



Case Study

application | Subgrade Reinforcement
location | Sandia Creek, Temecula, California
product | Mirafi® HP570

job owner | Sandia Creek, Santa Rosa Community Services District
engineer | Petra Geotechnical
contractor | Springer Excavating & Grading

TenCate develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

THE CHALLENGE

The water from the irrigation of the orange groves coupled with low lying areas bordering Sandia Creek Road caused major rutting and potholes. It was determined by the engineer that geosynthetic reinforcement would be needed to prevent future subgrade failure. The use of the geosynthetic would eliminate the need for over-excavation and reinforce sections where higher elevations were needed to allow proper drainage.

THE DESIGN

It was determined early on that a geosynthetic would be needed to construct a competent road. The use of Mirafi® HP570 served two

functions; reinforcement and separation. The high performance woven fabric separated the base material from the fine grained soils within the subgrade and increased the bearing capacity of the base material. Another reason for the use of Mirafi® HP570 was that inclusion of culverts under the road. The concern over settlement above these culverts prompted the use of a geosynthetic.

THE CONSTRUCTION

Placement of the geotextile was completed after the placing and levelling of the fill over the new culverts. An 8 in. lift of base material was bottom dumped and bladed level over the fabric. The ability to dump the base course directly on the Mirafi® HP570 made it possible to construct the road using standard construction practices.



Mirafi® HP570 is rolled out over the subgrade. Mirafi® HP570 serves two functions: to reinforce and separate.

THE PERFORMANCE

Where questionable subgrades are encountered, geotextiles have been proven to be an economical solution in the construction of the project. The use of Mirafi® HP570 allowed for decreased overexcavation in softer fill areas. All involved in the project are pleased with the results. Petra Geotechnical will be utilizing geosynthetics in other projects in the area after viewing this success.



Fill was dumped and levelled over the fabric.



Project is completed with positive results.

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365 South Holland Drive Tel 800 685 9990 Fax 706 693 4400
 Pendergrass, GA 30567 Tel 706 693 2226 www.mirafi.com



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