STANDARD OPERATING PROCEDURE
FOLEY PILOT PLANT

TITLE: Biomass Acid Soak and Press

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APPROVALS: **Process Change Committee** **DATE:**
HHSM **DATE:**

CONTENTS

A. Scope

This procedure describes the methods to soak the bagasse in acid solution.

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B. Safety and Training Requirements

Acid resistant gloves and eye protection are required when dealing with acid solutions.

C. Related Documents and SOPs

1. Biomass acid soak preparation SOP
2. OHAUS 5000 Series Xtreme W manual
3. Denver Instruments balance operation manual
4. Dynamic MF2000 mixer manual
5. Vincent Corporation CP-4 screw press manual
6. KERN moisture balance manual

D. Preparation/Materials/Equipment

1. OHAUS 5000 Series Xtreme W balance
2. Denver Instruments balance operation manual
3. Rubbermaid Roughneck 25 gal storage bin
4. KERN moisture balance
5. Vincent Corporation CP-4 screw press
6. Dynamic MF2000 mixer
7. 5-gal buckets

E. Detailed Procedure

1. Start the soaking by adding the biomass to the soak solution prepared in the Biomass Acid Soak Preparation SOP. Make sure all the biomass has been completely soaked.
2. After soaking for 4 h, start to dewater the biomass using the Vincent Corporation CP-4 screw press.
    a. Remember to use a 20-gal drum placed under the screw press to collect the liquid generated.
    b. Collect the pressed biomass in a tared Rubbermaid Roughneck 25 gal storage bin.
3. Using the Dynamic MF2000 mixer, make sure that the biomass is uniformly mixed.
4. Take a sample of the soaked and pressed biomass and measure dry weights using the KERN moisture balance at least three times.
5. Calculate the amount of biomass to be used for each shot (pretreatment batch) during pretreatment:

$$\text{biomass per shot} = \frac{0.5\ kg\ DW}{\%DW\ \text{of soaked and pressed biomass}}$$

6. Divide the biomass in 5-gal buckets containing the calculated amount of biomass per shot.

F. Data Archival and Analysis

Record the data in the Acid Soak and Press Log and store in the Batch Log Book.

G. Tickets

Biomass Acid Soak and Press Log

Date _____

Start soak time _____

	% Dry Weight
1	_____
2	_____
3	_____
4	_____
5	_____
6	_____
	_____ Average

Soaked and pressed biomass (kg)_____

Biomass per shot (kg) _____