Specification Requirements for Open Top Aluminum Trailers

1.0 PURPOSE

The purpose of this Attachment is to provide sufficient specification requirement information for suitable qualified Contractors to furnish transfer trailers to transport materials associated with resource recovery facilities. These materials will include, but not be limited to, the following: Municipal Solid Waste (MSW), Refuse Derived Fuel (RDF), and residue. "Suitably qualified" means that the Contractor shall be able to demonstrate satisfactory performance of the offered, or similar, equipment in a comparable application to the satisfaction of R&E.

R&E intends to purchase up to two (2) enclosed trailers.

2.0 SCOPE OF SUPPLY

2.1 GENERAL

Appendix A is not intended to be restrictive. An approved equal may be proposed but shall be approved by R&E. Alternate transfer trailers may be submitted as equal to the specified equipment. The burden of proof of equality shall be the responsibility of the Contractor. However, to retain consideration, the Contractor's base bid shall be prepared using the information provided per the RFB and Appendix A and Appendix B. **If R&E receives the product with components or designs unapproved, the trailer will be rejected at time of delivery and not hold R&E liable for freight expenses.**

R&E reserves the right, throughout the term of the contract, to purchase an additional number of trailers.

The Contractor shall bid aluminum panel smooth side moving floor trailers.

2.2 WORK INCLUDED

The total scope of the contract shall include design, supply, and delivery and performance warranties for the specified equipment. The Contractor shall furnish complete transfer trailer, including:

- Self-unloading trailers capable of load/unload MSW, RDF, or PROCESS RESIDUE.
- Maintenance instructions/manuals
- Assembly and Structural Drawings
- Recommended spare parts list and pricing

- Surface preparation and painting
- Initial fill and operating fluids and lubricants.

2.3 EXCLUSIONS (PROVIDED BY R&E)

- External hydraulic wet packs for moving floor operation.

3.0 GENERAL DESCRIPTION

The transfer trailers will be used to transport various materials to and from processing facility, which is located in Newport, Minnesota and is owned by the Ramsey/Washington Recycling & Energy Board. These trailers will be required to travel on paved highways as well as unpaved surfaces, such as sanitary landfills and roads leading to and from such landfills.

4.0 OPERATING REQUIREMENTS

The transfer trailers will be loaded by means of stationary compactors. The trailers shall be designed to withstand all the forces exerted on the trailer body by compactor loading (**maximum compactor thrust 150,000 LBF**). The trailers shall have a full size rear door for unloading purposes. This rear door, as well as the trailer itself, shall be compatible for loading by means of the stationary compactors at the facility. The trailers shall be designed to provide a means for locking the trailers to the compactor using the compactor center pin hook. It is the Contractor's responsibility to verify dimensions and compatibility with the existing compactors.

The trailers shall be constructed of aluminum. The transfer trailers shall meet all the requirements for maintaining maximum payload in the State of Minnesota over a ten (10) ton road. The trailers shall also conform to all Federal Department of Transportation regulations.

The trailers shall be of the moving floor design for self-unloading (**HALLCO ONLY**). All trailers shall be equipped with the necessary hardware and components such as hydraulic cylinders and directional valves to operate the unloading system. The unloading system shall be compatible with a hydraulic wet pack (by R&E) which operates at 3,000-PSI pressure and a flow of 30 GPM. The trailers shall be capable of off-loading the materials being transported in temperatures of (-) 40 to (+) 100 degrees Fahrenheit with no difficulty.

5.0 DETAIL GUIDE

5.1 GENERAL CONSTRUCTION

- The construction of this equipment shall conform to the requirements as outlined in this Appendix.
- All furnished equipment shall meet OSHA standards.
- **All hydraulic piping shall be stainless steel seamless pipe, socket welded throughout.**
- **ALL TRAILERS TO BE MINNESOTA STATE D.O.T CERTIFIED AND LICENSED PRIOR TO DELIVERY TO THE R&E CENTER.**

5.2 SPECIFIED REQUIREMENTS

Target Weight
NOT TO EXCEED 20,500 LBS
108 CUBIC YARDS MINIMUM

Target Height
13'6"

Target Length
45'0"

Maximum Width
8'0"

Axles
Two 22,500 lb 71.5 IN. Meritor 5/8" WALL TP w/ 49" spacing. Hutchens cast spring ride 3 leaf suspension. Axles are placed such that the rear of the rear most tire is a minimum of 12" forward from the rear of the trailer.

The Hutchens 9700 series is available in cast or fabricated components and either is acceptable.

Tires
Michelin XZE-2 11Rx 22.5

Rims
Steel HP 22.5 x 8.25 10 hole white powder coated

Brakes
16-1/2" by 7" Rockwell full air with quick disconnect couplers mounted at the front of trailer (must comply with all DOT requirements). Brake adjusters shall be self-adjusting. ABS braking system (Meritor/Wabco) shall be a four sensor system. (No gunnite products)

Hub/Drum

(4) cast w/steel hub 10 stud tp,ss,7” Hubodometer mounted driver side front - Stemco

King Pin
SAE standard king pin, 36” from front. All trailers shall have a **full width** trailer front fifth wheel protection plate.

Landing Gear
Heavy Duty, 2-speed crank type Holland Mark 5, crank mounted on driver side. 200,000-lbs. static load capacity with cushion foot sand pad. The landing gear shall also have a 4" O.D. scheduled 80 pipe installed inside the legs. **See Appendix B - Landing Gear for details attached hereto and made a part of this RFB.** (This landing gear can be purchased at Fleet Pride in St. Paul, Minnesota.) The landing gear is to be located 33’0” from the rear of the trailers and have a 72" centerline spacing. The landing gear shall have heavy duty bracing for multiple use.

Lights
Truck lite L.E.D. lights (rear lights to be suitably protected to prevent breakage). All lights must meet D.O.T. requirements and regulations.

Trailer Connections - A flush mounted access panel with minimum dimensions of 23-inches (H) by 32-inches (W) shall be installed at the front of the trailer with airline and electrical connections flush mounted to the face of the access panel. Panel design must be approved by purchaser.

Mud Flaps
Standard rubber composition at rear.

Paint
Any steel structure will be blasted to SPS-6, have 2 part epoxy primer of 3-4 mils with an epoxy top coat of 3-4 mils in black.

Galvanization as a weldment is acceptable.

Compactor Pin
Pin shall be 2-3/4” in diameter by 9” high. Centered 35-1/2” opening in the sub frame.

The pin shall be 2-3/4” in diameter. Pin opening in the sub frame shall be 35-1/2” wide, centered between the wheels of the trailer with a 9-1/4” pin opening height. Pin opening shall be 40” from ground surface and shall be 9-1/4” (i.e. opening shall be from 40” – 49-1/4” from ground surface).

Ejection System

Hydraulically operated and compatible with a wet pack operation at 3,000 PSI pressure and 30 GPM flow. Male Pioneer 4010-6P quick disconnect couplers mounted approximately fifteen (15) feet from rear of trailer, with 2 (TWO) duplicate sets mounted at the front of the trailer. The couplers will be compatible with each facilities present couplers. Contractors shall provide pricing for two moving floor options: a) A Hallco 4000 ejection floor system with 3/8 aluminum slats, twenty-one (21) slat design with "T" block bearings on the floor discharge end. The last 8 feet of floor to have a 3/8" aluminum overlay. Option b) A Brute 8500 moving floor system.

Body

Aluminum smooth side panels landfill tolerant design on both trailer frame and body. Either horizontal or vertical panels are acceptable. Sides, front bulkhead, roof and floor shall be able to withstand all forces exerted by compactor loading **(Max. compactor thrust 150,000 LBF**). Interior panel shall be thicker than exterior panel. Recommendations from the Contractor will be reviewed to achieve maximum strength while meeting weight requirements.

Current floor member cross spacing design is an I-beam that is 5-1/4" tall with 3/8" thick web and flanges. Each I-beam is located 14" on center for the entire length of the trailer. This "or approved equal" is acceptable.

The rearmost 10 feet of the trailer walls shall have a 3/16" interior aluminum overlay for the entire interior height of the trailer. The aluminum overlay shall be attached with a continuous weld for the entire overlay (stitch welding is not acceptable).

A vent shall be provided in the front of the trailer to provide a sight port at tractor window level to enable driver to watch the progress of the unloading sequence.

A non-stick surface shall be added to the front slope shield to aid in self-cleaning and freeze prevention. This surface shall be 3/8" UHMW plastic or equal.

Manufacturer's mark or logo, if applied to the trailer body, must be integrated into the finish.

Door

See Appendix D for additional details. Rear door is of double door design, a mechanism shall be provided for unlatching the rear doors from the driver side. Small door shall sit flush and protrude out from the large door (i.e. inner (smaller) door shall not be pocketed into the larger door). The handle for unlatching the large door shall be approximately 2-4 feet from

the rear of the trailer and a minimum 1 inch schedule 40 steel rod shall be used to connect the handle to the door mechanism. There are two (2) handles (one for each door). The large (full) door handle shall be located such that the operator is within four (4) feet of the rear of the trailer accessing the handle operating large door. The smaller door handle shall be located at the rear of the trailer on the driver's side.

Large door shall use "U-bolt" latches. A mechanism shall be provided so the outer door (small door) will open while the big door (inner door) is secured. Both door mechanisms shall be on the exterior of the trailer body panels. A method of adjusting both inner and outer door closure shall be provided. Doors must rest flush against trailer wall when open. Hinge design must be approved by R&E. Each hinge pin shall be stainless steel. No brass bushings. Each hinge requires a minimum of two (2) tapped grease zirks, and the hinge bore shall be 0.005" larger than the hinge pin diameter.

All mechanisms used to close or latch both doors shall be located on the exterior of the trailer body panels.

The hinge design must allow doors to rest flush against trailer side wall when open.

Hinge design must use individual hinge pins at each hinge (single rod through all hinges is not acceptable).

The front access doors hinge shall be located on the bottom and shall be a minimum of 10 gauge with 3/8" pin (piano hinges will not be acceptable).

Floor Height
The floor height is to be at 53" empty.

Maximum Unloading Time
The trailers unloading system shall require no more than 10 minutes to fully unload a trailer at 3,000 PSI and 30 GPM flow. Curves of unloading time vs. pressure shall be provided with bid.

Decal
All trailers will be provided with a "Caution-This trailer makes wide turns" decal affixed to the rear door on the passenger side.

Miscellaneous
All trailers shall be provided with a backing bell mounted to the passenger side front axle.

6.0 PERFORMANCE

6.1 GENERAL PERFORMANCE

The Contractor shall provide sufficient data with the bid to assure R&E that trailer of the type and style furnished by the Contractor have a minimum life of seven (7) years normal landfill and/or over-the-road usage, and have demonstrated such capabilities. The trailers will be used seven (7) days per week and twenty-four (24) hours per day.

6.2 PERFORAMANCE GUARANTEES

The Contractor shall guarantee the trailer performance as specified for a period of two years (24 months) to commence upon delivery of the complete order to the job site.

It shall be understood that normal trailer operation shall include compacting into the trailer with up to 150,000 pounds force on a high frequency basis (as much at fifteen (15) times per day) with sufficient quantities of RDF, MSW, or RESIDUE to obtain a gross vehicle weight of 80,000 pounds while still maintaining legal rear axle weights. Furthermore, fully loaded trailers shall be operated in landfills on a continuous basis.

The Contractor guarantee shall address the following elements:

A. Corrective Maintenance

If any individual trailer supplied under the resulting contract requires corrective maintenance and if the root cause of the problem to be corrected is traceable to the trailer Contractor (design, materials, fabrication, workmanship or sub-components), then the Contractor shall, at the Contractor's expense and at the Contractor's choice, perform corrective maintenance or replace the trailer requiring corrective maintenance.

B. Routine Maintenance

In support of this guarantee the Contractor shall provide information on expected maintenance which details schedules, materials consumables and labor requirement
If any individual trailer supplied under the resulting contract requires an abnormally high amount of routine maintenance, defined as 150% of the expected maintenance based on the

contractor's maintenance schedule, then the Contractor shall, at the Contractor's expense and at the Contractor's choice, either:

Perform the routine maintenance above and beyond that which is normally expected and provide temporary and compatible replacement trailers of equal or greater capacity while those trailers are awaiting or are receiving maintenance.

-OR- Reimburse R&E for all routine maintenance above and beyond that which is normally expected.

7.0 EQUIPMENT WARRANTY

7.1 COMPREHENSIVE WARRANTY

The Contractor warrants that the work will be as specified and will be free from defects in design, workmanship, and materials. If within the warranty period the materials or equipment fails to meet the provisions of this warranty, the Contractor shall promptly correct any defects, including non-conformance with the specification, by adjustment, repair or replacement of all defective parts or materials without additional cost to R&E.

Unless otherwise specified, the warranty period shall extend a period of two years (24 months) from the date of complete delivery of the equipment to the job site.

Any deviations from the above conditions must be specifically declared in writing with the Contractor's bid.

7.2 PERFORMANCE WARRANTY

The equipment shall be tested by R&E at least once within the first six (6) months after delivery of the equipment. The test will run for thirty (30) loads over fifteen (15) consecutive days. The equipment shall meet the following criteria:

- No structural integrity damage.
- No mechanical operational problems.
- Unloading time stated in proposal with minimal carryback of material.
- Stated payloads.

8.0 SUBMISSIONS AFTER RECEIPT OF CONTRACT

After award of the contract, the Contractor shall furnish eight (8) copies of the following documents to the operation staff of each facility in accordance with the agreed-upon schedule:

- Operations Manual
- Maintenance and Lubrication Manual
- Emergency Procedures
- Wiring Diagrams
- Electrical Schematics
- Piping Schematics
- General Arrangements and Assembly and Structural
- OSHA Certification

9.0 SUPPLEMENTAL PROVISIONS

9.1 SHIPMENT AND STORAGE

All spare parts and unattached material shall be suitable crated, boxed, equipped with handling fixtures, or otherwise prepared for shipment to prevent damage during shipment and handling. Each box or crate shall contain a detailed packing list. The weight of each component or container shall be stamped on the outside of the container along with R&E's address and contract number. All openings shall be properly protected to prevent the entrance of dirt or debris. Suitable weatherproofing shall adequately protect all parts, which may be exposed to the weather. It shall be the responsibility of the Contractor to take any other precaution required to reasonably ensuring job site arrival of the equipment in an undamaged and satisfactory working condition.

All parts shall be identified in an appropriate manner. When parts are crated or boxed, detailed packing lists shall be provided with each crate or box. All parts to be joined in the field shall be clearly matched marked after shop painting, and shall be marked with references to applicable assembly drawings

9.2 SURFACE PREPARATION AND PAINTING

In general, all components of standard manufacture purchased by the Contractor and furnished for this contract shall be prepared and finish painted in accordance with the component manufactures standard practice. All equipment and structural steel fabricated by the Contractor shall be cleaned, prepared, primed and finish painted in accordance with applicable painting codes and standards of Steel Structures Painting Council Surface Preparation Spec (SSPC-SP 6). All Painting shall be consistent with the specified intended service and the Contractor shall adhere to the paint manufacture's requirements. All surfaces shall be thoroughly cleaned

before priming and painting. Priming shall be a 2 (two) part epoxy primer 4-6 mil thickness R&E approved equivalent. Finish paint shall consist of a two (2) part polyurethane in a color selected by R&E of a thickness of 2-4 mils, total thickness to be no less than 6 mils. The underside of the trailers shall be painted black.

9.3 NAMEPLATES

All equipment shall be provided with a permanently attached stainless steel nameplate located in a readable location and fastened to the largest, least dismantled part. Nameplates shall not be attached to a pressure-retaining surface with mechanical fasteners.

The nameplate shall be stamped with the following information:

- Item
- Serial Number
- Design Capacity

10.0 QUALITY PROGRAM REQUIREMENTS

10.1 QUALITY CONTROL (QC) PROGRAM

10.1.1 The Contractor shall have an effective QC Program to ensure the requirements of the contract and specifications are complied with. It is preferred the program be documented, but verifiable demonstration of compliance through normal fabrication/erection practice is acceptable.

10.1.2 The program shall assure that required procedures are prepared and implemented, required test/measurements are made using calibrated tools and equipment, referenced codes and standards are available for use, personnel are trained and qualified to perform the specified task as required by codes, standards and the specification, deviation/defects are identified and corrected in compliance with specification requirements, and that materials are procured, handled and shipped in compliance with the Contract. All deviations/defects must be identified to R&E in writing including corrective action taken.

10.2 NOTIFICATION POINTS

R&E shall have the right to establish notification points for which the Contractor shall give prior notification. Notification points require the Contractor prior notification at least ten working days in advance of the scheduled time of performance. R&E may require that activities

performed without proper notification be repeated for R&E's observation at the Contractor's expense.

R&E will inform the Contractor of its desire to witness the event or will authorize the Contractor to proceed without witnessing the event. The above may be performed by telephone communication. Written waiver will be issued if requested by the Contractor.

10.3 QUALITY PROGRAM INTERFACE

The Contractor is subject to audits, unannounced inspections, and witnessing by R&E to ensure compliance with the requirements of R&E's specifications, codes, drawings and R&E's approved submittals. The exercise of, or failure to exercise his right to inspect, witness or audit, and subsequent approval by R&E shall not relieve the Contractor/Contractor obligation to comply with the terms and conditions of the contract. Any request for approval of deviations of nonconformance to the contract documents shall be preceded in accordance with the specification.

10.4 SUBMITTAL OF MANUFACTURING/ERECTION SCHEDULE

Prior to the award of the contract, the Contractor shall submit copies of the Manufacturing Schedule to R&E upon request for their information and establishment of Notification Points and Project Management.

10.5 DOCUMENTATION

10.5.1 Records System – A record system shall be established and maintained that provides for the identification and correlation of required records and certifications.

10.5.2 Documentation Schedule – This specification requires specific documents to be formally submitted to R&E for information or review and approval. If these documents are changed subsequent to submittal, the Contractor shall resubmit the revised document (s) to R&E for information or review and approval consistent with the original requirements.

10.5.3 Contractor Documentation - The Contractor shall assemble all required records into two identical sets. Each page of each documents submitted shall be clearly identified by the R&E name, the station and/or unit, the contract number, the equipment description and specific identification, and the manufacture/contractor's name and address. Each individual document shall be legible and shall be reproducible capability. No

information shall be recorded closer than 5/8" of the binding edge or closer than ¼" to any other edge of the paper.

Documents that have been submitted with a previous shipment on this order/contract shall not be duplicated. However, a statement shall be furnished to R&E itemizing, by document, the documents previously furnished for each item of equipment and the date of that previous submittal.

10.5.4 Documentation by the Contractor – The minimum documentation required to be furnished is listed in the Contract documents.

All records required by this specification, applicable regulations, codes and standards, or generated as a result of the Contractor's QC Program shall be retained in the Contractor's file for a period of 365 days after the contract requirements for the manufactures or installation have been complied with. At the expiration of this 365 day period, R&E or their authorized agent shall be provided the option of receipt and/or the Contractor's continued retention of the file contents. No records shall be destroyed or otherwise disposed of without permissions from R&E.