

Biennial Contamination Measurement
For
Loads of Recyclable Materials, Organics
Materials & Plant Materials
December 9 – 13, 2013

Presented to:

RethinkWaste

Submitted by:

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December 23, 2013

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*Sloan*VAZQUEZ_{LLC}

Municipal Solid Waste Management & Recycling Advisors

December 23, 2013

Cliff Feldman
Recycling Programs Coordinator
South Bayside Waste Management Authority
610 Elm Street, Suite 202
San Carlos, 94070

Re: Contamination Measurement – Performed December 9 – 13, 2013

Dear Mr. Feldman:

Sloan Vazquez, LLC is pleased to have assisted the SBWMA with the performance of the Contamination Measurement Study. The results of the contamination measurement are included in our report which is attached hereto.

Our team assembled at Shoreway on Monday, December 9, 2013 and completed the field reconnaissance and preparation for the sampling process. We met with managers and line supervisors from Recology and South Bay Recycling to confirm the operating procedures and measurement protocols, and the roles and responsibilities of each party during the contamination measurement period. The samples were collected, sorted, analyzed, and recorded commencing on Monday, December 9, 2013 and completed on Friday, December 12, 2013.

Thank you for the opportunity to work with SBWMA on this important project.

Cordially,

Joe Sloan
President

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CONTAMINATION MEASUREMENT – DECEMBER 9 – 13, 2013

PURPOSE

Section 6.02B of the *Franchise Agreement for Collection Services with Recology San Mateo County* (hereinafter “Agreement”) establishes the method of determining disincentive payments from Recology to SBWMA when contamination levels exceed the maximum amounts set forth therein. The SBWMA engaged the services of Sloan Vazquez, LLC to conduct the Contamination Measurement Study in accordance with the requirements of the Agreement. This report contains the contamination measurements from each of the five (5) designated streams during the sampling period.

METHODOLOGY

The contamination sampling was based upon the methodology described in *Attachment E-2* of the Agreement. For the purposes of sampling as documented in this report, *Attachment E-2*, the *Sample Selection Protocol*, the *Materials Sorting List*, and the *Policies and Procedures*, taken altogether, are described as the Contamination Measurement Protocol (Exhibit H).

The fourteen material types sampled are listed in Exhibits C, D, E, F, & G.

Also, the identifiable biodegradable plastics in the organic/plant samples are separately identified.

SAMPLING POPULATIONS

The following material streams were sampled during the December 9 – 13, 2013 sampling period:

- 1) Commercial Recyclables (also “CR”)
- 2) Residential Recyclables (also “RR”)
- 3) Commercial Organics (also “CO”)
- 4) Residential Organics (also “RO”)
- 5) Commercial Plant (also “CP”)

Twelve (12) samples were collected and sorted from each of the respective streams. The Commercial Plant material samples were collected, as available, from commercial greenwaste roll-off containers in accordance with the Contamination Measurement Protocol. All of the other samples and sample cells were randomly selected using the methodology provided in the Contamination Measurement Protocol. Sixty (60) total samples were collected and sorted during the sampling period. The daily sampling of routes is set forth in Table 1. Exhibit A contains the Collection Route Selection Sheet of randomized daily routes.

Table 1 – Contamination Measurement (December 9 – 13, 2013)

Routes Sampled by Day and by Material Type

Material	Mon 12/9/13	Tue 12/10/13	Wed 12/11/13	Thu 12/12/13	Fri 12/13/13	Total Samples by Material
Commercial Recyclables	623 632 934 637	637 633 632	639 637 631 938	938		12
Residential Recyclables	857 831 833	838 847 831	859 847 833 858	840 841		12
Commercial Organics	953 951 952	952 951 953	846 953 951	951 953 952		12
Residential Organics	867 868 864 888	888 877 861	877 874 864	889 867		12
Commercial Plant Roll-Off Loads-not routed	CP-1 CP-2	CP-3 CP-4 CP-5	CP-6 CP-7	CP-8 CP-9 CP-9C CP-10 CP-11		12
Total Samples Per Day	16	15	16	13		60

SAMPLE CELL EXTRACTIONS

For each of the sixty (60) samples, a skid-steer type of loader equipped with a grapple bucket was used to extract material from the randomly selected cells. The skid-steer loader is an agile, fast, and precise piece of equipment that is ideal for performing the sample extraction in accordance with the *Sample Selection Protocol*. Sloan Vazquez provided the skid-steer and the operator for the study.

MEASUREMENTS AND CALCULATIONS

The sample weights were manually recorded on Field Form Tally Sheets and later entered into the final Contamination Measurement Tally Sheets that are contained in Exhibits C, D, E, F, & G.

For each material type, the average sample weight either fell within or exceeded the desired average weight range indicated in the Contamination Measurement Protocol. See Table 2.

Table 2 – Contamination Measurement - 12/9 - 12/13, 2013 – Sample Weight Averages

Material	Total Samples	Average Weights (lbs)	Recommended Weight Range (lbs)
Commercial Recyclables	12	205	125-175
Residential Recyclables	12	193.6	175-225
Commercial Organics	12	298.7	125-175
Residential Organics	12	201.3	175-225
Commercial Plant	12	221.7	125-175

OBSERVATION AND MONITORING

Representatives from Recology observed the procedures associated with the sample collection and sorting process including:

- 1) Spotting and tipping of randomly selected loads,
- 2) Extraction of material from randomly selected cells,
- 3) Weighing the extracted sample,
- 4) Sorting of material from selected cells into “contaminant” and “acceptable” categories,
- 5) Weighing the contaminant fraction,
- 6) Recording the data into Field Form Tally Sheets

Recology and the SBWMA had full access to observe all aspects of the sampling and sorting process during the entire course of the sampling period. Recology representatives were consulted regarding “questionable” items recovered from the respective samples. When needed, [Appendix A: Materials](#)

Sorting List of ATTACHMENT E-2 was consulted and, in each instance, concurrence was reached between Recology and Sloan Vazquez personnel regarding the disposition of the material.

CONTAMINATION SAMPLING RESULTS

Exhibits C, D, E, F, & G contain the final record of contamination contained in each sample. The data from those Exhibits is summarized in Table 3. Maximum contamination amounts as set forth in the Agreement are provided for comparison.

Table 3 – Contamination Measurement- 12/9/13

Measured and Maximum Allowable Contamination

Measured Material Stream	Measured Contamination for 12/9/13 – 12/13/13	Maximum Allowable Contamination Level	Variance for 12/9/13 – 12/13/13
Commercial Recyclables	7.8%	10.0%	(2.2%)
Residential Recyclables	7.5%	8.5%	(1.0%)
Commercial Organics	7.4%	10.0%	(2.6%)
Residential Organics	2.2%	5.0%	(2.8%)
Commercial Plant	0.0%	5.0%	(5.0%)

ADDITIONAL RECORDS

The following referenced item is not attached to this report, but can be obtained from the SBWMA:

- 1) The SBWMA Member Agencies Franchise Agreements with Recology San Mateo County.

Table 4 – Summary of Sample Weights for each Category

	COMMERCIAL RECYCLING			RESIDENTIAL RECYCLING			COMMERCIAL ORGANICS			RESIDENTIAL ORGANICS			COMMERCIAL PLANT		
	SUMMARY		% Captured Sample	SUMMARY		% Captured Sample	SUMMARY		% Sample Weight	SUMMARY		% Sample Weight	SUMMARY		% Sample Weight
Total Sample Weight	Total	Average		Total	Average		Total	Average		Total	Average		Total	Average	
Materials	Acceptable	Non Acceptable		Acceptable	Non Acceptable		Other Acceptable	Non-Acceptable		Other Acceptable	Non-Acceptable		Other Acceptable	Non-Acceptable	
OCC	880.6		35.8%	414.8		17.9%	2.2		0.1%	-		0.0%	-		0.0%
Mixed Fiber	868.4		35.3%	1,031.6		44.4%	4.2		0.1%	1.0		0.0%	-		0.0%
Plastic (all except PET & Film)	67.6		2.7%	103.8		4.5%		99.6	2.8%		9.8	0.4%		-	0.0%
Film Plastic		29.8	1.2%		33.9	1.5%		129.0	3.6%		17.2	0.7%		-	0.0%
Biodegradable Plastics	-		0.0%	-		0.0%	49.4		0.0%	-		0.0%	-		0.0%
PET UBC's	15.6		0.6%	50.7		2.2%		8.0	0.2%		1.2	0.0%		-	0.0%
Glass UBC's	230.8		9.4%	378.1		16.3%		8.8	0.2%		11.4	0.5%		-	0.0%
Aluminum UBC'S	5.8		0.2%	13.1		0.6%		0.8	0.0%		0.2	0.0%		-	0.0%
Mixed Ferrous (Tin & Other)	53.8		2.2%	65.2		2.8%		20.0	0.6%		9.4	0.4%		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		1.2	0.0%		11.6	0.5%		-	0.0%		-	0.0%		-	0.0%
Haz Waste (paint, insecticide, pesticide)		4.8	0.2%		7.0	0.3%		-	0.0%		-	0.0%		-	0.0%
E-Waste (including small appliances)		8.6	0.3%		12.0	0.5%		-	0.0%		-	0.0%		-	0.0%
"Fines" (<2" items)	146.1		5.9%	91.6		3.9%	-		0.0%	-		0.0%	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		146.4	6.0%		110.2	4.7%		-	0.0%		4.8	0.2%		-	0.0%
Totals	2,268.7	190.8		2,148.9	174.7		55.8	266.2		1.0	54.0		-	-	
Percentage of Captured Sample	92.2%	7.8%		92.5%	7.5%			7.4%			2.2%			0.0%	
Maximum Allowable Contamination Level		8.0%			8.5%			10.0%			5.0%			5.0%	
Variance		-0.2%			-1.0%			-2.6%			-2.8%			-5.0%	
							Count			Count			Count		
							Biodegradable Plastic Bags	-			14.0			-	

EXHIBITS

EXHIBIT A – RANDOMIZED DAILY ROUTE SELECTION

EXHIBIT B – SCALEHOUSE NOTIFICATION FORM – LISTING OF SELECTED ROUTES BY DAY

EXHIBIT C – COMMERCIAL RECYCLING CONTAMINATION SUMMARIES & RELATED SAMPLE TALLY SHEETS

EXHIBIT D – RESIDENTIAL RECYCLING CONTAMINATION SUMMARIES & RELATED SAMPLE TALLY SHEETS

EXHIBIT E – COMMERCIAL ORGANICS CONTAMINATION SUMMARIES & RELATED SAMPLE TALLY SHEETS

EXHIBIT F – RESIDENTIAL ORGANICS CONTAMINATION SUMMARIES & RELATED SAMPLE TALLY SHEETS

EXHIBIT G – COMMERCIAL PLANT CONTAMINATION SUMMARIES & RELATED SAMPLE TALLY SHEETS

EXHIBIT H – CONTAMINATION MEASUREMENT PROTOCOL, E-2, SAMPLE PROTOCOL, POLICIES AND PROCEDURES, & SAMPLING SORTING LIST

EXHIBIT A

RANDOMIZED DAILY ROUTE SELECTION

**Collection Route and Sample Cell Randomizer
(Collection Route Selection Sheet)**

December 04, 2013 4:56 PM

This Microsoft Excel workbook generates randomized rankings of collection routes within material categories (commercial recyclables, residential recyclables, commercial organics, commercial plant, and residential organics) for each day of the week (Monday through Friday) from which routes may be selected for sampling. The randomization function also generates a primary sample cell (1-16) and an alternate sample cell for each route.

To randomize routes and sample cells:

Press the function key "F9" once to initiate the randomization function and generate a date-stamped set of ranked routes. (Note that pressing F9 again, altering the workbook, closing and reopening the workbook, etc. will initiate the randomization function again.)

To preserve the set of randomized routes and cells*:

From the **Save As** dialog box under "Save as type," select "PDF." Under "Options," select "Entire Workbook" and click "OK." Then generate the PDF by clicking "Publish."

OR

From the **Print** dialog box under "Print what," select "Entire Workbook" and click "OK." This will print all individual worksheets associated with each day of the week. Note that this will not create an electronic version of the document.

*These instructions are for users of MS Excel 2007. The Save As and Print functions in other versions of Excel may differ.

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Time Stamp: December 04, 2013 4:56 PM

MONDAY					
Commercial Recyclables					
Monday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
12	0.651353288	931	2	13	FEL
7	0.485554851	932	16	4	FEL
5	0.388160451	933	14	11	FEL
3	0.131133784	934	15	10	FEL
14	0.862667371	935	7	2	FEL
9	0.584322245	936	13	12	FEL
8	0.52977694	937	13	8	FEL
15	0.967083424	938	15	11	FEL
1	0.087097337	623	11	10	REL
6	0.394477987	631	6	11	REL
2	0.126514913	632	4	15	REL
13	0.745708468	633	1	2	REL
11	0.626742704	634	2	14	REL
4	0.224118189	637	11	12	REL
10	0.617591929	639	3	15	REL

Residential Recyclables					
Monday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
19	0.594124738	635	16	8	THS
2	0.042597215	831	15	1	
12	0.449640515	832	6	1	
3	0.060099243	833	12	6	
11	0.378837456	834	14	9	
6	0.215680962	835	1	12	
18	0.581482342	836	5	4	
22	0.670430792	837	8	16	
20	0.596733785	838	8	1	
23	0.678571018	839	8	6	
8	0.293110075	840	3	11	
16	0.545992872	841	11	10	
9	0.308130209	842	5	1	
10	0.32041553	843	12	3	
4	0.080378187	844	15	8	
13	0.514909516	845	3	14	
21	0.622213448	846	8	6	
7	0.273065649	847	8	4	
15	0.543864056	848	4	7	
14	0.527131695	849	14	2	
25	0.772698467	850	5	3	
5	0.153447717	851	15	4	
1	0.034652864	857	2	9	
17	0.546451876	858	12	3	
24	0.681959546	859	12	2	
26	0.915116037	860	7	5	

**Collection Route and Sample Cell Randomizer
(Collection Route Selection Sheet)**

Commercial Organics					
Monday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
2	0.784039848	951	9	2	FEL
3	0.974476176	952	12	1	FEL
1	0.052275649	953	1	7	FEL

Commercial Plant					
Monday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
7	0.919526203		6	11	
4	0.743864317		13	3	
1	0.321150718		13	10	
8	0.987190435		10	3	
2	0.430300044		11	8	
6	0.900992334		9	11	
5	0.754271642		6	12	
3	0.481764886		2	1	

Residential Organics					
Monday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
9	0.351888307	861	8	12	
7	0.261930542	862	10	12	
16	0.658706395	863	4	13	
3	0.126108521	864	6	8	
17	0.685379009	865	13	10	
22	0.857622585	866	1	4	
1	0.059290813	867	11	5	
2	0.090282609	868	3	15	
13	0.507941786	869	3	9	
10	0.39283357	870	8	12	
11	0.425261725	871	15	1	
19	0.69884108	872	5	8	
14	0.559267968	873	6	13	
8	0.289221318	874	4	16	
23	0.879443308	875	2	11	
18	0.692130141	876	10	6	
6	0.159782193	877	4	13	
15	0.651254142	878	1	10	
20	0.711322872	887	9	2	HTS
4	0.127704692	888	16	10	HTS
12	0.427912125	889	12	14	VHTS
21	0.796312541	890	5	13	
5	0.145582566	891	2	10	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Time Stamp: December 04, 2013 4:56 PM

TUESDAY					
Commercial Recyclables					
Tuesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
14	0.970235775	931	4	12	FEL
10	0.754819908	932	13	6	FEL
5	0.170905284	933	16	7	FEL
13	0.964496201	934	1	13	FEL
11	0.790678208	935	5	15	FEL
4	0.116875608	936	11	14	FEL
9	0.634609362	937	6	15	FEL
12	0.914923911	938	13	8	FEL
6	0.295106929	623	6	7	REL
15	0.998476397	631	4	6	REL
3	0.089731427	632	8	13	REL
2	0.061275649	633	13	10	REL
8	0.517127231	634	16	9	REL
1	0.021315282	637	12	7	REL
7	0.42196522	639	13	3	REL

Residential Recyclables					
Tuesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
7	0.371617056	635	11	7	THS
3	0.169270369	831	3	1	
8	0.372274749	832	13	2	
26	0.985496465	833	5	9	
15	0.623485209	834	13	1	
5	0.194602193	835	11	1	
13	0.543770015	836	14	5	
6	0.361679687	837	15	3	
1	0.036408176	838	12	7	
17	0.689912826	839	14	3	
9	0.423123422	840	12	6	
23	0.914210851	841	7	10	
20	0.808256656	842	9	16	
24	0.941392641	843	2	13	
12	0.521682545	844	4	9	
22	0.894027364	845	5	16	
19	0.775867111	846	13	9	
2	0.088834529	847	11	3	
25	0.959059025	848	6	13	
16	0.666339434	849	2	7	
4	0.190260376	850	10	7	
18	0.698490088	851	16	6	
10	0.445468917	857	1	15	
11	0.452824881	858	6	15	
14	0.564836905	859	9	6	
21	0.890869546	860	1	13	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Commercial Organics					
Tuesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
2	0.627406821	951	3	16	FEL
1	0.415772532	952	10	5	FEL
3	0.77353257	953	3	16	FEL

Commercial Plant					
Tuesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
3	0.621033338		7	14	
2	0.602871605		2	12	
5	0.760694315		8	10	
6	0.779443316		11	7	
7	0.92269819		11	4	
1	0.19719301		15	1	
8	0.99261993		16	12	
4	0.682616496		1	8	

Residential Organics					
Tuesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
3	0.111577323	861	3	11	
4	0.114551892	862	4	13	
18	0.653979232	863	4	6	
13	0.336834929	864	8	5	
21	0.855839581	865	10	15	
12	0.311794527	866	16	9	
8	0.219730146	867	15	13	
11	0.306980507	868	2	3	
17	0.530227073	869	9	7	
9	0.233819095	870	8	6	
15	0.458626907	871	1	15	
6	0.172846332	872	7	16	
7	0.180640076	873	11	9	
14	0.438824121	874	13	15	
20	0.811417777	875	1	9	
10	0.303690682	876	3	5	
2	0.092987384	877	8	9	
16	0.513645981	878	12	7	
23	0.976000917	887	7	9	HTS
1	0.041520693	888	14	12	HTS
19	0.680891603	889	2	9	VHTS
22	0.956210676	890	12	1	
5	0.172393093	891	14	3	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Time Stamp: December 04, 2013 4:56 PM

Wednesday					
Commercial Recyclables					
Wednesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
10	0.651288748	931	3	6	FEL
5	0.294487196	932	14	10	FEL
8	0.408163343	933	15	9	FEL
14	0.776630926	934	16	10	FEL
15	0.782861947	935	6	5	FEL
9	0.437077222	936	8	13	FEL
13	0.7315896	937	4	16	FEL
4	0.290942315	938	10	2	FEL
6	0.317756306	623	7	5	REL
3	0.204380496	631	16	9	REL
11	0.662631545	632	9	15	REL
12	0.687526091	633	2	1	REL
7	0.327632703	634	8	3	REL
2	0.137598068	637	7	14	REL
16	0.833043317	638	2	12	REL
1	0.094926972	639	12	11	REL

Residential Recyclables					
Wednesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
15	0.56707188	635	3	1	THS
16	0.61126068	831	6	1	
13	0.55286496	832	13	9	
18	0.637255627	833	6	13	
7	0.280543213	834	13	4	
17	0.617924274	835	14	4	
19	0.751688377	836	11	15	
5	0.170665139	837	8	2	
22	0.795466223	838	7	6	
14	0.563990359	839	9	4	
10	0.388914549	840	15	2	
6	0.264831017	841	2	11	
26	0.969059024	842	14	6	
23	0.899843353	843	7	16	
21	0.794099797	844	8	12	
11	0.434445413	845	13	15	
4	0.062121003	846	5	11	
2	0.014643233	847	6	16	
8	0.300857301	848	2	8	
25	0.927542147	849	4	8	
12	0.541668393	850	3	9	
20	0.763327745	851	5	12	
9	0.344242686	857	8	13	
3	0.043366631	858	9	14	
1	0.012390494	859	5	10	
24	0.917816456	860	13	5	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Commercial Organics					
Wednesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
2	0.554532611	951	13	14	FEL
3	0.630026626	952	5	10	FEL
1	0.055838958	953	4	9	FEL

Commercial Plant					
Wednesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
6	0.588017875		9	1	
4	0.441993328		13	1	
1	0.121593887		5	16	
2	0.143780746		15	1	
3	0.165229788		7	15	
8	0.73734199		13	9	
7	0.609006519		14	15	
5	0.538761473		8	10	

Residential Organics					
Wednesday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
6	0.213507603	861	8	6	
15	0.67793033	862	2	1	
7	0.271013738	863	7	9	
3	0.165393986	864	14	1	
23	0.923013025	865	11	12	
19	0.813504646	866	12	15	
11	0.460189116	867	16	9	
20	0.815247827	868	9	2	
22	0.880810106	869	11	6	
9	0.32756504	870	1	7	
16	0.770713759	871	11	8	
21	0.838277993	872	14	9	
12	0.519539895	873	9	16	
2	0.155095244	874	6	1	
8	0.288172606	875	9	1	
5	0.192006554	876	9	8	
1	0.085863955	877	7	10	
4	0.183591983	878	14	8	
17	0.775684592	887	13	8	HTS
13	0.532197352	888	6	3	HTS
10	0.338935347	889	6	3	VHTS
14	0.621255413	890	11	2	
18	0.781512172	891	11	5	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Time Stamp: December 04, 2013 4:56 PM

Thursday					
Commercial Recyclables					
Thursday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
15	0.990154057	931	14	4	FEL
16	0.993228582	932	5	9	FEL
13	0.846849075	933	16	5	FEL
10	0.728859573	934	6	14	FEL
5	0.590898131	935	15	13	FEL
12	0.816358779	936	7	4	FEL
2	0.212722854	937	13	8	FEL
3	0.343663262	938	3	11	FEL
6	0.669653034	623	12	16	REL
4	0.414651999	631	10	6	REL
14	0.975663727	632	8	3	REL
9	0.699522646	633	10	4	REL
1	0.168407416	634	9	15	REL
7	0.670562759	637	4	13	REL
11	0.798490636	638	14	2	REL
8	0.68702965	639	4	2	REL

Residential Recyclables					
Thursday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
14	0.385061043	635	9	7	THS
24	0.922788655	831	5	12	
26	0.98259327	832	14	3	
23	0.903614448	833	5	15	
7	0.152151546	834	13	10	
15	0.397793084	835	10	7	
22	0.855032098	836	12	2	
25	0.981116156	837	11	2	
9	0.239820974	838	16	9	
8	0.226943952	839	12	3	
1	0.060687762	840	3	1	
2	0.064552659	841	6	13	
21	0.823170548	842	9	7	
6	0.150311758	843	14	12	
19	0.57166221	844	14	2	
16	0.411162691	845	10	6	
11	0.297887593	846	5	7	
18	0.505687262	847	7	16	
4	0.115162875	848	1	5	
12	0.314089603	849	11	6	
17	0.469127956	850	9	8	
13	0.330699142	851	2	4	
20	0.588712069	857	3	2	
5	0.14838912	858	3	5	
10	0.250651765	859	10	12	
3	0.105749298	860	3	4	

**Collection Route and Sample Cell Randomizer
(Collection Route Selection Sheet)**

Commercial Organics					
Thursday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
1	0.194505602	951	13	6	FEL
3	0.744372302	952	6	4	FEL
2	0.354670155	953	3	5	FEL

Commercial Plant					
Thursday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
5	0.461837039		6	8	
7	0.7974487		10	16	
8	0.828383053		6	4	
2	0.22693837		13	11	
1	0.113459976		3	6	
3	0.231462901		10	7	
4	0.279380876		4	3	
6	0.567646564		14	7	

Residential Organics					
Thursday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
11	0.29420764	861	9	12	
20	0.785830898	862	11	13	
14	0.40528818	863	1	9	
7	0.177452994	864	9	1	
8	0.217691988	865	1	14	
12	0.297467157	866	15	6	
4	0.150134065	867	12	3	
23	0.989293595	868	11	15	
22	0.876751893	869	1	15	
16	0.577617578	870	9	10	
15	0.546280564	871	5	1	
21	0.815112347	872	4	10	
13	0.3430549	873	14	3	
2	0.092510066	874	10	1	
17	0.583979119	875	3	6	
6	0.166193158	876	5	11	
3	0.125644961	877	7	5	
10	0.261260755	878	3	9	
9	0.220491163	887	9	2	HTS
19	0.697855132	888	16	10	HTS
1	0.027245163	889	3	11	VHTS
18	0.595082987	890	10	9	
5	0.16505686	891	4	11	

Collection Route and Sample Cell Randomizer (Collection Route Selection Sheet)

Time Stamp: December 04, 2013 4:56 PM

Friday					
Commercial Recyclables					
Friday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
7	0.421647721	931	3	14	FEL
13	0.725504895	932	16	11	FEL
14	0.758470947	933	11	7	FEL
3	0.201629324	934	8	11	FEL
12	0.673073199	935	4	11	FEL
10	0.543511802	936	4	10	FEL
9	0.543237765	937	11	3	FEL
15	0.831639856	938	3	11	FEL
2	0.1091875	623	10	4	REL
1	0.032550793	631	12	10	REL
4	0.253898766	632	5	6	REL
8	0.432841347	633	12	15	REL
6	0.396086882	634	12	6	REL
16	0.897611177	637	15	11	REL
11	0.636802829	638	3	12	REL
5	0.256955245	639	11	5	REL

Residential Recyclables					
Friday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
7	0.253772027	635	10	16	THS
3	0.087635224	831	16	12	
14	0.426696417	832	15	2	
17	0.57981799	833	16	10	
2	0.034934109	834	15	2	
12	0.391598124	835	10	12	
19	0.655994586	836	6	2	
13	0.426203402	837	9	2	
16	0.551985271	838	3	9	
4	0.1278467	839	10	3	
25	0.972163696	840	6	16	
24	0.963790193	841	8	4	
23	0.937839117	842	1	4	
6	0.231498614	843	1	2	
10	0.336595086	844	5	3	
15	0.45365927	845	10	11	
26	0.996060833	846	3	5	
9	0.295439544	847	16	5	
18	0.592561722	848	10	3	
11	0.381309878	849	2	14	
8	0.271144237	850	2	6	
21	0.728460499	851	12	7	
1	0.006556223	857	7	13	
22	0.732128599	858	9	7	
20	0.685176923	859	4	7	
5	0.208932183	860	8	16	

**Collection Route and Sample Cell Randomizer
(Collection Route Selection Sheet)**

Commercial Organics					
Friday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
3	0.321637238	951	14	11	FEL
1	0.198629625	952	10	11	FEL
2	0.264957407	953	1	4	FEL

Commercial Plant					
Friday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	
2	0.296877833		12	5	
1	0.144567173		10	3	
7	0.882069569		3	8	
8	0.920415323		11	5	
4	0.46295293		4	12	
3	0.42473794		15	11	
6	0.835339917		8	13	
5	0.599835874		8	11	

Residential Organics					
Friday					
Selection Order	RANDOM	Route #	Cell #	Cell # (Alt)	Type
22	0.849272696	861	4	3	
18	0.669763894	862	10	16	
16	0.518960956	863	2	9	
6	0.148007079	864	8	12	
8	0.171779463	865	12	5	
9	0.178866698	866	11	6	
11	0.292673574	867	8	5	
23	0.909259679	868	6	3	
12	0.380537271	869	5	12	
19	0.706179922	870	5	3	
4	0.03558332	871	2	9	
1	0.01335204	872	7	14	
21	0.781660415	873	13	12	
17	0.582675107	874	5	4	
20	0.735649115	875	13	1	
3	0.031309253	876	1	10	
15	0.50764063	877	15	3	
13	0.409610684	878	15	6	
2	0.027552261	887	15	9	HTS
10	0.223990461	888	12	3	HTS
14	0.491847789	889	3	2	VHTS
5	0.079618515	890	3	6	
7	0.156950091	891	12	9	

EXHIBIT B

SCALEHOUSE NOTIFICATION FORM

RethinkWaste BCM Route Selection

Vehicle Selection Sheet		Sampling Date: Monday, December 09, 2013						
SBWMA: Contamination Sampling								
Route No.	Jurisdiction of Origin	ETA	Sample ID	Cell #	Alt Cell #	Vehicle Type	Number of Samples	Notes
623			CR-1	11	10	REL	1	
632			CR-2	4	15	REL	1	
934			CR-3	15	10	FEL	1	
637			CR-3C	11	12	REL	1	
857			RR-1	2	9		1	
831			RR-2	15	1		1	
833			RR-2C	12	6		1	
953			CO-1	1	7	FEL	1	
951			CO-2	9	2	FEL	1	
952			CO-2C	12	1	FEL	1	
867			RO-1	11	5		1	
868			RO-2	3	15		1	
864			RO-3	6	8		1	
888			RO-3C	16	10	HTS	1	
CP-1			CP-1	13	10		1	
CP-2			CP-2	11	8		1	
CP-2C			CP-2C	2	1		1	

Note: The letter "C" as the last character in the sample ID indicates a randomly selected contingency sample.

RethinkWaste BCM Route Selection

Vehicle Selection Sheet		Sampling Date: Tuesday, December 10, 2013						
SBWMA: Contamination Sampling								
Route No.	Jurisdiction of Origin	ETA	Sample ID	Cell #	Alt Cell #	Vehicle Type	Number of Samples	Notes
637			CR-4	12	7	REL	1	
633			CR-5	13	10	REL	1	
632			CR-5C	8	13	REL	1	
838			RR-3	12	7		1	
847			RR-4	11	3		1	
831			RR-5	3	1		1	
850			RR-5C	10	7		1	
952			CO-3	10	5	FEL	1	
951			CO-4	3	16	FEL	1	
953			CO-4C	3	16	FEL	1	
888			RO-4	14	12	HTS	1	
877			RO-5	8	9		1	
861			RO-5C	3	11		1	
CP-3			CP-3	15	1		1	
CP-4			CP-4	2	12		1	
CP-5			CP-5	7	14		1	
CP-5C			CP-5C	1	8		1	

Note: The letter "C" as the last character in the sample ID indicates a randomly selected contingency sample.

RethinkWaste BCM Route Selection

Vehicle Selection Sheet		Sampling Date: Wednesday, December 11, 2013						
SBWMA: Contamination Sampling								
Route No.	Jurisdiction of Origin	ETA	Sample ID	Cell #	Alt Cell #	Vehicle Type	Number of Samples	Notes
639			CR-6	12	11	REL	1	
637			CR-7	7	14	REL	1	
631			CR-8	16	9	REL	1	
938			CR-8C	10	2	FEL	1	
859			RR-6	5	10		1	
847			RR-7	6	16		1	
858			RR-8	9	14		1	
846			RR-8C	5	11		1	
953			CO-5	4	9	FEL	1	
951			CO-6	13	14	FEL	1	
952			CO-6C	5	10	FEL	1	
877			RO-6	7	10		1	
874			RO-7	6	1		1	
864			RO-7C	14	1		1	
CP-6			CP-6	5	16		1	
CP-7			CP-7	15	1		1	
CP-7C			CP-7C	7	15		1	

Note: The letter "C" as the last character in the sample ID indicates a randomly selected contingency sample.

RethnkWaste BCM Route Selection

Vehicle Selection Sheet		Sampling Date: Thursday, December 12, 2013						
SBWMA: Contamination Sampling								
Route No.	Jurisdiction of Origin	ETA	Sample ID	Cell #	Alt Cell #	Vehicle Type	Number of Samples	Notes
634			CR-9	9	15	REL	1	
937			CR-10	13	8	FEL	1	
938			CR-10C	3	11	FEL	1	
840			RR-9	3	1		1	
841			RR-10	6	13		1	
860			RR-10C	3	4		1	
951			CO-7	13	6	FEL	1	
953			CO-8	3	5	FEL	1	
952			CO-9	6	4	FEL	1	
889			RO-8	3	11	VHTS	1	
874			RO-9	10	1		1	
877			RO-10	7	5		1	
867			RO-10C	12	3		1	
CP-8			CP-8	3	6		1	
CP-9			CP-9	13	11		1	
CP-9C			CP-9C	10	7		1	

Note: The letter "C" as the last character in the sample ID indicates a randomly selected contingency sample.

RethinkWaste BCM Route Selection

Vehicle Selection Sheet		Sampling Date: Friday, December 13, 2013						
SBWMA: Contamination Sampling								
Route No.	Jurisdiction of Origin	ETA	Sample ID	Cell #	Alt Cell #	Vehicle Type	Number of Samples	Notes
631			CR-11	12	10	REL	1	
623			CR-12	10	4	REL	1	
934			CR-12C	8	11	FEL	1	
857			RR-11	7	13		1	
834			RR-12	15	2		1	
831			RR-12C	16	12		1	
952			CO-10	10	11	FEL	1	
953			CO-11	1	4	FEL	1	
951			CO-12	14	11	FEL	1	
872			RO-11	7	14		1	
887			RO-12	15	9	HTS	1	
876			RO-12C	1	10		1	
CP-10			CP-10	10	3		1	
CP-11			CP-11	12	5		1	
CP-12			CP-12	15	11		1	
CP-12C			CP-12C	4	12		1	

Note: The letter "C" as the last character in the sample ID indicates a randomly selected contingency sample.

EXHIBIT C

**COMMERCIAL RECYCLING CONTAMINATION
SUMMARY**

&

INDIVIDUAL SAMPLE RESULTS

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/13/13		
	COMMERCIAL RECYCLING SUMMARY		
	Total	Average	
Captured Sample Weight	2,459.5	205.0	
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	880.6		35.8%
Mixed Fiber	868.4		35.3%
Plastic (all except PET & Film)	67.6		2.7%
Film Plastic		29.8	1.2%
PET UBC's	15.6		0.6%
Glass UBC's	230.8		9.4%
Aluminum UBC'S	5.8		0.2%
Mixed Ferrous (Tin & Other)	53.8		2.2%
Inerts (brick, rock, tile, dirt, concrete)		1.2	0.0%
Haz Waste (paint, insecticide, pesticide)		4.8	0.2%
E-Waste (including small appliances)		8.6	0.3%
"Fines" (<2" items)	146.1		5.9%
Rejects/Refuse (food, liquids,, "garbage", etc.)		146.4	6.0%
Totals	2,268.7	190.8	
Percentage of Captured Sample	92.2%	7.8%	
Maximum Allowable Contamination Level		8.0%	
Variance		-0.2%	

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	CR1		
ROUTE:	623		
CITY:	SC / BELMONT/SAN MATEO/RWC		
Total Sample Weight	185.8		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	38.0		20.5%
Mixed Fiber	87.6		47.1%
Plastic (all except PET & Film)	7.4		4.0%
Film Plastic		1.6	0.9%
PET UBC's	4.8		2.6%
Glass UBC's	21.2		11.4%
Aluminum UBC'S	0.8		0.4%
Mixed Ferrous (Tin & Other)	2.6		1.4%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	7.2		3.9%
Rejects/Refuse (food, liquids,, "garbage", etc.)		14.6	7.9%
Totals	169.6	16.2	
Percentage of Captured Sample	91.3%	8.7%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	CR2		
ROUTE:	632		
CITY:	MENLO PARK		
Total Sample Weight	237.0		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	45.0		19.0%
Mixed Fiber	92.4		39.0%
Plastic (all except PET & Film)	5.6		2.4%
Film Plastic		4.0	1.7%
PET UBC's	2.0		0.8%
Glass UBC's	50.6		21.4%
Aluminum UBC'S	1.0		0.4%
Mixed Ferrous (Tin & Other)	5.2		2.2%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		1.4	0.6%
"Fines" (<2" items)	20.8		8.8%
Rejects/Refuse (food, liquids,, "garbage", etc.)		9.0	3.8%
Totals	222.6	14.4	
Percentage of Captured Sample	93.9%	6.1%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	CR3		
ROUTE:	934		
CITY:	SAN CARLOS/BELMONT/SAN MATEO		
Total Sample Weight	141.4		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	42.4		30.0%
Mixed Fiber	59.8		42.3%
Plastic (all except PET & Film)	6.6		4.7%
Film Plastic		2.6	1.8%
PET UBC's	0.6		0.4%
Glass UBC's	3.8		2.7%
Aluminum UBC'S	0.2		0.1%
Mixed Ferrous (Tin & Other)	-		0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	19.6		13.9%
Rejects/Refuse (food, liquids,, "garbage", etc.)		5.8	4.1%
Totals	133.0	8.4	
Percentage of Captured Sample	94.1%	5.9%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	CR3C		
ROUTE:	637		
CITY:	SAN MATEO / FOSTER CITY		
Total Sample Weight	194.8		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	102.8		52.8%
Mixed Fiber	33.0		16.9%
Plastic (all except PET & Film)	4.0		2.1%
Film Plastic		0.4	0.2%
PET UBC's	-		0.0%
Glass UBC's	10.8		5.5%
Aluminum UBC'S	-		0.0%
Mixed Ferrous (Tin & Other)	9.6		4.9%
Inerts (brick, rock, tile, dirt, concrete)		2.6	1.3%
Haz Waste (paint, insecticide, pesticide)			0.0%
E-Waste (including small appliances)			0.0%
"Fines" (<2" items)	15.2		7.8%
Rejects/Refuse (food, liquids,, "garbage", etc.)		16.4	8.4%
Totals	175.4	19.4	
Percentage of Captured Sample	90.0%	10.0%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	CR4		
ROUTE:	637		
CITY:	SAN MATEO		
Total Sample Weight	204.6		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	90.2		44.1%
Mixed Fiber	62.6		30.6%
Plastic (all except PET & Film)	3.8		1.9%
Film Plastic		1.4	0.7%
PET UBC's	-		0.0%
Glass UBC's	3.8		1.9%
Aluminum UBC'S	0.8		0.4%
Mixed Ferrous (Tin & Other)	0.2		0.1%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		1.4	0.7%
"Fines" (<2" items)	24.8		12.1%
Rejects/Refuse (food, liquids,, "garbage", etc.)		15.6	7.6%
Totals	186.2	18.4	
Percentage of Captured Sample	91.0%	9.0%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	CR5		
ROUTE:	633		
CITY:	BURLINGAME / SAN MATEO		
Total Sample Weight	302.0		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	138.4		45.8%
Mixed Fiber	64.0		21.2%
Plastic (all except PET & Film)	7.6		2.5%
Film Plastic		2.0	0.7%
PET UBC's	3.6		1.2%
Glass UBC's	46.8		15.5%
Aluminum UBC'S	1.2		0.4%
Mixed Ferrous (Tin & Other)	2.8		0.9%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	11.4		3.8%
Rejects/Refuse (food, liquids,, "garbage", etc.)		24.2	8.0%
Totals	275.8	26.2	
Percentage of Captured Sample	91.3%	8.7%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	CR5C		
ROUTE:	632		
CITY:	MENLO PARK / E. PALO ALTO		
Total Sample Weight	126.4		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	16.6		13.1%
Mixed Fiber	71.8		56.8%
Plastic (all except PET & Film)	4.8		3.8%
Film Plastic		1.2	0.9%
PET UBC's	3.0		2.4%
Glass UBC's	17.2		13.6%
Aluminum UBC'S	0.6		0.5%
Mixed Ferrous (Tin & Other)	3.2		2.5%
Inerts (brick, rock, tile, dirt, concrete)		1.2	0.9%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		6.8	5.4%
Totals	117.2	9.2	
Percentage of Captured Sample	92.7%	7.3%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	CR6		
ROUTE:	639		
CITY:	RWC		
Total Sample Weight	152.7		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	31.4		20.6%
Mixed Fiber	70.2		46.0%
Plastic (all except PET & Film)	3.2		2.1%
Film Plastic		5.8	3.8%
PET UBC's	1.4		0.9%
Glass UBC's	16.8		11.0%
Aluminum UBC'S	0.2		0.1%
Mixed Ferrous (Tin & Other)	7.0		4.6%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	11.5		7.5%
Rejects/Refuse (food, liquids,, "garbage", etc.)		5.2	3.4%
Totals	141.7	11.0	
Percentage of Captured Sample	92.8%	7.2%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	CR7		
ROUTE:	637		
CITY:	SAN MATEO		
Total Sample Weight	136.0		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	53.6		39.4%
Mixed Fiber	48.4		35.6%
Plastic (all except PET & Film)	10.0		7.4%
Film Plastic		3.2	2.4%
PET UBC's	-		0.0%
Glass UBC's	7.0		5.1%
Aluminum UBC'S	0.8		0.6%
Mixed Ferrous (Tin & Other)	0.8		0.6%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		2.2	1.6%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	6.2		4.6%
Rejects/Refuse (food, liquids,, "garbage", etc.)		3.8	2.8%
Totals	126.8	9.2	
Percentage of Captured Sample	93.2%	6.8%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	CR8		
ROUTE:	631		
CITY:	BURLINGAME / SAN MATEO		
Total Sample Weight	171.0		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	60.8		35.6%
Mixed Fiber	67.8		39.6%
Plastic (all except PET & Film)	6.4		3.7%
Film Plastic		2.8	1.6%
PET UBC's	0.2		0.1%
Glass UBC's	11.2		6.5%
Aluminum UBC'S	-		0.0%
Mixed Ferrous (Tin & Other)	2.6		1.5%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	8.4		4.9%
Rejects/Refuse (food, liquids,, "garbage", etc.)		10.8	6.3%
Totals	157.4	13.6	
Percentage of Captured Sample	92.0%	8.0%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	CR8C		
ROUTE:	938		
CITY:	MENLO PARK		
Total Sample Weight	287.6		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	127.6		44.4%
Mixed Fiber	102.6		35.7%
Plastic (all except PET & Film)	3.0		1.0%
Film Plastic		3.0	1.0%
PET UBC's	-		0.0%
Glass UBC's	23.0		8.0%
Aluminum UBC'S	0.2		0.1%
Mixed Ferrous (Tin & Other)	8.0		2.8%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		1.2	0.4%
"Fines" (<2" items)	6.4		2.2%
Rejects/Refuse (food, liquids,, "garbage", etc.)		12.6	4.4%
Totals	270.8	16.8	
Percentage of Captured Sample	94.2%	5.8%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	CR10C		
ROUTE:	938		
CITY:	MENLO PARK		
Total Sample Weight	320.2		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	133.8		41.8%
Mixed Fiber	108.2		33.8%
Plastic (all except PET & Film)	5.2		1.6%
Film Plastic		1.8	0.6%
PET UBC's	-		0.0%
Glass UBC's	18.6		5.8%
Aluminum UBC'S	-		0.0%
Mixed Ferrous (Tin & Other)	11.8		3.7%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		4.6	1.4%
"Fines" (<2" items)	14.6		4.6%
Rejects/Refuse (food, liquids,, "garbage", etc.)		21.6	6.7%
Totals	292.2	28.0	
Percentage of Captured Sample	91.3%	8.7%	
Notes:			

EXHIBIT D

**RESIDENTIAL RECYCLING CONTAMINATION
SUMMARY**

&

INDIVIDUAL SAMPLE RESULTS

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/13/13		
RESIDENTIAL RECYCLING SUMMARY			
		Total	Average
Total Sample Weight		2,323.6	193.6
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	414.8		17.9%
Mixed Fiber	1,031.6		44.4%
Plastic (all except PET & Film)	103.8		4.5%
Film Plastic		33.9	0.0%
PET UBC's	50.7		2.2%
Glass UBC's	378.1		16.3%
Aluminum UBC'S	13.1		0.6%
Mixed Ferrous (Tin & Other)	65.2		2.8%
Inerts (brick, rock, tile, dirt, concrete)		11.6	0.0%
Haz Waste (paint, insecticide, pesticide)		7.0	0.0%
E-Waste (including small appliances)		12.0	0.0%
"Fines" (<2" items)	91.6		3.9%
Rejects/Refuse (food, liquids,, "garbage", etc.)		110.2	4.7%
Totals		2,148.9	174.7
Percentage of Captured Sample		92.5%	7.5%
Maximum Allowable Contamination Level			8.5%
Variance			-1.0%

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	RR1		
ROUTE:	857		
CITY:	RWC		
Total Sample Weight	212.30		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	30.8		14.5%
Mixed Fiber	110.5		52.0%
Plastic (all except PET & Film)	12.8		6.0%
Film Plastic		1.2	0.6%
PET UBC's	6.1		2.9%
Glass UBC's	28.9		13.6%
Aluminum UBC'S	-		0.0%
Mixed Ferrous (Tin & Other)	2.2		1.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		2.4	1.1%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	8.8		4.1%
Rejects/Refuse (food, liquids,, "garbage", etc.)		8.6	4.1%
Totals	200.1	12.2	
Percentage of Captured Sample	94.3%	5.7%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	RR2		
ROUTE:	831		
CITY:	BURLINGAME		
Total Sample Weight	234.30		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	45.0		19.2%
Mixed Fiber	123.6		52.8%
Plastic (all except PET & Film)	4.0		1.7%
Film Plastic		3.9	0.0%
PET UBC's	5.7		2.4%
Glass UBC's	16.0		6.8%
Aluminum UBC'S	0.3		0.1%
Mixed Ferrous (Tin & Other)	6.2		2.6%
Inerts (brick, rock, tile, dirt, concrete)		2.8	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		1.4	0.0%
"Fines" (<2" items)	17.2		7.3%
Rejects/Refuse (food, liquids,, "garbage", etc.)		8.2	3.5%
Totals	218.0	16.3	
Percentage of Captured Sample	93.0%	7.0%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	RR2C		
ROUTE:	833		
CITY:	HILLSBOROUGH		
Total Sample Weight	201.40		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	19.2		9.5%
Mixed Fiber	61.3		30.4%
Plastic (all except PET & Film)	21.2		10.5%
Film Plastic		7.6	0.0%
PET UBC's	11.7		5.8%
Glass UBC's	37.6		18.7%
Aluminum UBC'S	-		0.0%
Mixed Ferrous (Tin & Other)	11.0		5.5%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	17.2		8.5%
Rejects/Refuse (food, liquids,, "garbage", etc.)		14.6	7.2%
Totals	179.2	22.2	
Percentage of Captured Sample	89.0%	11.0%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	RR3		
ROUTE:	838		
CITY:	BELMONT		
Total Sample Weight	146.40		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	32.0		21.9%
Mixed Fiber	55.0		37.6%
Plastic (all except PET & Film)	10.6		7.2%
Film Plastic		3.0	0.0%
PET UBC's	2.2		1.5%
Glass UBC's	26.6		18.2%
Aluminum UBC'S	3.4		2.3%
Mixed Ferrous (Tin & Other)	4.4		3.0%
Inerts (brick, rock, tile, dirt, concrete)		2.8	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	2.2		1.5%
Rejects/Refuse (food, liquids,, "garbage", etc.)		4.2	2.9%
Totals	136.4	10.0	
Percentage of Captured Sample	93.2%	6.8%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	RR4		
ROUTE:	847		
CITY:	RWC		
Total Sample Weight	223.40		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	40.8		18.3%
Mixed Fiber	113.2		50.7%
Plastic (all except PET & Film)	4.2		1.9%
Film Plastic		1.8	0.0%
PET UBC's	3.0		1.3%
Glass UBC's	30.6		13.7%
Aluminum UBC'S	5.4		2.4%
Mixed Ferrous (Tin & Other)	2.0		0.9%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		3.2	0.0%
"Fines" (<2" items)	8.8		3.9%
Rejects/Refuse (food, liquids,, "garbage", etc.)		10.4	4.7%
Totals	208.0	15.4	
Percentage of Captured Sample	93.1%	6.9%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	RR5		
ROUTE:	831		
CITY:	BURLINGAME		
Total Sample Weight	241.20		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	22.0		9.1%
Mixed Fiber	104.6		43.4%
Plastic (all except PET & Film)	8.4		3.5%
Film Plastic		1.2	0.0%
PET UBC's	3.8		1.6%
Glass UBC's	62.2		25.8%
Aluminum UBC'S	-		0.0%
Mixed Ferrous (Tin & Other)	6.0		2.5%
Inerts (brick, rock, tile, dirt, concrete)		1.6	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	3.8		1.6%
Rejects/Refuse (food, liquids,, "garbage", etc.)		27.6	11.4%
Totals	210.8	30.4	
Percentage of Captured Sample	87.4%	12.6%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	RR6		
ROUTE:	859		
CITY:	RWC/HILLSBOROUGH/BELMONT		
Total Sample Weight	166.60		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	28.4		17.0%
Mixed Fiber	76.0		45.6%
Plastic (all except PET & Film)	8.0		4.8%
Film Plastic		1.8	0.0%
PET UBC's	1.6		1.0%
Glass UBC's	35.6		21.4%
Aluminum UBC'S	0.2		0.1%
Mixed Ferrous (Tin & Other)	3.0		1.8%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		1.8	0.0%
E-Waste (including small appliances)		1.4	0.0%
"Fines" (<2" items)	4.6		2.8%
Rejects/Refuse (food, liquids,, "garbage", etc.)		4.2	2.5%
Totals	157.4	9.2	
Percentage of Captured Sample	94.5%	5.5%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	RR7		
ROUTE:	847		
CITY:	RWC		
Total Sample Weight	137.40		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	25.8		18.8%
Mixed Fiber	56.2		40.9%
Plastic (all except PET & Film)	4.8		3.5%
Film Plastic		2.8	0.0%
PET UBC's	1.6		1.2%
Glass UBC's	26.4		19.2%
Aluminum UBC'S	0.8		0.6%
Mixed Ferrous (Tin & Other)	3.8		2.8%
Inerts (brick, rock, tile, dirt, concrete)		4.4	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	8.2		6.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		2.6	1.9%
Totals	127.6	9.8	
Percentage of Captured Sample	92.9%	7.1%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	RR8		
ROUTE:	858		
CITY:	BELMONT		
Total Sample Weight	194.60		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	76.2		39.2%
Mixed Fiber	54.8		28.2%
Plastic (all except PET & Film)	6.2		3.2%
Film Plastic		1.4	0.0%
PET UBC's	2.8		1.4%
Glass UBC's	15.2		7.8%
Aluminum UBC'S	0.8		0.4%
Mixed Ferrous (Tin & Other)	20.2		10.4%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	4.4		2.3%
Rejects/Refuse (food, liquids,, "garbage", etc.)		12.6	6.5%
Totals	180.6	14.0	
Percentage of Captured Sample	92.8%	7.2%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	RR8C		
ROUTE:	846		
CITY:	SAN CARLOS		
Total Sample Weight	251.80		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	46.8		18.6%
Mixed Fiber	103.2		41.0%
Plastic (all except PET & Film)	10.0		4.0%
Film Plastic		2.4	0.0%
PET UBC's	6.0		2.4%
Glass UBC's	60.8		24.1%
Aluminum UBC'S	0.8		0.3%
Mixed Ferrous (Tin & Other)	4.0		1.6%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		4.4	0.0%
"Fines" (<2" items)	5.0		2.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		8.4	3.3%
Totals	236.6	15.2	
Percentage of Captured Sample	94.0%	6.0%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	RR9		
ROUTE:	840		
CITY:	MENLO PARK		
Total Sample Weight	183.20		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	22.0		12.0%
Mixed Fiber	112.6		61.5%
Plastic (all except PET & Film)	8.2		4.5%
Film Plastic		3.8	0.0%
PET UBC's	3.2		1.7%
Glass UBC's	16.4		9.0%
Aluminum UBC'S	1.0		0.5%
Mixed Ferrous (Tin & Other)	1.8		1.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		2.8	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	6.2		3.4%
Rejects/Refuse (food, liquids,, "garbage", etc.)		5.2	2.8%
Totals	171.4	11.8	
Percentage of Captured Sample	93.6%	6.4%	
Notes:			

RethinkWaste
Biennial Contamination Measurement
12/9-12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	RR10		
ROUTE:	841		
CITY:	MENLO PARK		
Total Sample Weight	131.00		
Materials	Acceptable	Non Acceptable	% Captured Sample
OCC	25.8		19.7%
Mixed Fiber	60.6		46.3%
Plastic (all except PET & Film)	5.4		4.1%
Film Plastic		3.0	0.0%
PET UBC's	3.0		2.3%
Glass UBC's	21.8		16.6%
Aluminum UBC'S	0.4		0.3%
Mixed Ferrous (Tin & Other)	0.6		0.5%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		1.6	0.0%
"Fines" (<2" items)	5.2		4.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		3.6	2.7%
Totals	122.8	8.2	
Percentage of Captured Sample	93.7%	6.3%	
Notes:			

EXHIBIT E

**COMMERCIAL ORGANICS CONTAMINATION
SUMMARY**

&

INDIVIDUAL SAMPLE RESULTS

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/13/13		
	COMMERCIAL ORGANICS SUMMARY		
	Total	Average	
Total Sample Weight	3584.4	298.7	
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	2.2		0.1%
Mixed Fiber 1 to 4	4.2		0.1%
Plastic (all except PET & Film)		99.6	2.8%
Film Plastic		129.0	3.6%
Biodegradable plastics	49.4		1.4%
PET UBC's		8.0	0.2%
Glass UBC's		8.8	0.2%
Aluminum UBC'S		0.8	0.0%
Mixed Ferrous (Tin & Other)		20.0	0.6%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	55.8	266.2	
Percentage of Captured Sample		7.4%	
Maximum Allowable Contamination Level		10.0%	
Variance		-2.6%	
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	CO1		
ROUTE:	953		
CITY:	RWC/SAN CARLOS		
Total Sample Weight	301.80		
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	2.2		0.7%
Mixed Fiber	4.2		1.4%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		11.8	3.9%
Biodegradable plastics	3.0		1.0%
PET UBC's		0.2	0.1%
Glass UBC's		0.6	0.2%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	9.4	12.6	
Percentage of Sample Weight		4.2%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	CO2		
ROUTE:	951		
CITY:	FOSTER CITY/SAN MATEO		
Total Sample Weight	168.00		
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		5.6	3.3%
Biodegradable plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		1.8	1.1%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	7.4	
Percentage of Sample Weight		4.4%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	CO2C		
ROUTE:	952		
CITY:	MENLO PARK		
Total Sample Weight	372.20		
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		9.2	2.5%
Film Plastic		19.0	5.1%
Biodegradable plastics	1.8		0.5%
PET UBC's		0.2	0.1%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	1.8	28.4	
Percentage of Sample Weight		7.6%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	CO3		
ROUTE:	952		
CITY:	RWC		
Total Sample Weight		232.40	
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		5.8	2.5%
Film Plastic		13.6	5.9%
Biodegradable plastics	-		0.0%
PET UBC's		1.4	0.6%
Glass UBC's		1.8	0.8%
Aluminum UBC'S		0.4	0.2%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	23.0	
Percentage of Sample Weight		9.9%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	CO4		
ROUTE:	951		
CITY:	Burlingame / Foster City / San Mateo		
Total Sample Weight	212.40		
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		5.2	2.4%
Film Plastic		10.4	4.9%
Biodegradable plastics	1.2		0.6%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		4.2	2.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	1.2	19.8	
Percentage of Sample Weight		9.3%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	CO4C		
ROUTE:	953		
CITY:	Belmont/San Carlos/RWC/F City		
Total Sample Weight	411.40		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		21.0	5.1%
Film Plastic		6.4	1.6%
Biodegradable plastics	0.4		0.1%
PET UBC's		0.2	0.0%
Glass UBC's		4.2	1.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	0.4	31.8	
Percentage of Sample Weight		7.7%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	CO5		
ROUTE:	953		
CITY:	RWC/SAN MATEO/SAN CARLOS		
Total Sample Weight	294.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		11.2	3.8%
Biodegradable plastics	0.2		0.1%
PET UBC's		1.6	0.5%
Glass UBC's		-	0.0%
Aluminum UBC'S		0.4	0.1%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	0.2	13.2	
Percentage of Sample Weight		4.5%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	CO6		
ROUTE:	951		
CITY:	SAN MATEO/BURLINGAME		
Total Sample Weight	311.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		5.4	1.7%
Film Plastic		8.4	2.7%
Biodegradable plastics	8.4		2.7%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		6.2	2.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	8.4	20.0	
Percentage of Sample Weight		6.4%	
Notes:			
	Count		
Biodegradable Plastic Bags			

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	CO6C		
ROUTE:	952		
CITY:	MENLO PARK / RWC		
Total Sample Weight	249.00		
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	26.2	10.5%
Film Plastic	-	2.8	1.1%
Biodegradable plastics	2.2	-	0.9%
PET UBC's	-	-	0.0%
Glass UBC's	-	2.2	0.9%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	-	0.0%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	-	0.0%
Totals	2.2	31.2	12.5%
Percentage of Sample Weight			
Notes:			
		Count	
Biodegradable Plastic Bags		-	

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	CO7		
ROUTE:	951		
CITY:	S MATEO / BURLINGAME / FOSTER CITY		
Total Sample Weight		568.40	
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		17.2	3.0%
Film Plastic		15.6	2.7%
Biodegradable plastics	6.8		1.2%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		3.6	0.6%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	6.8	36.4	
Percentage of Sample Weight		6.4%	
Notes:			
		Count	
Biodegradable Plastic Bags			

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	CO8		
ROUTE:	953		
CITY:	RWC/BELMONT/S MATEO		
Total Sample Weight	198.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	5.8	2.9%
Film Plastic	-	5.4	2.7%
Biodegradable plastics	3.2	-	1.6%
PET UBC's	-	-	0.0%
Glass UBC's	-	-	0.0%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	2.2	1.1%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	-	0.0%
Totals	3.2	13.4	6.8%
Percentage of Sample Weight			
Notes:			
		Count	
Biodegradable Plastic Bags		-	

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	CO9		
ROUTE:	952		
CITY:	MENLO PARK / RWC		
Total Sample Weight	265.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	3.8	1.4%
Film Plastic	-	18.8	7.1%
Biodegradable plastics	22.2	-	8.4%
PET UBC's	-	4.4	1.7%
Glass UBC's	-	-	0.0%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	2.0	0.8%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	-	0.0%
Totals	22.2	29.0	10.9%
Percentage of Sample Weight			
Notes:			
		Count	
Biodegradable Plastic Bags			

EXHIBIT F

**RESIDENTIAL ORGANICS RECYCLING
SUMMARY**

&

INDIVIDUAL SAMPLE RESULTS

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/13/13		
	RESIDENTIAL ORGANICS SUMMARY		
	Total	Average	
Total Sample Weight	2415.3	201.3	
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	1.0	-	0.0%
Plastic (all except PET & Film)	-	9.8	0.4%
Film Plastic	-	17.2	0.7%
Biodegradable Plastics	-	-	0.0%
PET UBC's	-	1.2	0.0%
Glass UBC's	-	11.4	0.5%
Aluminum UBC'S	-	0.2	0.0%
Mixed Ferrous (Tin & Other)	-	9.4	0.4%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	4.8	0.2%
Totals	1.0	54.0	-
Percentage of Captured Sample		2.2%	-
Maximum Allowable Contamination Level		5.0%	-
Variance		-2.8%	-
	Count		
Biodegradable Plastic Bags	14.0		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	RO1		
ROUTE:	867		
CITY:	SAN MATEO		
Total Sample Weight	261.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	3.2	1.2%
Film Plastic	-	1.0	0.4%
Biodegradable Plastics	-	-	0.0%
PET UBC's	-	-	0.0%
Glass UBC's	-	-	0.0%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	-	0.0%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	-	0.0%
Totals	-	4.2	1.6%
Percentage of Captured Sample		1.6%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	RO2		
ROUTE:	868		
CITY:	SAN MATEO/FOSTER CITY/BELMONT		
Total Sample Weight	196.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	4.4	2.2%
Film Plastic	-	-	0.0%
Biodegradable Plastics	-	-	0.0%
PET UBC's	-	-	0.0%
Glass UBC's	-	-	0.0%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	2.6	1.3%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	4.8	2.4%
Totals	-	11.8	6.0%
Percentage of Captured Sample		6.0%	
Notes:	Rejects Include: CARPET		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	RO3		
ROUTE:	864		
CITY:	BELMONT/SAN MATEO		
Total Sample Weight	206.90		
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	-	0.0%
Film Plastic	-	2.6	1.3%
Biodegradable Plastics	-	-	0.0%
PET UBC's	-	-	0.0%
Glass UBC's	-	-	0.0%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	1.6	0.8%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	-	0.0%
Totals	-	4.2	2.0%
Percentage of Captured Sample			
Notes:	Rejects Include:		
Count			
Biodegradable Plastic Bags	-	-	-

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	RO3C		
ROUTE:	888		
CITY:	BURLINGAME		
Total Sample Weight	152.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	-	0.0%
Film Plastic	-	2.2	1.4%
Biodegradable Plastics	-	-	0.0%
PET UBC's	-	-	0.0%
Glass UBC's	-	2.0	1.3%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	-	0.0%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	-	0.0%
Totals	-	4.2	2.8%
Percentage of Captured Sample			
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	2.0		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	RO4		
ROUTE:	888		
CITY:	HILLSBOROUGH		
Total Sample Weight	184.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		1.2	0.7%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		2.0	1.1%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	3.2	
Percentage of Captured Sample		1.7%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	RO5		
ROUTE:	877		
CITY:	ATHERTON		
Total Sample Weight	194.40		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	-	0.0%
Film Plastic	-	0.8	0.4%
Biodegradable Plastics	-	-	0.0%
PET UBC's	-	-	0.0%
Glass UBC's	-	-	0.0%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	2.4	1.2%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	-	0.0%
Totals	-	3.2	1.6%
Percentage of Captured Sample		1.6%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	RO5C		
ROUTE:	861		
CITY:	BURLINGAME		
Total Sample Weight	227.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		1.4	0.6%
Biodegradable Plastics	-		0.0%
PET UBC's		0.4	0.2%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	1.8	
Percentage of Captured Sample		0.8%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	RO6		
ROUTE:	877		
CITY:	BELMONT		
Total Sample Weight	170.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	-	0.0%
Film Plastic	-	2.2	1.3%
Biodegradable Plastics	-	-	0.0%
PET UBC's	-	-	0.0%
Glass UBC's	-	0.4	0.2%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	0.4	0.2%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	-	0.0%
Totals	-	3.0	1.8%
Percentage of Captured Sample			
Notes:	Rejects Include: Diapers		
	Count		
Biodegradable Plastic Bags	1.0		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	RO7		
ROUTE:	874		
CITY:	RWC		
Total Sample Weight	197.60		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	1.0		0.5%
Plastic (all except PET & Film)		2.2	1.1%
Film Plastic		-	0.0%
Biodegradable Plastics	2.6		1.3%
PET UBC's		-	0.0%
Glass UBC's		2.8	1.4%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		2.4	1.2%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	3.6	7.4	
Percentage of Captured Sample		3.7%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	7.0		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	R07C		
ROUTE:	864		
CITY:	SAN MATEO		
Total Sample Weight	235.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	-	0.0%
Film Plastic	-	1.8	0.8%
Biodegradable Plastics	-	-	0.0%
PET UBC's	-	-	0.0%
Glass UBC's	-	1.6	0.7%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	-	0.0%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	-	0.0%
Totals	-	3.4	1.4%
Percentage of Captured Sample		1.4%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	RO8		
ROUTE:	889		
CITY:	SAN CARLOS		
Total Sample Weight	230.40		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		2.2	1.0%
Biodegradable Plastics	1.8		0.8%
PET UBC's		0.8	0.3%
Glass UBC's		1.8	0.8%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	1.8	4.8	
Percentage of Captured Sample		2.1%	
Notes:	Rejects Include:		
	Count		
Biodegradable Plastic Bags	4.0		

RethinkWaste
Biennial Contamination Measurement
12/9 -12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	RO10C		
ROUTE:	867		
CITY:	HILLSBOROUGH		
Total Sample Weight	159.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		1.8	1.1%
Biodegradable Plastics	0.2		0.1%
PET UBC's		-	0.0%
Glass UBC's		0.8	0.5%
Aluminum UBC'S		0.2	0.1%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	0.2	2.8	
Percentage of Captured Sample		1.8%	
Notes:	Rejects Include: Carpet rug		
	Count		
Biodegradable Plastic Bags	-		

EXHIBIT G

**COMMERCIAL PLANT CONTAMINATION
SUMMARY**

&

INDIVIDUAL SAMPLE RESULTS

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/13/13		
	COMMERCIAL PLANT SUMMARY		
	Total	Average	
Total Sample Weight	2660.0	221.7	
Materials	Other Acceptable	Non- Acceptable	% Sample Weight
OCC	-	-	0.0%
Mixed Fiber	-	-	0.0%
Plastic (all except PET & Film)	-	-	0.0%
Film Plastic	-	-	0.0%
Biodegradable Plastics	-	-	0.0%
PET UBC's	-	-	0.0%
Glass UBC's	-	-	0.0%
Aluminum UBC'S	-	-	0.0%
Mixed Ferrous (Tin & Other)	-	-	0.0%
Inerts (brick, rock, tile, dirt, concrete)	-	-	0.0%
Haz Waste (paint, insecticide, pesticide)	-	-	0.0%
E-Waste (including small appliances)	-	-	0.0%
"Fines" (<2" items)	-	-	0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)	-	-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Maximum Allowable Contamination Level		5.0%	
Variance		-5.0%	
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	CP1		
ROUTE:	CP1		
CITY:	MENLO PARK		
Total Sample Weight	228.40		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/09/13		
PLACARD I.D. #	CP2		
ROUTE:	CP2		
CITY:	ATHERTON		
Total Sample Weight	251.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	CP3		
ROUTE:	CP3		
CITY:	MENLO PARK		
Total Sample Weight	210.40		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	CP4		
ROUTE:	CP4		
CITY:	RWC		
Total Sample Weight	286.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/10/13		
PLACARD I.D. #	CP5		
ROUTE:	CP5		
CITY:	ATHERTON		
Total Sample Weight	268.40		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	CP6		
ROUTE:	CP6		
CITY:	MENLO PARK		
Total Sample Weight	192.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/11/13		
PLACARD I.D. #	CP7		
ROUTE:	CP7		
CITY:	MENLO PARK		
Total Sample Weight	200.20		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	CP8		
ROUTE:	CP8		
CITY:	MENLO PARK		
Total Sample Weight	198.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	CP9		
ROUTE:	CP9		
CITY:	MENLO PARK		
Total Sample Weight	207.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	CP9C		
ROUTE:	CP9C		
CITY:	MENLO PARK		
Total Sample Weight	212.00		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	CP10		
ROUTE:	CP10		
CITY:	RWC		
Total Sample Weight	195.60		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
	Count		
Biodegradable Plastic Bags	-		

RethinkWaste
Biennial Contamination Measurement
12/9 - 12/13/2013

DATE:	12/12/13		
PLACARD I.D. #	CP11		
ROUTE:	CP11		
CITY:	MENLO PARK		
Total Sample Weight	209.80		
Materials	Other Acceptable	Non-Acceptable	% Sample Weight
OCC	-		0.0%
Mixed Fiber	-		0.0%
Plastic (all except PET & Film)		-	0.0%
Film Plastic		-	0.0%
Biodegradable Plastics	-		0.0%
PET UBC's		-	0.0%
Glass UBC's		-	0.0%
Aluminum UBC'S		-	0.0%
Mixed Ferrous (Tin & Other)		-	0.0%
Inerts (brick, rock, tile, dirt, concrete)		-	0.0%
Haz Waste (paint, insecticide, pesticide)		-	0.0%
E-Waste (including small appliances)		-	0.0%
"Fines" (<2" items)	-		0.0%
Rejects/Refuse (food, liquids,, "garbage", etc.)		-	0.0%
Totals	-	-	
Percentage of Captured Sample		0.0%	
Notes:			
Biodegradable Plastic Bags	-		

EXHIBIT H

CONTAMINATION MEASUREMENT PROTOCOL

ATTACHMENT E-2

Contamination Measurement Methodology: Quarterly Protocol

This Attachment presents the methodology for quantifying the Contamination Level in five (5) distinct materials streams Collected by Contractor from the SBWMA Service Area.

This Attachment is organized into the following six (6) sections:

1. **Objectives**—describes the purpose of the methodology.
2. **Sampling rationale**—presents key sample groupings for the methodology, based on the Agency and material stream.
3. **Sampling allocation and calendar**—describes the number of samples required to provide a sufficient level of accuracy in findings and outlines a schedule that provides representative and sufficient data to meet quarterly and annual sampling goals.
4. **Field procedures**—describes sampling activities for each sorting day.
5. **Sorting categories**—describes the sorting categories.
6. **Calculations**

Appendices 1 through 3 consist of:

1. *methodology checklist*
2. *sample data collection forms*
3. *equipment list*

1. Objectives

This methodology is designed to estimate the Contamination Level (as a percentage by weight of the entire load) in an individual load from any of the five (5) materials streams Collected in the SBWMA Service Area as follows:

- Commercial Source-Separated and Targeted Recyclable Materials
- Commercial Organic Materials
- Commercial Plant Materials
- Single-Family Targeted Recyclable Materials
- Single-Family Organic Materials

The methodology described herein is also intended to produce consistent and statistically reliable estimates of the Contamination Level for each material stream as a whole. In addition, the methodology is designed to require the minimum necessary organizational time and financial investment.

2. Sampling rationale

Load samples shall be collected from each material stream identified above. The sampling plan considers the SBWMA Service Area as a single source of materials generation. Each materials stream will be considered as separate sampling population.

3. Sampling allocation and calendar

A total of twelve (12) samples shall be collected from each materials stream per quarter to achieve the agreed upon desired level of statistical accuracy. Additional samples may be collected in accordance with the last paragraph of this Section 3 and in such cases, all samples taken shall be used to calculate the Measured Contamination Level(s) for that quarter.

The specified number of samples are based on the following factors:

- 1) An analysis of the composition variability among samples that were sorted during waste characterization studies of similar waste streams and programs in other west coast communities.
- 2) An agreement on the acceptable level of accuracy

Table 1 indicates the statistical confidence intervals (error ranges) at the ninety percent (90%) confidence level that are expected to result from characterizing twelve (12) samples per quarter and forty-eight (48) samples per year with respect to each material stream.

Table 1: Samples per Load and Results

Material stream	Estimated sample weight	Quarterly samples and results		Annual samples and results	
		Number of truckloads to be sampled ¹	Approximate statistical error range	Number of truckloads to be sampled ¹	Approximate statistical error range
Commercial Source-Separated and Targeted Recyclable Materials	150 lbs	12	3%	48	1.5%
Commercial Organic Materials	200 lbs	12	8%	48	4% to 5%
Commercial Plant Materials	150 lbs	12	1%	48	0.5%
Single-Family Targeted Recyclable Materials	150 lbs	12	2%	48	1%
Single-Family Organic Materials	150 lbs	12	1%	48	0.5%

¹ The error ranges in Table 1 are based on one (1) sample per truckload.

The error ranges shown above shall be interpreted as follows. When the calculation method described below provides the Measured Contamination Level in a material stream, the estimate will be expressed in terms of percent by weight of the entire material stream. The error range around the estimate reflects a percent by weight of the entire material stream. Thus, if the Measured Contamination Level in a given material stream is five percent (5%), plus or minus one percent (1%), then ninety percent (90%) confidence that the Contamination Level is between four percent (4%) and six percent (6%) of the total material stream is achieved.

The Parties agree that the actual Measured Contamination Level will be the sole determinant of the percentage of Contamination in a load, and of Contractor's compliance with the maximum contamination levels.

It is expected that a two (2) person crew can collect, sort, and weigh approximately twelve (12) samples in an eight (8) to ten (10) hour period, assuming a constant supply of samples is available. Therefore, two (2) sorters working approximately five (5) days per quarter will collect and sort the desired number of samples to assess all five (5) material streams, assuming there are enough inbound loads during that time period to provide the desired number of samples.

To capture seasonal variations, sampling events will be conducted during each of the the four (4) calendar quarters. In addition, sampling events will not be scheduled five (5) days immediately before or after Holidays.

If the Measured Contamination Level for a material stream calculated for one (1) calendar quarter varies by twenty five percent (25%) or more from the Measured Contamination Level calculated for the immediately preceding calendar quarter, Contractor may require the SBWMA to increase the number of samples to be taken in the following quarter (up to twenty four (24) samples) at Contractor's expense. The result of the increased sampling will be used together with the regularly scheduled sampling to establish the Measured Contamination Level for the material stream for that quarter.

4. Field Procedures

The field procedures are described in the following nine (9) steps, and shall be followed by the applicable party: Contractor, Operator, SBWMA, or a third party designated by the SBWMA.

- Advanced preparation for regularly scheduled testing
- Arrival at Facility for regularly scheduled testing
- Scale house coordination
- Tipping floor coordination
- Load selection
- Sample collection
- Sample sorting
- Sample disposal
- Data management

Contractor or its representative shall have the right to be present at, observe, and photograph and video all aspects of the sampling process, including without limitation each of the steps listed above or described below.

SBWMA shall be solely responsible for all costs incurred in implementing the sampling process and procedures described in this Attachment E-2, other than (i) costs incurred by Contractor in exercising its observation rights set forth in the preceding paragraph, and (ii) the full cost of conducting additional sampling implemented at Contractor's direction under Section 3.

The above field procedures or steps are described in more detail following the explanation of roles. Each step is the responsibility of a specific person or group of people as follows:

- **sampling crew manager**—responsible for identifying selected samples, working with Operator and the *sampling crew*, quality control, and compliance with Facility regulations.
- **sampling crew**—responsible for sorting samples.
- **MRF manager**—responsible for coordinating with the *sampling crew manager*.
- **scale house staff**—responsible for identifying selected vehicles, distributing sample placards, and directing drivers towards the sampling area.
- **tipping floor staff**—responsible for creating a designated sampling and sorting area, and ensuring segregation of selected loads in that area.
- **loader operator(s)**—responsible for segregating the selected load from other loads in the designated sampling and sorting area.
- **project manager**—responsible for managing the sampling process.
- **facility manager**—responsible for managing day-to-day operations at the Designated Transfer and Processing Facility
- **Contractor**—responsible for informing the scale house staff of load origin and material stream and for passing sample placards to the sampling crew manager.

Advanced preparation for regularly scheduled testing

Before each sampling day, the *sampling crew manager* will contact the *MRF manager* and require the *MRF manager* to remind the *scale house staff*, *tipping floor staff*, *loader operator(s)*, *Contractor*, and all other affected staff of the sampling plan. The *project manager* will also require the *facility manager* to provide the site's safety standards and disclose if any additional safety training will be required on site. In addition, the *project manager* will obtain and inspect all safety equipment and all sorting equipment (see list of supplies in Appendix 3), and develop and print all daily sampling quotas, vehicle selection sheets, placards, and tally sheets prior to beginning each sampling event. See Appendix 2 for sample forms.

Contractors, SBWMA staff and/or third parties will meet all requirements of and receive formal training in the safety requirements of the Facility.

Arrival at Facility for regularly scheduled testing

The *sampling crew* and *sampling crew manager* will arrive at the Designated Transfer and Processing Facility prior to the agreed upon start time to participate in any required safety training and to put on all required personal protective equipment. Before the start time, the *sampling crew manager* will also cover logistics with the *MRF manager*, as well as any needs and expectations for the study period (regardless of the amount of advance communication conducted.)

Scale house coordination

The *sampling crew manager* will speak with the *scale house staff* to explain the basic objectives of the study and provide the *scale house staff* with a copy of the vehicle selection sheet, as well as sampling placards to identify selected loads (see Appendix 2 for examples of field forms.) The *sampling crew manager* will ensure the *scale house staff* understands the needs of the study throughout the day, allowing the *scale house staff* to plan for transitions such as scheduled breaks and shift changes. Additionally, the *sampling crew manager* will provide the *scale house staff* with a means of contacting the *sampling crew manager* throughout the day.

The *scale house staff* is responsible for identifying selected vehicles using the vehicle selection sheet, provided by the *sampling crew manager*. The *scale house staff* will also distribute sampling placards to the *Contractor*.

Tipping floor coordination

With the input of the *MRF manager* and the *loader operator(s)*, the *sampling crew manager* will determine locations for two (2) designated sampling/sorting areas on or near the tipping floors. There will be one designated sampling/sorting area on the Organic Materials tipping floor and one area on the recyclables tipping floor. These sampling/sorting areas will be in a location in which the *sampling crew* can identify designated loads entering the tipping area, the *loader operator(s)* can visually communicate with the *sampling crew*, and the *loader operator(s)* can safely remove samples after sorting.

Once the *sampling crew manager* has determined the locations, the *sampling crew* will set up the designated sampling/sorting areas. The *sampling crew manager* will then walk through the process of extracting samples from selected loads with both the *loader operator(s)* and the *tipping house staff*.

Load selection

Contractor and SBWMA shall mutually agree on the random numbers table to be used, the process to select random truckloads for sampling, and the process to select specific cells from each truckload for sampling. When a target Collection vehicle arrives at the Designated Transfer and Processing Facility, the *scale house staff* will confirm the material stream and origin of the load (e.g., Single-Family Targeted Recyclable Materials from the north geographic area). The *scale house staff* will copy the sample cell number from the Collection vehicle selection form onto the appropriate sample placard and provide the placard to the driver. A cell number represents the location within a load from which a sample will be extracted and is defined by the map in Figure 1. Additionally, the *scale house staff* will record the load's net weight on the vehicle selection sheet.

The *scale house staff* will instruct the driver to place the placard in a highly visible place at the front of the truck (e.g., on the dashboard), and will direct the driver where to unload.

The placard is the signal to the *sampling crew* that a load selected for sampling has arrived. The placard is marked with a unique sample identification number and additional information used to randomly select cells, identify loads in photographs, and correlate net weights with sample details. Each placard will be coded according to its corresponding material stream and origin (e.g., 'O-S-01' indicates a load of Single-Family Organic Materials from the south geographic area).

Sample collection

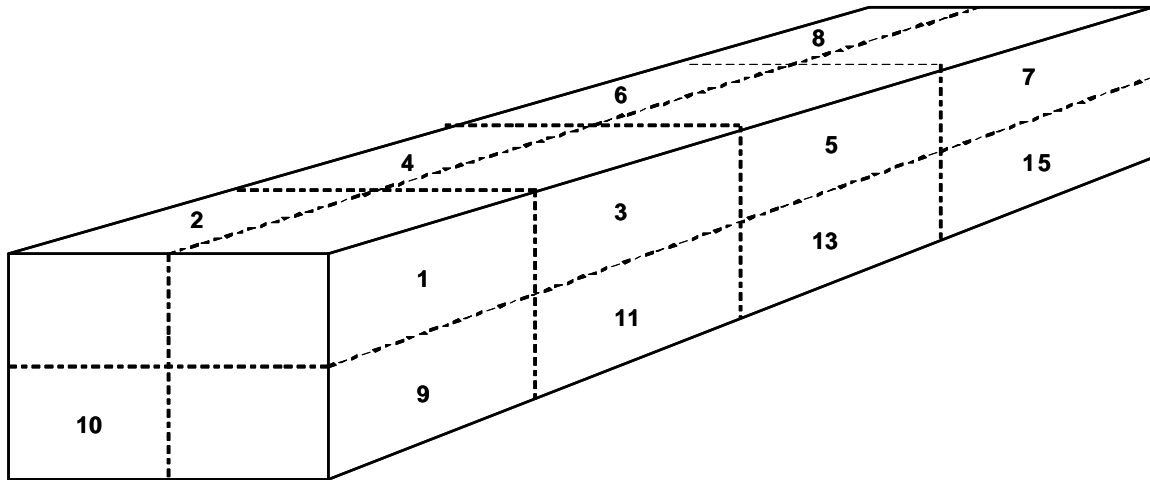
The *tipping house staff* will direct the driver to empty the entire truckload of material in an elongated pile on a designated dumping area. To the extent possible, this area shall be clean and the unloaded material shall be segregated from other loads on the tipping floor. The location of the unloading area may change during any given day.

The *sampling crew manager* will collect the placard from the *Contractor* and, once the load is emptied, will assist the *loader operator(s)* in locating the appropriate cell for the sample, as noted on the sample placard, using the map shown in Figure 1. The map shown in Figure 1 shall always be oriented with cells 1, 2, 9 and 10 representing the material contained in the front of the truck and cells 7, 8, 15 and 16 representing the material contained in the rear of the truck and unloaded first. The *loader operator(s)* will then extract the material in the selected cell. The *sampling crew manager* will guide the *loader operator(s)* to a designated tarpaulin, and will ensure that the proper quantity of material (one-hundred and twenty five (125) to two hundred and twenty five (225) pounds, depending on the material stream) is unloaded on the tarpaulin. A shovel may be used to add material from the bottom of the cell to ensure the sample includes some heavy and small material that the loader bucket failed to collect.

Pulling the tarpaulin taught is a basic test used to estimate sample weight. If it is determined that a sample is too heavy it may be lightened by removing vertical slices from the sample. If it is determined that a sample is too light it may be increased by adding more material. It is important to add or remove all material in the slice from the top to bottom, to ensure that both small, heavy, and loose materials and large, light, and bagged materials are added or removed.

Samples can be queued and stored on tarps until sorted, but samples shall be kept separate. The *sampling crew manager* will place the sample placard on its respective sample for a photograph and, if the sample is not immediately sorted, wrap the sample in its tarpaulin for later sampling. The *sampling crew manager* will photograph each load individually with the sample placard visible and legible.

Figure 1: Sixteen (16) Cell Grid



Note: Cells 12, 14 and 16 are below cells 4, 6 and 8, respectively.

Sample sorting

The *sampling crew manager* will record the sample identification number, as designated by the placard, on the tally form (see Appendix 2 for an example of this form).

The *sampling crew* will move the sample into the designated sampling/sorting area. The *sampling crew* and the *sampling crew manager* will sort the Contamination materials, as defined in Section 5, out of the load and into designated sort receptacles. The *sampling crew* will then weigh the Contamination materials and the *sampling crew manager* will record the weights on the tally form. The remainder of the load—all acceptable items—will be put into receptacles, weighed, and recorded by the *sampling crew manager* on the tally form.

The *sampling crew manager* is responsible for monitoring the homogeneity of material in each receptacle and ensuring the accuracy of the sorting process. For increased efficiency, the *sampling crew manager* shall be responsible for either pre-programming the scale with the receptacle tare weights, or recording the receptacle tare weights for subtraction later. At the end of each sampling day the *sampling crew* and *sampling crew manager* must comply with any Facility directions regarding cleaning the designated sampling/sorting area and storing sampling and sorting supplies.

Sample disposal

After the weight of all material in each sample is recorded on the tally sheet, the *sampling crew* and the *sampling crew manager* will move the sample to a location where it is safe and convenient for the *loader operator(s)* to remove.

Data management

At the end of each sampling day, the *sampling crew manager*, Contractor and SBWMA shall review all forms for accuracy and completeness to ensure timely resolution of any disputes or issues that may arise. The *sampling crew manager* will collect the vehicle selection sheets from the *scale house staff* and ensure that net weights have been recorded for each selected load.

To ensure the vehicle selection and tally forms are not lost before inputting the data into an electronic form, the *sampling crew manager* will make copies of all completed forms and will keep the copies in a separate place from the originals. The *sampling crew manager* will ensure a copy of the form is delivered within one (1) day to the person inputting the data into an electronic form.

5. Sorting categories

All loads identified for sorting shall be sorted and weighed into the following two (2) categories:

- 1) Contamination
- 2) Targeted Recyclable Materials, Source-Separated Targeted Recyclable Materials, Organic Materials, or Plant Materials

6. Calculations

Estimates of Contamination and Targeted Recyclable Materials, Source-Separated Targeted Recyclable Materials, Organic Materials, or Plant Materials will be calculated using a method that gives equal weighting or “importance” to each sample within a given stream. Confidence intervals (error ranges) will be calculated based on assumptions of normality in the composition estimates.

In the descriptions of calculation methods, the following variables will be used:

- i denotes an individual sample.
- j denotes the material type.
- c_j is the weight of the material type j in a sample.
- w is the weight of an entire sample.
- r_j is the composition estimate for material j (r stands for *ratio*).
- a denotes a region of the state (a stands for *area*).
- s denotes a particular sector or subsector of the waste stream.
- n denotes the number of samples in the particular group that is being analyzed at that step.

Estimating the Composition

The following method will be used to estimate the composition of waste belonging to the Commercial Source-Separated and Targeted Recyclable Materials, Commercial Organic Materials, Commercial Plant Materials, Single-Family Targeted Recyclable Materials, and Single-Family Organic Materials streams.

For a given stream, the composition estimate denoted by r_j represents the ratio of the component’s weight to the total weight of all the samples in the stream. This estimate will be derived by summing each component’s weight across all of the selected samples belonging to a given stream and dividing by the sum of the total weight of waste for all of the samples in that stream, as shown in the following equation:

$$r_j = \frac{\sum_i c_{ij}}{\sum_i w_i} \quad (1)$$

where:

- c = weight of particular component
- w = sum of all component weights
- for $i = 1$ to n , where n = number of selected samples
- for $j = 1$ to m , where m = number of components

For example, the following simplified scenario involves three samples. For the purposes of this example, only the weights of the component *carpet* are shown.

	Sample 1	Sample 2	Sample 3
Weight (c) of carpet	5	3	4
Total Sample Weight (w)	80	70	90

$$r_{Carpet} = \frac{5 + 3 + 4}{80 + 70 + 90} = 0.05$$

To find the composition estimate for the component *carpet*, the weights for that material are added for all selected samples and divided by the total sample weights of those samples. The resulting composition is 0.05, or five percent (5%). In other words, five percent (5%) of the sampled material, by weight, is *carpet*. This finding is then projected onto the stratum being examined in this step of the analysis.

The confidence interval for this estimate will be derived in two (2) steps. First, the variance around the estimate will be calculated, accounting for the fact that the ratio included two (2) random variables (the component and total sample weights). The variance of the ratio estimator equation follows:

$$\text{Var}(r_j) \approx \left(\frac{1}{n}\right)\left(\frac{1}{\bar{w}^2}\right)\left(\frac{\sum_i (c_{ij} - r_j w_i)^2}{n-1}\right) \quad (2)$$

where:

$$\bar{w} = \frac{\sum_i w_i}{n} \quad (3)$$

(For more information regarding Equation 2, please refer to *Sampling Techniques, 3rd Edition* by William G. Cochran [John Wiley & Sons, Inc., 1977].)

Second, precision levels at the 90 percent (90%) confidence level will be calculated for a component's mean as follows:

$$r_j \pm (z\sqrt{\text{Var}(r_j)}) \quad (4)$$

where z = the value of the z -statistic (1.645) corresponding to a 90 percent (90%) confidence level.

Appendix 1: Methodology checklist

Roles and responsibilities

- **sampling crew manager**—responsible for identifying selected samples, working with Facility staff and the *sampling crew*, quality control, and compliance with Facility regulations.
- **sampling crew**—responsible for sorting samples.
- **MRF manager**—responsible for coordinating with the *sampling crew manager*, SBWMA, and drivers.
- **scale house staff**—responsible for identifying selected vehicles, distributing sample placards, and directing drivers towards the sampling area.
- **tipping floor staff**—creating a designated sampling and sorting area, and ensuring segregation of selected loads in that area.
- **loader operator(s)**—responsible for segregating the selected load from other loads in the designated sampling and sorting area.
- **project manager**—responsible for managing the sampling process.
- **facility manager**—responsible for managing day-to-day operations at the Designated Transfer and Processing Facility.
- **Contractor**—responsible for informing the scale house staff of load origin and type and for passing sample placards to the sampling crew manager.

Advanced Preparation

- Project Manager*
 - Contact *MRF manager*
 - Confirm study dates
 - Ask *MRF manager* to update the following employees with the sampling plan:
 - scale house staff*
 - loader operator(s)*
 - tipping house staff*
 - Contractor*
 - Any other affected staff
 - Share study quotas
 - Request expected traffic volumes
 - Request safety expectations
 - Schedule safety training
 - Ask if there are any circumstances that may affect the study (i.e., weather, animals, site construction, etc.)
 - Obtain safety gear (Appendix 3)
 - Check safety gear
 - Obtain sorting equipment (Appendix 3)
 - Check sorting equipment
 - Develop and print daily sampling quotas (Appendix 2)
 - Develop and print vehicle selection sheets (Appendix 2)
 - Print tally sheets (Appendix 2)
 - Print on “Rite in the Rain” all-weather paper

- *Sampling crew and sampling crew manager*
 - Review material list
 - Review field forms
 - Review study requirements
 - Review unique site requirements
 - Review quotas

- **Arrival at Facility**
 - *Sampling crew:*
 - Arrive at Facility ahead of schedule
 - Participate in any required safety training
 - Don safety gear
 - *Sampling crew manager:*
 - Arrive at Facility ahead of schedule
 - Reviews logistics and expectations with MRF manager
 - Participate in any required safety training
 - Don safety gear

- **Scale House Coordination**
 - *Sampling crew manager:*
 - Explain the basic objective of the study to the *scale house staff*
 - Explain the responsibilities of the *scale house staff*
 - Explain the needs of the study despite breaks and shift changes
 - Encourage *scale house staff* to plan transitions for breaks and shift changes
 - Provide *scale house staff* with vehicle selection sheet
 - Discuss expected vehicle traffic
 - Ask *scale house staff* if this is reasonable
 - Provide *scale house staff* with sampling placards
 - Provide *scale house staff* with sampling crew manager's cell phone number

- **Tipping Floor Coordination**
 - *Sampling crew manager:*
 - Designate a designated sampling/sorting area on each tipping floor (2) with input from tipping floor staff and loader operator(s), meeting the following criteria:
 - *sampling crew* can see selected loads entering the tipping floor area
 - *Loader operator(s)* can visually communicate with sampling crew
 - *Loader operator(s)* can safely remove sorted loads
 - Approximately twenty (20) feet by twenty (20) feet
 - Explain and walkthrough the sampling process with both the *tipping house staff* and the *loader operator(s)*
 - Explain how trucks with placards are samples
 - Explain that samples must be dumped in a clean area, separate from other loads (called a designated dumping area)
 - Explain that the *sampling crew manager* is responsible for collecting the placard and responsible for identifying the selected cell of the load that the *loader operator(s)* will sample
 - Explain that each sample is between one hundred and twenty five (125) and two hundred and twenty five (225) pounds

- Explain that the *sampling crew manager* will be responsible for guiding the *loader operator(s)* to the appropriate tarpaulin
 - Note: Explanation will need to be repeated for each designated sorting area
 - *Sampling crew:*
 - Set up designated sampling sorting area one
 - Sorting table
 - Baskets
 - Digital scale(s)
 - Set up designated sampling sorting area two
 - Sorting table
 - Baskets
 - Digital scale(s)
- **Sample Collection**
 - *Tipping house staff:*
 - Direct load to a designated dumping area
 - *Sampling crew manager:*
 - Collect placard from *Contractor*
 - Direct *loader operator(s)* to pre-selected sampling cell
 - Direct *loader operator(s)* to designated tarpaulin
 - Signal *loader operator(s)* with tipping instructions
 - Pull tarp to test for appropriate sample weight
 - Place placard in the load
 - Photograph load
 - Placard should be visible and legible
 - Wrap and segregate load until ready to sort
 - *Loader operator(s):*
 - Pinch/scoop sample, as directed by the sampling crew manager
 - Tip sample on designated tarpaulin, as directed by the *sampling crew manager*
 - *Sampling crew:*
 - May assist *sampling crew manager* at any point
- **Sample Sorting**
 - *Sampling crew:*
 - Move the sample into the designated sampling/sorting area
 - Sort the sample
 - Sort Contamination materials into designated baskets
 - Assist the *sampling crew manager* with weighing the baskets
 - Assist the *sampling crew manager* with weighing the remainder material
 - *Sampling crew manager:*
 - Record the sample identification number onto the tally sheet
 - Assist the *sampling crew* in moving the sample into the designated sampling/sorting area
 - Sort the sample
 - Sort Contamination materials into designated baskets
 - Weigh Contamination baskets and record weights on the tally sheet
 - Ensure homogeneity of materials
 - Weigh remainder material and record weights on the tally sheet
 - Ensure all Contamination materials are removed

- **Sample Disposal**
 - *Sampling crew manager and sampling crew:*
 - Dispose of all materials in a designated disposal area
 - *Loader operator(s):*
 - Remove disposed materials when it is safe and convenient

- **Data Management**
 - *Sampling crew manager:*
 - Collect vehicle selection sheets from the *scale house staff*
 - Review all forms for accuracy and completeness
 - Vehicle selection sheet(s)
 - Tally sheet(s)
 - *Project Manager*
 - Check all forms for accuracy and completeness
 - Vehicle selection sheets(s)
 - Tally sheet(s)
 - Copy all data forms
 - Store copies separate from the originals
 - Download pictures from camera
 - Provide copies of data for electronic input
 - Ensure data entry is checked for accuracy

Appendix 2: Example Data collection forms

Appendix 2 consists of copies of each of the following three (3) data collection forms

- Collection vehicle selection sheet
- sampling placard
- tally sheet

Figure 2: Example Collection Vehicle selection sheet


Vehicle Selection Sheet			Sampling Date: June 25, 2009						
SBWMA: Contamination Sampling			1 st Load Arrives At: 9:00:00 AM						
			Notes: Betty working at scale house, helped with sampling before.						
Truck No.	Load No.	ETA	Sampling Population	Sample ID	Sample Cell	Vehicle Type	Number of samples	Net Weight (pounds)	Notes
2238	1	9:00	CSS - N	CSS-1	3	FL	1		
1318	1	9:00	RSS - S	RSS-1	8	FL	1		
1310	1	10:30	CO - E	CO-1	4	FL	1		
2305	2	12:00	CO - W	CO-2	2	FL	1		
1227	1	13:00	CSS - E	CSS-2	1	FL	1		
1313	1	13:00	RO - E	RO-1	9	FL	1		
1308	1	13:30	CGW - N	CGW-1	7	FL	1		
2240	1	14:00	CGW - N	CGW-2	1	FL	1		
2243	2	14:00	RO - W	RO-2	7	FL	1		
1317	2	15:30	CSS - N	CSS-3	2	RO	1		
Multi Sample Loads									
1319	2	15:30	CGW - E	CGW-3&4	6,13	FL	2		
1309	2	15:30	RSS - N	RSS-2&3	9,1	FL	2		
CONTINGENCY SAMPLES									
1316	1	11:30	RSS - N		7	FL	1		
2244	2	11:30	RO - W		14	FL	1		
Any Additional Samples or notes?									


Figure 3: Example Sampling placard

Date: _____
Jurisdiction: _____

RSS - 1

Cell 13

Figure 4: Example Tally sheet

South Bayside Waste Management Authority: Contamination Sampling								
CONTAMINANTS	Container 1				DATE:		SAMPLE ID:	
	Container 2				SAMPLING POPULATION:		SAMPLE WEIGHT:	
	Container 3							
	Container 4							
	Container 5							
	Container 6				TIME:		TRUCK NO.:	
	Container 7				LOAD NO.:		CELL NO.:	
	Container 8							
	Container 9							
	Container 10							
ACCEPTABLE	Container 1				NOTES: 			
	Container 2							
	Container 3							
	Container 4							
	Container 5							
	Container 6							
	Container 7							
	Container 8							
	Container 9							
	Container 10							

Appendix 3: Equipment list

Appendix 3 provides a list of equipment necessary for all sampling and sorting activities. Extra safety equipment should be available to ensure the safety of observers or others at the sorting site.

Sorting equipment:

- approximately twenty (20) identical sorting containers (e.g. laundry baskets or five (5) gallon buckets)
- square point shovels
- rakes
- push brooms
- digital scale, battery powered (weigh up to four hundred (400) pounds, accurate to one-tenth (1/10) of a pound)
- spare batteries for the scale
- fifteen (15) to twenty (20) ten (10) foot by twelve (12) foot or similar size tarps
- clipboards
- field forms printed on Rite in the Rain paper
- permanent markers
- mechanical pencils
- tape measures
- utility knives, scissors
- duct tape
- ten (10) to fifteen (15) Carts
- ten (10) to fifteen (15) plastic receptacles
- four (4) metal eight (8) foot by twelve (12) foot tables
- one (1) metal work desk with drawer
- erasable placards and markers
- digital camera with extra flash card
- moisture probe
- six (6) special pallets with solid tops
- three (3) six cubic yard Bins
- three (3) three cubic yard Bins

Safety equipment:

- dust masks (N-95 or better)
- safety glasses
- hearing protection
- steel-toed work boots
- puncture resistant gloves
- glove liners (latex or nitrile)
- leather work gloves
- reflective safety vests (Brite Lime)
- hard hats
- safety/medical kit
- fire extinguisher
- disinfecting soap, paper towels, antiseptic towels
- water
- rubber aprons or Tyvek protective garments

Quarterly Contamination Measurement Policies and Procedures March 15, 2011

Purpose

The *Contamination Measurement Policies and Procedures* ("Policies and Procedures") provides additional and clarified policies and procedures necessary to perform the sampling methodology described in *Attachment E-2 Contamination Measurement Methodology: Quarterly Protocol* ("E-2"). The Policies and Procedures document mainly serves to address particular areas of such importance to the affected parties and to the successful completion of the sampling process that they should be agreed upon prior to commencing sampling. This document may be considered a "final draft" for the purposes of the performing the first quarter 2011 sampling. Learnings from the first quarter sampling period may suggest a need to revise this document for subsequent sampling periods. Integrated within this document is the previously approved Sample Selection Protocol content.

Route and Sample Cell Selection

"Routes," "Loads" and "Vehicles"

In describing the load selection methodology, the term "route" is used in place of "load" as it is the routes that shall be randomly selected for sampling. The first load of each randomly selected route will be purposely chosen for sampling. The process below describes the methodology for randomly selecting a route from a particular material stream for a given day of the week. The Sample Selection Protocol does not refer to collection vehicle numbers associated with the collection routes as vehicle numbers may change due to, for example, scheduling changes and vehicle repairs.

Sampling Population

Load samples shall be collected from each material stream as described in E-2, Section 1. Each of the E-2 identified materials streams are collected via multiple routes identified by route number. For the purposes of sampling, the route associated with each sampling population will be considered free of any materials that are not a part of the associated sampling population. For example, residential recyclables should not contain any commercial recyclables.

Random Route Selection Tool

Random selection of routes to be sampled can be achieved via a variety of methods. The method chosen for the Sample Selection Protocol utilizes Microsoft Excel's random number generating function to provide a randomized rank ordering of the routes provided by Recology. Specifically, the Excel RAND and RANK functions are used to generate a sequence of randomly ordered, non-duplicated integers in the range determined by the number of routes in a given list. These numbers are associated with the route numbers for each material type, and are used to determine the selection order of the routes. This randomization function and the resulting selections are presented in the form of a simple Microsoft Excel Workbook ("Randomizer"). To aid in transparency, the formulae used in randomizing selection involve standard Excel functions. No scripting (programming) is used to achieve the results. See *Figure 1* for an example format of the resulting selections for one material stream and one day of the week.

On March 4, 2011 or ten (10) business days prior to the first sampling period, the Randomizer will be made available, electronically, to Recology and the SBWMA to review and approve the integrity of its random selection formulae. Any necessary revisions will be provided in writing to the contamination sampling contractor within two (2) business days of receipt of the Randomizer. Revisions to the Randomizer will be integrated and a final Randomizer for use in all future sampling periods will be delivered electronically to Recology and the SBWMA for their records.

Figure 1: Example Format of Route Selection Results

Material Type: Residential Recyclables				
Day: Monday				
Random Number	Selection Order	Route #	Cell #	Alternate Cell #
9049212...	5	1820	6	14
4546872...	2	1821	14	2
6709992...	4	1822	2	9
1132389...	1	1823	9	11
5943212...	3	1824	11	13

Random Route Selection Methodology

At least fifteen (15) business days prior to the actual application of the Sample Selection Protocol in any given quarter, Recology will provide to the contamination sampling contractor a current route list in the format set forth in the Randomizer. This list will be used for making route selections using the process identified herein. This route list will contain route numbers organized by material type and, if feasible, will indicate the volume of material collected from the individual jurisdictions associated with each route day. Recology has agreed to explore this and tonnage data will be included with an updated route list if feasible.

Upon receipt of the route list, the contamination sampling contractor will populate the Randomizer with the route data. The populated Randomizer will then be delivered to the SBWMA and Recology to ensure accurate integration of the route data. The SBWMA and Recology will have two (2) business days to review the data and provide any necessary revisions to the contamination sampling contractor.

After approval of the integrated data, the contamination sampling contractor will execute¹ the randomization function of the Randomizer once. This step will rank the routes for each day of the sampling period. The highest ranked routes (with one (1) being the highest) will be used to create sampling groups. *Table 1* indicates the number of routes in each sampling group and the approximate number of samples to be selected from each group (in parentheses). Routes in each sampling group will be sampled in the order of each collection vehicle's arrival at the facility until the desired number of samples is obtained. If the number of routes associated with a particular sampling population is less than the indicated size of the sampling group, all routes associated with that population will compose the sampling group. In other words, if the ideal sample group size is six (6) but there are only four (4) routes total in the sampling population, then the sample group will comprise four (4) routes. This is the case for the Commercial Organic Materials routes. The method described above helps ensure that circumstances such as communication errors, vehicle failures and simultaneous arrival of selected routes/vehicles will not impact the ability to collect a sufficient number of samples of each material type per day. This method will be used by the contamination sampling contractor to develop its Collection Route Selection Sheet.

¹ The Randomizer will create a random sample order set every time the user presses the F9 function key. The function key triggers what is called a "volatile" function in Excel, producing a sequence of random numbers, each to a near infinite decimal place. These random numbers are then sorted by value in ascending order using the Microsoft Excel function "RANK." The order changes every time the volatile random number function is activated. Note that activation of the random number function can also be triggered by any alteration to the Excel workbook (e.g., typing in a spreadsheet cell, changing cell sizes, etc.). The sample selection order is therefore randomized by a two step process: a random number generator and a sample ranking according to the value of the random numbers.

Table 1 provides the approximate number of routes which will be selected from the ranked ordered routes and sampled for each day of the week. The number of routes selected for sampling on each day will be adjusted as necessary to accommodate for route timing and unforeseen circumstances, and to ensure that the required number of total samples for the sampling period are obtained and sorted.

Table 1: Approximate Number of Routes Sampled Per Day by Material

Material	Mon	Tue	Wed	Thurs	Fri	Total Samples By Material
Commercial Targeted Recyclable Materials	6 (3)*	6 (3)	6 (2)	6 (2)	6 (2)	12
Commercial Organic Materials	6 (3)	6 (3)	6 (2)	6 (2)	6 (2)	12
Residential Targeted Recyclable Materials	6 (3)	6 (3)	6 (2)	6 (2)	6 (2)	12
Residential Organic Materials	6 (3)	6 (3)	6 (2)	6 (2)	6 (2)	12
Commercial Plant Materials	1-2 (1-2)	1-2 (1-2)	1-2 (1-2)	1-2 (1-2)	1-2 (1-2)	6
Total Samples Each Day	13-14	13-14	9-10	9-10	9-10	54

*"6" refers to the size of the sample group and "(3)" refers to the approximate number of samples to be taken.

Random Cell Selection Methodology

Using a process similar to that used for route selection, the Randomizer will also be used to select a primary sample cell out of a possible sixteen (16) cells (see cell grid diagram in Figure 1 in E-2 documentation) for association with each route. It is not anticipated that an alternate sample cell will be required; however the Randomizer will generate an alternate cell for each route to provide a contingency. The alternate cell may be required if, for example, the integrity of part of a sample load is impacted by accidental unloading of a separate load onto part of the sample load or if, as suggested in the E-2 (Figure 2) "Example Collection Vehicle Selection Sheet," there may be a need to take multiple samples from a sample load as may be appropriate, if agreed upon during the sampling period by Recology and the SBWMA, to ensure that the desired number of samples are obtained without having to extend the number of days in the sampling period.

Observation and Record Keeping

If a representative of the SBWMA or Recology wishes to observe the randomization process, this event must be scheduled to take place after integration of Recology-provided route data and at least seven (7) business days in advance of any given sampling period. The observation of the randomization process will take place at the contamination sampling contractor's offices.

In order to ensure that the selected routes are not disclosed to the SBWMA and Recology in advance of the sampling period, route numbers will be hidden during the randomization observation process. Observers will be limited to viewing the rank changes and noting the timing of the generation of the PDF. The randomized results will be preserved for audit purposes by saving the Excel workbook and associated worksheets as a PDF file.

Considerations

Commercial Plant Materials

These materials are, in most cases, currently collected on the same routes that collect commercial organics. The fact that commercial organic and commercial plant materials are not collected separately

under normal operating conditions presents a challenge in conforming to the E-2 protocol. Either a deviation from the E-2 protocol (to allow sampling of 4 streams instead of 5) will be required, or a new sampling protocol involving special collections will need to be developed in order to provide the samples required in E-2.

In an effort to conform to E-2 which requires sampling of separate Commercial Organic Materials and Commercial Plant streams, plant material roll-off drop boxes and compactor ("roll-off containers") accounts will be used to select loads for sampling during the first quarter 2011 sampling period. (This approach will be reviewed for effectiveness after the first quarter 2011 sampling period and revised as necessary.). Because many roll-off accounts are serviced "on-call," the associated routes will not be subject to random sampling. Rather, Recology will ensure that six (6) roll-off containers will be available for sampling over the course of the sampling period (i.e., Monday through Friday). In addition, Recology will, to the best of its ability, spread the targeted loads out over the course of the sampling period week. The contamination sampling contractor will still provide randomized sample cells regardless of whether route information is available to include in the Randomizer. In the event that there is no available route information, the contamination sampling contractor will simply use the randomized sample cells associated with the "Selection Order," in the Randomizer. For example, the first plant materials only roll-off container to enter the facility will be identified as number "1" in the selection order and the corresponding sample cell will be used.

Routes Using Specialized Trucks for "Hard-to-Service" and "Very-Hard-to-Service" Accounts

These routes and their associated smaller capacity collection vehicles are given equal weight in the route selection process. The methodology for sampling and sorting these smaller load sizes, including the size of the cell grid used, will be addressed in the CMQP. The SBWMA and Recology agree to revisit whether or not it makes sense to reduce the number of cells used for the smaller capacity trucks after the Q1 sampling period.

Jurisdictional Representation in Sample Selections

There is potential in a given sampling period for random selection of routes to result in a set of sampled materials which may not be representative of the materials generated by all jurisdictions. This should be balanced over time as more samples are sorted. For the purposes of the Sample Selection Protocol, jurisdictional representation will be observed by the SBWMA over four (4) sampling periods in order to determine if a modification to the Sample Selection Protocol will be required for the following calendar year.

"Multi-Tip" Routes

The Sample Selection Protocol does not provide a methodology for selecting different loads from "multi-tip" routes—routes which may tip their loads at the Shoreway Environmental Center more than one time a day due to seasonality or other variables. For the purposes of the Protocol, the first load of the day for any given selected route will be targeted for sampling. The Protocol will be assessed after gathering data from four (4) quarterly sampling periods to determine if a protocol modification is needed.

"Start Up Helper Routes" Using Relief Drivers

Recology identified the Start Up Helper Routes #623, #631, #632, #633, #634, #635 and #636 as commercial recycling accounts. These routes will be included in the route selection process.

Incomplete Routes

Routes selected for sampling may be interrupted or commingled with other route loads due to:

- Collection "coverage" for a disabled collection vehicle by a vehicle from a different route.
- A malfunctioning collection vehicle which tips its load before completing most of its route
- Driver Illness

Recology will immediately inform contamination sampling contractor of route delivery issues. Alternate routes will be selected where necessary.

Sampling Calendar

Section 3 of E-2 indicates that quarterly sampling events will not be scheduled five (5) days immediately before or after Holidays. Quarterly sampling events are also to be completed by the last day of the applicable quarter. To allow for completion of a quarterly sampling event impacted by an act of god, equipment failure or other unforeseen circumstances, the SBWMA and Recology may mutually agree to schedule a sampling event as necessary.

Sampling Accuracy

The SBWMA and Recology accept that any agreed upon reduction in the number of quarterly samples may impact the statistical confidence levels for any given sampling period.

Materials Sorting List

The sampling crew will use the Appendix A: Materials Sorting List as a guide in making determinations as to whether particular sample materials are contaminants. Appendix A does not and cannot address all possible encountered materials or combinations of materials. It is a working document which will be refined over successive sampling periods. In instances where Appendix A does not provide an obvious determination as to whether a particular material or combination of materials is a contaminant, the sampling crew will use its best judgment to make that determination unless designated representatives of the SBWMA and Recology are present to make that determination prior to completion of sorting for any given sample.

Load/Route Identification

Load or route identification for sampling is addressed broadly in E-2. The detailed process for ensuring the identification and "capture" of the randomly selected routes at the scale house or upon entry to the transfer station will be addressed administratively by the MRF and transfer station managers in coordination with the sampling crew manager. It should be noted though that the scale house attendant carries the responsibility of directing selected route drivers not to unload their load unless directed to do so, and for ensuring that information contained in the Collection Route Selection Sheet is not disclosed to collection vehicle drivers.

Aside from capturing routes and directing drivers, the scale house attendant will also be responsible for making collection vehicle selection decisions to ensure that sampling quotas as defined in Table 1 are met. This work will involve keeping a record of the *number* of routes within each *sampling group* which have been selected and directed to the designated sampling/sorting area. It will also involve effectively coordinating the timing of sampling the different material types with the sampling crew manager. This is important as the various material types tend to arrive in concentrations at different times of the day and the sampling crew will want to set up and perform its sampling and sorting operations to align with these arrival times. It is expected that this process will be refined during the first quarter 2011 sampling period.

Designated Sampling/Sorting Areas and Tipping Floor Coordination

Prior to and during each sampling period, the MRF and transfer station managers will create and maintain designated sampling/sorting areas on the MRF and transfer station tipping floors as identified and developed in pre-sampling period consultations and sampling dry runs. It is understood that these areas may need to be modified in subsequent periods after completion of the MRF and transfer station facilities.

The level of traffic and limited space in both the MRF and transfer station, in part, resulting from temporary, in-progress construction of these facilities, may in some cases, impact the management of sample loads. For example, sample loads may need to be shifted using a loader to allow for influxes in vehicle traffic and materials. In such cases, best efforts will be made to maintain the integrity of loads as they were originally unloaded from the collection vehicle. Similarly, best efforts will be made to ensure that materials from other loads do not contaminate selected sample loads.

(E2) 5 of 8

Limited available space for “stockpiling” multiple sample loads which arrive simultaneously may require selected route drivers to queue and stage their collection vehicles in a designated area until individual loads can be unloaded, sampled and the area cleared for the next load. Failure of drivers to wait as necessary for the sampling crew manager to direct unloading of collection vehicles may result in insufficient sample collection and an extra day(s) of sampling at Recology’s expense.

Sample Collection

Unloading

While it is the responsibility (as defined in E-2) of the tipping floor staff to direct drivers to empty their entire truckload of material in an elongated pile on a designated dumping area, the sampling crew manager will need to assume control over this activity, in part, to ensure that the integrity and identity of loads are maintained. Tipping floor staff will be made available in the MRF and the transfer station during the sampling period to provide assistance to the sampling crew manager such as in cases of simultaneous arrival of selected routes.

The Sampling Crew Manager will instruct the driver to use his/her knowledge of the type and volume of the load to unload the materials in a form that best approximates the cell grid identified in E-2. For example, the driver will make best efforts to ensure that the load is not long and flat or piled high on itself.

Sample Cell Extraction

Both the loader and the excavator heavy equipment will be used as available and at the discretion of the sampling crew manager to obtain the most precise cell extractions possible. As witnessed during the sampling dry runs, these “tools” are inherently imprecise. The sampling crew manager and loader operator will make best efforts to extract sample cells in a manner to that most closely adheres to the methodology described in E-2.

In situations where using the 16 cell (2w x 2h x 4l) grid (as described in E-2: Figure 1) to define a sample cell would not likely produce a sufficient sample cell weight (such as might be the case with a load from a specialized truck used to service hard-to-service accounts), the sampling crew manager, at his/her discretion, will use a modified cell grid. Because randomly selected cell numbers in the range of 1-16 are generated for each randomly selected route, any reduction in the number of cells in the sixteen cell grid requires a methodology for converting the existing random number to an alternate cell number existing in the modified cell grid. Figure 2 is a conversion table for cell grids containing 12 cells (e.g., 2w x 2h x 3l), 8 cells and 4 cells. If, for example, an 8 cell grid is required for a particular route’s load, but the randomly selected cell for the route is 14, the corresponding cell in an 8 cell grid would be 6. In the case of a 12 cell grid, the numbers 13, 14, 15, and 16 are assigned to top corner, top middle, bottom middle, and bottom corner cell positions in a 12 cell grid. All modified grids will be renumbered in the same format defined graphically in E-2: Figure 1.

Figure 2: Sample Cell Conversions

# of Cells in Modified Grid					=
					#
4		8		12	
				16	12
					11
					10
				15	9
			16		8
			15		7
			14		6
			13		5
16	12	8	12	14	4
15	11	7	11		3
14	10	6	10		2
13	9	5	9	13	1

Sample Weight Estimating

As indicated in E-2, pulling the tarpaulin taught is the basic test to be used to estimate sample weight. This method of estimating is prone to inaccuracies and estimates which may be revealed in final (post sorting) sample weights outside of the 50 pound weight range indicated for the various material types. Other more accurate alternatives for weight estimation have been considered, but have been determined to be too potentially time-consuming and logistically challenging for the purposes of the first quarter 2011 sampling period. The “pull” (or manual lift) method will be used despite the potential for misestimating. Best efforts will be made to err on the side of exceeding the weight range while taking into consideration the additional labor time associated with sorting heavier samples. The sample weight estimating effort will be considered successful if the average weight for all samples within a sampling population falls within the population’s established weight range. After the first quarter 2011 sampling period, the actual sample weights will be reviewed to determine if an alternative weight range test should be considered for subsequent sampling periods.

If, as a result of a pull test, a sample is determined to be too heavy or too light the following procedure will be used to lighten or increase its weight. As with weight estimation, it is understood by all parties that this procedure is highly subjective and imprecise due to the non-standard and amorphous nature of the materials being sampled. Further, the amount of effort placed into such a procedure must be balanced with the need to expeditiously process and sort a large volume of samples and materials.

If a sample is determined to be too heavy, it will be lightened by removing vertical slices from the sample. The sampling crew manager will remove two (2) slices each representing half of the estimated weight to be removed from the sample with the initial slice taken from side of the sample closest to the corner of the tarpaulin to which the tarpaulin’s drawstring is attached and the second slice taken from the opposite corner of the tarpaulin. In cases where, for example, a large bag or large object such as a tree limb spans the location in which the slice would be initiated, such objects will not be “sliced into”. Instead, the material nearest the corner clock-wise from the initial tarpaulin corner will be sliced. If a load, due to its composition, is inherently difficult to be sliced, material will be pulled off of the pile using an appropriate tool. A second pull test will be performed after the slices are removed. If it is determined that additional material needs to be removed, the procedure described above will be repeated.

(E2) 7 of 8

If a sample is determined to be too light, the excavator operator will be instructed to extract additional material from the vicinity of the sample cell. Best efforts will be made to add or remove all material in a slice from the top to bottom, to ensure that both small, heavy, and loose materials and large, light, and bagged materials are added or removed.

Only after a the sampling crew manager has informed the loader operator that the necessary amount of material has been extracted for sampling will the loader operator remove the remainder of the load for processing by the facility. The loader operator will then ensure that the designated sample selection area is, to the extent possible, clean and free of materials from the previous sample.

Appendix A: Materials Sorting List March 18, 2011

The Materials Sorting List is a working document to be used in gaining clarity regarding acceptable materials and contaminants as the definitions provided in the Franchise Agreement do not, in all cases, provide the level of specificity needed to make sorting decisions. The document will ultimately serve the additional purpose of being a training and reference tool for sorters.

The organization of the document including the “Yes’s” and “No’s” side by side helps in understanding (especially for sorters) that there are some subtle differences between certain items in the various categories (e.g., plastics). “Yes’s” refer to the items to the left. “No’s” refer to the items on the right, except in the Irregular and Combined materials section where the right column is for notes. Green is used to indicate organic materials and blue to indicate recyclable materials.

ORGANIC MATERIALS			
	Acceptable?		
Food scraps including: <ul style="list-style-type: none"> • Meat including bones • Fish • Vegetables • Fruit, including pits • Grains • Dairy • Egg shells 	YES	NO	<ul style="list-style-type: none"> • Cooking oil
Paper products soiled with food including: <ul style="list-style-type: none"> • Coffee filters • Paper cups (e.g., chain store coffee cups) • Paper plates • Paper ice cream containers • Paper bags • Paper napkin and paper towels • Tissue paper including used paper • Paper tea bags • Greasy pizza boxes • Waxed cardboard and paper • Cardboard egg cartons • Wine corks (made from cork, not plastic) 	YES	NO	<ul style="list-style-type: none"> • Juice or milk cartons made of poly-coated paper (i.e., standard milk cartons) • Juice or soy milk type boxes with foil liner (e.g., Tetra-Pak)
Plant materials including: <ul style="list-style-type: none"> • Branches and brush • Tree trimmings • Leaves • Flowers and floral trimmings • Grass cuttings and weeds 	YES	NO	<ul style="list-style-type: none"> • Palm fronds • Sod • Cactus • Yucca
“Bioplastics” including: <ul style="list-style-type: none"> • Biodegradable plastic food service ware including compostable clamshells, cups and utensils clearly labeled “compostable” or “biodegradable” • Compostable bio-plastic bags (must have BPI-certified logo) 	YES	NO	<ul style="list-style-type: none"> • Regular plastic trash bags or compostable bags which <u>do not</u> have a BPI-certified logo (These large plastic bags containing organics will be opened/broken to sort materials and the bags will be considered contaminants. Small bags such as Safeway grocery bags with unknown contents will not be opened and will be considered contaminants in entirety) • Styrofoam or plastic “clam shell” containers • Utensils which are not clearly labeled “compostable” or “biodegradable.”

<p>Wood pieces (unpainted, untreated) including:</p> <ul style="list-style-type: none"> • Small scraps of lumber • Corks (made from cork bark) • Popsicle sticks • Chopsticks • Plywood (unpainted, non-laminated) • MDF/composite wood (unpainted, non-laminated) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Pressure treated and painted wood • Plastic corks • Laminated or painted MDF or plywood
<p>Other:</p> <ul style="list-style-type: none"> • Pieces of <u>unpainted</u> wallboard (also called sheetrock and drywall) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Animal excrement • Diapers • Brick, concrete, rock, gravel, large quantities of dirt, concrete (If plant materials are combined with more than 50% inert materials such as dirt, the entire amount should be considered inert.) • Liquids and ice • Recyclable materials (e.g., glass, aluminum, paper, plastics 1-7)
<p>RECYCLABLE MATERIALS</p>			
		<p>Acceptable?</p>	
<p>Paper including:</p> <ul style="list-style-type: none"> • Office paper • Computer paper • Newspaper including inserts and coupons • Newspaper in protective delivery bag • Magazines • Junk mail • Catalogs • Paperboard • Telephone books (e.g., "Yellow Pages") • Books • Colored paper • Construction paper • Packing paper • Legal pad backings • Shoe boxes • Envelopes (including those with plastic windows) • Sticky notes • Shredded paper (should be in paper bag labeled "shredded paper" but if in plastic bag, bag will be opened, removed and considered a contaminant) • Wrapping paper (non-metallic) • Paper bags • Department store bags with nylon rope handle • Corrugated cardboard (non-waxed) • Cardboard egg cartons • Cereal and other similar food boxes • Paper milk and juice cartons (including those with plastic spouts) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Clumped, wet paper ("wringable", exhibiting free-flowing liquid and drips is considered contaminated; dampness and sheets of paper loosely stuck together is acceptable) • Paper cups (e.g., coffee cups) • Juice, soup or soy milk boxes with foil liners (e.g., Tetra-Paks)

<p>Glass including:</p> <ul style="list-style-type: none"> • Glass bottles and jars (and metal lids) of any color including: brown, blue, clear, and green (must not contain free flowing liquid or food clumps) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Drinking glasses (made of glass) • Mirrors, windows and any glass that is not a bottle or jar • Light bulbs • Glass bottles and jars containing free flowing liquid or food clumps
<p>Metal including:</p> <ul style="list-style-type: none"> • Aluminum cans including food and beverage containers • Aluminum foil and trays (if clean) • Small pieces of scrap metal weighing less than 10 lbs (<u>NO</u> chain, cable, wire, banding, hand tools, or automotive parts) • Steel, tin and bi-metal containers including paint cans (if empty and dry) • Metal jar lids • Aerosol spray cans (if empty) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Wire, metal banding, chains, cables • Automotive parts • Cans and aluminum foil and trays containing free flowing liquid or food clumps • Lidded paint cans that, as determined by “shake or weight,” have dried or liquid residuals (Cans will not be opened.) • Spray cans that, as determined by “shake or weight,” have residual contents (Cans will not be sprayed.)
<p>Plastics including:</p> <ul style="list-style-type: none"> • Plastic bottles, tubs and other containers including clam shells stamped with SPI code #1 through #7, except black plastic (must not contain food clumps or be more than ¼ full with liquid) • Plastic bottles, tubs and other containers (except black plastic) including clam shells not stamped 1-7 but which clearly can be identified as PET, HDPE, and PP. • Caps and lids from plastic bottles, tubs and other containers whether attached to the container or not • Plastic buckets • Plastic coffee cup lids • Strawberry baskets (even if not labeled 1-7 or PET, HDPE or PP) • Plastic cups including red “keg cups” and clear plastic cocktail cups (if labeled) 	<p>YES</p>	<p>NO</p>	<ul style="list-style-type: none"> • Styrofoam (e.g., Styrofoam egg cartons even if labeled #6 • Black plastic even if labeled 1-7 or PET, HDPE, PP • Any container not indicated as 1-7 <u>but</u> labeled LDPE, PS, or V. • Plastic forks, knives and spoons (cutlery) • Plastic bags including those used to contain recyclables • Plastic films (pallet wrap, shrink wrap, bubble wrap, food wrappers, etc.) • Juice pouches • Condiment packages • Plastic milk creamer containers • Plastic corks (and any other corks) • Plastic protective seals/wraps for containers • Plastic drinking straws • Garden hoses • Rubber bands • Diapers • Black plastic flower and nursery pots (colored, labeled are OK) • Plastic bottles and containers containing free flowing liquid or food clumps • Toys
<p>Inert Materials including:</p>		<p>NO</p>	<ul style="list-style-type: none"> • Ceramics • Concrete, asphalt, stones, bricks, rocks, sand, etc.

Other:		NO	<ul style="list-style-type: none"> • Hangers (plastic, metal, or wood) • Automotive parts and products • Tires • Batteries and cell phones • Wood • Household hazardous waste
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IRREGULAR AND COMBINED MATERIALS			
ORGANIC MATERIALS	Acceptable?	Handling / Sorting Notes	
Compostable clamshell, lined with foil and with mustard packet inside		NO	Reject all as contaminated
Materials in a non-BPI certified yet compostable bag	YES		Bag should be broken open and sorted
Small Safeway plastic grocery bag loosely tied with what appears to be various compostables and possible non-compostables		NO	Plastic bags obviously meant for compostables will be broken and sorted. Bags such as the one described or bags which contain obvious mixed contaminants and compostables will be rejected.
Clear-bagged paper janitorial products including what was presumed to be partially spent rolls of toilet paper generated when janitorial staff swap out partially used rolls for new, large rolls	YES		Bag will be opened and accepted as long material is not soiled with excrement or combined with cleaning products.
Unopened, bagged loaf of bread		NO	
Ziplocked bag of uncooked chicken		NO	
Book		NO	
Milk cartons stuffed with food scraps		NO	
Plant with a large root ball composed mostly of dirt	YES		
Large 8"x10"x24" block of wood that still fits in toter	YES		
Candle (paraffin, soy, beeswax)		NO	
Bananas with plastic branding banding	YES		
Poison Oak	YES		If encountered, a determination will be made whether to reject the load or the sample for a new load or alternative sample in order to ensure the safety of the sorters.
Vegetables with rubber band (broccoli)	YES		
Vegetables with wire band (lettuce)	YES		
Cheesecloth (textile)	YES		
Soiled dish towel (textile)	YES		
RECYCLABLE MATERIALS	Acceptable?	Handling / Sorting Questions	
Partially-filled glass jars and bottles from refrigerator clean-out (e.g., peanut butter jar with clumped residuals and half-filled salad dressing bottle)		NO	
Plastic container with paper mashed inside of it		NO	This is a "composite" material not easily processed.
Plastic soda bottle capped with residual liquid not exceeding ¼ of volume of container	YES		
Cardboard covered with packing tape	YES		
Newspaper with paint (used for paint masking)	YES		

Notepad with wire spiral binding		NO	
Pasta box with clear plastic window	YES		
Pasta box with residual pasta		NO	
Greeting cards that may contain audio electronics		NO	
Book with shrink wrap		NO	
Plastic container with obscured/destroyed recycling symbol	YES		
Newspaper in plastic delivery bag		NO	
Pharmaceuticals in recyclable containers		NO	
Magazine with infused glass (magazine was once wet, but dried, twisted and infused with glass fines)		NO	
Cardboard cereal box with plastic bag lining		NO	Though cardboard box acceptable, plastic bag is not. Entire item will be considered a contaminant.
Mostly glass fines commingled with other small recyclable and contaminating fines on the tarp after larger items are sorted	YES		During the dry run, for example, the residential recyclables sample had 13 lbs of commingled fines which were mostly glass but contained various small contaminants. Obvious contaminants will be sorted and the remaining fines will be considered recyclable.