DRAFT

Waste Acceptance Plan

1 EXECUTIVE SUMMARY

At this time Denver Zoo is not approved to accept any waste streams from external sources, other than the pre-approved landscape, woody debris waste generated by City and County of Denver Parks and Recreation Department (CCD-PR)

This plan was developed at the request of Colorado Department of Public Health and the Environment (CDPHE) to support a program for future waste acceptance of external sources. Until such time that Denver Zoo is approved to explore external waste partners, this plan will be updated to reflect any new information we gain regarding our fuel needs as the system progresses. In addition, before this plan is considered for implementation, Denver Zoo will submit to CDPHE and CCD-Department of Environmental Health (CCD-DEH) a proposed modification to the Engineering Design and Operation Plan (EDOP) with a request for approval to evaluate and accept a set of pre-approved external sources. This proposal will include any necessary approvals from City and County of Denver-Department of Parks and Recreation (including a revised zoning approval letter-appendix B of EDOP).

As of July 1, 2014- This plan is not in effect and will be labeled DRAFT until such time that we are actively considering outside waste streams for fuel.

This document outlines Denver Zoo’s waste acceptance procedure with any potential waste to energy customers that want to provide combustible waste materials for the zoo’s waste to energy system. This document provides the waste acceptance criteria for combustible waste being consigned to Denver Zoo including details of the physical and packaging and transportation requirements that waste must comply with to be accepted.

This document should be read in conjunction with the Waste Acceptance Application and Waste Characterization Form, which should be completed by any customer interested in providing combustible waste materials. A process overview diagram, which provides a visual guide to the waste acceptance processes, and all other documents associated with Denver Zoo, is provided in this document as a quick reference tool.

If you need any assistance or have any questions regarding waste acceptance criteria or Denver Zoo’s Waste to Energy system, please contact the Denver Zoo at 720-337-1500.
DRAFT

Waste Acceptance Plan

2  INTRODUCTION

This document defines the waste acceptance criteria for utilization of combustible wastes by Denver Zoo for the generation of onsite renewable energy delivered in the form of both electrical and thermal energy to Denver Zoo’s operations.

3  SCOPE

The waste acceptance criteria represents the generic physical and chemical aspects that are desired for the waste to energy system. Additionally, this document will address any procedures for the delivery and receipt of wastes at Denver Zoo. The criteria in this plan applies to each consignment of waste to Denver Zoo.

4  PROCESS & WASTE ACCEPTANCE

Customers interested in providing waste for Denver Zoo’s Waste to Energy System will be asked to complete and submit a Waste Acceptance Application and Waste Characterization Form. Provided in both forms is a required generator certification statement and signature to be signed by the applicant. Due to the nature of this system and the approval process for any combustible materials to be considered fuel in the system, we appreciate that the forms be completed in their entirety.

For a waste to be accepted by Denver Zoo, it will be necessary to ensure that waste complies with the waste acceptance criteria provided below. Our waste approval process will be coordinated with review and approval from City and County of Denver-Department of Environmental Health, and Colorado Department of Public Health and Environment (CDPHE). Waste will only be accepted from customers in accordance with these Denver Zoo’s waste acceptance procedures.

The criteria defined in this document do not necessarily represent the full range of acceptance criteria. Additional requirements may be defined in a formal response letter to the customer from Denver Zoo.

All customers are responsible for packaging, transportation and delivery of approved combustible wastes to Denver Zoo’s Waste Management Facility located in City Park at 2300 Steele Street, Denver, CO 80205. Requirements for transportation and delivery will be provided to the approved customer in their formal response letter.
5 \textbf{WASTE ACCEPTANCE CRITERIA}

This section details the Waste Acceptance Criteria for Denver Zoo’s Waste to Energy System.

\textbf{PHYSICAL AND CHEMICAL PROPERTIES}

\textit{Will complete specifics at a later date. Likely contain language associated with approved moisture content, BTU value, organic content, etc.}

\textbf{ACCEPTABLE SOLID COMBUSTIBLE WASTES}

The following table outlines the solid materials that are generally accepted and those that are restricted for use in the Waste to Energy System:

<table>
<thead>
<tr>
<th>Acceptable Solid Combustible Wastes</th>
<th>Provisionally Acceptable Solid Combustible Wastes</th>
<th>Restricted Solid Combustible Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virgin Wood</td>
<td>Plastics (non-halogenated)</td>
<td>Plastics (halogenated including PVC)</td>
</tr>
<tr>
<td>Paper</td>
<td>Rubber</td>
<td></td>
</tr>
<tr>
<td>Cardboard</td>
<td>Filters</td>
<td></td>
</tr>
<tr>
<td>Cloth-including cotton and PPE</td>
<td>Grease</td>
<td></td>
</tr>
<tr>
<td>Landscape wastes</td>
<td>Graphite</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Metal - including steel, lead, chromium, cadmium, mercury, beryllium, uranium metal, thorium metal, radioactive lightening conductors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any Glass</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Toxic materials-including mercury, PCBs, cyanides</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Biological, infectious or pathogenic materials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asbestos</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concrete</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blasting materials- including sand, grit, glass, beads, pearls</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Luminous items</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fibreglass, mineral wool</td>
<td></td>
</tr>
</tbody>
</table>
Waste Acceptance Plan

ACCEPTABLE LIQUID COMBUSTIBLE WASTES
The following table outlines the liquid materials that are generally accepted and those that are restricted for use in the Waste to Energy System:

<table>
<thead>
<tr>
<th>Acceptable Liquid Combustible Wastes</th>
<th>Restricted Liquid Combustible Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>None at this time</td>
<td>Oils</td>
</tr>
<tr>
<td></td>
<td>Synthetic fluids</td>
</tr>
<tr>
<td></td>
<td>Chemical wastes including solvents</td>
</tr>
<tr>
<td></td>
<td>Decontamination solutions</td>
</tr>
<tr>
<td></td>
<td>Sludges</td>
</tr>
<tr>
<td></td>
<td>Paint</td>
</tr>
</tbody>
</table>

6 PACKAGING AND TRANSPORT REQUIREMENTS
Waste to be consigned to Denver Zoo is best delivered to Denver Zoo with minimal packaging to support our Zero Waste efforts. If the customer cannot arrange for materials to be hauled in a dump truck, then considerations should be made as to whether the packaging meets our fuel requirements or can be reused by the customer for future deliveries. The following table outlines the packages that are generally acceptable.

<table>
<thead>
<tr>
<th>Acceptable packaging</th>
<th>Not likely acceptable (unless recycled by customer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibreboard Kegs</td>
<td>Metal drums</td>
</tr>
<tr>
<td>Cardboard based boxes/containers</td>
<td>Large plastic containers (Dolav Boxes, etc)- unless reused</td>
</tr>
<tr>
<td>TBD</td>
<td>block styrofoam</td>
</tr>
<tr>
<td>TBD</td>
<td>foam packing peanut</td>
</tr>
</tbody>
</table>

MAXIMUM WEIGHT AND PACKAGING RESTRICTIONS
Denver Zoo may apply specific criteria to the maximum weight and volume of waste packages. Limits may be imposed on the following:
- Weight of dry packaged waste;
- Single item volume;
- Package dimensions;
- Density of super-compacted waste
Customers are responsible for loading their waste so that, as far as reasonably practicable, waste is packaged in such a way as to maximize the use of the approved container and limits the number of vehicle miles on the road.

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Document Owner: Jennifer Hale  
Date: June 30, 2014
Waste Acceptance Plan

**Transport Regulations**
Customers are responsible for ensuring compliance with the transport regulations and the Certificate of Approval for the specific container design including the requirements of any associated packing and handling instructions.

**Site Rules and Instructions**
When delivering waste to Denver Zoo’s Waste Management Building, the customer’s representatives must observe the site rules and instructions as provided by Denver Zoo. Customers shall review and sign Denver Zoo’s Contractor Code of Conduct before conducting business with the zoo for waste consignment.

**Transport Container Return**
Where the transport container belongs to the customer, Denver Zoo, or its subcontractor, will unload the contents of the container into the waste to energy system and ensure that it is available for return, within the timescale agreed with the customer, in as good a condition as it was when delivered, subject to fair wear and tear.
Waste Acceptance Plan

PROCESS OVERVIEW DIAGRAM

Customer completes Waste Acceptance Application & Waste Approval Form

Submit application to Denver Zoo

Denver Zoo reviews application for completeness

Does consigned waste meet waste acceptance criteria?

- yes
  - Denver Zoo submit request to approve to CCD-DEH
  - Denver Zoo submit request to approve to CDPHE*

- no
  - Denver Zoo notifies customer that application is not approved

Approval

- yes
  - Denver Zoo notifies customer that application is approved

- no

(*Review with CDPHE will include assessment for revised APEN submission)

If approved: Denver Zoo will develop a final agreement with customer on transportation, delivery and other specific instructions to related to the consignment of the waste. This will also include any conditions received during regulatory review.
DRAFT

Waste Acceptance Application Form

Please complete and sign this form and attach for each waste stream a Waste Characterization Form. Denver Zoo’s waste approval process is documented in our Waste Acceptance Plan, under the Process Overview Diagram.

WASTE GENERATOR:

<table>
<thead>
<tr>
<th>Company</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mailing Address</td>
<td>Phone #</td>
</tr>
<tr>
<td>City, State, ZIP</td>
<td>Fax #</td>
</tr>
<tr>
<td>Address of Waste Generation (if different from above)</td>
<td>City</td>
</tr>
<tr>
<td>E-mail (optional)</td>
<td></td>
</tr>
</tbody>
</table>

WASTE HAULER (if different from above):

<table>
<thead>
<tr>
<th>Company</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mailing Address</td>
<td>Phone #</td>
</tr>
<tr>
<td>City, State, ZIP</td>
<td>Fax #</td>
</tr>
</tbody>
</table>

WASTE STREAM INFORMATION

| Name or description of waste: | |
| Weight or volume of waste (if known): | |
| Frequency of disposal: | |
| One Time Only | Weekly | Monthly | Other ______ |
| (double click box for option to check) | |

GENERATOR CERTIFICATION

I, the undersigned, hereby certify, that to the best of my knowledge the information contained above is true and correct. Furthermore, I certify that, to the best of my knowledge, this waste is not a “hazardous waste” as defined by USEPA or Colorado Department of Public Health and Environment, that this waste does not contain regulated quantities of PCBs (Polychlorinated Biphenyls) [May insert other chemicals here in future] and that this waste does not contain regulated quantities of radioactive materials.

__________________________
Generator Signature
__________________________
Type or Print Name
__________________________
Title
__________________________
Date

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Date: June 30, 2014
Waste Acceptance Application Form

FORM INSTRUCTIONS

Information on this form is used to determine whether the waste described may be handled, transported, and used as fuel in Denver Zoo’s Waste to Energy system. The information in this form will be shared with City and County of Denver, Department of Environmental Health as part of the review process for waste acceptance. Please allow for 30 days to receive a letter response from Denver Zoo.

Information must be printed in ink or typed. If you have questions concerning this form, please contact Denver Zoo Facility Department at 720-337-1500.

Part I. Generator and Transport Information

1. Generator Name and Mailing Address – Enter the name of the facility (or person if a residential site) where the waste is generated. Enter the street address, city, and zip code to be used for written correspondence. Enter the name (contact) and phone number of the person who can answer any questions about the waste. Enter a FAX number or e-mail address if you would like your completed Waste Clearance returned to you by FAX or e-mail.

2. Hauler Name and Mailing Address – Enter the name, mailing address and phone number of the person or company that will be disposing of the waste, if different than the Generator.

Part II. Waste Stream Information

1. Description of material to be utilized in Denver Zoo’s fuel stream - enter the name generally descriptive of this waste (e.g., paper, cardboard, landscape wastes, etc).

2. Source of material - enter the physical address (not P.O. Box) of the building or structure where the waste is generated. If the generation address is the same as the generator’s mailing address in Part I, above, enter “Same”.

3. Weight or volume of material to be disposed – if known, enter an estimate of the amount to be delivered in a single trip, or for a monthly, quarterly or yearly period.

4. Frequency of disposal - double click on box to get option to add check-mark.

Part III. Generator Certification

1. Signature – Generator or an authorized employee of the Generator.

2. Title - Enter employee's title, if applicable.

3. Name – Type or print.

4. Date - Enter the date submitted.

5. Return the completed form and completed Waste Characterization Form to:
   Denver Zoological Foundation
   Attn: Facilities Department/Special Projects
   2300 Steele Street, Denver, CO 80205

   You may also fax the forms to 720-337-1626 or e-mail it to nmyers@denverzoo.org.
   Please keep a copy of your completed application for your files.

Questions?
Contact: 720-337-1500
Please complete the following information and submit this form with the Waste Acceptance Application Form.

WASTE STREAM INFORMATION

Name or description of waste:

Weight (pounds) or volume (gallons or liters) of waste (if known):

Frequency of disposal: □ One Time Only □ Weekly □ Monthly □ Other ______
  (double click box for option to check)

PHYSICAL CHARACTERISTICS OF WASTE (See Instructions)

1. Color or hue: ____________________________________________________________
2. Does the waste have a strong incidental odor? □ No □ Yes, if so, describe: __________________________
3. Physical State: □ Solid □ Liquid □ Semi-Solid □ Powder □ Other: __________________
4. Free Liquids: □ No □ Yes - Volume: ______ %
5. pH: □ ≤2 □ 2-4 □ 4-7 □ 7-10 □ 10- <12.5 □ ≥12.5 □ NA
6. Flash Point: □ NA □ <140F/60C □ 140-199F/60-93C □ ≥200F/93C
7. Waste Category: □ Ignitable □ Corrosive □ Reactive □ Radioactive □ NA

CHEMICAL COMPOSITION RANGE (MIN-MAX)

Provide full chemical names, do not abbreviate or use chemical formulas and include MSDS for brand names. Provide lower and upper limits for each constituent.

<table>
<thead>
<tr>
<th>1. Chemical name (CAS#)</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>%</td>
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<tr>
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<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Total</td>
<td>%</td>
<td>%</td>
</tr>
</tbody>
</table>
### 2. Does the waste contain any of the following? (circle any, provide concentrations if known)

| Element            | Element         | Element     | Element     | Element     | Element     | Element     | Element     | Element     | Element     | Element     | Element     | Element     | Element     |
|--------------------|-----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Antimony           | Arsenic         | Barium      | Beryllium   | Bromine     | Cadmium     | Chlorine    | Chromium    | Cobalt      | Copper      | Dioxin      | Fluorine    | Iodine      | Lead        |
| Chromium           | Cobalt          | Copper      | Dioxin      | Fluorine    | Iodine      | Lead        | Mercury     | Molybdenum  | Nickel      | Potassium   | Selenium    | Silicon     | Silver      |
| Manganese          | Mercury         | Molybdenum  | Nickel      | Potassium   | Selenium    | Silicon     | Sodium      | Sulfur      | Thallium    | Vanadium    | Zinc        | PCB         | Sodium      |
| Silver             | Sodium          | Sulfur      | Thallium    | Vanadium    | Zinc        | PCB         | Stainless   | Vanadium    | Zinc        | PCB         | Stainless   | Stainless   | Stainless   |
| NONE               |                 |             |             |             |             |             |             |             |             |             |             |             |             |

**Known Concentrations:**

_______________________________________________________________________________________________

_______________________________________________________________________________________________

### 3. Method used to determine composition.*

- [ ] Analytical Data  - [ ] MSDS  - [ ] Other:

*Please provide a copy of the records for determining composition*

**SAMPLING INFORMATION (If Applicable)**

1. **Source of Sample** (eg. drum, stockpile, sump/catch basin; tank)

2. **Sampling Method:** [ ] Composite  [ ] Discrete/grab  [ ] Other:

3. **Number of samples:**

**GENERATOR CERTIFICATION**

By signing this Waste Characterization Form, the Generator certifies:

1. This waste is not a "Hazardous Waste" as defined by USEPA and/or CDPHE
2. This waste does not contain regulated radioactive materials or regulated concentrations of PCBs (Polychlorinated Biphenyls). *(This may be edited at a later date to contain more information)*
3. All information provided is a true and accurate description of the waste material. All relevant information regarding known or suspected hazards in the possession of the Generator has been disclosed.
4. This waste complies with the regulations of the Colorado Department of Public Health and Environment and the local solid waste division.
5. The analytical data presented herein, attached hereto, or otherwise submitted for the purpose of completing or supplementing any or all of the information on this form were derived from testing a representative sample taken in accordance with 40 CFR 261.20(c) or equivalent rules.
6. If any changes occur in the character of the waste (e.g., physical characteristics, chemical composition, process of generation, etc.), the Generator shall notify Denver Zoo

Signature: ____________________________  Title: ____________________________

(not required if submitted electronically)

Name: ____________________________  Date: ____________________________