

## **AWS Carson Case Study – Ecolab Implementation of AWS International Water Stewardship Standard**

To comply with AWS indicators 5.1.1, 6.1.1, 6.2.1, 6.3.1

### **Background**

Ecolab's manufacturing facility located in Carson, California, is a blend plant that primarily produces water treatment chemical blends, polymers, oil blends, antimony and paper additives. Located in Southern California, the Carson plant relies on water from the California Water Service Company, which sources water from Northern California and Colorado River. Other water sources include groundwater and recycled water practices. In alignment with Ecolab's commitment to a holistic approach to water management across its manufacturing facilities, the company decided to implement the Alliance for Water Stewardship International Water Standard at its Carson plant.

### **Situation**

The team at Ecolab's Carson plant assessed the facility for opportunities to reduce water use across its operations by 7 percent per ton of product by 2016, from a 2015 baseline. After this assessment, the plant prioritized the adoption of Ecolab's softener exchange program, cooling tower upgrades, installation of spray nozzles on hoses, Reverse Osmosis (RO) membrane installation, restroom upgrades, reuse of washout water, leak fixes and landscaping practices.

Ecolab's Water Risk Monetizer was also utilized to understand the water risk at the plant. The water risk premium was found to be 2.6 x the current local water price.

### **Solutions**

The implementation of water reduction projects were prioritized throughout the plant to achieve desired savings.

- Changes to landscape practices reduced total plant water use by 2 percent per year, resulting in a cost savings of \$535 annually
- Adopting softener exchange services reduced total plant water use by 7 percent per year, resulting in a cost savings of \$1819 annually
- Installation of spray nozzles on hoses reduced floor-washing water use by 50 percent and total plant water use by 2 percent per year, resulting in a cost savings of \$2000 annually
- Washout water reuse implementation reduced total plant water usage by 2 percent per year, resulting in a cost savings of \$1,000 annually

Additional Notable Water Saving Projects Include

- Restroom upgrades reduced total plant water use by <1 percent per year, resulting in a cost savings of \$30 annually
- Cooling tower upgrades reduced total plant water usage by <1 percent per year, resulting in a cost savings of \$100 annually
- Cooling tower temperature control upgrades reduced total plant water use by <1 percent per year, resulting in a cost savings of \$100 annually
- Steam leak fixes were made and reduced total plant water use by <1 percent per year, resulting in a cost savings of \$100 annually.

These efforts resulted in a 6.6 percent reduction between 2014 and 2015. This reduction is equivalent to more than 1.3 million gallons of water and more than \$6,000 in cost savings annually. This is equivalent to a 17 percent reduction in water intensity since 2015.

### **Water Governance**

At the plant level, Safety, Health and Environmental (SHE) manager, Walter Chang, is responsible for overall wastewater compliance, compliance with wastewater permits and accountable for wastewater discharge and PH monitoring. Maintenance Supervisor, Justin Gillman, is responsible for wastewater testing, wastewater discharge and PH monitoring. Plant manager, Fred Casey, is ultimately accountable for overall wastewater compliance, wastewater testing, regulation updates, wastewater discharge, and PH monitoring. At a corporate level, the Sustainability Team is guided and advised by the Sustainability Executive Advisory Team, which is made up of the company's most senior business and divisional leaders.

In addition, Ecolab's Water Stewardship position and Global SHE position are publically available and serve as commitments to and guidance on water-related issues and compliance. Ecolab's Water Stewardship Position formalizes Ecolab's global commitment to responsible water stewardship by identifying opportunities for the company and its customers to use water resources in a manner that benefits business, communities and nature. Ecolab's SHE position outlines the company's commitment to excellence in safety, health and environmental practices and performance across global operations.

### Water Stewardship Journey


In addition to internal operational improvements, Ecolab's Carson plant's water stewardship activities include plant outreach and volunteer events around restoration. Restoration activities are specifically focused around the Dominguez watershed.

Water stewardship activities outside of the plant are ongoing and include continued involvement with California's water governance and California Water Action Collaborative (CWAC).

In addition to local water stewardship efforts, Ecolab's global giving program, Solutions for Life, enhances the company's mission to conserve and protect fresh water through partnership with two global NGOs: The Nature Conservancy and Project WET Foundation.

Shared challenges between the plant and relevant stakeholders include water scarcity due to reduced snow pack from existing water sources, aging water infrastructure, urban water runoff, saline intrusion into groundwater and loss of wetlands and species. To address these shared issues, Ecolab collaborates with other water users in the basin, one of which is an Ecolab plant in City of Industry (COI) California also pursuing the Alliance for Water stewardship certification. In October 2014, best practices for water management were shared with World Wildlife Fund. In August 2016, water stewardship in the Los Angeles area basin was discussed with General Mills. In October 2016, water stewardship in the San Gabriel basin, current projects underway and the CWAC were discussed with MillerCoors. In January 2017, implementation of the AWS standard at Ecolab's COI plant was discussed. Additionally, Ecolab participates in monthly CWAC calls to keep pace on shared water challenges and efforts in California.

### Performance

eROI Impact		
Total water savings: 1.3 million gallons (2015), equivalent to more than \$6,000 in annual savings		17% reduction of Effluent water intensity since 2015