

# Muscle Wall proves itself for stormwater and erosion control

ENGEO performed a case study into the use of Muscle Wall (MW) on steep slopes for a project site in Northern California.

Nine temporary Muscle Wall basins were placed along a steep unvegetated hillside with grades up to 50%.

The goal was to detain as much rainfall runoff as possible to reduce the volume of stormwater leaving the project site.

## DEPLOYMENT

4,000 linear feet of 4' tall MW was ordered for the project, which arrived on 7 truck trailers (95 pieces per trailer).

Each 8'x6' pallet contained 12 pieces.

Time to deploy 500' of MW:

- 9 hours (if grading was needed to level the surface)
- 5 hours (without grading)



## RESULTS

MW basins were successful at detaining large volumes of stormwater and sediment while remaining stable for varying slope steepnesses, surface types, and barrier configurations.

Water would eventually overtop or seep under the barrier pieces, but at a low discharge rate that could be managed downstream.

# Muscle Wall is expected to last

## DISCUSSION

It was effective to leave some barrier pieces unfilled when placed across a haul road; the ratio of water filled to unfilled barrier pieces should increase as slope steepness increases.

Combining a MW barrier with an excavated sediment basin and lining with plastic was an effective method to hold large volumes of water without seepage occurring underneath the barrier pieces.

Muscle Wall recently developed a discharge port to control outflow – a hose can be connected and fitted with a filter sock or bag filter system to reduce turbidity before discharge offsite.

## CONCLUSION

MW proved to be an effective stormwater and erosion control management option, especially for a site with steep slopes.

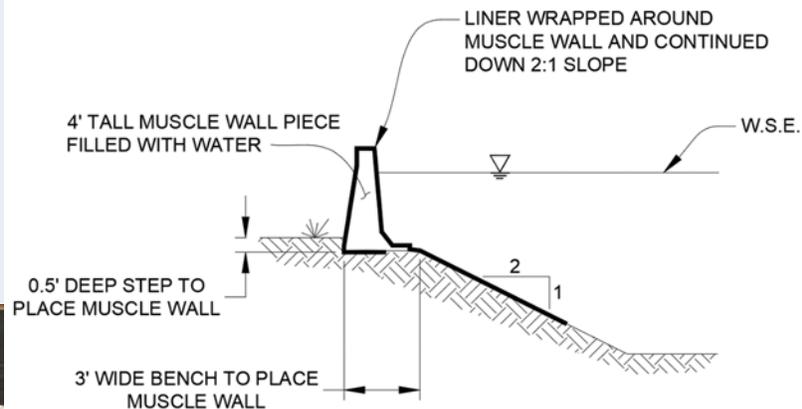
MW is expected to withstand multiple storm seasons of continued use due to its durable polyethylene material.

## MUSCLE WALL EXCELS FOR SITES WITH THE FOLLOWING CONDITIONS

- ✓ Earthwork occurring throughout rainy season
- ✓ Highly erodible soils
- ✓ Consequences for offsite sediment discharge
- ✓ Steep terrain



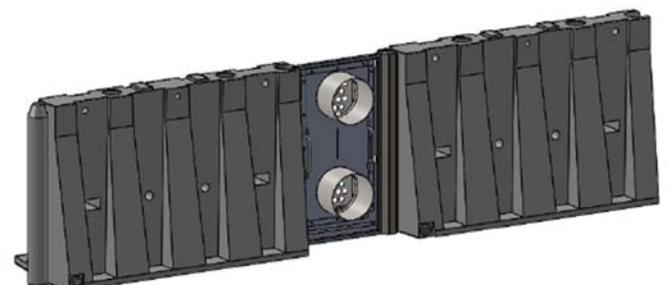
MW placed across haul road



MW sediment basin detail



Discharge port demonstration



Discharge port rendering