



Ecobat Lithium Battery Recycling
Casa Grande RCRA Part B Permit
Pre-Application Public Meeting

Purpose of Meeting & Agenda

- 1. Introduce Ecobat Staff**
- 2. Discuss the Operations of the Ecobat Solutions Lithium Recycling Facility**
 - a. Facility Location**
 - b. Recycling Facility Operations**
- 3. RCRA Part B Permit Application Process**
 - a. Operations Subject to Permit Requirements**
 - b. Safety & Environmental Protection Features**
 - c. Other Facility & Environmental Permits**
 - d. Public Participation**
- 4. Arizona Department of Environmental Quality (ADEQ) Review & Oversight**
- 5. Public Comment Period**

Ecobat Staff & Support

- **Eric Knowles, Plant Manager**
- **Mark Hoffman, Environmental Director**
- **Mike Buckantz, Environmental Technical Support**
- **Jennifer Fieber, Associates Environmental, Consultant**

Site Location



Legend

- Property Boundary
- HWMU: Hazardous Waste Management Unit



Associates Environmental
 18141 Beach Boulevard, Suite 200
 Huntington Beach, CA 92648
 (949) 352-4941 Fax (714) 362-9085

Description: Ecobat Solutions Arizona, Inc.
 1474 North V.I.P. Blvd. Casa Grande, Arizona 85122

Secondary Description: Site Location

Job No: 433-147	Drawing Date: 12-07-2023	Drawn By: MO	Drawing Version: 1.0
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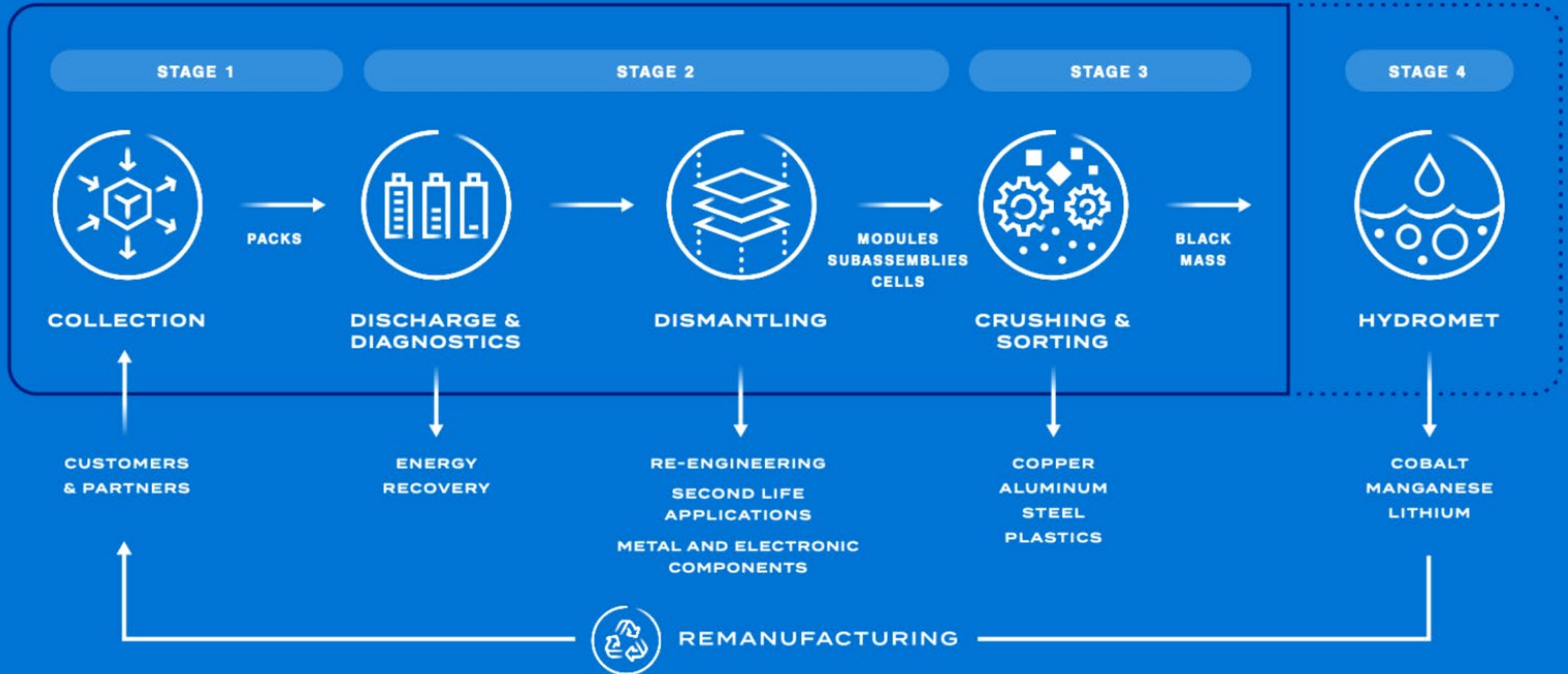
Site Location



Recycling Facility Operations: General Concept

Onsite Services

Managed Services



Lithium Battery Recycling Process: Process Features

- **Inert Gas/Wet Shredding Process**

- Inert Gas Mitigates Battery Breaking Hazards
- Water Mitigates Vapors & Fugitive Dust in a Closed System
- Closed Loop Water Recycle Stream

- **Emissions Control**

- Battery Electrolyte Capture/Condensation
- Scrubber to Reduce Particulate & VOC Emissions
- Baghouse to Reduce Particulate Emissions

- **Equipment Noise**

- No Noticeable Noise to Neighbors
- Recycling Operations Performed Inside the Building

Recycling Facility Operations

assessment or customer request



Booking in

- Barcoding and booking in

Visual damage check/Thermal check

- Check battery for signs of external damage
- Thermal Check
- Record images of battery with camera

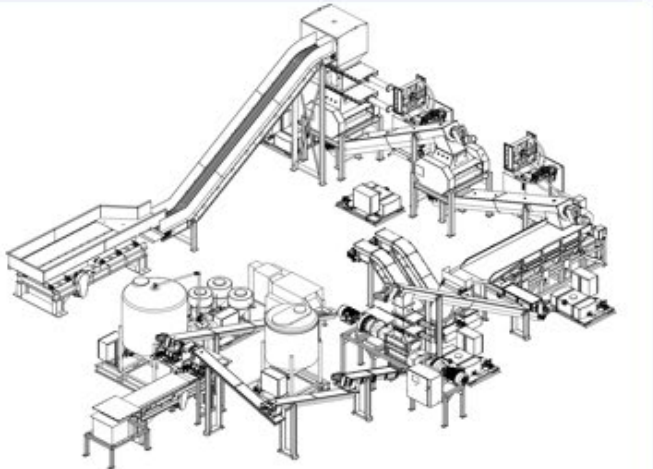


Store Battery

Sacrificial Building/ Container



Recycle Battery



Disassemble and recycle

Recycling Facility Operations

Battery Collection & Storage



On & Off-Site Safety Assessment

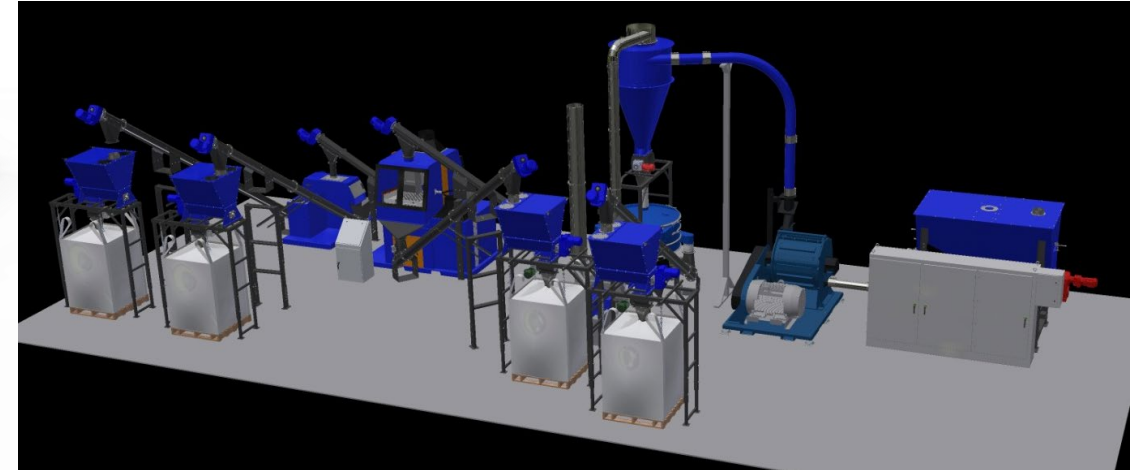


Pack and Module Disassembly

Recycling Facility Operations: Shredding and Separations Equipment



- **4 ton/hour battery input shredding capacity**
 - Wet process with inert gas blanket
- **Input size of batteries – Small consumer batteries (power tools, laptops, cell phones) to EV modules**



- **High air intensity turbo mill that balls copper and aluminum foils**
- **Air density separation tables used to separate out copper and aluminum fractions**

Recycling Facility Operations: Final Product Shipment

- Final Products are Packaged in SuperSacks and placed on pallets.
- Products are shipped from the facility via truck.



RCRA Part B Application Process: Operations Subject to Permit Requirements

- The future storage of spent lithium-ion batteries and lithium-containing materials are subject to hazardous waste permitting provisions and necessitates the submittal of a RCRA Part B permit application.
- Three Hazardous Waste Management Units (HWMUs) are Proposed:
 - HWMU1 consists of a concrete pad that houses four containers.
 - Two containers are designated to receive “Normal-Risk” materials. These are typically in-tact batteries that display no damage, bulging or other signs of stress after arrival at the facility and initial inspection.
 - Two containers are designated to receive “At-Risk” materials. Normally, any “At-Risk” materials will be immediately processed in the recycling system. However, if the recycling system is undergoing maintenance or is otherwise unavailable, “At-Risk” materials will be stored in specially-designed containers until they can be processed.

RCRA Part B Application Process: Normal-Risk Storage Container



- UL490 design, FM Approved for 4 hours.
- Heat Sensor. Controller shuts down the fan if the fire suppression is deployed. Fire suppression is deployed by fusible link.
- Exterior Horn/Strobe warning in event of activation of fire suppression.
- Spill Containment Sump; Water pressure tested and protected with chemical resistant coating.
- Sump Capacity: 128 Gallons.
- Storage of 36 pallet slots in each building. There are up to 4 drums per pallet.

RCRA Part B Application Process: At-Risk Storage Container



- Fire Rated Walls, Intertek Tested & FM Approved for 4 Hours.
- Fire Rated Roof, Intertek Tested & FM Approved for 3 Hours.
- Smoke/Fire Detection Systems with Alarm & Strobe.
- Dry Chemical Fire Suppression System.
- Fire Water Suppression System
- Sump Capacity: 824 Gallons.
- Weight: 18,400 Pounds.
- Storage of 12 pallet slots in each container. There are up to 4 drums per pallet.

RCRA Part B Application Process: HWMU2 & HWMU3: Outdoor Storage Areas



- **HWMU2** consists of outdoor uncovered storage at the Northeast portion of the property.
- The total square footage for HWMU2 is 17,340 square feet.
- This area is equipped with thermal imaging cameras connected to emergency alert and response systems connected to the security network.
- The security system will send automated alerts by email and text message to responsible persons.
- This area is used for storing drums of scrap batteries on pallets. There are up to 4 drums per pallet.

- **HWMU3** consists of outdoor uncovered storage east of the main building.
- The total square footage for HWMU3 is 5,625 square feet.
- This area is equipped with thermal imaging cameras connected to emergency alert and response systems connected to the security network.
- The security system will send automated alerts by email and text message to responsible persons.
- This area is used for storing drums of scrap batteries on pallets. There are up to 4 drums per pallet.

Legend			Associates Environmental 18141 Beach Boulevard, Suite 200 Huntington Beach, CA 92648 (949) 352-4941 Fax (714) 362-9085	
Property Boundary	HWMU: Hazardous Waste Management Unit		Description: Ecobat Solutions Arizona, Inc. 1474 North V.I.P. Blvd. Casa Grande, Arizona 85122	
		Secondary Description	Figure 2 - Surrounding Topography	
Job No:	Drawing Date:	Drawn By:	Drawing Version:	
433-147	12-07-2023	MO	1.0	

RCRA Part B Application Process: Safety & Environmental Protection Features

- **Building Fire Mitigation**

- Equipped with laser smoke detection, flame detection and visual/thermal cameras with alert system
- Monitored 24/7
- Sprinkler system activated by detection systems
- Extinguisher array with CO2, foam and Lithex

- **Inbound Staging**

- Each container must be checked for temperature using a thermal gun.
- Each battery container in this area must be monitored periodically for its temperature.
- During checks if the temperature is found to be out of specification the battery container is immediately processed or moved to the appropriate location for further monitoring.
- Battery containers will be receiving a tag to identify what storage location it must be moved to for further processing.

RCRA Part B Application Process: Safety & Environmental Protection Features

- **HWMU1: At-Risk Materials**

- Material at risk of thermal runaway will be immediately processed, placed into a water bath or will be stored in the At-Risk Storage area.
- Batteries Identified as thermal runaway will be recorded and the material will be isolated away from other containers.
- If the temperature increases from the last measurement material will be re-evaluated and relocated as necessary.

- **HWMU1: Normal-Risk Materials**

- Material exhibiting normal temperatures that is not intended to be processed within the shift it is received will be stored in the Normal-Risk Storage area, or in the exterior storage area.
- Batteries Identified as thermal runaway will be recorded and the material will be isolated away from other containers.
- If the temperature increases from the last measurement material will be re-evaluated and relocated as necessary.

RCRA Part B Application Process: Safety & Environmental Protection Features

- **HWMU2 & 3: Outdoor Storage Areas**

- Material exhibiting normal temperatures that is not intended to be processed within the shift it is received will be stored in the Normal Risk Storage area, or in one of the Outdoor Storage Areas.
- Batteries Identified as thermal runaway will be recorded and the material will be isolated away from other containers.
- Thermal cameras will be used to identify abnormal temperature changes.
- If abnormal temperature changes are observed, materials will be immediately processed or relocated to At-Risk Storage.

RCRA Part B Application Process: Other Facility & Environmental Permits

Conditional Use Permit

Permit Number: DSA-22-00275

Issuing Entity: City of Casa Grande

Date Issued: February 2, 2023

Air Permit

Permit Number: C31426.000

Issuing Entity: Pinal County Air Quality Control District

Date Issued: November 2, 2023

RCRA Part B Application Process: Public Participation

- **Ecobat has established a website where members of the public can access documents related to this application process:**
 - <https://ecobat.com/location/ecobat-solutions-casa-grande/>
 - Additional documents will be added throughout the initial permitting process and during future permit modifications, as necessary.
- **Pre-Application Meeting: March 21, 2024 in Casa Grande.**
- **After the Application is Submitted to and Reviewed by Arizona Department of Environmental Quality (ADEQ), a Draft Permit will be Released for Review and a Public Meeting will be held.**

RCRA Part B Application Process: ADEQ Review & Oversight

- **How Does ADEQ Monitor Hazardous Waste Recycling Facilities?**
 - ADEQ is concerned with health and safety issues involving hazardous waste management in Arizona. Under the RCRA, along with state statutes and codes, ADEQ has the authority to monitor and direct businesses that may generate, transport or dispose of hazardous waste in Arizona.
 - The **Waste Programs Division** implements state and federal hazardous waste laws pursuant to delegation from the EPA.
 - The division is responsible for effectively implementing standards for the safe generation, management, treatment, storage and disposal of hazardous waste. Specific responsibilities include:
 - Inspections and Compliance — Conducting routine, follow-up, and initial compliance inspections and responding to public complaints and other agency referrals to ensure that hazardous wastes are safely managed and properly disposed.
 - Permits and Plan Review — Permitting facilities that treat, store or dispose of hazardous waste and reviewing required plans and monitoring reports.
 - Outreach and Compliance Assistance — Educating and reaching out to the regulated community and the general public.
- **ADEQ has Performed a RCRA Facility Assessment (RFA) to document the condition of the site prior to initiation of lithium recycling activities.**
- **Once finalized, the RFA will be placed on the Ecobat documents website.**

RCRA Part B Application Process: Public Comment Period

- **Public Comment Period.**
 - Please come to the microphone, state your name and affiliation for the record and proceed with your comments.
 - Comments will be transcribed and considered when finalizing the permit application.
 - All comments and responses will be included in an Appendix to the RCRA Part B Permit Application.