

EXECUTIVE SUMMARY

This report documents an engineering study which had the primary goal of determining how to cope with an increased amount of stormwater which will be the result of lining Bamberger Pond. The lining of Bamberger Pond is contemplated because infiltration there is currently causing a groundwater mound which increases the rate at which groundwater flows west, across the base boundary. It is preferred that this component of groundwater flow be kept low, so its arsenic and manganese content would naturally attenuate before it eventually left the base.

As part of this project a stormwater runoff model and pond water balance model were developed, and calibrated using actual measurements of key storm water flows and pond levels. The development and calibration of these models is documented separately in *Stormwater Model for the Bamberger Pond - DRMO Pond Watersheds*, Dames & Moore, July 1998.

Seven alternative ways to dispose of the additional quantity of stormwater were listed in the work plan for evaluation. An eighth alternative was included in the engineering study when it became obvious that it was pertinent.

Of the alternatives evaluated, only two were capable of dealing with the excess stormwater. These were:

Alternative II - Enlarge the DRMO Pond so it is capable of infiltrating an increased amount of stormwater; install a pumping system to keep Bamberger Pond at its lowest possible level while keeping DRMO Pond at its highest possible level (to enhance infiltration).

Alternative VIII - Construct a new unlined 1.3 acre pond south of Building 891 to infiltrate the excess stormwater; install a pumping system to keep Bamberger Pond at its lowest possible level while keeping the new pond at its highest possible level (to enhance infiltration).

Alternative VIII is \$211,000 more expensive than Alternative II, so Dames & Moore recommends Alternative II. The estimated cost of implementing Alternative II is \$432,000.

This report includes all information necessary to complete a detailed design of the recommended Alternative II, with the exception of base facility and topographic drawings which are available at the base civil engineering office. Detailed topographic drawings of Bamberger Pond and DRMO Pond are included in the modeling report.