

Technical Memorandum Name: Effluent Reuse and Disposal Alternatives, April 2008
Committer: TAC Engineering
Comments Date: June 24, 2008
Responses Date: July 2, 2008

The following comments were submitted in response to the above listed Technical Memorandum (TM). The TM was developed as part of the EIR process for the project, in order to help facilitate and broaden the discussion of project issues important to the community. The responses should be considered preliminary because the EIR process is not complete, and the information necessary to fully respond has not yet been developed. The project team is grateful to those citizens who took the time to review the TM and provide comments at this early stage in the process. The project team will endeavor to fully address the comments and concerns through the on-going project development process.

	Comment	Response
1	In the May 12, 2008 Engineering Subcommittee meeting, Mr. Tim Cleath of Cleath & Associates was asked if the Los Osos Groundwater Basin could support the future water supply demands for the community at build-out population. Mr. Cleath indicated that, based on the best studies and other information he has available to him, the Los Osos Groundwater Basin could support the future water supply needs, provided that an agricultural exchange program and recycled water reuse program of sufficient size are implemented.	Comment noted. The development of a basin management plan by the community water purveyors, in cooperation with the County, will drive decisions on the most cost effective methods for reuse of treated wastewater effluent and development of future water supply enhancements.
2	The seawater mitigation (SWM) factors are dependent upon how water is extracted and managed within the Los Osos Groundwater Basin. A SWM Factor of 0.55 depends upon reduced pumping from wells in the lower west zone. Conservation is an example of the use of the SWM Factor 0.55. If conservation reduces the need for pumping, it is assumed that the reduced pumping will occur in the west lower zone wells. This requires participation of the water purveyors at even a level 1 project. Also, it is vitally important to recognize that not all water purveyors have western lower zone wells that can provide a seawater mitigation factor of 0.55. Therefore, cooperation between all three water purveyors is very important in coordinating the reduction of pumping from the lower west zone. Physical interconnections between the water purveyor distribution systems and shared use of upper zone water will be necessary to achieve a SWM Factor of 0.55 for conservation and reuse measures.	Comment noted. This is an important assumption and does require the cooperation of the community water purveyors. The water purveyors have already begun preparations to shift production away from the lower aquifer on the west side of Los Osos and to develop interconnections that improve groundwater management.
3	The Fine Screening Report (Section 2.5.1.1) estimated the Total Dissolved Solids (TDS) concentration of the wastewater treatment plant effluent to be 620 mg/l, which is based on 200 mg/l salt pick-up and the average drinking water TDS of 420 mg/l. This value was used in the subject TM to illustrate the viability of an agricultural exchange program in the Los Osos Creek Valley area. It is important to note that the average drinking water TDS is from current water quality data. Most of the water produced from the basin is from the lower zone, which is	Comment noted. Table 1 of the tech memo shows the effect of TDS on crop yields and that most crops would not be affected by the TDS of the recycled wastewater. The potential for an even lower TDS in the recycled wastewater increases the feasibility of agricultural reuse.

	<p>experiencing increasing TDS concentrations. An important consideration is the fact that pumping from the lower zone is actively being reduced by the water purveyors now. The pumping from the lower zone may potentially be further reduced once the wastewater project is implemented, particularly if an agricultural exchange program is implemented. This shift in pumping patterns will have a marked effect on the TDS concentration in drinking water and subsequently the TDS concentration in the wastewater treatment plant effluent.</p> <p>In Cleath and Associate's Lower Aquifer Source Investigation (October 2005), it was noted that the Los Osos Creek Valley groundwater had an average TDS concentration of 524 mg/l and the lower aquifer zone had an average TDS concentration of 364 and the upper aquifer zone had a TDS in the 180 to 280 mg/l range. These average TDS concentrations suggest that as the pumping from the lower zone is reduced and pumping is shifted to the upper zone, the TDS in drinking water will have a marked reduction. This may result in a wastewater treatment plant effluent with a TDS concentration lower than the TDS concentrations observed in the groundwater underlying the agricultural land in the Los Osos Creek Valley area.</p> <p>The implication here is that the higher the participation in the proposed agricultural exchange program, the lower the salt content will be in the recycled water that is provided to agricultural program. There is the potential for the recycled water to have a lower salt content than the irrigation water currently being utilized in the Los Osos Creek valley area.</p>	
4	<p>The issue of the San Luis Coastal Unified School District installing irrigation wells at their school sites was discussed in the May 12 Public TAC Meeting. It is important to note that if the School District installs new irrigation wells, they will essentially eliminate the potential for future implementation of a recycled water irrigation (purple pipe) program. As indicated by Cleath, to rely on the Los Osos Groundwater Basin for future water supply needs, an agricultural exchange and purple pipe program of sufficient size is required.</p> <p>The wells are being considered by the School District because of the increasing rate block structure recently implemented by the LOCSD. The water bills have escalated significantly since the increasing rate block structure was implemented and, as a result, installing new irrigation well is a more economically attractive alternative to paying the high user fees. The School District can greatly assist the community with its water and wastewater issues through remaining available for a potential future purple pipe program. Likewise, the LO CSD can greatly assist the community through reconsidering the increasing rate block structure as it is</p>	<p>Comment noted. Decisions by the school district and LOCSD regarding water bills and rate structures are outside of the control of the wastewater project.</p> <p>Currently, the community water purveyors, in cooperation with the County, are developing of a basin management plan which will identify the most cost effective methods for reuse of treated wastewater effluent. If recycled water is ultimately made available for urban reuse in the community a number of incentives and/or mandates could be created to encourage its use.</p>

	<p>applied to the School District.</p> <p>An additional consideration is to modify the County's RSL Level III response to also allow developer credits for installing purple pipe systems as opposed to only allowing credit for existing home retrofits. This measure will integrate the RSL III response with the wastewater project and water purveyor objectives.</p>	
5	<p>Due to the small size of the Los Osos Groundwater Basin and the relatively large volume of wastewater treatment plant effluent to be produced, it is important to maintain the proposed diversified portfolio of disposal options. Eliminating one or more disposal options will significantly reduce the ability to properly manage the wastewater treatment plant effluent while maintaining operational flexibility and ensuring the hydraulic balance of the groundwater basin.</p>	<p>Comment noted. It is recognized in the tech memo that a combination of several reuse and disposal options will be necessary to provide capacity for the full flow of treated wastewater. Maintaining options for future wastewater reuse is also an important consideration.</p>
6	<p>The proposed Broderson Leach Field is a valuable asset that needs to be properly utilized and carefully monitored, as this is the only proposed disposal option that directly recharges the upper basin.</p>	<p>Comment noted. Several other locations could provide recharge to the upper aquifer, but Broderson is the only location that also effectively mitigates sea water intrusion in the lower aquifer.</p>
7	<p>The Engineering Subcommittee recommends that the Broderson Leach Field design be peer reviewed by appropriately licensed professionals to ensure that the most current and conservative engineering methodology is utilized in determining the Leach Field's volumetric capacity, operational protocol and design.</p>	<p>The project tech memos and Rough and Fine Screening Reports will be the subject of an upcoming peer review. Additionally, the Broderson site has been the subject of extensive scientific study and prototype testing by experts in the fields of geology, hydrogeology, engineering, and environmental science from many different agencies and consulting firms over the last 20 years which have consistently supported the conclusion that the site has the capacity for high rate infiltration.</p>
8	<p>The Engineering Subcommittee recommends that all of the wastewater treatment effluent disposal options be included and considered into an integrated groundwater basin management plan. Each option should be evaluated for its potential or actual impact on groundwater quality, geotechnical considerations and cost (both initial construction and ongoing operations and maintenance costs). This evaluation should be completed on a periodic basis to ensure that the disposal system remains optimized.</p>	<p>This tech memo considers the reuse and disposal of treated effluent from the perspective of options under the control of the project. The County is also working in cooperation with the community water purveyors to develop a basin management plan which will identify the most cost effective methods for reuse of treated wastewater effluent. The treated effluent from the wastewater project will be made available to the water purveyors for options which require implementation or new infrastructure to be developed by the water purveyors.</p>