

**Village of Corrales**  
**Fourth Public Meeting – December 20, 2007**  
**Disposal Systems and Hydrogeology**  
**Questions and Answers**

- Q. If we pond our effluent water and birds die in our pond will we be held responsible for their deaths?
- A. The wastewater effluent storage ponds would not harm wildlife.
- Q. I understood that you did not need a permit to use gray water on your property?
- A. There are regulations, both NMED and Construction Industries Division.
- Q. What kind of discharge to groundwater?
- A. There are a lot of variables when discharging to groundwater. You will have water mounding occur at the point of discharge. I have not seen standing water in the Village but it could occur if discharging to groundwater at too high of rate. Advanced treatment units can allow higher permeability through the leachfields as there is less food for the biomat that occurs under the leachfield and the reduction in biomat allows flow through it to happen quicker. How well the septic system is maintained, overloading, poor maintenance are factors affecting septic tank discharge. Where ground is rocky there is less cleansing action of the discharged effluent before it hits groundwater.
- Q. Is Class 1A and 1B dischargeable to the river?
- A. Yes. Class 1A reclaimed wastewater processes will typically produce less than 10 ppm total nitrogen and does not typically require monitoring when stored in ponds.
- Q. Where is the cutoff of surface water?
- A. Discharge to surface water has different requirements depending on the surface water body. Here it would be the Middle Rio Grande. There are specific requirements for discharge to the Middle Rio Grande above the Alameda Bridge that include velocity, dissolved oxygen, pH, E. coli, and temperature.
- Q. What classes are dischargeable to the river?
- A. All Classes of reclaimed wastewater are dischargeable to the Rio Grande. Very large daily discharges, higher than what the Village would produce, have limits on total dissolved solids but all Classes would meet that.
- Q. What is the timeframe on the Septic Field Dispersion Model?
- A. It was set for two years to twenty years.
- Q. A lot of the wells are 200 ft and not more than 250 ft?
- A. Well depths vary in the Village, from 40 or 50 feet to 250 to 300 feet.



- Q. What is the maximum depth contaminates will reach?
- A. That is an unknown and variable depending on amount of discharge, contaminant concentrations, depth to groundwater, etc.
- Q. What about the down flow rate?
- A. That is a variable that is dependant on amount of discharge, soils, aquifer conditions, etc.
- Q. What affect does irrigation have on the drain pull?
- A. Water in the acequias can sometimes increase the level of the water table but as the Rio Grande in the area of the Village is considered a losing stream, the acequias are not expected to have any major effect.
- Q. What are the acceptable levels for drinking water?
- A. The maximum level of nitrate in groundwater allowed is 10 ppm. NMED considers 2 ppm total nitrogen in Village groundwater as background, or naturally occurring. They have suggested this concentration as a target as anything above this level signifies impacts from septic tanks.
- Q. Based on the mathematical model, the person that lives where the ground is mostly clay, does the water move? The dispersion is not a function passing through the materials?
- A. The dispersion model is setup based on general conditions on the east side of Corrales Road. Groundwater does move through clay, but at a slower rate than sand or gravel. Dispersion is dependant on groundwater flow but also acts independently of groundwater flow.
- Q. You are saying that in the sand fields the water goes faster and deeper but does not spread out very wide where as in the clay fields it would spread out in a wide radius?
- A. Yes, that's true.
- Q. Is the plume greater in sand or clay?
- A. The plume will spread out further horizontally in areas of clay.
- Q. Does your generic model take into account the level of the surface water?
- A. Yes, the model is representative of the eastern portion of Corrales.
- Q. If we were in the western area of Corrales how would the model change on the sand hills where there is 30 or 40 ft. to groundwater?
- A. The plumes would be less spread out.
- Q. If in your model you have all the leachfields, would you have one giant plume?
- A. Possibly. It depends on the density of the leachfields.
- Q. What would be the influence of the lateral drain?
- A. The drain could cause plumes to slow down or move when they contact another body of water.



- Q. What are the depths of the well tested, the ones that are contaminated?
- A. 150 ft. is the average well depth. There have been contaminants seen in deeper wells.
- Q. Is there any useful information to be gathered in the interior of Corrales? What information could you gather from testing the groundwater?
- A. Testing of individual residential drinking water wells is not required by NMED. Only public water systems require testing. It is hard to get consistent data with the number of variables involved with testing impacts to groundwater. When consistent data does occur then the problem is much greater and more costly to fix.
- Q. With the evidence of impact, what are we looking for? How much impact are we looking at?
- A. Seeing contaminants above target levels, such as anything above 2 ppm nitrate, is indicative of impacts to groundwater. A concentration of 5 ppm nitrate is halfway to the regulated standard of 10 ppm nitrate. Once you exceed regulated standards then the NMED gets involved to protect public safety. You don't want to wait and involve the NMED. What you are seeing as far as concentrations are warning signs.
- Q. On your map the dots in the western area, did NMED get involved and did they test the nearby wells?
- A. NMED did testing 2003 – 2005 and put it into a report in 2005. They test what samples are brought to them voluntarily. That's the hard part. They don't test the same wells all the time. Septic tank discharges can vary day to day and when sampled you have to ask what happened on that day? This is why it is hard to get consistent data and hard for individuals to understand.
- Q. When there is a red dot by a blue dot what does that tell you?
- A. That there is a level of contamination in close proximity occurring likely by density of septic tanks.
- Q. We have no definite proof of contaminants.
- A. Seldom have contaminants been measured above regulated standards. Communities install better methods of wastewater treatment or municipal systems before there is definite proof there is a problem. Waiting until then is not recommended nor the way others do it.
- Q. When can we expect to have defined sectors of Corrales?
- A. Part of our work scope is to define sectors of the Village and propose methods and times of implementation. It will be in our draft report that we submit to Mayor and Council on Dec. 28, 2007.
- Q. How will all the public involvement be used in your report?
- A. We will not be providing a public comment section in our report. That was done for the previous PER and recent comments have been similar. We have reviewed the public comments in the PER and for the past 5 years in the local newspaper. All public comments are being considered during preparation of our report and recommendations.

- Q. Are you taking all the public comments into your recommendations?
- A. Yes, they are being considered as part of our recommendations.
- Q. Regarding water as a commodity, is the value of the commodity included in your report?
- A. It is considered for disposal alternatives. There are significant costs in producing and distributing reclaimed wastewater. There also has to be guaranteed use everyday or you will have to store it. A decision has to be made as to whether the value of it as a commodity is worth the expenditure. I can tell you right now that disposal to the river is the cheapest method.
- Q. Can you tell me how my water rights works with Village water rights. The state has to buy our water if we send it to the river?
- A. We are not water-right attorneys. Our understanding is that residential use of water is not a water right, it is an allocation to use water. It is not an adjudicated right that can be bought and sold. The Village, as a municipality, would have adjudicated water rights. Right now there is a lot of discussion about whether individual allocations can be transferred to an association of municipality. The state is not likely going to buy reclaimed wastewater the Village might send to the Rio Grande in order to meet the requirements of compacts with Texas.-.
- Q. If we go with the big pipe to Albuquerque, does Albuquerque get water credits or do we? If we keep the water do we get credit?
- A. Albuquerque will get the credit if the water goes into their sewer system. If you decide to treat it here and put it back into the river, The Village will get the credit, but only up to the level of water right ownership of the Village.
- Q. Do you know the discharge permit cost for putting the water back?
- A. The cost to prepare a Discharge Permit for up to 50,000 gallons per day is about \$6,000. There is a permit fee. The cost to prepare a Discharge Permit for over 100,000 gallons per day is about \$50,000. There is additional cost for monitoring affect on aquatic life when discharging to the river.
- Q. Is there a way to discharge through the Bosque before it goes into the river?
- A. It could be done but there would be the possibility of erosion and being able to accessed by the public. The normal method is to discharge directly into the river.
- Q. The study you said was done in 1994. Has the new data been plotted on that map? I haven't seen any data that tells me we are in trouble.
- A. The map is from data collected in 1994 by NMED. NMED also has data plotted on a map from 2003 to 2005 that will be part of our hydrogeology report. The data from the 2006 Village volunteer monitoring program has not been plotted on a map. The laboratory provided a map showing the general locations sampled. The analytical report has the Village broken into different areas with an understanding that they went west to east.
- Q. Are you integrating the water data into the map?
- A. We have not placed the 2006 data on the map. We do not have the addresses where samples were collected.



- Q. Is the data in the sections showing the same?
- A. It has been similar in that it appears shown some impacts above target levels and to be widespread across the database, and/or Village.
- Q. You are telling me you have not contacted the person involved in the well monitoring and the report that was produced?
- A. No, we haven't. The 2006 Village well monitoring report was provided to us by the Village. We do not know if the addresses where sampling occurred are available. – *The Mayor then indicated that the information could be considered public and SMA can contact the laboratory to seek this information.*
- Q. Do you think that the increase in density in 1994 to 2006 might be close to the increase from 2007 to 2020?
- A. Yes. Population data and projections show similar growth in these periods of time. The 2006 well sampling data was taken from across the entire Village. We expect the data showing groundwater impacts above target levels to be similar to that from 1994 in that it is widespread across the Village.
- Q. Can't the people in the well monitoring provide that well monitoring data with specific addresses?
- A. The Mayor said that the information should be public information and can be provided.
- Q. With that analysis can that tell you if that data was misleading? Are you recommending more complete well monitoring?
- A. That is expensive and I would not recommend it. I am telling you I already see a problem, NMED sees there is already a problem.
- Q. You are making your conclusion on the best data that you have?
- A. That's right.
- Q. Another part of this is the wastewater need of the core area of Corrales.
- A. Yes, NMED's 2005 report said that there was contamination from septic tanks. There is also new information on the lower Rio Grande nutrient loading.
- Q. How about accidents from municipal wastewater treatment plants?
- A. If they are not operated correctly accidents can occur.
- Q. We could have trouble with a wastewater treatment plant of our own.
- A. New technology in the last 20-30 years has significantly lessened the possibility of accidental releases.
- Q. Did you do any visual inspections?
- A. Yes, we tried to.
- Q. In your report would there be a recommendation of mandatory well testing?
- A. A septic tank pumping mandate may be recommended. Mandatory well testing is not currently a recommendation.

- Q. Is there a water class we would have to achieve for fire fighting?
- A. Class 1A or 1B.
- Q. If you have a system that requires transportation would you have to introduce more water to reach the right pressure?
- A. Pipes are sized to the appropriate flow so no addition of water should be necessary. If sewer lines are oversized there is some preventative maintenance that can be done to keep the pipes clear.
- Q. What about other systems that are connected to a lot of homes? Do you need additional water?
- A. Additional water is not necessary. There are a number of approaches to collect and transport wastewater. The systems can involve gravity flow to lift stations, pumping under pressure from each connection, or other methods. The appropriate design depends on local conditions.
- Q. We couldn't reuse the water if we sent it to Albuquerque. We would have to spend more money.
- A. If wastewater is sent to Albuquerque for treatment, the water is no longer available for reuse in the Village.