Iowa Green Brewery Certification

Iowa Waste Reduction Center | University of Northern Iowa

Environmental Plan

1. **<u>Facility Equipment and Process Lines, HVAC Ductwork, Plumbing Line Inspection:</u>** *By identifying and regularly inspecting process lines, HVAC ductwork, and plumbing lines, inefficiencies or leaks can be identified and repaired. Documentation creates and increases employee awareness.*

    - **Process Line Inspections (1a.)**
        - Identify and document process lines present at the facility
        - Complete and document quarterly inspections
        - Record any repairs made

    - **HVAC Inspection/ Cleaning/ Filter Replacement (1b.)**
        - Identify and document HVAC ductwork
        - Complete and document quarterly inspections
        - Record any repairs made
    - **Plumbing Inspection (1c.)**
        - Identify and document plumbing lines
        - Complete and document quarterly inspections
        - Record any repairs made

2. **<u>Operational Efficiencies:</u>** *Implementing and using energy efficiency strategies for projects and equipment will allow the facility to reduce energy usage. Documentation creates and increases employee awareness of alternative efficiency opportunities*

    - **Operational Efficiencies (2a.)**
        - Identify and document the following
            - Energy efficient equipment (HVAC units, water heaters, appliances, electronics, etc)
            - CFL/ LED lighting
            - Heat recovery activities
            - Protocols for turning off lights and/or the use of motion sensors or timers for lighting
            - Protocols for shutting down equipment
            - Use of renewable energy
            - Energy efficient windows and doors

    - **Optimal Operating Temperatures (2b.)**
        - List all equipment with temperature controls (thermostats, hot water heaters, boilers, etc.)
        - Document the optimal operating temperatures (according to manufacturer's specifications of brewery process knowledge)

3. **<u>Wastewater Management:</u>** *Reusing or recycling process water reduces the overall water usage by the facility. Eliminating solids from wastewater stream lessens the burden on the wastewater treatment facilities and decreases the facilities environmental footprint.*

    - **Process Water (3a.)**
        - Identify and document processes or projects to reuse and recycle process water (cleaning, watering, etc.)
        - Identify and document procedures used to reduce solids (yeast, grains, hops, etc.) in the wastewater discharge
        - Document stormwater best management practices- SWPPP or No Exposure

4. **<u>Solid Waste Management and Recycling:</u>** *Documentation and monitoring of solid waste and reduction/ management/ diversion efforts will allow facilities to reduce their impact in landfills. Documentation creates and increases employee awareness of diversion options and strategies.*

    - **Recycling Plan (4a.)**
        - Create and implement a recycling plan for traditional recyclable materials (paper, cardboard, plastics, aluminum, glass) and non-traditional recyclable materials (pallets, ink cartridges, drums/ totes, etc,)

    - **Spent Grain Diversion From Landfill (4b.)**
        - Create and implement a recycling plan for spent grains

    - **Annual Waste Audit (4c.)**
        - Determine the types of waste and amounts being generated at your facility
        - Determine the effectiveness of current waste management strategies
        - Evaluate product inventory
        - Review current employee training procedures related to waste management efforts
        - Track cost savings and revenue generation
        - Create goals for the year

Facility Equipment and Process Lines, HVAC Ductwork, Plumbing Line Inspection

1a.

Process Line Location	Quarterly Inspection (Y/N)	Repairs Made

1b.

HVAC Location	Quarterly Inspection (Y/N)	Repairs Made

1c.

Plumbing Location	Quarterly Inspection (Y/N)	Repairs Made

Operational Efficiencies

2a.

	Yes/ No	Standard Operating Procedures
Energy efficient equipment		
CFL/ LED lighting		
Protocols for heat recovery		
Protocols for turning off lights/ motion sensors		
Protocols for shutting down equipment		
Use of renewable energy		
Energy efficient windows and doors		

2b.

Equipment	Optimal Operating Temperatures

Wastewater Management

3a.

Processes/ Projects to Reuse and Recycle Wastewater

Procedures Used to Reduce Solids in Wastewater Discharge

Solid Waste Management and Recycling

4a.

Recyclable Material	Disposal Plan

4b.

Spent Grains Recycling Plan	

4c.

Type of Waste	Amount (lbs)

Effectiveness of Current Waste Management Strategies:

Product Inventory:

Current Employee Training Procedures:

Cost Savings and Revenue Generation:

Goals:

Quarterly Inspection Checklist: Process Line, HVAC, Plumbing

HVAC Equipment Filters and Coils	Yes	No	Repairs Made
Are all coils cleans and free of debris?			
Are all filters clean?			
Have any filters been replaced as a result of this inspection?			
Plumbing and Process Lines	**Yes**	**No**	**Repairs Made**
Are plumbing lines free of leaks (using leak detection spray)?			
Are process lines free of leaks (using leak detection spray)?			
Have any leaks been identified as a result of this inspection?			
Refrigerant and Process Lines	**Yes**	**No**	**Repairs Made**
Are all required process lines and plumbing properly insulated?			
Has any insulation been added or repaired as a result of this inspection?			
HVAC Ductwork	**Yes**	**No**	**Repairs Made**
Is the ductwork free of damage or leaks?			
Has any ductwork been repaired as a result of this inspection?			