

**DRAFT
MEETING MINUTES
CAMP STANLEY STORAGE ACTIVITY, BOERNE, TEXAS
PARSONS 745953**

Date: Thursday, 23 October 2008
 Time: 11:30 A.M. – 12:30 P.M.
 Place: Camp Stanley Storage Activity (CSSA)
 Subject: Supply Well Design and Disinfection

Attendees:

Attendee	Organization	Phone
Jason Shirley	CSSA	
Katy	CSSA	
Joe Stager	CSSA	
Glaré Sanchez	CSSA	
Alvin Mynar	CSSA	
Martin Martinez	CSSA	
Wayne Elliot	USACE-CESWF	
Chris Beal	Portage	
Julie Burdey	Parsons	
Scott Pearson	Parsons	
Kenneth Kuhr	Parsons	

*Minutes prepared by Scott Pearson, Parsons.

The purpose of this meeting was to discuss design considerations for planned water supply well (CS-12) in the North Pasture. In August 2008, Parsons submitted a technical memorandum on “*Disinfection Alternatives*” and a draft version of the “*Engineering Report*” for submittal to the TCEQ. This meeting was a presentation of that data and an opportunity to provide comments and decisions.

The topics discussed included the historical perspective, operational considerations, alignments for roads, water, and electrical conveyances to the supply well, and housing options. In particular, significant attention was given to the disinfection alternatives available to CSSA. Attachment A includes the PowerPoint presentation given during the

discussion. Below is a list of action items or decisions that were made during the course of the meeting.

SUPPLY WELL DISINFECTION

- A presentation was given that described the processes and cost associated with candidate chlorination systems which included: chlorine gas, sodium hypochlorite (bleach), calcium hypochlorite (granular), and MIOX (mixed oxidant) systems. This evaluation is applicable for future upgrades at wells CS-1 and CS-9/10. Eventually having matching disinfection systems throughout the post is desirable.
- Because of safety concerns and handling/storage requirements associated with chlorine gas disinfection, it will no longer be retained for further evaluation or consideration.
- Both bleach and granular hypochlorite are effective, economical, and safe methods of delivering chlorine disinfection to the raw water stream. In terms of cost and implementation, they are essentially equal.
- MIOX utilizes electrolysis to produce the chlorine disinfectant from common table salt (NaCl). While effective, the system is inherently more complicated and more costly than bleach or granular hypochlorite. The MIOX system also produces a brine waste stream that requires management. The idea of using an evaporation pond or a septic tank that could be pumped off on occasion was discussed.
- Based upon the materials presented, the CSSA management team considered the bleach and granular hypochlorite systems the leading candidates. Upon further review, CSSA selected the granular hypochlorite system as the preferred disinfection method. CSSA management found that its ease of use, safety aspects, and overall implementation best suited the needs of the water distribution system.
- Parsons will update the "Engineering Report" to include granular hypochlorite and the disinfection method.

ENGINEERING AND DESIGN

- Parsons reviewed the engineering design submitted as part of the "Engineering Report". Copies of the report and design drawings were presented to the attendees.
- As of September 2008, the new 4-inch waterline to the CS-12 supply well location has been completed by Parsons.
- As indicated in the July 2008 meeting, a CMU cinder block building is the preferred construction standard. Therefore Parsons included a design for a CMU structure in the Engineering Report. A cursory review of the design appears to meet the needs of CSSA.
- The regulations require that an all-weather road be constructed to the well site. The access road would curve to the northwest around the Zachary complex to the new well. The electrical and water utilities will follow the same general pathway.

- Scott Pearson inquired into the preferred construction of the roadway: asphalt or gravel base? The design included a flexible base road. Martin Martinez indicated that an asphalt road would be preferable, but requested cost estimates for both an asphalt road and a gravel road. Parsons will include a design for asphalt paving in the final draft of the Engineering Report, with the option to install gravel base if preferred.
- For the purposes of interim approval with the TCEQ, the all-weather access requirement will be fulfilled by combined use of the asphalt-paved Zachary road, and a newly-constructed road that is extended from the Zachary Complex to the supply well. However, for general access by CSSA and others, the well will be accessed from Gate 6. Although, limited use of the Zachary Gate at North Outer Road by CSSA personnel during inclement weather will be permissible for access to the supply well.
- Consideration will be given to have CSSA Public Works construct the access road if budgetary constraints become a factor in the award of the task order.

STATUS AND SCHEDULE

- CSSA Engineering will review the draft design package and provide comments to Parsons within 2 weeks (November 7, 2008). In the meantime, Parsons will update the Disinfection section of the report to reflect the granular hypochlorite selection for the disinfection method. Parsons will provide that information by November 3, 2008.
- Upon resolution of all comments, the Final Engineering Report will be submitted to the TCEQ for acceptance. That review may take 120 days or more.
- Parsons reviewed the status of the project. Current funding includes the conversion of the test well into a larger diameter supply well and the pumping equipment. The water distribution conveyance has also been installed. Unfunded items are the following: electrical distribution, housing, chlorination, SCADA control, road access, and final connections.
- When the final Engineering Report is completed, Parsons will work with Wayne Elliott to develop a SOW modification to USACE contract DY02 to complete the supply well system.