



**Engineering &  
Environmental**  
CONSTRUCTION

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# SWPPP IMPLEMENTATION

## CASE STUDY

### PROJECT OVERVIEW

**Project Name:** Stormwater Retention System

**Location:** Garden Grove CA

**Job Type:** SWPPP Controls

### DESCRIPTION

Ensuring this recycling and solid waste facility was able to maintain compliance to strict regulatory directives by preventing any untreated surface water from leaving the site during rain events. This project included the installation of a large stormwater retention system that implemented various methods of collecting runoff and a complex filtration system.



### MAIN TASKS

- Design the stormwater retention system to fit within the footprint of a large parking area and maximize the use of existing infrastructure (when possible)
- Sawcutting and removal of all pavement
- Install collection drains, pre-filters, drain boxes, and PCV conveyance pipes
- Create an infiltration bed in a 6' deep excavation with 2' of  $\frac{3}{4}$ " crushed rock, a filter fabric cover, and corrugated 3' diameter pipes
- Rebuild the inflow and outflow of the existing 3-stage clarifier
- Backfill the infiltration gallery with  $\frac{3}{4}$ " crushed rock
- Resurface the entire area



## CHALLENGES

Site Traffic – The facility’s operations included heavy truck traffic throughout the day, which required a coordinated work flow for incoming truck traffic.

Excavation Risks – The site’s native soils were mostly sand below 2ft, which meant careful implementation of construction and sloping techniques were required to avoid side wall collapse during excavation.

## INTERESTING POINTS

Acting as a collection, filtration, and dispersion system, this stormwater retention system was designed to collect all surface water – including stormwater and facilities operational runoff – and ensure it is directed safely back into the groundwater through two large infiltration galleries.

This stormwater retention system consisted of:

- A collection drain with pre-filters at every location where water could leave the property
- PCV conveyance pipes collecting from all the drain boxes and routing back to a 3-stage clarifier
- Two filtration galleries that accept the outflow from the clarifier – made of several rows of large-diameter, corrugated half-pipe sections that were constructed in an excavation with a bed of crushed rock

On completion, the entire area was resurfaced.

## ABOUT E&E CONSTRUCTION

Engineering and Environmental Construction (E&E) was founded in 2006 with a primary focus on the installation of environmental remediation systems. Over the years, we’ve continually expanded our skill-sets to become one of the industry’s leading purveyors of full-service construction services – both within the environmental industry and in general construction. Today, we are proud to offer a wide range of highly specialized environmental engineering capabilities and a full-suite of general construction services to support our clients’ ever-evolving needs.



## STATEMENT OF QUALIFICATIONS

Engineering and Environmental Construction, Inc (E&E) is a privately held corporation established in 2006. E&E’s main construction offices are based in Huntington Beach, CA. We are licensed to conduct operations throughout California, Arizona, Nevada, and Washington.

Contractor Licenses and Certifications Include (but aren’t limited to):

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- B General Building License
- C-10 Electrical License
- C-36 Plumbing License
- Hazardous Substances Removal License
- Annual OSHA Excavation & Trenching Certification
- Remedial Action Certification
- SCAQMD Rule 1166 – Various Locations Permit

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