



Gravel Pit Reservoirs Slurry Walls and Seepage Control

**PRRIP
Governance Committee Meeting
July 26, 2016**



**Applegate
Group, Inc.**

WATER RESOURCE ADVISORS FOR THE WEST



**PLATTE RIVER
RECOVERY IMPLEMENTATION PROGRAM**

What we will be discussing today

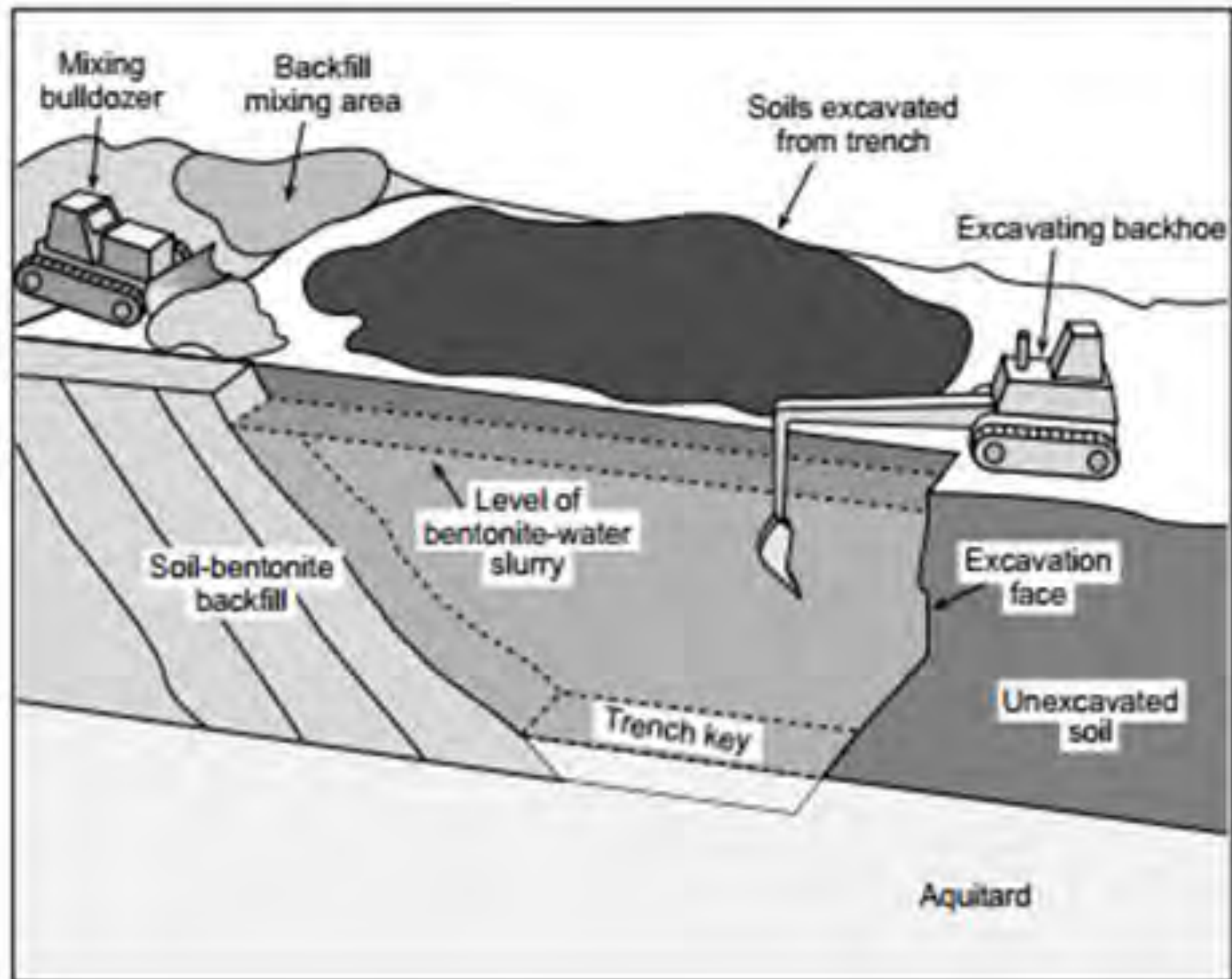
- Using gravel pits for reservoir storage
- General concepts of slurry wall cutoffs
- Issues of concern regarding seepage and groundwater impacts.
- Infrastructure for water delivery

Gravel Pit Reservoirs

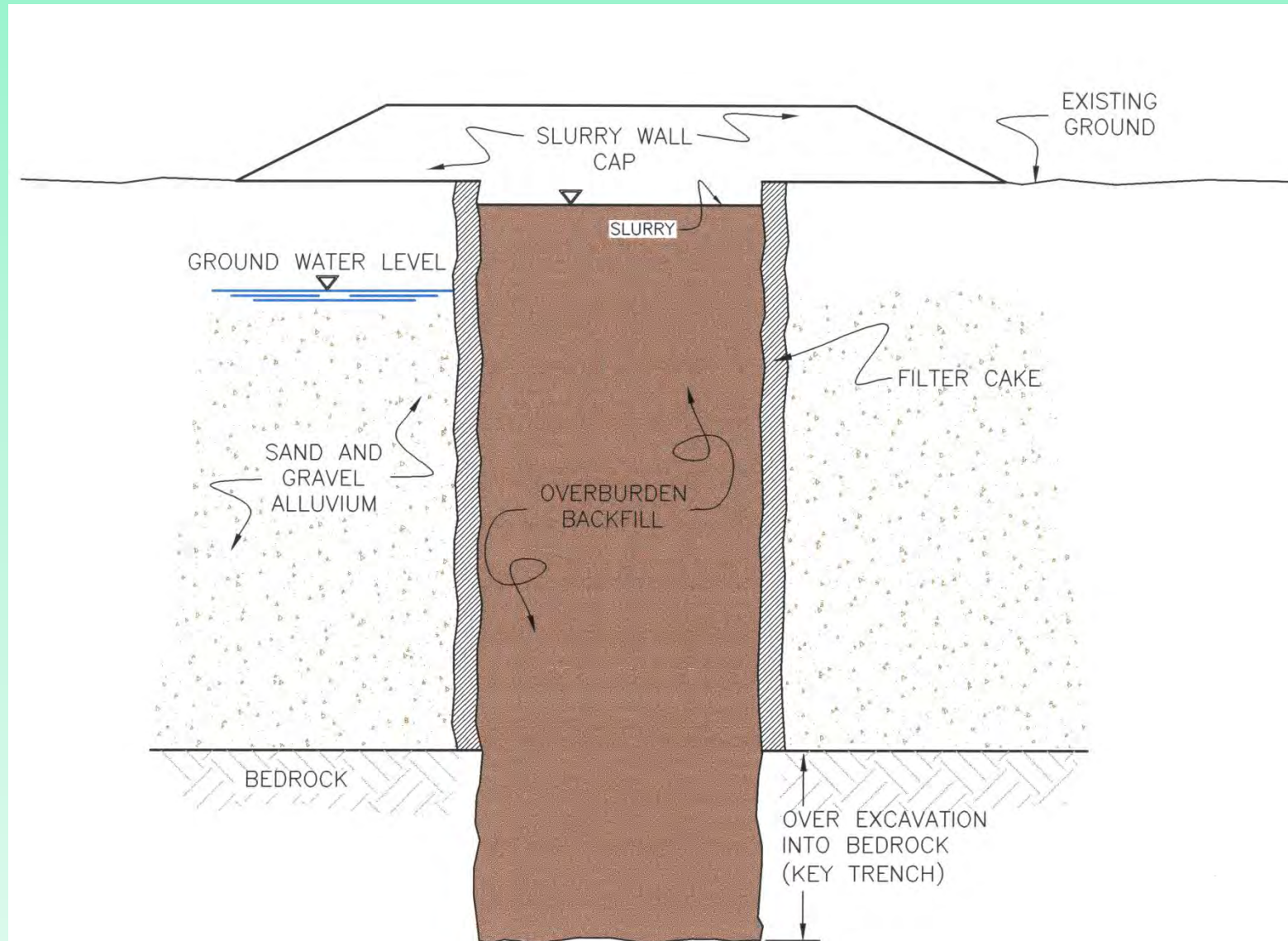


- Gravel pits are hydraulically connected to the alluvial aquifer they are situated in.
- If that alluvial aquifer can be isolated from the mined out resource, they can store and hold water.

Slurry Wall Construction Method



Slurry Wall Trench Cross Section



Slurry Wall Construction



7. 11. 2000

Slurry Wall Construction



✦ **Excavation and Slurry Mixing**

7.11.2000

Slurry Wall Backfill being mixed



7.11.2000

Slurry Wall Backfill being placed by Dozer



7.11.2000

Slurry Wall Prior to Capping



7.11.2000

Basic Requirements for Slurry Wall Construction

- ✦ Good Underlying Bedrock
- ✦ Adequate Quantity and Quality of Overburden Materials on Site
- ✦ Good Quality Control/Quality Assurance Program

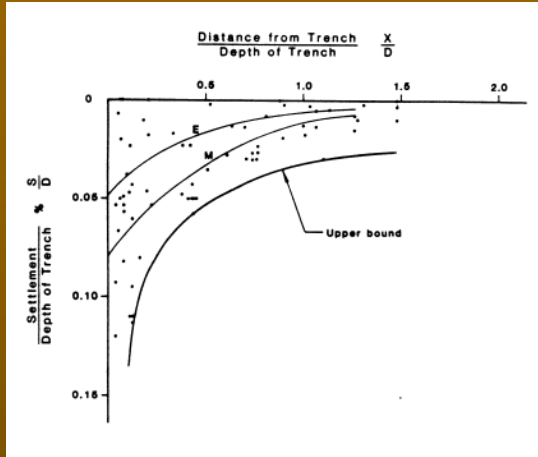


Data for Slurry Wall Design

- ✦ Geotechnical Properties of Soils
- ✦ Survey Data
- ✦ Quantity Estimates of On-Site Materials
- ✦ Groundwater Table Data
- ✦ Location of bedrock
- ✦ Floodplain location



Engineering Issues



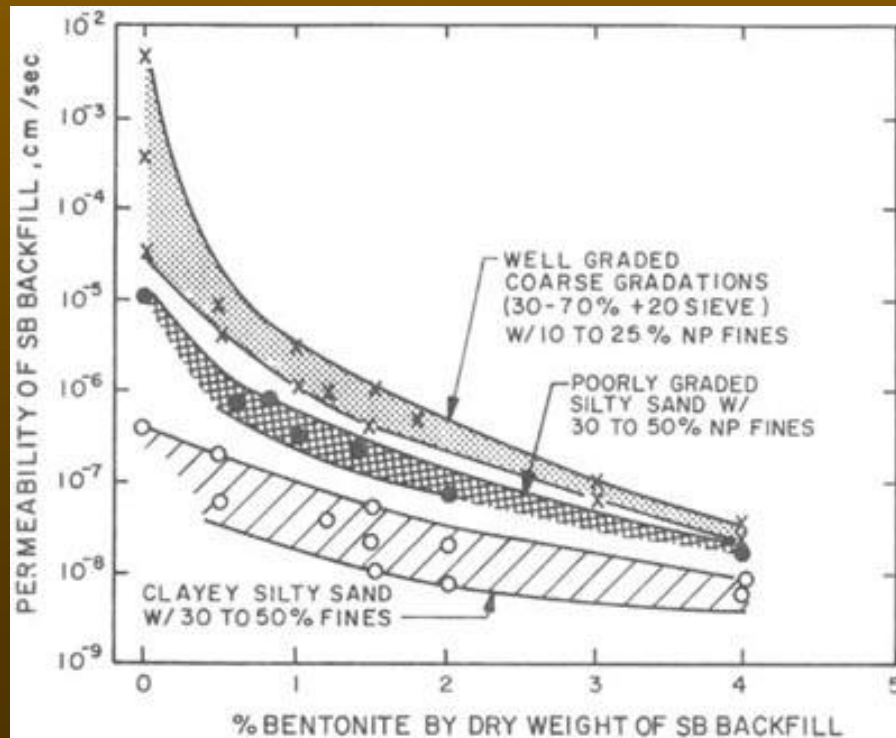
- Mounding and Shadowing impact on groundwater table
- Trench collapses during construction
- Long term settlement and movement



Quality Control



Marsh Funnel



Examples of Slurry Wall Construction



Other Slurry Trenching Methods



Slurry Wall Construction using Bentonite Injection and In-situ mixing



Water Management Infrastructure



Water Management Infrastructure



QUESTIONS?

