CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2014
DateRun:	11/13/2015
Experimenters:	Loc Nguyen, George Liang
ClientType:	Cleaning Equipment Mfr
ProjectNumber:	Project #1
Substrates:	Ceramics, Porcelain
PartType:	Coupon
Contaminants:	Hucker's Soil
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate three supplied products for all purpose cleaning following GS 37 requirements
Experimental Procedure:	Preweighed ceramic and porcelain were coated with Hucker's Soil Formulation (Jif Creamy Peanut Butter,Salted Butter, Arrowhead Mills stone ground wheat flour, Egg Yolk, Evaporated milk, distilled water, Printer's ink with boiled linseed oil, Shaws saline solution) using a handheld swab and allowed to dry for 24 hours at room temperature. The contaminated coupons were weighed again to determine the amount of soil added. Three coupons were placed into a Gardner Straight Line Washability unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled and soaked with 1 spray of cleaning solution. Each coupon was sprayed once with the same cleaning solution. The cleaning unit was run for 20 cycles (~33 seconds). At the end of the cleaning, coupons were wiped once with a dry paper towel. Final weights were recorded, efficiencies were calculated and recorded. Chemistries Evaluated: Force Of Nature, Scrubbing Bubbles; Lysol Power Bathroom Cleaner; Summary Substrates: Ceramics; Porcelain; Contaminants: Hucker Soil; Force of Nature Ph = 6.67 Concentration = 250 ppm

Results:

Cleaner	Initial wt	Final wt	% Removed
Force of Nature – Porcelain			
	0.5386	0.142	73.64
	0.6876	0.1881	72.64
	0.6837	0.0952	86.08
	0.8661	0.0586	93.23
	0.7426	0.0913	87.71
	0.5814	0.1372	76.4
	0.7928	0.144	81.84
	0.7348	0.079	89.25
	0.8147	0.0669	91.79
Force of Nature - Ceramic			
	0.4588	0.1595	65.24
	0.8262	0.141	82.93
	0.6465	0.2153	66.7
	0.6763	0.099	85.36
	0.6627	0.0691	89.57
	0.8799	0.1192	86.45
	0.7092	0.0985	86.11
	0.6504	0.1516	76.69
	2.3559	0.6558	72.16
Scrubbing Bubbles – Porcelain			
	0.8725	0.1046	88.01
	0.8302	0.0873	89.48
	0.8357	0.0616	92.63

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	0.6964	0.0379	94.56
	0.9796	0.0668	93.18
	0.9116	0.0679	92.55
	0.8444	0.062	92.66
	0.5454	0.0949	82.6
	0.7978	0.0322	95.96
Scrubbing Bubbles - Ceramic			
	0.5787	0.0161	97.22
	0.6276	0.0116	98.15
	0.5949	0.0275	95.38
	0.5595	0.0325	94.19
	0.3997	0.0087	97.82
	0.6348	0.0164	97.42
	0.7418	0.0123	98.34
	0.6386	0.0215	96.63
	1.1978	0.0373	96.89
Lysol Power Bath – Porcelain			
	0.7964	0.0837	89.49
	0.5573	0.0833	85.05
	0.7773	0.0872	88.78
	0.6711	0.0878	86.92
	0.9591	0.064	93.33
	0.8897	0.0765	91.4
	0.8962	0.1311	85.37
	0.7767	0.1044	86.56
	0.7755	0.1277	83.53
Lysol Power Bath - Ceramic			
	0.3031	0.131	56.78
	0.5232	0.2247	57.05
	0.5377	0.1775	66.99
	0.7134	0.1001	85.97
	0.9334	0.1223	86.9
	0.7306	0.1355	81.45
	0.7918	0.1416	82.12
	0.7578	0.2734	63.92
	1.0322	0.2627	74.55

Summary:

Substrates:	Ceramics, Porcelain
Contaminants:	Hucker's Soil

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Healthier Cleaning Innovations	Force of Nature	100	95.02	☑	
Clorox Company	Formula 409 All Purpose Cleaner	100	69.83	☐	

Conclusion:

Scrubbing Bubbles was the most efficient and consistent cleaner. Scrubbing Bubbles was statistically more effective than Force of Nature. Lysol Power Bathroom cleaner and the Force of Nature were comparable to each other in performance, with FON having more consistent cleaning.