

Attachment 4

- 4 – A MRF Equipment and Installation Specifications**
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Attachment 4 - A

SBWMA - MRF Equipment and Installation

Specifications and Cost Proposal Forms

1.0 MRF Equipment and Installation Scope of Work

The Proposer will provide the complete equipment design, installation services and start-up for all aspects of the single stream sorting system. The South Bayside Waste Management Authority (SBWMA) will review the equipment designs and will either accept the design as-is, make alterations to the design or choose different equipment than is recommended by the Proposer. The SBWMA will enter into a contract directly with the equipment provider(s) to procure the selected equipment (including, but not limited to process, structural, mechanical, electrical, and control elements). After the equipment has been ordered, the Proposer will be responsible for managing the installation and construction of the single stream system and working with the equipment suppliers to complete the System Acceptance Test Attachment 4-D.

A conceptual design of the MRF building is included in the Master Plan Attachment 7 to the Operations RFP. Detailed Architectural drawings of the MRF building are under development at the time of this RFP issuance and will be provided to the Proposers as they become available. The SBWMA will be constructing a new MRF building and the building construction will begin after the completion of the Proposer selection process. It is expected that the selected Contractor, equipment supplier(s), and installation firms will provide input to the design process so that critical equipment and/or operational aspects can be incorporated into the building design. The SBWMA will work with the Contractor and the equipment suppliers to ensure that power and other utilities are supplied to the locations and in the sufficient quantities as may be required by the processing equipment.

It is the SBWMA's requirement to have the Proposer act as the Project Lead overseeing the equipment installation and providing overall responsibility for the start-up the system and getting the systems fully operational.

1.1 The Proposer's proposal shall include the following items.

- a) Provide costs, designs, specifications, details and documentation for all sort system components, necessary structural and metal fabrications, electrical, mechanical and control systems comprising a complete and functional single stream system. The system shall be designed to produce marketable end products as defined in the Product Quality Standards in Attachment 4- C.
- b) Produce system flow schematics and drawings for review by the SBWMA that meet system requirements. Meet with SBWMA and its representatives to review and receive comment upon the proposed design. If requested by SBWMA, incorporate SBWMA's changes into design.
- c) Produce a System Operations and Maintenance Plan, based on the tonnage and material composition projections provided by the Authority including but not limited to:
 1. Staffing plan - including job category and number of personnel.
 2. Preventive maintenance plan.
 3. Equipment replacement schedule.
 4. Other operational parameters.

- d) Ensure that the proposed system meets safety standards required by local, state and federal codes (meeting applicable ANSI and OSHA specifications).
- e) Meet requirements of local fire code and obtain final inspection sign-off.
- f) Ensure that equipment designs and costs include all equipment support structures and operator/maintenance access stairs, platforms and ladders (include all handrails, railings, kick plates, floor plates and gratings as required).
- g) Ensure that installation cost proposal includes the provision for the wiring of electrical equipment including motors, electrical drives, power panels, control panels and operator interface panels in accordance with the requirements of the specifications.
- h) Provide preliminary testing, start-up, commissioning and Acceptance Testing of the completed system in accordance with the requirements of the specifications.
- i) At the completion of the installation, the Contractor is to provide complete and accurate as-built drawings and Operation and Maintenance Manuals (operations and maintenance manuals are to be supplied 30 days prior to the date of the System Acceptance Test).

1.2 Interruption of Existing Operations

The existing MRF facility will be closed during the building construction and the equipment installation. The equipment installation must not interfere with the traffic flow on the SRDC Site. A detailed Master Plan (prepared by J.R. Miller & Assoc.) is included as Attachment 7 to the RFP. It provides the construction schedule and a detailed Construction Phasing Plan for the MRF building and for other planned construction at the SRDC site.

2.0 Single Stream Processing Equipment Specification

Proposer's proposed equipment and equipment design shall address the following requirements.

- a) In-feed and presort for commingled single stream residential recyclables into the processing system from the tipping floor via a metering drum feed system that is controlled so to provide steady and constant feed volume to the sorting and screen system. Feed system shall have a hopper capacity of 40+ cubic yards so as to allow the loader to charge the hopper and not be continually attending the feed hopper. At a minimum, the presort station will have pick stations for trash, plastic film, large HDPE, and final sort station for a second trash pick.
- b) Separate in-feed and presort for commingled commercial recyclables loaded onto the processing system from the tipping floor via pit-feed belt system that is controlled so to provide a steady and constant feed volume to the sorting and screen system. At a minimum, the presort station will have pick stations for wood, trash, plastic film, scrap metal, and final sort station for a second trash pick.
- c) Optional belt-scale weigh system on the residential single stream infeed line that is connected to the sort system PLC (programmable logic control) and relays data to a PC for monitoring and tracking material infeed rate and feed consistency (cost out this item as an optional cost on Detail Equipment Proposal and Equipment Cost Summary (forms 4-B.3 & 4).
- d) The list of Acceptable Materials for the single stream recycling program includes small scrap metal (10 lbs or less and no appliances, hand tools, auto parts, chain, cable, banding are allowed) and the equipment design should include consideration for equipment to remove this material before it reaches the screen decks and causes potential damage to the system.

- e) OCC screens that follow the commercial and the residential presort stations. Unders from the commercial stream should be able to be combined with the residential single stream inflow or deposited on the tipping floor. OCC from both OCC screens should combine so that one sort station can pick trash from the OCC stream before it is dropped back onto the tip floor.
- f) Optional design provision to screen-out at least 75% of broken glass and small containers before material reaches ONP screening decks (cost out this item as an optional cost on Detail Equipment Proposal and Equipment Cost Summary (forms 4-B.3 & 4)).
- g) Average process rate of **≥30 tons per hour of residential single stream material** (average processing rate shall be defined as time that the system is running at full capacity and does not include break times and down time). Note that though the sorted commercial material unders will likely be combined with the residential infeed, the combined single streams infeed will be 30 tons/hour and this is the target for the “residential” single stream sorting system.
- h) Average process rate of **≥15 tons per hour of the commingled commercial** material (average processing rate shall be defined as time that the system is running at full capacity and does not include break times and down time).
- i) Mechanical and optical processing technologies that produce high quality recyclable commodities with the cost effective use of manual labor - - target goal for MRF is greater than one ton processed per operations man-hour.
- j) Delivery of color-sorted glass to individual bunkers and a bunker for mixed glass fraction to a location of SBWMA’s design.
- k) Option of delivery of residual by overhead conveyor to a designated location or delivering trash to two-trash roll-off containers configured with a diverter so that sort-lines can run continuously without shutdown (cost out this item as an optional cost on Detail Equipment Proposal and Equipment Cost Summary (forms 4-B.3 & 4)).
- l) Minimize the generation of residual to less than 10% and ensure that less than 2 % of the residual is composed of whole pieces of recyclable material.
- m) Quality control function to ensure that 99.5% of the whole aluminum cans from system are recovered and do not end up as trash or residual.
- n) Ability to direct source separated fiber and other clean materials directly to the baler without running the material over the sorting platforms.
- o) Ability to direct mixed containers directly to the container sort line portion of the system, without directing this material through the entire single stream separation system (optional).
- p) Option to direct container stream from fiber sort system directly to the container processing system or onto the floor (cost out this item as an optional cost on Detail Equipment Proposal and Equipment Cost Summary (forms 4-B.3 & 4)).
- q) Option to switch conveyance of sorted materials destined for baling to either baler (cost out this item as an optional cost on Detail Equipment Proposal and Equipment Cost Summary (forms 4-B.3 & 4) and discuss how materials will be handled in case one baler is down for extended maintenance).
- r) Control of system residue and broken glass to minimize housekeeping.
- s) Control of dust generation from paper screens.

- t) Control equipment noise to below 96 dBA (tested at employee work stations) for new equipment. SBWMA may waive this requirement in particular instances if the Proposer can justify why this may not be practical.
- u) Utilize high-efficiency motors in all sorting equipment to minimize energy consumption.
- v) System controls to be housed in an enclosed controlled room or structure that will limit dust accumulation on the control equipment.
- w) Sorting system reporting capabilities on key metrics (i.e., throughput for each line in tons/hour, run hours, historical metrics reporting, motor resistance, remote access, remote alert notification).
- x) Cameras installed the provide view of the sort lines, screen systems and the residual bunkers that can be remotely accessed and controlled by internet.
- y) A glass cleanup system that separates the bottles and broken glass from fiber and grit and produces a mixed glass product stream that meets the Product Quality Standards in the Operations Agreement.
- z) Separate fiber from containers and produce products that meet the Product Quality Standards in the Operations Agreement.

3.0 Fiber Baler Specifications

The following table presents an estimate of the materials the fiber baler will process on an annual basis:

Material Type	Tons/Year
OCC	20,000
ONP & MP	<u>50,000</u>
Total Fiber	70,000

Proposer will provide a horizontal, single ram, no shear baler. Baler will need to perform the following requirements or have the following attributes:

- a) Produce 40 tons per hour of mixed fiber material.
- b) Produce 20 tons per hour of old corrugated containers.
- c) Produce bales that have sufficient density that 45 foot shipping containers can be loaded and shipped at maximum trailer payload trailer (48,000 lbs) for mixed paper and/or ONP fiber.
- d) Equipped with a single fiber fluffer conditioner that can be swung in and out hydraulically.
- e) Have fully automatic side and vertical tension panels.
- f) Have a vertical pre-press flap (with dual pulling cylinders, to prevent jamming).

- g) Have an extra wide feed-hopper and pre-crusher (minimum size of 6'7" x 3'7") operated by a dedicated hydraulic system.
- h) Have programmable controlled electronics and proximity switches.
- i) Have a vertical wire tying system capable of tying multiple wires simultaneous around the bales.
- j) Have an inspection platform and ladder to service the in-feed from the "bridging conveyor".
- k) Have a computerized information management system capable of reporting operational metrics that reports out to a PC by cable or network connection.
- l) Operate with a computerized information system in an automated manner (no designated baler operator).
- m) Have provision for up to 20 wire coils of 2500 lbs to be placed on either side of the baler.
- n) Bearing wheels for main ram to reduce power use.
- o) Cylinders will have bolted removable head and bottom sections.
- p) Hydraulic system that uses a regenerative differential oil flow between the cylinders.
- q) Nose-over "bridging conveyor" design with adequate spacing and supports for forklift traffic below it.

4.0 Other Equipment Considerations

The Proposer is to provide the following in response to this section of the RFP.

- a) The SBWMA is interested in having two balers one primarily for fiber and a second to bale containers (HDPE, PET, mixed plastics, tin, and aluminum) and to serve as a fiber back-up baler. The SBWMA owns a Harris HRB Centurion baler and is interested in the potential of reusing this baler in the new facility. The Proposer can suggest an alternative to reusing this baler and should show justification for a suggested alternative. **The costs of re-installing this baler or the installation of a replacement baler should be included in the Proposers Equipment Installation Cost Proposal.**

5.0 Proposer and Equipment Supplier Qualifications

Proposers are asked to supply the following information in the form and order requested.

- a) Identify the equipment designer and equipment manufacturer(s) for all equipment proposed by the Proposer for the SRDC site.
- b) Identify the installation project team selected to perform the construction / installation and management for the project. Explain the roles of the team members and indicate their relevant experience for this project including contact information (name, address, phone, and email) of prime contractor and subcontractors.
- c) Provide contact name and phone number for references of the member(s) of the Proposers team who will responsible for the equipment installation and serve as the prime contact and be the responsible party for the project and coordination of any subcontractors.
- d) Resumes of other key staff to be assigned to the project.
- e) Reference projects of similar size and function that have been completed by the team members / companies.

- f) **Insurance Coverage.** The Contractor and any sub-contractors are required to maintain (until successful completion of the System Acceptance Test) insurance for all work performed under this scope of work and performed under the Agreement. Insurance shall be as follows (the policy limits required are to be considered minimum amounts):
- 1) Liability Insurance with minimum limits of \$1,000,000 for each occurrence. This policy shall include the Broad Form Endorsement. The Certificate of Insurance for this coverage must identify if this coverage is provided under a claims-made form. Should this insurance coverage be on a claims-made form, a letter from the Contractor's Insurance Broker outlining the current policy aggregate limits must accompany the Certificate of Insurance. SBWMA shall be named "additionally insured" on the policy certificate.
 - 2) Workers Compensation and Employers Liability Insurance shall cover the obligations of the Contractor in accordance with the provisions of the Worker's Compensation Act, as amended, of the State of California.

6.0 Proposal Requirements

Respondents are requested to discuss their approach to the project and address each of the following, in the order listed, in their Proposal:

- a) Design Drawings - The Proposer must submit a conceptual design drawing and supporting documentation. The design should show:
 - 1) The arrangement of the facility and stationary equipment in the facility.
 - 2) Elevations of equipment.
 - 3) How rolling stock will move through the facility.
 - 4) Bale storage analysis for the proposed bale storage, location and access.
 - 5) Tipping area storage capacity.
 - 6) How bale and tipping area storage has been maximized.
- b) Process Flow Diagram - Illustrate the anticipated materials flow through the facility in the terms of a Process Flow Diagram. The flow diagram needs to illustrate the anticipated flow rates (in tons per hour) for each sort line input.
- c) List of Equipment - Enumerate each major piece of equipment the Proposer intends to install.
- d) Equipment Description – Describe the types of equipment the Proposer will install in order to achieve the contract performance requirements. Describe how each piece of sorting equipment will function and how the equipment types will function in relationship to each other. Discuss why the selected screens or optical sorting technology were used in each instance.
- e) Single Stream Equipment Maintenance Cost – Detail the system "wear parts" (i.e., screen disks) and the replacement schedule for the system parts and the total five-year cost.
- f) Baler Maintenance Cost - List of replacement parts, anticipated maintenance service, service frequency for the proposed baler and the total five-year cost for baler maintenance.
- g) Single Stream Equipment References - List five (5) other facilities that are using the single stream equipment in similar applications and how long the equipment has been operational, describe the quality of the inbound materials and the generation of residual,

and provide data on 2-years of historical residual generation by month as percentage of inbound tonnage.

- h) Baler Equipment References – List of five (5) other MRF facilities in the United States (with similar throughput) in which this particular baler model has been in operation for +5 years.
- i) Disruption of Operations - Describe how the equipment installations will be done according to or vary from the Construction Phasing Plan in the SRDC Master Plan document. Provide an equipment installation schedule. Identify if there are areas of the SRDC (outside of the MRF footprint) that will be impacted by the equipment installation and for how long (days/hours).
- j) Single Stream Power Usage Projection - Show projected energy consumption on a kw/hour basis for the sorting system based on the horsepower requirements and other supporting details for each new piece of equipment (there is a separate power consumption Form for the baler that is proposed).
- k) Baler Power Consumption Cost – Complete the Baler Power Consumption Cost Worksheet (form 4 – B.6) that shows the power usage by the baler in full and continuous operation).
- l) Residual - Discuss the maximum amount of residuals (waste, non-recyclables material) the system will generate after the presort station. Provide a description of how the system is designed to minimize the generation of residual.
- m) Warranty - Describe the warranty on parts and labor for defective parts is required. Any parts replaced under warranty shall receive an additional one-year warranty. Describe what commitments of support are offered by the equipment manufacturers during the warranty period and what portions of the equipment are subject to longer supplier warranties.
 - 1) The Proposer can use non-OEM replacement parts but will need to confirm that the use of non-OEM replacement and wear-parts does not void the manufacturer's warranty. The signing and approval of the Agreement will serve as a confirmation that the Proposer received manufacture approval or has assumed the manufacture's warranty responsibility.
- n) Performance Guarantees - The equipment provider(s) will need to provide a Certificate of Assurance to the SBWMA confirming that the proposed sorting system will pass the processing throughput goal tonnage that is required in the System Acceptance Test and meet the Residual Guaranteed maximum specified in the Operations Agreement.

6.1 System Acceptance Test

The MRF equipment installation and System Acceptance Test is to be to be completed within a six-month time window before the facility operation and the single stream programs commence (targeted for January 1, 2011). Successful completion of the equipment installation and start-up portion of the Agreement will require that the Contractor and equipment supplier(s) successfully complete the requirements stated in Attachment 8, System Acceptance Test.

The baler(s) that are installed by the Contractor will need to pass a separate Baler Acceptance Test. In the Baler Acceptance Test the baler performance will be assessed separately from the single stream system. The baler performance will be measured against the manufacturer's published specifications. The Proposer will need to submit published manufacturer's specifications before the award of the Agreement to the SBWMA. The Baler specifications and Baler Acceptance Test will need to demonstrate the following:

- a) Performance Items - baler stroke speed, bale density (OCC, ONP, Plastics), bale rate, bale system reporting capabilities and remote access.
- b) Electrical Power Consumption – as a part of the response to this RFP, a power consumption of the proposed baler(s) will need to be submitted. During the time period of the Baler Acceptance Test, power consumption will be monitored and will need to comply with the power consumption figures submitted by the Proposer.

7.0 Equipment Selection and Installation Proposal

Proposers are required to complete all cost forms as provided in the RFP which will become Exhibits to the Agreement.

- Representations by Equipment Installation Company (form 4 – B.A).
- Cost proposal summary for Equipment Installation and Start-up (form 4 – B.2) - installation costs includes but not limited to obtaining building and fire permits, performing field measurements, design, analyzing utilities, start-up and System Acceptance Test performance.
- Detail Equipment Proposal (form 4 - B.3) – provide a listing of all the proposed equipment and that will be necessary to operate the single stream system and the cost and power per unit.
- Proposal Summary for Equipment Costs (form 4 – B.4) – summary of all single stream equipment and baler costs that are needed to operate the single stream plant. These costs will be paid directly by the SBWMA to the equipment Vendor(s).
- Single Stream Equipment Maintenance (form 4 - B.5) - provide maintenance requirements and costs for the equipment including wear parts.
- Baler Power Consumption and Cost Worksheet (form 4 – B.6) - provide the power consumption of the proposed baler(s) operating continuously at full capacity.
- Baler Maintenance (form 4 - B.7) - provide maintenance requirements and costs for the Baler(s) including wear parts.

8.0 Proposer and Equipment Section Evaluation Criteria

Equipment selection will be evaluated on the following criteria:

- a) Proposer's understanding of the project requirements and the Proposer's equipment, installation and start-up plan to meet the project goals.
- b) Technical consideration including the following items: equipment design and adherence to the specification, level of detail and consideration in response to the requests made in this Attachment; level of detail and consideration in design and processing capabilities of the equipment; thoroughness and detail provided in the equipment list and cost detail; consideration of the building design, construction and construction phasing in proposing equipment for the MRF.
- c) References and reference projects that indicate successful design and construction of single stream systems. Proposer shall provide a complete listing of all California recycling processing operations that have been designed, manufactured, installed, owned (in whole or in part), managed, or operated by the proposer, or affiliates of the proposer since 2000. For each facility, contact information shall be provided for each municipality and for each private contractor that is served by the facility. A listing,

including contact information, for all purchasers of all commodities from each listed facility shall also be provided.

- d) Information contained on proposal forms.
- e) Warranties and Guarantees provided by equipment manufacturers and the Proposer.
- f) Cost proposal forms that follow.

Note: Equipment selection will not be based solely on the lowest cost, but based on the proposal that provides the equipment, equipment design, and best long term value to the SBWMA.

Attachment 4 - B

Equipment and Installation Cost Proposal Forms

Form 4 – B.1

Required Representations by Equipment Installation Company

In responding to this RFP, the Proposer understands that the selected installation / construction Company that will be performing work on the equipment installation at the SRDC will abide by the following, and understands that the following are required as a condition of performing the Contract Work and receiving payment for same.

1. The Company will possess all applicable professional and business licenses required for performing work in California.
2. The Company satisfies all bonding and insurance requirements as stipulated in the solicitation for this project.
3. The Company and all subcontractors that are employed or that may be employed in execution of the Contract Work shall be in full compliance with SBWMA's requirements for workers' compensation insurance.
4. If awarded the Contract Work, the Company represents that it will not exceed its current bonding limitations when the Contract Work is combined with the total aggregate amount of all unfinished work for which the Contractor is responsible.
5. The Company represents that it has no conflicts of interests with SBWMA if awarded the Contract Work and that any potential conflicts of interest that may arise in the future will be disclosed immediately to SBWMA.
6. The Company represents the price offered and other information submitted in connection with its proposal for the Contract Work were arrived at independently without consultation, communication or agreement with any other offer or competitor.
7. The Company will ensure that employees and applicants for employment are not discriminated against because of their race, color, religion, sex or national origin.

The undersigned hereby represents that all statements, representations, information and documents provided in or with this Contractor Qualification Statement and attachments hereto are complete, accurate and truthful.

Date and Signature of Authorized Representative

Print Name, Position/Title, Company Name

Notary Public

Form 4 – B.2
Proposal Summary for One-Time Equipment Installation and Start-up Costs

<u>Items</u>		<u>Description (one time costs)</u>	<u>Cost</u>
1	Construction Management Services Cost		\$ _____
2	Equipment Installation Service Cost		\$ _____
3	Start-up and Acceptance Testing Costs		\$ _____
4	Other Costs (attach detail)		\$ _____
5	Total Price for Installed Equipment Cost (Total cost for all pre-operational equipment related expenses to be paid by the SBWMA)		\$ _____
		TOTAL	\$ _____

OPTIONAL EQUIPMENT			
1. Optional belt-scale weigh system on the residential single stream infeed line			
2. Trash to two-trash roll-off containers configured with a diverter			
3. Optional glass prescreening system to remove glass and small containers before the fiber screens			
4. Option to direct container stream from the fiber sort system directly to the container processing system or onto the floor			
5. Option to switch conveyance of sorted materials destined for baling to either baler			
6. Option of replacing existing Harris Centurion Baler			
	OPTIONAL EQUIPMENT TOTAL COST AND TOTAL HORSE POWER		

Form 4 – B.4
Proposal Summary for Equipment Costs

<u>Items</u>	<u>Description (one time costs)</u>	<u>Cost</u>
1	Single stream system (to include all controls, in-feeds, and sort system related costs).	\$ _____
2	Other single stream system equipment related costs (not included above).	\$ _____
3	Total of Optional items from Form 4-B.3 detail Detail Equipment Proposal	\$ _____
4	Baler cost (includes all costs for baler, controls, and wire tie).	\$ _____
5	Other baler related costs (not include above).	\$ _____
6	Other costs not included above that are necessary to complete an operational single stream processing system	\$ _____
	TOTAL	\$ _____

**Form 4 – B.5
Single Stream Equipment Maintenance**

System Routine Maintenance Item	Describe Required Maintenance	Expected approximate cost of parts and materials
Replacement of stars/disks on fiber sorting screen decks		\$ _____ Individual unit cost \$ _____ Annual est. cost
Other Cost Items		\$ _____ Individual unit cost \$ _____ Annual est. cost

**Form 4 – B.6
Baler Power Consumption and Cost Work Sheet**

Baler Manufacturer: _____

Baler Model: _____

Baler Description: _____

Rated throughput capacities by Material Type:

ONP: _____

OCC: _____

Plastic Containers: _____

Other: _____

Other: _____

Total Horsepower of Baler

Hydraulic Motor(s) _____ H.P.

_____ H.P.

_____ H.P.

Cooling System _____ H.P.

Fluffer(s) _____ H.P.

Total motors _____ **H.P.**

X .746 Kwh Conversion Factor

_____ Kwh Used

X \$0.30 Kwh

\$ _____ Kwh Cost Per Hour

X 7 Hours Per Shift

\$ _____ Operating Cost Per Shift

X 260 Operating Shifts

\$ _____ Annual Baler Power Cost

X 5 Years

\$ _____ Five-Year Power Usage Cost

**Form 4 – B.7
Baler Maintenance**

Part and scheduled service required	Cost for part or service	Frequency of service	Total for five year period

Attachment 4 - C

Draft Product Quality Standards

The following Product Quality Standards are to be followed by the Contractor to ensure that there is effective recovery of materials and that quality Products are produced by the single-stream processing system and marketed by the Contractor. All measurements of percentage in the Product Quality Standards are by weight.

Fiber

- At a minimum, 75% of the newspaper feed into the processing system will be captured and baled separately from mixed paper.
- Contractor will manufacture a commodity of sufficient quality that sales revenue per ton are equal to or greater than the average market price paid to other processors in the Bay Area selling the same commodity grade as determined by a local market survey of other processors conducted by the SBWMA or the commodity sold by the Contractor will meet the ISRI specifications for #8 newspaper, #2 mixed paper and OCC at the SBWMA's discretion.
- Should prices fall below the average commodity price or the Contractor's loads are rejected or down graded by buyers, the Contractor will be required to meet the ISRI product quality specifications.
- Not more than 2% of fiber materials (defined as whole or intact sheets of fiber and does not include shredded paper) fed into the Processing System shall be disposed as residue or trash.
- At a minimum, 90% of the paper (excluding shredded and paper recovered as newspaper or corrugated cardboard) arriving at the facility will be captured and baled as mixed paper.
- At a minimum, 95% of the corrugated cardboard arriving at the facility will be captured and baled as OCC.

Container Glass

- Glass product sold by the Contractor will have less than 10% non-glass contamination and meet the minimum standards for the State of California Department of Conservation (DOC) California Redemption Value (CRV).

Aluminum

At a minimum, 99.5% of the aluminum cans fed into the processing system shall be recovered and be free of contaminants. Not more than 0.2% by weight of cans fed into the processing system shall be disposed as residual.

PET

At a minimum, 98% of the PET bottles collected shall be recovered as PET Product. PET product shall contain less than 2% contaminants. Not more than 1% by weight of containers fed into the processing system shall be disposed as residual.

HDPE

At a minimum, 98% of the HDPE containers collected shall be recovered as HDPE Product. HDPE product shall be sorted into natural and colored and each Product shall contain less than 2% contaminants. Not more than 1% by weight of containers fed into the processing system shall be disposed as residual.

Attachment 4 - D

Draft Systems Acceptance Test

General Testing Requirements and Acceptance Standards

The purpose of Systems Acceptance Test is to verify that the system, as constructed, is capable of operating at the performance required under the Agreement.

During Acceptance Test, the Contractor shall operate the system in accordance with staffing plan and specified method of operation that has been submitted by the Contractor and approved by the SBWMA in the MRF Operating Plan prior to the signing of the agreement and Acceptance Testing. For the purposes of the Acceptance Test, the Contractor shall not operate the facility in any manner which is not consistent with the approved Facility Operating Plan, nor shall the Contractor utilize additional personnel above and beyond those specified in the approved Facility Operating Plan to achieve Acceptance.

The Company shall be responsible to fully install and start-up (and test) all aspects of the MRF Facility to demonstrate compliance with all requirements of the RFP, Agreement, manufacturer's warrantee requirements, and this Acceptance Test. The Contractor will conduct the Acceptance Test in the presence of representatives from the SBWMA and it's Consulting Engineer(s) if appropriate.

Acceptance Test Process Materials

The Process Materials for the Acceptance Test will be residential curbside materials as described below. The Process Materials will be prepared at the SRDC by:

- 1) Importing single stream materials from a Bay Area location that has similar demographics to the SBWMA or by,
- 2) Selecting a material that meets the mutual agreement of the SBWMA and the Contractor or, by
- 3) Mixing the collected source separated fiber and container streams that are currently collected from inbound curbside route trucks delivered to the SRDC by recycling route trucks.

The Process Material shall resemble as closely as possible the single stream material that will be collected and be processed by the facility after the initiation of single stream collection by the SBWMA. The current residual level of dual stream commercial and residential source separated fiber and container materials being processed at the existing MRF is approximately 4.5%.

Acceptance Test Run Time

The Acceptance Test will be conducted over three (3) consecutive operating days. The start-time and end-time will be pre-determined as well as scheduled break-time. No unscheduled down-time is acceptable, and any occurrence of unscheduled down time will void the day. Contractor will provide clean product load-out containers (roll-off or smaller bins) at each of the product and residual generation areas. Each container will be tare weighed on the Facility's scales and identified prior to placement.

The following data will be recorded at a minimum:

- The individual and aggregate weights of all materials (Product and Residual) generated during the Acceptance Test run time by day.

- Start and stop time and total run time (less breaks). The Company shall at all times be responsible for the performance of the Facility, and Facility processing time will not be suspended for any reason other than normal scheduled breaks.
- Logs of all maintenance, repairs, and adjustments to Facility operations performed by the Company during each test period. The hourly processing rate will be determined by dividing the total amount of Process Material (determined from the aggregate weight all products, residual and trash collected after the run) over the three (3) day testing period by the total amount of Run Hours.

Product Quality Test

The Product Quality Test will be conducted simultaneously with the Acceptance Test. During the Acceptance test, all Recyclable Material shall be recovered and processed as specified by the Contractor in the approved Facility Operating Plan, and all resulting Products shall be deposited in their designated containers (or bales). At the conclusion of each day, total tonnage of each product will be recorded.

A representative from the Contractor's company will select a Representative Sample (parties shall follow ASTM procedures if there is disagreement in the selection of a Representative Sample) of each Product from each of the system outputs. In the case of loose material, a five gallon bucket will be used to obtain the sample. In the case of baled material, a representative bale will be selected, unbound, and a sample will be placed in a 40-cubic yard box. All samples will be selected and analyzed in the presence of the SBWMA representatives.

- 1) Fiber - A bale of OCC, newsprint and mixed paper will be selected at random, loaded into a roll off container and unbound. To qualify for the Test, bale(s) must weigh more than 1,000 pounds. Fiber Product must meet the Product Quality Standards in the RFP and Agreement.
- 2) Glass - A five gallon bucket of cullet will be extracted, subdivided and combined in accordance with ASTM grab sample protocol from each glass product storage container/area. Samples will be analyzed in accordance with procedures described in the Test Protocol. In order to meet product specification, each sample must meet the specifications set forth in Product Quality Standards in the RFP and Agreement.
- 3) Aluminum - If baled, aluminum will follow the procedures for sample collection as described for newspaper, and if loose, the procedures for sample collection will follow those described for glass cullet. The sample must meet the Product Quality Standards in the RFP and agreement.
- 4) Plastic - The sampling procedures will follow the procedure for sample collection as described for newsprint. In order to meet product specifications, PET and HDPE samples must meet the meet the Product Quality Standards in the RFP and Agreement.

Residual Generation

Residual will be collected from all points of generation within the Processing System and aggregated into a container for sampling. The aggregate weight of residual for the day will be compared to the total tons processed (Processed Material) to determine the percentage of Residual generated by the Processing System. The Residual must be below 10%.

Residual will be considered all materials that are not captured as Products (as tested under the Product Quality Standards). Any materials that fall to the floor from the Processing System will be considered Residual.