

# ENVIRONMENTAL COMPLIANCE REPORT - ARCTIC OPERATIONS

## ENVIRONMENTAL COMPLIANCE REPORT -

**Polar Dynamics Robotics, Inc.**

Report Period: January 1, 2023 - December 31, 2023

Document Reference: ECR-2023-ARC-001

Date: January 11, 2024

### 1. EXECUTIVE SUMMARY

This Environmental Compliance Report details Polar Dynamics Robotics, Inc. ("PDR") adherence to environmental regulations and standards governing Arctic operations.

operations in extreme cold environments. The report focuses on the operation of the BlueCore(TM) autonomous mobile robot (AMR) platform and associated equipment operating in sub-zero conditions.

## **2. SCOPE OF OPERATIONS**

### **1. Primary Operational Sites:**

-

Anchorage Testing Facility (ATF-01)

-

Prudhoe Bay Development Center (PBDC-02)

-

Nome Cold Weather Proving Grounds (NCWPG-03)

### **2. Covered Activities:**

- - 2 -

AMR cold-weather testing and validation

-

Battery systems environmental impact assessment

-

Hydraulic fluid containment protocols

-

Waste management in extreme conditions

-

Chemical storage and disposal procedures

### **3. REGULATORY FRAMEWORK COMPLIANCE**

1. Federal Regulations:

-

Clean Air Act (CAA) - 40 CFR Part 50

-

Resource Conservation and Recovery Act (RCRA)

-

Toxic Substances Control Act (TSCA)

-

Arctic Research and Policy Act compliance

## 2. State Regulations:

-

Alaska Department of Environmental Conservation (ADEC) requirements

-

Alaska Administrative Code Title 18, Chapter 50

-

State-specific hazardous materials handling protocols

## **4. ENVIRONMENTAL MANAGEMENT SYSTEMS**

### **1. ISO 14001:2015 Certification Status:**

-

ATF-01: Certified (Certificate #ISO14001-2022-0456)

-

PBDC-02: Certification pending (Q2 2024)

-

NCWPG-03: Pre-assessment phase

### **2. Environmental Policy Implementation:**

-

Quarterly internal audits

-

Monthly environmental performance reviews

- - 5 -

Continuous monitoring systems

-

Employee training and certification programs

## **5. WASTE MANAGEMENT AND DISPOSAL**

### **1. Hazardous Materials:**

-

Battery disposal protocols

-

Electronic component recycling

-

Chemical waste management

-

Contaminated snow and ice handling

## 2. Non-Hazardous Materials:

-

General waste segregation

-

Recycling programs

-

Packaging material management

-

Office waste reduction initiatives

## **6. EMISSIONS AND ENVIRONMENTAL IMPACT**

### 1. Air Quality:

- - 7 -

HVAC system emissions

-

Testing facility ventilation

-

Generator emissions monitoring

-

Particulate matter control

2. Water Management:

-

Snowmelt handling procedures

-

Facility runoff control

-



Groundwater protection measures

-

Ice management protocols

## **7. ENVIRONMENTAL INCIDENTS AND REMEDIATION**

### **1. Reported Incidents (2023):**

-

Minor hydraulic fluid leak at ATF-01 (February 2023)

-

Battery thermal event at PBDC-02 (July 2023)

-

All incidents resolved per ADEC guidelines

### **2. Remediation Actions:**

- - 9 -

Updated containment protocols

-

Enhanced monitoring systems

-

Staff retraining completed

-

Equipment modifications implemented

## **8. RISK ASSESSMENT AND MITIGATION**

### **1. Identified Risks:**

-

Extreme weather impact on containment systems

-

Chemical storage in sub-zero conditions

-

Battery performance in arctic conditions

-

Permafrost protection measures

## 2. Mitigation Strategies:

-

Enhanced containment systems

-

Upgraded monitoring equipment

-

Revised emergency response procedures

-

Additional staff training programs

## 9. COMPLIANCE CERTIFICATIONS

### 1. Current Certifications:

-

EPA Facility ID: AK000123456

-

ADEC Operating Permit: 2023-ARC-789

-

ISO 14001:2015 (ATF-01)

-

Arctic Council Guidelines Compliance

### 2. Pending Certifications:

-

PBDC-02 ISO 14001:2015 (Expected Q2 2024)

- - 12 -

NCWPG-03 ADEC Final Approval (Expected Q3 2024)

## **10. RECOMMENDATIONS AND ACTION ITEMS**

### **1. Short-term Actions (0-6 months):**

-

Complete PBDC-02 ISO certification

-

Upgrade chemical storage facilities

-

Implement enhanced monitoring systems

-

Conduct quarterly staff training

## 2. Long-term Initiatives (6-24 months):

- 

Facility-wide energy efficiency improvements

- 

Advanced waste reduction programs

- 

Environmental impact reduction targets

- 

Sustainability initiative implementation

## 11. CERTIFICATION

This Environmental Compliance Report has been prepared in accordance with applicable federal and state regulations. The undersigned certifies that the information contained herein is true and accurate to the best of their

knowledge.

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Polar Dynamics Robotics, Inc.

Date: January 11, 2024

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