CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	1996
DateRun:	05/07/1996
Experimenters:	Jay Jankauskas
ClientType:	Ceramic Coating Company
ProjectNumber:	Project #1
Substrates:	Steel, Teflon
PartType:	Part
Contaminants:	Coatings, Clay
Cleaning Methods:	Mechanical Agitation
Analytical Methods:	Visual
Purpose:	Goal of trial is to find a cleaning method

Experimental Procedure:

The goal of this trial is to find a viable method for Ceramic Coating Company to clean of their screens. Three different criteria wereused to determine the effectiveness of a cleaning method:

1) Cleanliness- The new method must remove most of the baked-on clay/silicon dioxides front the screens.
2) Economically Viable- The new method must be cost effective and should also require as little equipment as possible and must not damage the screens.
3) Environmentally Friendly- The new method must not add to or create hazardous waste and/or worker exposure.
From the above listed criteria, two different methods were selected to be tested. The first method was to use an environmentally friendly cleaning chemical to remove the baked-on clay/silicon dioxide. Nine different chemicals were chosen on the basis of strength and classification.
The sample screens obtained from Ceramic Coating Company were cleaned in a one-liter full-strength solution of each chemical. Cleaning was performed for 30 minutes at 120 F in a beaker agitated with a stir-bar. Cleaning effectiveness was observed by visual inspection.
The second method to be tested was a sodium bicarbonate blasting process used at AA Environmental in Woburn, MA. The sodium bicarbonate blasting is similar to sandblasting except it is virtually nondestructive and the blasting material is water soluble and non-hazardous so it can be washed away. AA Environmental is basically a contract cleaning company who will come down to one's facility to perform the cleaning, but he sodium bicarbonate blasting equipment can also be purchased through them if so desired.

SUBSTRATE MATERIAL: Teflon coated steel screens
CONTAMINANTS: Baked on Kaolin Clay/Silicon Dioxide
CONTAMINATING PROCESS USED: As received from Ceramic Coating Company.

Results:

The first part of the test proved to be unsuccessful. The only chemical that even touched the clay/silicon dioxide was the W.R. Grace 294xx. From the long contact time needed for a full-strength solution, this part of testing was deemed nonviable and was not explored any further.
The sodium bicarbonate blasting proved to be very effective. All of the clay/silicon dioxide was removed from one half of a screen in less than a minute.

Summary:

Substrates:	Steel, Teflon				
Contaminants:	Coatings, Clay				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
CSA Inc	Bio Safe 1023	100	0.00	☐	
Eastern Color and Chemical Company	Ecobrite Cleaner AK	100	0.00	☐	
ISP Technologies	Ship Shape Resin Cleaner	100	0.00	☐	
US Polychem Corporation	Polychem PW 147	100	0.00	☐	
US Polychem Corporation	Product 69 MC	100	0.00	☐	
Magnaflux	Daraclean 294 xx	100	0.00	☐	
Tarksol Inc	Tarksol HTF 321	100	0.00	☐	
Brulin Corporation	Compliance	100	0.00	☐	
Cleaning Systems	Release	100	0.00	☐	
Armex Cleaning and Coating Removal Systems	Sodium Bicarbonate	100	0.00	☑	

Conclusion:

The one problem with the blasting was that the Teflon was also removed.