

Work Plan No. C.09-01 Water Balance Study

Scope:

1. Data Collection

- **Inventory of Water Sources:** Identify all water sources including municipal supply, wells, rainwater harvesting, etc.
- **Water Use Inventory:** Catalog all points of water use within the facility, such as processes, cooling, cleaning, domestic use, irrigation, etc.
- **Discharge Points:** Identify all points where water leaves the facility, including wastewater, stormwater, and product water.
- **Historical Data Review:** Collect historical water use and discharge data, including water bills, flow meter readings, and discharge permits.

2. Field Measurements and Monitoring

- **Flow Measurement:** Utilize portable flow meters to measure water usage at key points.
- **Water Quality Testing:** Conduct water quality tests to understand the characteristics of water at different points.
- **Site Observations:** Document observations regarding water use practices, leaks, and inefficiencies.

3. Data Analysis

- **Water Balance Calculation:** Calculate the water balance by comparing total inflows with total outflows and changes in storage.
- **Discrepancy Analysis:** Identify and analyze discrepancies in the water balance, which may indicate leaks, unaccounted water uses, or measurement errors.
- **Efficiency Assessment:** Evaluate the efficiency of water use processes and identify areas for improvement.

4. Reporting and Recommendations

- **Water Balance Report:** Prepare a comprehensive report detailing the findings of the water balance study, including data analysis, graphs, and tables.
- **Recommendations:** Provide actionable recommendations for improving water use efficiency, reducing water consumption, and managing wastewater effectively.
- **Cost-Benefit Analysis:** Conduct a cost-benefit analysis for the recommended actions to help prioritize implementation.

5. Implementation Support

- **Action Plan Development:** Assist in developing a detailed action plan for implementing recommendations.
- **Training and Education:** Provide training sessions for facility staff on best practices for water management.
- **Follow-Up Monitoring:** Establish a plan for ongoing monitoring and evaluation of water use to ensure continuous improvement.

6. Regulatory Compliance

- **Compliance Review:** Ensure all water use and discharge practices comply with local, state, and federal regulations.
- **Reporting Requirements:** Assist in preparing and submitting required reports to regulatory agencies.

7. Stakeholder Engagement

- **Communication Plan:** Develop a plan to communicate findings and progress to all stakeholders, including facility management, staff, and external stakeholders.
- **Feedback Mechanism:** Establish mechanisms for receiving and addressing stakeholder feedback.

Deliverables

- **Initial Project Plan:** Detailed plan outlining scope, objectives, and methodology.
- **Data Collection Report:** Summary of collected data, including any observed issues or gaps.
- **Water Balance Report:** Detailed report with analysis, findings, and recommendations.
- **Implementation Plan:** Actionable plan with prioritized recommendations and timelines.
- **Training Materials:** Educational materials and resources for facility staff.
- **Compliance Documentation:** Documentation for regulatory compliance and reporting.

Budget Items

- **Personnel Costs:** Include costs for project manager, data analysts, field technicians, and trainers.
- **Equipment Costs:** Budget for portable flow meter, water quality testing kits, and any other necessary equipment.
- **Miscellaneous Costs:** Travel expenses, report production costs, and any other miscellaneous expenses.

Prime: AEW Engineering

Subconsultants: None

Total Work Plan Value: \$ 301,380