CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2015
DateRun:	05/20/2015
Experimenters:	James Keats
ClientType:	Cleaning Equipment Mfr
ProjectNumber:	Project #1
Substrates:	Vinyl Composite Tiles
PartType:	Coupon
Contaminants:	Food
Cleaning Methods:	Mechanical Agitation
Analytical Methods:	Visual
Purpose:	Evaluate beginning, middle, and end effectiveness of iRobot cleaning pad.

Experimental Procedure:

Apply soil to 4' X 4' clean vinyl floor, spreading 1g of soil onto even numbered tiles with a swab and odd tiles by dripping 1g of soil onto them (16g per floor). No drying is required for the Vinaigrette. Attach a cleaning pad to the Braava unit and completely fill with water. Then place the Braava unit onto the floor. Turn on the Braava unit, and begin the cleaning cycle. At intervals of 10 seconds, take a picture of the floor. Once the cycle is complete, empty any water still in the Braava unit and dispose of the pad.

Pictures are taken periodically to compare effectiveness of cleaning pad over time. This will allow beginning, middle, and end cleaning to be visually evaluated.

To evaluate total soil removal, a visual observation will be made. The floor will first be allowed to dry to make it easier to identify the clear soil. This observation will be an estimation of the % soil removed from each tile by comparing before and after pictures of the floor. In addition to this, observers will also be asked to rate the overall cleanliness of the floor from 1-5 (1 being no soil remaining).

Tile numbers

4	5	6	7
3	14	15	8
2	13	16	9
1	12	11	10

^^^

Braava unit starts here.

Results:

The floor was soiled and cleaned once.

- Found that the Braava unit stopped its cleaning cycle after ~25 minutes. Significantly longer than when conducting coke trials.
- Although the floor was visually clean, this may have been a result of the Vinaigrette's clearness. After cleaning, the floor was significantly more slippery than it had been before.
- The floor was still slippery after drying for 72 hours.

Percent removal Trial 1

(Ex: 95% means that 5% of the tile was covered in contaminant.)

Observer 1 – rating: 1.3

95%	100%	100%	100%
100%	100%	100%	100%
100%	100%	100%	100%
100%	100%	93%	95%

Observer 2 – rating: 2

100%	95%	100%	100%
98%	95%	85%	100%
98%	95%	80%	95%
100%	95%	95%	95%

Observer 3 – rating: 1.5

100%	97%	100%	100%
100%	96%	90%	100%
99%	96%	95%	100%

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100%	95%	95%	100%

Figure 1: Initial floor.

Figure 2: Cleaned floor after 1 cycle.

Summary:

Substrates:	Vinyl Composite Tiles
Contaminants:	Food

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
iRobot	iRobot Braava unit	100	0.00	☑	

Conclusion:

Pad seemed to clean consistently across entire floor.

After allowing the floor to dry for 5 days, 2 tiles on the floor were cleaned with soap and water. The soap and water was then wiped away with a paper towel. These two tiles were not visually cleaner than the other 14, but there was a noticeable change in slipperiness between these two tiles and then rest of the floor.

Changes to testing method

- To make it easier to see remaining soil, each tile will be wiped with a towel.

Manual wipe tests was conducted with paper towels and water on a floor soiled with Vinaigrette in order to provide a comparison to the Braava unit. The time it took to clean the floor was recorded. Once cleaned, the floor was evaluated with the same visual method mentioned earlier in this report.