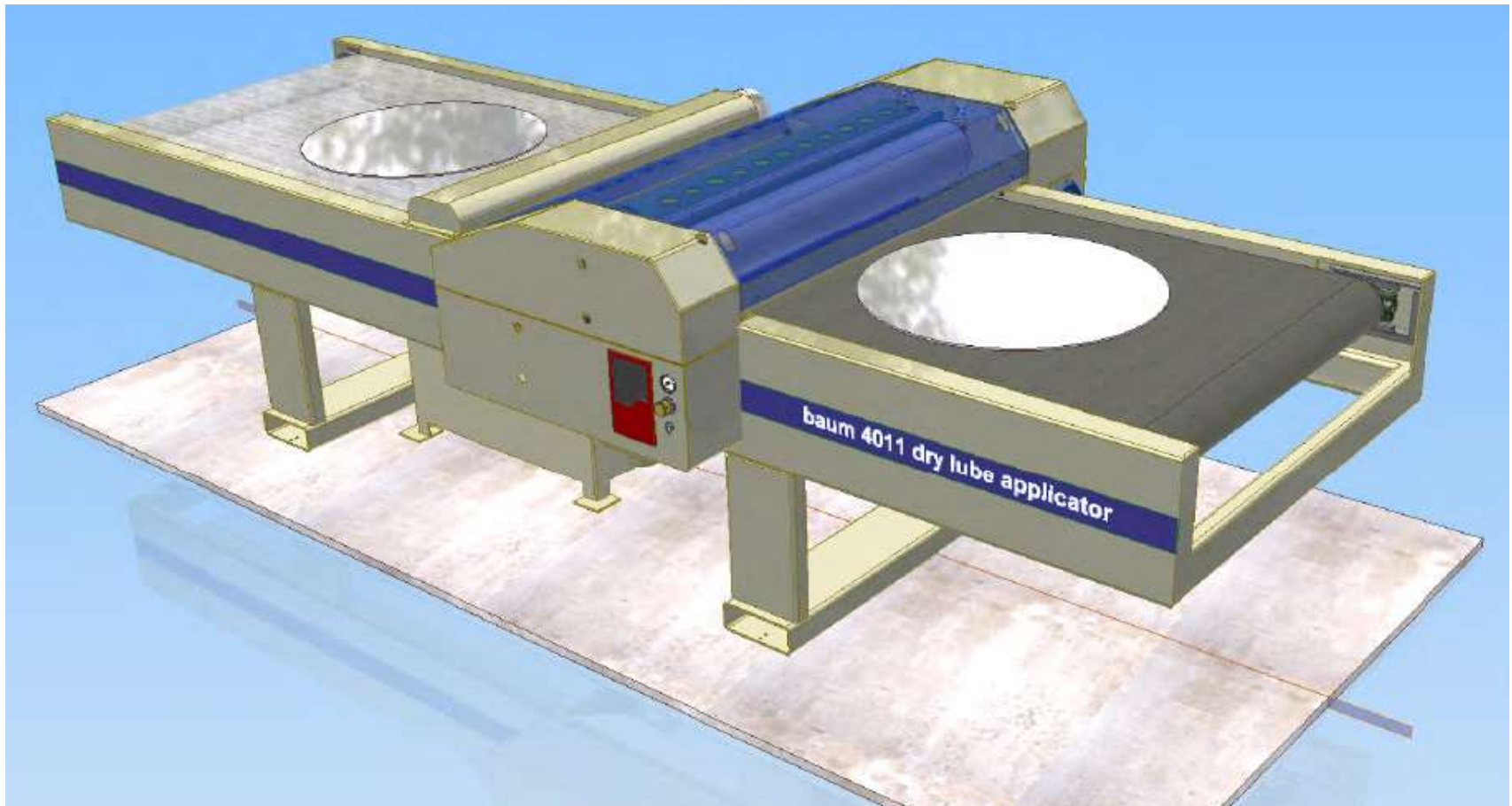
- July, 2011
 - Evaluation visit to vendor and power equipment mfg. currently using this process
- August, 2012
 - Return visit to Baum
- December, 2012
 - Delivery of Dry Lube Applicator
- January, 2013
 - Conversion to Dry Lube Process

Equipment Purchased

- Blank Coater
- Air Knife
- Pin Pallets



Blank Coater



Coated Aluminum Blanks

Dry-Lubed Blank in Press



Formed Heads After Washing



Pollution Prevention Positives

- 72% Reduction in Oil & Grease discharges
- Reduction in weld defects
- Old process used mineral oil, glycol ether and caustic.
- New process uses food grade polyethylene and glycol ether (all non-hazardous)
- Reduced exposure to employees