

Markley Creek Landfill Remediation, Antioch California

Landfill Consolidation, Construct Engineered Cap, Creek Restoration

The Markley Creek landfill operated from 1900 to 1994 by multiple owners accepting mostly municipal solid waste. It comprises approximately 23 Acres and the Markley Creek borders it for about 1,700 feet. In recent years, the water flow through the creek had eroded the integrity of the landfill and waste was entering the channel and being swept down stream. The purpose of the project was to restore the creek grade to improve flow and eliminate erosion while consolidating buried waste in above ground covered cells. **Chemicals of concern** included: barium, cadmium, copper, lead, and zinc.

Major tasks include constructing and capping a solid waste containment area (SWCA). This work involved excavating 20,000 yards of soil, excavating and moving 20,000 yards of solid waste into the cell and then capping the cell with 30,000 yards of cap material.

Concurrent with the construction of the SWCA, PSEC, using haul trucks, dozers, and compactors, repaired the damaged landfill areas and creek channel including: fine grading and compacting fill to design limits; installation of cascade revetments; reconstruction of channel and banks; reinstallation of the outfall from v-ditch.

Problem resolution Soil that met the design specifications for the construction could not be found. Working as a team, the RWQCB, Brown and Caldwell, PB America and Pacific States revised the soil specifications such that a suitable soil could be found that did not compromise the intent of the engineering or environmental requirements.

Site restoration work included: installation of 50,000 yards of import fill to re-grade and contour the creek; revetment construction for sediment entrapment; installation of vegetation and associated irrigation system, and hydroseeding 12 acres of cleared areas.



PSEC constructing new outfall for storm water drainage into creek



Project Name: Markley Creek Landfill Remediation

Location: Antioch, California

Original budget: \$3,674,580

Final budget: \$4,676,424

Percent Work PSEC: 91%

Percent Work Subcontractor: 9%

Owner's Representative: Mike Scott – PB America
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Project Duration: 10 Months

Original Completion Date: December 28, 2008

Actual Completion Date: March 6, 2009

Labor costs: \$748,228

Equipment costs: \$794,992

Material/supplies costs: \$2,852,618

Subcontractor costs: \$280,586