BEFORE THE ARIZONA CORPORATION

IN THE MATTER OF THE APPLICATION OF FAR WEST WATER & SEWER COMPANY, AN ARIZONA CORPORATION, FOR APPROVAL OF INTERIM RATES AND CHARGES.

DOCKET NO. WS-03478A-08-0608

At: Tucson, Arizona

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BE IT REMEMBERED that the above-entitled and numbered matter reconvened before the Arizona Corporation Commission, in Hearing Room 222 of said Commission, 400 West Congress, Tucson, Arizona, commencing at 9:26 a.m. on the 13th of May, 2009.

BEFORE: JANE L. RODDA, Administrative Law Judge

APPEARANCES:

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ALJ RODDA: Let's go back on the record for the continuation of the hearing in Docket No. WS-03478A-08-0608, which is the application of Far West Water & Sewer for approval of interim rates. And we finished with Mr. Capestro yesterday, and who is celebrating in the audience.

And I believe, Mr. Lee, that you are our next witness.

GARY MICHAEL LEE,

a witness herein, having been first duly sworn by the Certified Reporter to speak the truth and nothing but the truth, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. SHAPIRO:

Q. Good morning. Mr. Lee, would you please state your full name for the record.

A. Gary Michael Lee.

Q. And --

ALJ RODDA: Before you do, is the green button on?

THE WITNESS: Yes, ma'am.

ALJ RODDA: Microphone on? Okay.

BY MR. SHAPIRO:

Q. And what is your business address?

A. 801 Westchester Avenue, Harrisonville, Missouri 64701.

Q. And by whom are you employed, Mr. Lee?

A. I am employed by Universal Asset Management, who is a partner, is one of the members of the Coriolis Group.

Q. And what is your position with that entity, or positions?

A. I am president of Universal Asset Management and I serve as engineering director of Coriolis.

Q. Okay. Just speaking generally, Mr. Lee, what are your areas of expertise?

A. My background is in civil and environmental engineering, predominantly infrastructure.

Q. And where did you obtain your education in that area and to what level?

A. I have a bachelor's and master's degree in civil environmental engineering from the University of Missouri Rolla, and professional degree from University of Missouri Rolla, civil engineer.

Q. And how many years have you been working as an engineer?

A. 38 years.

Q. And is your expertise predominantly in utilities

or other matters?

A. Predominantly utilities.

Q. And what certifications do you hold?

A. Well, I am a registered professional engineer in a number of states, including the State of Arizona.

Q. And do you have other similar projects with other utility entities either in the United States or elsewhere of a similar nature? Can you give us a couple examples if you do.

A. Well, currently, we are involved in two wastewater projects right now in the Missouri area. These are independent engineering reviews, or one is independent engineering review of a 3 million gallon per day plant upgrade, the other project is an upgrade of a two and a half million gallon per day wastewater treatment plant.

And then the third is a, the first phase will be a 5 million gallon per day brackish water desalination water plant north of Albuquerque, New Mexico, where we will ultimately get 30 million gallons a day.

Q. A desalination plant?

A. Yes.

Q. That's for taking salt out of water so it can be drunk, drank?

A. Drank, that's correct.

Q. A little early for a beer. When did you become associated with Far West Water & Sewer Company?

A. It was, I believe, 2000 -- late 2005 or 2006.

Q. Okay. And what are your responsibilities with respect to Far West Water & Sewer?

A. Most of my role has been and continues to be providing engineering services, which involves both design, involves assistance with permitting. And we have also assisted in some other issues that they have with regards to management systems and asset management systems.

Q. And does your company or companies have a contract with Far West for this work?

A. Yes, Coriolis does.

Q. And you, so you have been involved since before Far West Water & Sewer Company entered into a consent, the first consent order with ADEQ?

A. No, the first consent order was in place before we began.

Q. Okay. And then you were involved before there was a second consent order?

A. That's correct.

Q. And the first consent order only dealt with Del Oro?

A. Yes, sir.

Q. When you came on board were you brought on board only to deal with Del Oro because of the consent order?

A. No. Our original contract, well, actually still the current contract, was to do a comprehensive review of the entire utility, water and sewer and the utility, of which of course addressing the issues of the wastewater plants was one of the issues to deal with.

Q. And why did Far West to your knowledge bring you on board to do that before they had a consent order with ADEQ regarding all of its other non Del Oro wastewater treatment facilities?

A. Well, there were at that time, they had an existing consent order on Del Oro and the clock was ticking on their schedule for compliance with that order. And that was our highest priority, was to attempt to get them into compliance with that first consent order. And that was basically to deliver an operating treatment plant there. I think we got about 60 days left to do that on Del Oro at the time.

But when -- and for my first meeting with the management of the utility, there was a long litany of issues that were facing them beyond just the consent order that they were attempting to deal with, some of which obviously were sewer but several of which were also in the water division.

Q. So Far West was undertaking an effort to evaluate and make improvements to its system even before the consent orders with ADEQ were both executed and in place?

A. Well, yes.

Q. Okay. And part of that was an evaluation of its water utility system?

A. That's correct.

Q. Okay. And they have some issues that need to be addressed with its water utility system as well?

A. Yes, sir.

Q. So I assume then based on your work with them the past few years you are intimately familiar with their wastewater treatment system?

A. Yes.

Q. And if I can direct your attention to the board next to you, the map that Mr. Capestro introduced yesterday, Exhibit A-7. Your company prepared that?

A. Yes, sir.

Q. Okay. And your company also prepared a second version as well, didn't it?

A. Yes, we did.

MR. SHAPIRO: If I could just have a second, Your Honor, let me mark these for everybody.

BY MR. SHAPIRO:

Q. Let me hand you what has been marked as Exhibit A-20 and give everybody their own colored large copy today.

MS. WOOD: What is the number on this one?

MR. SHAPIRO: A-20.

BY MR. SHAPIRO:

Q. Mr. Lee, what were you intending to depict on this one in addition or different to A-7?

A. We prepared this exhibit in order to demonstrate what our understanding is of the capacity of the existing plants as they stand today versus the capacity after the improvements are completed.

Q. Okay. And that's the reason that for instance Villa Royale shows zero gpd after the project is completed, because it will be shut down?

A. Yes, sir.

MR. SHAPIRO: Your Honor, just so I don't forget I will go ahead and move A-20.

ALJ RODDA: Okay. Any objection to A-20?

MS. WOOD: No.

MR. TORREY: No, Your Honor.

ALJ RODDA: A-20 is admitted.

(Exhibit No. A-20 was admitted into evidence.)

BY MR. SHAPIRO:

Q. Let's focus on the what we have been calling

loosely Far West's sewer improvement project. Your company has been paid we found out yesterday roughly $4 million, a little over, for this project to date. Why did Far West need to pay that kind of money to somebody? What are they doing? Can you kind of describe what you are doing out there.

A. Well, our original contract assumed a construction price of about twenty, a little over 22 million dollars as I recall. Our general fee is 10 percent for engineering and permitting assistance. And we also provide through another division construction management services, which is another 10 percent. So that's our typical fees and pretty much in line with what the numbers that were described yesterday.

The project has changed different. The original scope and original construction budget included the construction of a water treatment plant. The water treatment plant construction has been deferred. But the scope and cost of the wastewater improvements increased.

Q. From your perspective as the engineer and the sort of supervisor, for lack of a better term, of this whole project, what is wrong with the wastewater treatment system that the company needed to make this kind of investment in it?

A. Well, it is -- I think we would probably need to take a look at a couple items. And again, not having been involved in the original development of those projects, I am almost a little hesitant to walk in the shoes of the previous designer. But just from the standpoint of how those units were performing, in general, the units were designed for what we refer to as sequential batch reactors, which do require a fair amount of instrumentation to work properly. And the instrumentation that we saw anyway was pretty rudimentary and would be difficult to make them work under the best of circumstances.

In addition, it appeared to us that the hydraulic loading on these plants were anticipated to be lower than what they were actually receiving and as a result detention times and tankage was much lower.

The aeration systems in these tanks were very inefficient, basically nothing more than bubbler lines, which means that we have a great deal of difficulty transferring oxygen into the aeration tanks.

In addition to that, the biosolids handling facilities, these types of plants all rely on the removal of biosolids, we refer to them as sludge, periodically. And those removal systems were very difficult for the operators to work with. And as a

result, the biosolids were not being removed in our opinion significantly from the process.

Now, the end result of all of those issues were that we were not having enough oxygen, not enough detention time in order to nitrify the wastewater, meaning convert the ammonia to nitrogen, and certainly did not have enough capacity in the plant to denitrify. Altogether what that means is you are unable to meet the total nitrogen requirements that the effluent permits would require from these plants. Because biosolids were difficult to remove from the system, you had buildup in solids which meant that you had solids carrying over to clarifiers, which means your turbidity limits were being exceeded in most cases and, in many instances, your fecal coliforms were also being exceeded. So that's --

Q. So Mr. Capestro said, I believe it was yesterday, that the problem that they faced was not really a lack of physical capacity, it was more lack of adequate capacity to properly treat waste. Would you agree with that?

A. Well, yes. I think that, you know, you have to look at capacity in two ways, one is hydraulic and the other is organic. And hydraulically these plants were challenged. Many of them were operating, in many instances operating at times over even what the rated

capacity was. But organically all of these plants were challenged in terms of their ability to actually treat the waste.

Q. What about the company's ability to dispose of effluent? We have heard a lot of talk about Palm Shadows and problems with perking. What can you tell us about that problem with their system?

A. Well, we have two facilities that were relying on percolation ponds, Seasons and Palm Shadows. We could find -- when we first were engaged we had asked for, in an attempt to find in the record, any type of subsurface geotechnical surveys that may have been completed. There had been an apparent percolation test run. But typically, at least our firm would find that typically inadequate for this size of plant. We would normally request at least a deep boring at each of these sites to have a good clear understanding of the underlying soil conditions and geology.

So I believe it is fairly safe to say that without those geotechnical investigations in place, the decisions that were made off of the percolation tests alone led to a conclusion that these ponds would in fact percolate to the degree that they would need to for the rated capacity of the plants when in fact the underlying geology basically subverted that conclusion.

Q. That was the conclusion that Mr. Capestro testified was based on the analysis of an engineer that certified his findings and provided them to the relevant agencies?

A. I can -- I mean I listened to the testimony and I understand that to be the testimony. I have not, I have not been engaged to do any type of investigation of what led to those conclusions.

Q. But I assume your company does the same thing when you evaluate something, prepare plans, you put your engineer's type stamp on certifying your work?

A. Yes, that's correct. And in this case that would be my seal.

Q. And you expect that when you do that your clients are relying on your findings and decisions and your certification, correct?

A. Yes. There is, as with most professional positions, there is a certain standard of care that you are expected to abide with. And the clients, it is not so much expecting the result as it is you expect that the work that was done by that professional was, you know, tried to anticipate as many of the issues that would come about and that the techniques, testing, design, thought that goes into it were normal and prudent for that design profession.

Q. And I apologize, I neglected to ask. You testified before this Commission before on behalf of Far West, haven't you?

A. Yes, sir.

Q. You testified in their last rate case decided early in 2007, correct?

A. That's correct.

Q. And you also submitted prefiled testimony in the company's current pending rate case again regarding your work with Far West on the sewer project you discussed today?

A. That's correct.

Q. Okay. Okay. Let's talk about what your company came up with as a plan for Far West to comply with the consent orders and address its problems just as a general proposition. What was your approach and recommendation to the company?

A. Well, I had a number of challenges that we felt this utility faced immediately. We had, I guess, one eye on long-term planning and we normally look at a 20-year horizon for a utility. At the same time, we had immediate issues they were facing as a utility with regards to a number of notices of violation, at least one outstanding consent order and another consent order pending to be drafted.

So with that as a backdrop, we tried to set up a plan that we thought would be as flexible as possible and that could be implemented quickly and could be modified in midstream if needed to be. To that end, in order to meet the first hurdle, which was Del Oro, again, that was a part of our scope, which was already under a mandated consent order with a completion date, which I believe at that time only had about 60 or 75 days remaining, it might have been 90 days but it was a very short period of time, and we had to -- the consent order basically stated that there would be an operating plant there, 300,000 gallon per day plant, as I recall, operating within that time frame.

What we proposed for that particular instance was to employ a technology we call membrane bioreactor technology. This is a technology that combines activated sludge which is very similar to the process that they are were currently using but with additional aeration capacity and much more efficient aeration transfer and in combination with fine synthetic membranes that will filter down to the virus size particles. It is all done in combination.

The advantage of these units is they are portable, mobile in many instances. And we were fortunate enough to find a mobile plant in Canada that

was just coming off line. We made immediate arrangements with the owner of that membrane unit to have it shipped, to have it recommissioned, which meant it had to be cleaned and serviced and had it delivered to the site. And while that delivery was going on, our construction group working with Far West reconfigured the tankage that was on that site already so that it could compliment this mobile unit as it arrived.

The conclusion of that was the mobile unit did arrive, it was up and running, and we were able to get that and be able to meet that deadline date.

Simultaneous to all this activity, there was a system-wide odor problem. This was not just germane to the treatment plants. It was pervasive throughout the collection system. This is not an uncommon problem in southwest environments where you have gravity sewers, relatively shallow grade slopes, oftentimes deposition of solids in the sewer system, insufficient flows in some segments to clean those sediments out during peak flows. But it was, it was obvious from the outset that that needed to be corrected quickly. We as engineers wanted that particular issue off the plate as early as possible so that we could stay focused on the sewage plants themselves.

So in that scope, we recommended to the utility

that they engage a company. I believe they engaged Seimens Corporation to institute the injection of bioxide chemicals throughout the system to basically fix the odor producing chemicals in the sewage out in the collection system so it could not be replaced through manholes or lift stations or at any other locations where it would come in contact with the ambient air conditions.

In addition to that, we did site in a few locations where there could be a potential release into the ambient atmosphere odor. We did recommend some carbon filters that were added.

In the past, the utility had attempted to put carbon filters in some of their lift stations, some of their sewage treatment plants but unfortunately that process was, it is more or less trying to fix something after it has already occurred, after the odors have already been produced. We took a little more proactive role and went out into the collection system with this chemical addition and basically fixed that, those odors, into the liquid so they would not, they would not be released into the air in a gaseous form.

That was done relatively quickly, within about a week or two. And it was as you would expect. The improvement was rather dramatic and quick. Within, I

would say within just a few days, two or three days, the odor issues had subsided considerably. Now, that's not to say they were all eliminated but at least it was no longer system-wide. What any other odors were produced were easy to identify and could be attacked on a point source basis.

Q. So the odor control implementation facilities and procedures that you recommended and the company adopted, those are already in place and have been in place for some time?

A. Yes. They were in place within a week or two after we started.

Q. Okay.

A. So with those two immediate issues I guess off our plate, we then set out to complete an engineering study of both the water and sewer system to provide the utility with some guidance with long-term, short-term goals.

During this period of time, we visited with some of the engineers that had been involved in these projects in the past, with some of the equipment companies that have been involved so that we could get a good firm understanding in our opinion what has been designed, what was the intent of those designs. And then we spent a great deal of time with the operators

trying to understand how they performed. The last thing we wanted to do was to recommend capital improvements where simple operational changes or modifications could be employed.

We did recommend some modifications to the existing operation to try, but we identified those all as just short-term, interim fixes, not long-term solutions.

It did become obvious to us that most of these plants, with the exception of Marwood, would require major modifications. We recommended to the utility that we thought just generally from a professional standpoint that there were far more wastewater treatment plants than a community of this size should have. I think there were seven at the time.

Q. And those seven are shown on Exhibit A-20 you prepared with the colored blocks?

A. Yes. Seven treatment plants, many of them located in basically neighborhoods, we just did not feel was a good long-term plan.

It appeared to us that this, that this issue just sort of evolved because of the rapid development of the area and that individual subdividers or developers that built these plants had dedicated at one point or another over to the utility, which is not an uncommon

situation. So consolidating these plants was a recommendation we made early. And we believe that in long-term planning, that there will be further consolidation.

It would be not unreasonable to expect that this service area at some point would be served by potentially only one sewage treatment plant or maybe on the outset two, one on the north of the interstate, one to the south of the interstate, because we sort of recognized that as a long-term plan and because we felt that we were going to, at least for the next several years, be faced with at least four locations of treatment plants, three of which were going to be majorly upgraded under our recommendations, that we wanted these plants to be, the plants that we did build, to be both modular and to some extent portable, not mobile but portable.

Q. Why you don't stop for a moment and describe what you mean by modular.

A. By modular I mean we adopted a certain train. And that is we divided it into sort of the biological and mechanical segments of the process into what we refer to as modular trains. And we adopted a biological modular train. It is around 500,000 gallons per day capacity, 500- to 600,000. This means, regardless

whether we are at Del Oro or we are at Section 14, the tankage would all be the same diameter. They would all look the same. They would all have the same equipment.

The purpose of this we could -- the spare parts and that type of thing could all be interchangeable. You don't end up with a very specific plant at each of these three locations. They would all be basically the same.

Q. Which is not the case now? All the plants --

A. No. All the plants are different. They all have different blowers, different arrangements, different control systems and very complicated for the operators to try to manage that.

Under this scenario, all the parts and pieces will be interchangeable from one plant to the other.

Q. Thank you.

A. So that's part of an operational issue, part of it also a staging issue. This allows us to, as plant increases, we increase it by the same modularity so that every, on the biological side we would have every biological module be increased by 500- or 600,000. So instead of doing it in haphazard 50,000 or 150,000, 200,000, doing each addition different so you end up with kind of a hodgepodge at the end of tankage out on the site, we have got certain threshold points. When

you reach 600,000 biological units, then it is time to put in the next biological train and so on, so forth.

Q. Are there economies of scales or cost savings achieved by proceeding with this modular approach?

A. Yes.

Q. Why is that?

A. Well, it is, again, the -- there are really kind of two, one of which is construction related. It is, if you were to take a look at average cost per dollar, the smaller the train is the more cost it is per unit. Small units using this type of technology that may be in the 50,000 gallon per day range could be as high as $30 a gallon. Whereas if you did it in 500,000 or 600-, could be down 15 to $20 a gallon. You get even larger and you start deploying, say, 1 million gallons per day, you start getting into $6 a gallon. So there are some, there are some economies on the construction side.

Also, on the operating side, you end up with a lot less pumps, a lot less blowers, a lot less controls and instrumentation because you now are using the same instruments to manage just a few tanks rather than, like I said before, kind of a hodgepodge or mixture of multiple tanks.

That's basically what they have in some of these sites now. They started with a 20,000 gallon unit,

added a 70, then added a 150. They have got almost like three different plants sitting on some of these sites, very confusing for an operator to try and get a balance of that kind of setup.

What we wanted to do was to achieve, once an operator was trained and knew how to run a 495,000 gallon per day plant, that they could run a 2 million gallon per day plant because it is just four times of the same procedure.

Q. Thank you. Please continue with your discussion of your overall project.

A. The other aspect on the mechanical side, which I will refer to the mechanical side or filtration side of this, we also did modularity as well. There the modules are a little smaller and the cassette tankage is a little smaller. So I believe those individual cassettes are somewhere around 200,000 gallons per day. So but the same concept was in place.

Here we chose to put enough tankage in each of these sites to match the modularity of the biological tankage but not to outfit those tankages with the expensive membranes. This allows a plant to grow and without a great deal of capital or these high spikes of capital expenditures. Right now we are engaged in a high spike of capital expenditure. But what we wanted

to do is to start to set the framework for in the future to where that wouldn't be the case.

So a plant at Del Oro, for instance, which is currently sized to go to 495,000 on the biological side, is only being outfitted with membranes to serve 300,000 gallons per day capacity now. Then as that capacity needs to be increased towards the 495, they can just add additional cassettes, they don't have to add clear to 495. They will be able to go to smaller increments to get there. So that gives a lot more ability for the utility to do some planning, to engage in the permitting requirements without asking for expedited reviews, that type of thing.

Q. And it smoothes out the investment after this initial investment?

A. But the intent is to get the investment associated with growth to more match the growth. And it allows us to not have to necessarily build all of that growth in up front and put that burden on the current customers. It allows it to be more matched with the new customers that are coming on board.

Q. Thank you.

A. In addition, while these plants again are not what I would consider mobile, we did attempt in every case to make those as portable as possible understanding

there could be further consolidation of these plants in the future. As this area grows and as more customers come on line, we wanted these plants to be in a position where they could be moved without -- and try to attempt to retain as much of the investment that was being made in these plants.

So to that end we used all bolted steel tankage so that tankage could be taken apart and moved to another site in the future. All of the membranes are all in skid mounted units. We call them plug and play units. This is more, really more in line with what we think of as industrial design thinking as opposed to municipal design thinking. Municipal is usually heavily concrete oriented, lots of permanent structures that are put in place. We used here more an industrial thought process where there is more steel tankage, more steel construction, more modular skid mounted units with the idea that, you know, somewhere down the road these units likely could end up being moved and they would retain a significant amount of their value as a result of being able to be moved.

So we prepared, from that plan on the wastewater plans, we prepared, well, we assisted in providing technical advice to Mr. Capestro during his negotiations for the second consent order which I believe was in

October 2008 and subsequently filed on their behalf, or in conjunction with, the utility the appropriate notices of intent for system, collection system improvements and the APP applications for the applications for improving the wastewater plants and closure permits, applications for the closure of the plants that we were decommissioning.

Subsequent to that activity, we have been involved -- I guess that sort of describes the technical issues on the wastewater side. We were at the same time also evaluating the water side. The water treatment system has, was at that time and continuing today to not be able to utilize all of its contracted amount of diversion water from the canal.

Q. Why is that, Mr. Lee?

A. Simply because the capacity of their plant. Their plant has a rated capacity, I believe, 6 million gallons per day. And they just, they have more -- they could use more capacity in the system. And they have more availability of raw water from the canal, but that water from the canal all has to go through the treatment plant. And the treatment plant just simply can't, it can't treat as much as they have water capacity.

The concern with that was that if they don't use that water, as I understand contractual relationships,

is that, you know, the diversion could at some point say, well, if you aren't going to use it maybe we need to cut that back. And that in this part of the world is something you want to try to retain as much of that type of water, quality of water as you can.

Q. Why did they, why do they have to treat the water that they purchase from the district?

A. Well, you have two basic treatment rules that U.S. EPA has promulgated. And that is administered by the State of Arizona and ADEQ.

One is the groundwater rules which is well water source. And under the groundwater rule here, it is very minimal treatment. You can pretty well chlorinate that water, disinfect it and move it into the system as long as it is free of fecal coliform.

The second rule is the surface water rule. And from the surface water rule you have a certain requirement to provide best treatment practices. Those best treatment practices have to result in a very low turbidity, along with a number of other chemical constituent tests that are required that are not required of groundwater. And they are not required of groundwater because the suspect compounds that you are trying to remove in surface water just simply don't exist in groundwater. So it is a much more complicated

process to use surface water than it is to use groundwater.

Far West has always used a mixture of both. They use their treatment plant to the extent they can maximize its capacity and they make up the difference with groundwater sources. And there are times in the year in which groundwater or surface water is not available to them. There is a downtime in the canal in which diversion water is not available. During those periods of time, the system relies entirely on their groundwater sources.

So we had, we had recommended an improvement in expansion of their water treatment plant that would have an immediate ability to add an additional 3 million gallons per day of capacity with the ability to go to 6 million gallons per day capacity in the future. So it would be a doubling of their current surface water and would be adequate to maximize the use of their canal diversion water and start to minimize their reliance on groundwater.

Q. And this analysis that you were doing on the water side, this was going on around the time you came on board and --

A. Yes. All of these were simultaneous. All right. You know, because there was a lot of activity

with regards early on with the NOVs and the issues surrounding consent order, a lot of our initial thoughts were certainly dominated on the wastewater side but there was a group within the office that was working on water throughout that entire period.

Q. So your charge at that time was consistent with the company's desire at that time to work on both its water and its wastewater systems?

A. Yes. We were, while we knew that there were significant regulatory issues on the wastewater side, there were still significant nonregulatory issues presented to us on the nonwater side. The operators were generally concerned about their ability to maximize the use of their surface water resource. They were also becoming more and more concerned about the ability of their groundwater sources to meet the supplemental demand that was required of the utility.

Throughout all of that activity, we were handicapped by a genuine lack of infrastructure data, if you will, on the system. There were no reliable system-wide maps of either water or wastewater. I mean just to try to figure out what was going on which plant was very difficult to do. You basically have to get in a car and sort of drive the area with someone that was familiar with how things are being constructed in order

to get a feel for what was going where.

So it became obvious early on that we needed to get a good collection system map of the wastewater and distribution system map of the water. So as a result of that, we also were engaged to complete a mapping system. We did that in a geographical information system database so that it could be updated. We used a low altitude ortho corrected photo imagery to build a map so that that way we would not rely on developer provided plat maps and that type of thing because we found many of those to be inaccurate.

Q. Does that -- I am sorry. Does a mapping include not only the location of their CC&N, which you can see on here, but plotting all of the developments within and showing where all the facilities are?

A. Yes.

Q. Okay.

A. What we did is an inventory of all the facilities. And at that point, we started to uncover some other issues.

We pulled most all the manhole covers off to look in the manholes to determine whether or not we had corrosion issues. And this was sort of a follow-up to the earlier odor work, that we felt that there was, that there was probably significant solids deposition in some

of those lines. And that was confirmed. We mapped all those and provided instructions to the operators to go out and flush those particular segments on a routine basis so that we could prevent odors occurring in there and hopefully reduce the chemical demand we would have on the odor chemicals we were using to sequester that odor in the system.

The other, some other issues that we found, we inventoried all the water wells in the system, and began to look at the equipment that was servicing those wells. We found many of those wells to be past what we consider to be their life without some type of major rehabilitation.

From that, we engaged and worked together with HSI out of Phoenix, a hydrogeotechnical firm, in which they did some additional review of the data we had collected and also looked at some of the specific wells' logs and also did look at one or two wells that we were having performance, the operators were having performance problems with. And basically it confirmed that concern.

We have a, we have a fairly significant issue with our groundwater wells in our opinion and I think would be reinforced with the hydrogeologists that are going to require some work there. Again this is not

unusual in the types of waters that we have here, high in total dissolved solids, a fair amount of iron in the water. These waters are fairly aggressive on well construction. And as a result, it is not unusual over some period of time you have to go in there and do some major modification.

Q. In fact, the quality of the water is what led to the transition to surface water and the surface water treatment plant in the first place because these things affect taste?

A. Yes. We have basically two issues that we deal with in water supply and water treatment. One is potability and the other is palatability. Both sources provide adequate potability. That means it is safe to drink. But being safe to drink doesn't necessarily mean the consumer is necessarily happy with the taste of that water or the way that water performs in dishwashers or in laundry conditions. And that's when we resort to a palatability issue.

Here we have a palatability issue really with both sources that are derived from the total dissolved solids content. The total dissolved solids content of the water is higher in the groundwater and therefore more issues of palatability are more pronounced. You will get complaints, you know, about the water not

tasting well or you will get complaints that people say, well, when people come in to visit our area and they drink our water they get diarrhea. We call it traveler's diarrhea oftentimes, usually caused by what essentially are Epsom salts that develop within these TDS, these total dissolved solids, in the water because they are sodium sulfates for the most part, spots in your dishwasher, can't get your glasses clean in the dishwasher, spots in the dishwasher, laundry, just, you -- just no matter how much bleach you still don't get the whites as white as you want.

Q. Is this what the surface treatment plant does, is eliminates that stuff?

A. Surface water treatment plant is an improvement. Colorado River diversion water is still, by national standards, high. But it is about a third of what it is in your current groundwater sources for regards to these chemical constituents. So it is an improvement.

If you were to go through this service area and talk to consumers, you would find that some of them have their own under-the-counter reverse osmosis units. You will find that you can buy bottled water at kiosks around the service area. That's not unusual in areas that have this kind of water. People will try to compensate for that, the palatability issues, by finding

some other way to get water for drinking water purposes predominantly.

Q. So for Far West, while they are worried about all this sewer improvement and making sure their 8,000, 7500 sewer customers are taken care of, they have also got an ongoing water division with 15,000 customers to worry about?

A. Well, that's correct. And I have cautioned this from the beginning with the utility, is that while you have a fire to put out immediately, which was the case in terms of wastewater, is that these utility systems are living systems. They age. They deteriorate. There is also a continual improvement process that needs to be evaluated as you, you know, as you go forward, the risk being, if you devote all of your attention to one, then the other starts, then you end up putting -- you kind of end up in a constant fire drill type setup.

What we are trying to do is give them a plan to ultimately get ahead of the curve and get this in a more manageable position. This utility grew relatively quickly, at least on the sewer side grew relatively quickly in number of customers. And it is my observation from the involvement we had early on was that, as it grew, the sophistication of the treatment plants and wastewater side did not grow with them. The

sophistication of the just basic management systems with regards to mapping and data collection and inventory of your assets did not grow in the same way that you would expect going into a community of this size, population, a mature utility what you would expect them to have.

So there were a number of these things that we were, and we continue today, to remind them that these are things they need to be looking at down the road. Obviously you can't tackle all these things at one time, but at the same time you can't ignore them either.

Q. So this mapping effort you talked about is one of those tools that you recommended, the company engaged you to do so that it has quality maps of its entire system?

A. Right. One of the issues that -- actually the request came in to me from Andy Capestro. On the mapping, we obviously were fighting the issue of mapping because of the engineering side of it. But I think the -- it -- the initiation of the activity actually came from the frustration of the utility not being able to always identify where their customers were.

So what we did here is we not only deployed the mapping system for the purposes of inventorying assets, but also inventorying and tracking their customer base. This customer base is unique because we have a large

seasonal influx of people. They are -- we have a certain base load of customers but then we have a large number of customers coming here during the winter months, and for whatever reason they choose to disconnect and reconnect each time. Obviously there is an economic advantage for them to do so, but that causes a burden management-wise on trying to figure out who is on the system and who is not on the system at any one time. So if someone would ask me, typical request was, you know, how many customers is a particular plant serving now, well, we could give an estimate but that's all we could do. We are getting closer now with the mapping system being linked to the billing system to be able to provide those kinds of reports on a real-time basis.

Q. So the mapping helps the company not only in its capital planning but also in its day-to-day operation of the utility?

A. Yes, that's correct.

Q. Could I ask you, do you have Exhibit A-8 up there? It is a big one. It is a big one that's not the maps.

A. Yes, sir, yes.

Q. Would you turn to page 7 of 21 of that.

A. Yes.

Q. Okay. I would like to focus your attention on the gray area. You were here yesterday during the proceeding?

A. Yes, sir.

Q. And you probably heard Mr. Torrey asking Mr. Capestro some questions about the investment on the water side in this section of the chart?

A. Yes.

Q. Okay. Mr. Capestro described the Fortuna Road project which is $109,772 and change. Do you see that one?

A. Yes, sir.

Q. Were you involved in that project?

A. No, sir, we were not.

Q. Okay. The mapping, that shows 464,000 for water. Was the mapping for the water and sewer done in combination or did you finish one and do the other? How was that done? Was the project done for both sides together?

A. Yes.

Q. Okay. Did it cost more to do the mapping for the water or is it more customers, is that why?

A. Well, there is, there are three general cost areas, actually four general cost areas in mapping. The first is the base mapping, just getting the aerial

photography. That's more than just flying the area. These are, these are scaled sensitive drawings. And the reason we did this is because there were so many, we tried to use, at a lower cost, tried to use the tax maps provided by the county. But there were so many inaccuracies, as a matter of fact, we shared those inaccuracies with the county assessor's office, at this point that we found it just -- we thought it was going to lead to confusion in the future, particularly with regards to the -- eventually these maps should have all the easements located on them so that if you are wanting to go out and work on a line, you should know what your easement boundaries are when you go out there. And you ought to be able to use these maps to reasonably feel that you know where you are in the world when you are out there on the site.

So these are what we call ortho corrective photo imagery, which is a picture, if you will, of the entire site scale corrected. This also requires that there is a certain amount of land survey that is done to tie in your photography to the scale, if you will, of the ultimate mapping. That is both shared. I mean that mapping is good for water or sewer.

I might also add it also provides contouring. We used two foot contouring of this area, which allows

us to take a look at topographical differences for either the water distribution system or the sewage system.

Q. So if the company would have just done one of its divisions at this time and postponed the mapping it would have been more expensive to do the second division later?

A. Well, yes. I mean you would have, if you mapped any one piece of infrastructure in this area, you are going to do all the aerial work first. I mean that is shared by everyone.

Q. Right. And then there are other cost factors. Please continue with those.

A. Yes. The other three cost areas are basically the inventory. Now, these are more easily separated. This is where we went out and physically tried to locate points on the ground because, again, the existing mapping was so inaccurate. Most of this, it had been provided by developers. And unfortunately oftentimes they just don't build them the way that they say they were going to in the plans. So the waterline is supposed to be on the north side of the street and ends up on the south side of the street.

Q. H&S Developers wouldn't do that, though?

A. That was --

Q. We will strike that question.

A. That's sort of a trait of developers generally.

Q. Okay. They are all guilty.

A. So we located all the valves that we could locate. We located, on the water side, all the hydrants. We also used that to set up a hydrant exercising program for the utility. We recommended to the operators that those actually be exercised on a routine basis, because people rely on those hydrants to be operational. And we could not find any -- we knew that they were doing this to some extent but it wasn't really recorded anywhere.

The other, on the wastewater side, we field located all the manholes. We opened all of the manholes to confirm both the line size, the depth, which we are now able to recreate sewer profiles of the entire system. So from that we can -- we know what areas are draining to which lift stations, which are pumping to which treatment plants.

Those two field activities are very different. But we use the same crew. As we were going down the street to locate manholes we were locating water valves at the same time. And it would have increased the cost to have done that separately. And we were, you know -- the guy offered to do them both at the same time and in

our opinion it made sense.

The other aspect is to go out and physically inventory all the treatment plants, going to the well sites and understand what you have there. So if you go to a water well, how many wells do you have, what is the depth, the diameter, is there a well log in the database, what is the capacity of that well, and then getting all of that logged in. And the end result is that now through the system you could basically call up any layer that you need. If you are working on the water -- if you are working on the sewer system, and you want to know where the nearest waterline is so that you don't accidently dig that waterline up or damage it, you can call that up on the system before you go out to do a repair.

You can also click on the well, for instance, and when I say click on it, that's just a mouse click on the map, and it will bring up all the information regarding that well, how old it is, when was the last time it was worked on. And this is just data for use for the operators to, if they are starting to experience a problem pumping sediment or sand, you know, it gives them some idea whether or not this is something they should have expected because maybe that well hasn't been worked on for a long time or this is something that, you

know, that is an anomaly that they need to really look at because it is -- should not have been expected.

Q. Mr. Lee, do you know on what allocation basis the company split the cost between water and sewer as shown in this document?

A. No. That I am not sure.

Q. Tell me about the software. If you go down below the mapping, there is entries for software for both water and sewer. What is that software?

A. Well, there is a -- we had started out obviously as an offshoot of the mapping process. And because the mapping process was at least initiated with regards to being able to track customers, we had suggested to the utility that they consider a more robust utility billing system they had, one that could be linked to the GIS system and one that ultimately could be a little more user friendly from the consumer side in that ultimately it was desired to have a system where they could do bill payment on line and now customers could look up and see exactly how much water they had been using in the last month, that type of thing.

When we started to look at packages on behalf of the utility for the billing system, we found very quickly that it was not just the billing system that probably needed to be addressed but also the accounting

system. I believe they were using QuickBooks at the time, which we just, we didn't feel was very robust, certainly not for linking with a brand new billing system. And most of these billing systems do come with packages to where you can bolt on an accounting package, a customer relation management package.

So we submitted those to the utility and suggested that while they were going through this effort that they should look at those. They chose to do that.

And one of the -- I am not an accountant, but from just a standpoint of engineering perspective, one of the items that this type of utility billing and accounting system provides them is what we call fund based accounting. So it allows the utility to do budgets and for those budgets to be tracked. And we saw that as always being an issue within this utility, you know, how work orders are generated, how they are registered against a particular project that they are involved with, how that work order evolves into an invoice, how that invoice is tracked in the accounting system. There was a lot of manual work going in there and a lot of interfacing that should have been taking place that we automatically, or through automation that was very laborious with regards at least from our perspective and, as a result, we felt could lead to some

inaccuracy.

Q. It sounds to me, listening to your testimony, talking about things like the mapping and software, Mr. Lee, would it be fair to say these were recommendations that you and your company made to, for lack of a better term, help this utility start to grow up a bit and start to tackle its new found size and number of customers and responsibilities? Is that a fair characterization?

A. Yes. Our -- I have worked with a number of utilities over the last 38 years and what we see here is not the first time that we have run into this kind of a situation, where I made it very clear to management before we became engaged that we were going to look at all aspects of their operation, we were going to make recommendations, and that we would take this assignment on only if they would listen to our recommendations. We did not want to get into a position where we were, you know, fixing one problem and then walking away thinking, you know, thinking that or making them think that they had, you know, solved their problem.

We could tell very quickly that we had a management group or ownership group within the utility that genuinely wanted to improve the system. And that's kind of a criteria of ours. If this was just window

dressing to get through the process, we weren't interested. But they gave us a genuine commitment and they also said they wanted to look at this system in a holistic way, holistic approach, we are not bounded by any critical issues of the day, and which allowed us to provide that. And this has been pretty well true throughout the project.

This utility unfortunately grew much faster than its systems grew, whether you refer to their assets or their management systems. And while they have made large strides, you know, we are not there yet. We are getting closer, very close. But this is a very different system today, or once the improvements are completed and once all of this is done, very different system from what they were in 2006 or when I first met them.

Q. Based on your 38 years doing this kind of stuff, you find a willing partner, an employer, in Far West; is that a fair statement?

A. Yes. I have not had -- I mean we obviously, you know, professionally will -- I can't say that they adopt every recommendation that we make, because they have to deal with their staffing issues and their budget issues. And, you know, we as engineers, we tend to only look at what needs to be done and put those on the table. How

those get deployed certainly is an issue of management. But I think I can truthfully say that in every instance that we have pointed out what we refer to as the deficiency or an item that we felt needed to be significantly addressed, they understood it and accepted that and were willing to program that in their thought processes as they moved forward.

Q. And things like the mapping, now that's done, they can grow with that; they don't have to go out every couple years and do that whole huge mapping process again, correct?

A. That's correct. They will have their own software. It is -- we chose a relatively simple software to use just for that purpose, so they could train their own staff in using it so they don't have to hire consultants to do that on a routine basis. So they can do their own upgrading of the system. So as they add a line or a developer comes in and adds a subdivision or dedicates it over to them, they can update the system.

The one item that we would recommend is that they probably consider some interval, depending on the growth of the area, they may want to refly, redo the photography. You already notice in some of these areas there are subdivisions here that show up as being laid

out. But that's coming off plat drawings from the developers. But no houses show up there yet.

Q. But that refly, you won't have to go back to square one to do that refly for the map?

A. No. That's just an upgrade of the raster images.

Q. Just one more question about A-8. There is an entry here for AMI Engineering for $250. That's not your company?

A. Yes, that was our company.

Q. So that's -- is that -- that's further engineering similar to the first item up there, design construction management or --

A. Yes. This is, in the course of reviewing the billing system and doing inventory in the mapping on the water system, we ran into a number of issues, water meter issues. And they are, the utility routinely will replace meters. And that's, in this case, that's probably warranted because we do have a fair amount of groundwater coming into the system. Groundwater has a tendency to also have a little bit of sand in the system. It is not noticeable necessarily to the consumer but it is sometimes noticeable to the disk that resides in the meters.

And so they have an ongoing meter improvement

program. The technology that they are using for meters is somewhat, I mean it is tried and true technologies but it is somewhat of a dated technology that the tendency in meter upgrades these days is to go to advanced metering infrastructure which allows a two way communication between the meter and the customer. It eliminates the need to deploy meter readers in the field and allows us to detect certain problems that may exist on the consumer side of the meter.

This is an issue here, we believe, because we have so many people who leave the system and disconnect during the summer months, some of which having expressed a desire to leave their meters on so they can leave irrigation systems on, some of which do that; others who turn them off and then have a habit of just reconnecting themselves when they come back, which is again not an unusual situation.

The advanced metering allows you to control all of that. If you have a customer that is not at his home, and then all of a sudden is using water outside of their average, and this is done in real-time, then you know there is something, they have a leak in that house. It could be in the irrigation system. It could be in their plumbing in their house but, you know, there is a problem. And it generates an alert which generates some

type of interface with the consumer to try -- if nothing else it alerts the utility to go out and shut the meter off to avoid any damage or extraordinarily high bill to that customer.

It also allows consumers to get into the billing system and they can look in real-time how much water they are using. This type of approach is becoming prevalent in the electric energy industry more and more. And it is emerging now in the water industry.

So the intent was to set the platform for that and to, we actually at one point thought we would just start to deploy the AMI metering, but as budget issues arose that got deferred. But we did change the specs on the meters they did have so they could be retrofitted for AMI at a much reduced cost in the future.

Q. So in that situation, you know, if there is not others like it tell me, but these expenses that have been incurred as shown in A-8 for water, the fact that the company now has to defer further improvements to the water doesn't render these investments useless, does it?

A. No.

Q. They are just waiting for the next steps?

A. Yes.

MR. SHAPIRO: Okay. Judge Rodda, this is probably a perfect moment to take a morning break

because I am going to change subjects.

ALJ RODDA: Thanks. I was just thinking that. Let's take ten minutes. Dense testimony.

(A recess ensued from 10:39 a.m. to 10:58 a.m.)

ALJ RODDA: Let's go back on the record. And, Mr. Shapiro, you were going to change subjects.

MR. SHAPIRO: Yes. We are going to continue on.

BY MR. SHAPIRO:

Q. Mr. Lee, I looked up the term retrofit in Webster's and found it to mean provide with parts, devices or equipment not available or in use at the time of the original manufacture. Do you agree with that definition for retrofitting?

A. Yes.

Q. Is Far West retrofitting its wastewater treatment systems?

A. We refer to it is an upgrade of the systems. We are using the components but we are not modifying those components in the strict definition of a retrofit.

Q. So I think I used the term cannibalize with Mr. Capestro yesterday. You are taking whatever you can from the previous systems and using it again in the improvements?

A. Yes, sir.

Q. Does that help with the costs?

A. Well, we would do this almost on all projects that we work on. If a client has, has invested in existing capital infrastructure, we try to use as much of that infrastructure as we can in any kind of a plant upgrade or plant expansion. In most instances, we can do that fairly successfully because most of the existing assets here involve blowers, piping, and underground tankage, and because we had a need for certain amount of tankage. We were able to, we were able to recover most, a use for almost, well, for the large majority of the assets that were in the ground at the time that we started.

Q. You said that if the client invests. Were you just speaking generically? You don't know the actual financing of the existing facilities Far West has, do you?

A. No. I use it generically.

Q. Okay.

A. It is -- we just have in our practice, we just have a mind-set that if something is there and existing, and as long as it is in physically good shape, we try to use it somewhere.

Q. It is clear from your testimony and the record in this case that the company's system, wastewater system, wasn't adequate before all this started. But is

it costing more to do the work you are doing and bringing this system into compliance with the consent order because it was inadequate before?

A. If your question would it have been less expensive to have completed the improvements that we are doing now back in the late '90s, just sheer cost of money, probably the answer to that would be yes. If the question is are we needing to do some extraordinary accommodation because we are working around existing equipment that was deemed inadequate, then the answer is no. We are, we do that all the time. And it is not, that's not an unusual circumstance.

Q. One of the things that needed to be done in this process was to determine the capacity of the new facilities, correct?

A. Yes.

Q. And there is actually two plants that we can call new plants that would be Del Oro and Section 14, correct?

A. That's correct.

Q. Okay. Mr. Capestro testified that ADEQ required the use of 187.2 gallons per day per lot. Do you recall that testimony?

A. Yes, sir.

Q. Can you confirm, is Mr. Capestro correct, is

that what you were required to use in your determinations?

A. Yes.

Q. And where did that requirement come from?

A. Before we launched any type of APP applications, and this was early on, several months before the second consent order was issued, within a few days after actually being employed, we developed an engineering report, kind of a general global assessment of what they needed to do to deal with the NOVs that were on the table. And at that point, we looked at historical flow data, historical flow records, current flow records, state requirements under the Arizona regulatory code. And we obtained from the utility, you know, the areas that they were serving, how many customers they had in order to get a benchmark for the sizing of these plants.

That report then was issued and we shared that then with ADEQ, which is a common practice. We do this with agencies all the time in order to make sure that we are of the same mind-set going into the design for an APP application. It makes that process go smoother by having these early communications with the regulatory agencies. That's our view.

We had presented this report to them. I don't recall now, I think maybe it was around 120 gallons per

person per day is what we were estimating that the historical data was indicating. I think at one point it could maybe be as high as 160 gallons per person per day, which is recognizably low, and maybe you would even say somewhat unusually low. But we attributed that in part because of the demographics of the area, also to the fact that we assumed that there was a fair amount of energy saving devices in houses, low flow toilets and low flow water fixtures, that type of thing.

ADEQ did not agree. We had what we referred to as a capacity conference in August 23rd of 2006, I believe. Maybe it was 2007, August of 2007.

Q. Who attended that conference on behalf of ADEQ?

A. Oh, there were several people there. The two that I recall, Mr. Don Bell who heads up the permitting division, he is our primary contact in the permitting division, and then there was another gentleman, another engineer by the name of Kwame Agyare, I believe.

Q. Thank you. Please continue talking about the conference.

A. At that meeting, they, they did not want to accept those numbers. And of course that was the purpose of the meeting, was to get on the same page with what we would use as our base numbers because that was going to drive the capacities that would be determined

for those plants, plant upgrades.

We were told that the state through ADEQ had completed a survey within the last five years which indicated that at best they were comfortable with using this 187.2 gallons per day per connection. They understood that we were presenting data but said that, minus a duplication of the study effort that they as a department had completed, that they were not willing to accept those lower flow rates.

We chose at that time, in consultation with Far West Water & Sewer, to just use the 187.2 without further debate with the agency simply because we had been the roadmap we had been given to debate that issue would be to go out and complete a companion study to try and prove that number should be lower. Given the fact that we were in notice of violation status, we, number one, did not believe that we had the luxury of the time to duplicate a study. Second, it was going to be fairly expensive to do that. And thirdly, there was no guarantee that we would come up with a different result.

We, you know, ADEQ as most state agencies use a fairly rigorous approach when they do those types of studies, and we weren't there to challenge the accuracy of that study. It was only that specifically in our service area we felt it was, that we were seeing

something different.

Q. So from that point forward you worked with 187.2 and then used that to determine the amounts of capacity, design capacity the plants would have?

A. Yes, that's correct.

Q. And had ADEQ agreed to use the lower number you would have been able to design plants with less design capacity?

A. We would have been comfortable if they would have allowed us to do that, yes.

Q. Can you give me your perspective on the definition of the term excess capacity. What does that mean to you as an engineer?

A. Well, excess capacity in my definition, and I suppose everybody may define it somewhat differently, would be the ability of a plant either hydraulically or organically to provide service over and above those commitments that have already been made subject to that plant.

An example would be if we have 100 active customers on a plant, the plant has commitments to take on another 100 customers, and yet the plant has a total registered capacity of 300 connections, we would consider the 200 as committed capacity and the remaining 100 as excess capacity.

Q. And in determining how much capacity these two new plants coming on line would have, what did you include in the analysis for need? Did it include the need for excess capacity or did you stop at committed capacity?

A. We stopped at committed capacity. But we tried to place a roadmap in front of the utility that would allow them to expand the facility as excess capacity was required.

Q. Okay. Del Oro, let's focus on that one. And what you show on Exhibit A-20 for Del Oro is 495,000 gallons after the project is complete. Mr. Capestro testified yesterday that that would be actually a second phase. And I think you described that this morning. There is actually a first phase for Del Oro that will be at 300,000 gallons?

A. Yes. It might be helpful to kind of walk through Del Oro --

Q. Okay.

A. -- a little bit. Its capacity issues and determining sizing of units are, particularly in these applications, are not -- it is not a simple formula to use. And certainly you cannot simply use the number of connections to drive the sizing of your units. There are other factors that come into play if you are going

to keep yourself from having downstream problems, what I mean, problems in expanding the facility or meeting the needs in that service area at a later date.

The answer to your question forthright is yes, the first phase is 300,000 gallons per day in terms of what the total plant capacity will be at the completion of what we call phase one. However, Del Oro is a unique site.

Del Oro is a very congested, very small site. It is bounded. I think we have a 150 foot setback or 100 foot setback, I can't remember now, on the three sides. And then we are bounded on the south side by an APS easement, which we learned in the course of providing the, doing our design work you cannot locate any permanent structures within the APS easement. So it contracted our actual plant construction site to a relatively small and challenging triangle that we had to put these units in.

As I said earlier, we were using a modular design. And we recommended that in the biological modules, these are the tankages that perform the nitrification and denitrification ahead of the membrane units, we felt that they should go ahead and be built at the full 495 capacity. It is what we call the 500-, 600,000 gallon per day capacity range.

And the reason we did that is because we felt we had one shot at this site for building those larger structures and there would be no room for additional structures. It would be very difficult to manipulate on that site construction-wise to build it in segments. So the biological segment of phase one will actually be large enough to serve phase two as well.

Q. When you say -- I want to make sure our phases are on the same page. Phase one, 300 to 495?

A. Phases two is 300 to 495.

Q. Okay.

A. I am trying -- I may be getting too far in the weeds here. But the plant is always sized based on its weakest or least capacity element. So phase one has a 300,000 gallon capacity because it is limited in the deployment of the phase one membranes that we are putting in. There are a number of other components in phase one that were sized for the full 495 because we don't have enough room on-site to put multiple units in the various sizes, for instance, the headwork screens.

At Del Oro we are using the existing headwork screens which already had a capacity to go up to 495,000 so we left them alone. The tankage, because of the site we are working on, because we have used a modular design, it made sense in our opinion to do that one time

up front. And so the tankage for the biological components has a capacity of 495. The downstream membrane units, however, are only sized to go to 300 under initially phase one. Therefore, the plant under phase one has a capacity of 300,000 gallons per day. In phase two, as we go from 300,000 up to 495, we can go in increments as we go up there a little bit. We can add those cassettes on those membrane cassettes to ultimately get to 495. So that phase two, phase one to phase two will be somewhat of an evolving process depending on the need or demand for additional capacity at that point.

Q. So you could have a phase one point five and add 100,000 gallons?

A. At its peak, yes.

Q. Mr. Capestro testified that when Royale and Del Rey are shut down, the peak flows at Del Oro will be 270,000 gallons per day.

A. That's my understanding, yes.

Q. Okay. That's 90 percent of 300,000 or of the design capacity, correct?

A. That's correct.

Q. When do you recommend, at what point do you recommend that a client begin to plan to expand and construct expansions of wastewater treatment capacity?

A. Well, depends on the stage of planning, I suppose. We, in this project here, the -- we believe that this utility should have a long-term plan. We have started to work with them on looking at how these undeveloped areas might develop in the future and start taking a look at how, you know, what the next stage of plants might look at, because at some point we are going to simply exhaust the capacity to build at these existing sites.

Q. And this is it for Del Oro? Excuse me for interrupting. This is it, you cannot go beyond 495 there?

A. No. We struggled to get to 495. And really the ADEQ worked, really worked with us very well to really work our way through the setback rules in order to be able to do that. We were able to put some nonprocessing equipment on within the setback as an example.

But Del Oro is a very challenging site to try and make work, not so much the case with the other sites. We had more room to deal with. And those sites could be added to, each of the sites.

But on your issue of planning, we believe there needs to be a long-term plan. The 208 planning efforts that ADEQ requires is an effort to get all utilities to look much further down the road. As a matter of fact,

first thing we had to do in this effort was assure ADEQ that our plans, our immediate plans were in compliance with what the existing 208 plan indicated. Fortunately we were -- and it is strictly by coincidence, I suppose, because I was not aware of what the 208 plan was when I started on this -- we were exactly at the same sizes that we were recommending for these sites. We are exactly what the 208 plan had been developed by someone years ago.

The 208 plan as I understand, which set those capacities in this case, was, I believe, orchestrated by the department itself, by ADEQ. It has been going for the last couple years through a revision which is being sponsored by the county and by the City of Yuma, which is more typical. So we would, we have encouraged the utility to stay involved with that planning process.

We offered an amendment to that 208 revising process it is going through just taking a look down the road. So from that perspective it is never too early in our opinion to start thinking about what is going to happen.

Now, in terms of actually applying for an APP permit, when generically you start that process, the APP process is a lengthy process. And it is in most instances. Arizona I don't think is particularly

unusual in that regard. We should, you should allow at least a year for construction and a year to obtain your permit. So you should try to look out far enough ahead that you are not going to need that capacity for two years.

Q. So if, when Del Oro comes on line at 300,000 gallons per day with a peak of 270,000 gallons per day, would it be prudent for the utility not to have a plan in place to add capacity once they are at 90 percent of their design capacity?

A. No. We would certainly counsel against that strongly. We have been in numerous situations, particularly in growing or areas that could reach, you know, potential high growth rates, and this area has already experienced that and somewhat been stressed as a result, we feel that it is extremely important for the utility to have a firm handle not just on what their current flows are going into these plants but what their committed regulatory capacity is going into these plants.

We find oftentimes that utilities will, I guess sort of as an example, it is sort of like looking at your balance in your checking account and calling the bank and they tell you you have got $1,000 in the bank and you ignore the fact that you have also got

outstanding checks out there so you really don't have $1,000 in the bank. The case is the same here when you look at these issues at the treatment plant, is you can't look at just what is coming into the plant at the time. You have got to look at what you have committed for fear that you may over commit. And that happens a lot in growing situations.

Q. In fact isn't that one of the things that Far West experienced in the past, is --

A. Right.

Q. -- lack of planning for a commitment?

A. One of the things that we have worked with the utility on that has been, is a much more rigorous understanding and analysis of what they have committed at each of these sites. We asked them to go through and count all the in-fill properties, these are vacant lots that are parts of subdivisions for which they have issued capacity letters in the past, and to make sure that we have a clear understanding of all the capacity requirements or commitments that they have made, assurances that they have made to date, going into these plants, and then provide as much opportunity for these plants to expand, to match that growth that you are incurring so that, in the case for Del Oro for instance, we have tried to identify some relatively expensive

elements of the plant in terms of the membranes, for instance, and be able to set it up such that they can be deployed in segments, in cassette modules.

Q. And, in fact, in this case you indicate you don't even have to go all the way to 495 from 300, you can incrementally increase in that range, too --

A. Right.

Q. -- right?

A. Yes. And one other thing I point out, to really look at this commitment on capacity, we would have to go back to the APP permit, which will ultimately end up in a discharge permit, to determine, when you say capacity, what are we referring to. Most of the time it is the average day max month. So if you have a peak day, that is not necessarily meaning that you are bumping up against that.

That's what we call an alert level. That should give the utility an alert that they, you know, the system is growing and starting to bump up against the capacity of the plant. But you may still be some distance away in giving you enough of a planning horizon to be able to implement your plant expansion.

In the case of Del Oro you are not going to go any further than this one. You are going to go to 495 and at that point you are going to be redirecting

wastewater to some other site.

Q. But you are not suggesting that the company, a utility, sewer utility ignore peak flows and focus only on average?

A. Oh, no, not at all. Hydraulic elements in the plant are important. The question is kind of the old, the 80/90 rule as you referred to it before. In dealing with staff ADEQ, is we tend to look at the -- in that rule we are looking at how is it impacting their ability to stay within compliance of their APP permit.

But, no, from a perspective of many other things, you want to keep an eye on not only your peak but your minimum flows that are coming to your plant and how that might impact, and adjustments either in operation or in modifications to your infrastructure.

You also want to take a look at the strength of the wastewater going to the plant, particularly as more and more people use flow conservation measures within their household plumbing and appliances. We are reducing the hydraulic capacity on plants but we still have the same organic loading coming to the plant. The organic loading has not changed, it is just concentrated. And that's partially what got these plants initially, was that even if their hydraulic loading had been okay, the organic loading of the plants

is significantly higher than the textbooks tell you it should be. And that's what led us to the conclusion that there is probably a fair amount of conservation going on within the consumer base here.

Q. Had the company just planned to build at Del Oro for 300,000 gallons, do you believe they could have ever expanded beyond that at a later date?

A. No.

Q. Hypothetically if they could have stopped at 300,000 and then come back later and added another 95,000 gallons per day, would it have cost more to add it at that time?

A. I don't know how we would have done it. I am not sure what technology we could have used to do that simply because there wouldn't have been any room on the site to do that.

Q. Okay. When Del Oro comes on line at 300,000 gallons per day treatment capacity, will there be any excess capacity as you defined it?

A. At 300,000? We are still, we are still basically deferring those kinds of conclusions to the utility because they keep the daily track on connections. But it was our intent to simply meet what their current commitments load were at 300 and provide a pathway for the excess capacity at 195.

Q. And you have to, you have to plan these things based on the information that's available at the time, correct?

A. Yes. Usually the utilities, we work with the utilities to determine, you know, what their customer base is going to be because they have the best knowledge not only of who is there but what commitments have been made to date and what the, you know, what are the impending commitments, particularly when you are under somewhat of a building moratorium, which is again not an unusual situation to find ourselves in where you end up with kind of three levels of commitments.

You have those that are committed and using the system, commitments that have been made and people who are not using the system, and you have got these people who if it weren't for the moratorium would have already had committed flows at the time so, as soon as you flip the switch, they show up. And we had to have looked down the road and looked at that enough to make sure that we would not all of a sudden see a big spike in connections, which we expect to happen in most of these instances within the first, you know, six months after they go on line.

Q. I guess the other category of people to plan for would be those proposed or future connections that

Mr. Capestro spoke about yesterday. You were here for that?

A. Yes.

Q. Okay. And do you agree with Mr. Capestro that you really haven't planned to bring capacity on line as part of this project for those future proposed subdivisions?

A. That's correct. We have identified a pathway, though, how you deal, how they can deal with that when and if those come about.

Q. And that's what you talked about not starting over again for the next time. You built in the plan and the procedures and it is the fact the facility that can be added to and brought up and makes it less expensive?

A. The intent would be to continue to replicate those modules either at the existing sites where we can or, if we have to open up a new site at some point, which logically will happen, that we would just continue to execute the same plan.

Q. Okay. Mr. -- I am sorry. Yes, Mr. Capestro testified, I think some exhibits show, let's turn to Section 14, phase one of Section 14 will be 681,000 gallons per day when it comes on line?

A. Yes.

Q. And the APP also allows that plant to go as high

as 1.3 million gallons per day?

A. That's correct.

Q. Okay. And that's the 1.3 that's shown on your chart?

A. That's correct.

Q. Okay. Or map. How were -- again, were those numbers determined in the same manner that you described Del Oro committed capacity, customers connected?

A. Some modification. Every site is a little unique.

Q. Okay.

A. The 187.2 gallons per day per customer is consistent and that would be on all sites.

The interim capacity here was not a site constraint. The interim capacity of the 681,000 was really driven by a joint analysis between our company and the hydrogeological group HSI and ADEQ with regards to the ability of the golf course to receive effluent. They use, ADEQ uses a particular calculation, a software program that we help provide input to. And it gives you some direction as to how much of the effluent can be taken by a golf course over the course of a year. It is basically a water balance exercise.

In the months I believe of January and February, the calculations indicated that we could be limited to

681,000 gallons per day. And I say could be because this is a theoretical calculation that is made. This is not the result of field testing.

If you were to look then at the full 1.3 million gallon per day capacity, that same analysis would indicate that there would potentially be a need for three vadose wells to supplement the availability of the golf course to accept effluent.

We believed, our group believed that the ADEQ calculation was conservative and that in reality it will, the golf course will likely be able to take more effluent. And part of this is our observations, albeit somewhat empirical, observations and discussions we have had with the golf course operator and his constant demand for more water.

We have, we negotiated, I guess, if you will, during the APP to not give us a requirement to build those three vadose wells, to not have to have a firm commitment that we would build those three vadose wells to get to 1.3 million. The compromise was that we would accept initially only putting 681,000 on the golf course and we would go ahead and build one vadose well as part of the first phase of 681,000.

Q. And a vadose well is for recharging effluent into the aquifer?

A. Yes.
Q. Thank you.
A. Yes. Vadose is a zone just above the permanent aquifer. So you are basically discharging water or effluent into that zone and then it is trickling down, if you will, to the permanent aquifer level.
Q. But if you have more effluent, why not just send more for the golf course? Can't they just take as much effluent as you can deliver?
A. Well, that's the question. The calculations indicate no, indicate they are limited to 681,000. Practice in the field would indicate that, yes, they can take a lot more than 681.

So our agreement in the exercise with ADEQ staff was that we would accept the 681,000 as the initial. We would go ahead and drill one vadose well under phase one and then we would do field testing. We would track it. And as this plant grew beyond 681,000 capacity, we would submit our findings to ADEQ. And if those findings indicate that the golf course indeed could take more water, was taking more water and was not causing any environmental degradation, then they would consider not requiring us to build the additional two vadose wells.

We think there is a high likelihood that we may not have to build at least one of those vadose wells.

But we did this in an effort to try to, you know, compromise as best we could because vadose wells cost about half a million dollars apiece and we were already building one vadose well more than what we anticipated when we first started the project.

Q. Do you know if these golf courses, do they pay for this effluent, pay Far West?

A. I don't know what the commercial transactions are between the golf courses.

Q. Do you know if they have access to other alternative sources of water for irrigation?

A. I believe in some instances they have well water, wells they have drilled. At least in two, I think in both instances, there is well water competing with the effluent.

We had some kind of interesting conversations with golf course operators early on in the project and actually very early on in our meetings with ADEQ. The golf course operators were approaching us that the value of the effluent as they saw the value was not in the water itself but in the nutrients that were ladened in the water, particularly nitrogen.

Q. You are taking that stuff out, aren't you?

A. Well, that was the point. The challenge that we were provided with was, you know, if you give us the

effluent and you are denitrifying it, it increased our need to add more fertilizer on the golf course.

Now, we did have a meeting because we agreed to do this, we did have a meeting with ADEQ and we did lay this on the table. I could tell that this was not an argument that they had -- it was an argument that they had heard before.

The problem is this is a statewide regulation and it doesn't really leave room for, you know, negotiating specific terms. And there are lots of reasons why regulatory agencies regulate nitrogen. And it is not just to, they are not doing it because they are trying to harm the value of our effluent going to a golf course. They are doing it for much broader reasons. And as a result, you know, the answer is what we thought it would be, well, we are sorry but that's -- we are -- we have to denitrify and we have to, you know, meet a total nitrogen limit.

But it was an interesting conversation, because it spoke to, you know, my thought in talking with operators, the predominant interest was in the moisture content, where in reality they were interested in the nitro content.

Q. So the golf courses may have financial reasons or, well, I guess the term is agronomic reasons for

limiting their use of effluent?

A. Well, all I would say is that there is a competing source in these instances, which is groundwater and the fact that we have taken the nutrients out of the groundwater. Essentially we have to some extent -- the groundwater I suppose becomes more of a competitor for us than would otherwise.

Q. Mr. Capestro testified yesterday that he prepared Exhibit A-17 and that showed, let's see, I believe 800 and -- I have got to find the number. Do you have that exhibit there in front of you?

A. A-17?

Q. A-17, yes. Page 2 he indicates that -- page 3, sorry. That's why I have an accountant in front of me, to count. Page 3, he indicated that when the -- well, first of all, let me back up.

Flows are being diverted to Section 14 from other places?

A. Yes.

Q. Okay. What are those other places?

A. Two specific ones. We are diverting wastewater from the Palm Shadows existing facility.

Q. And that's all flows, correct? Palm Shadows goes bye-bye?

A. Palm Shadows will be closed as a result of the

project. It will be converted to a pumping station, lift station.

Marwood is, and we have predicted that Marwood would be reaching capacity shortly, this was three years ago when we first got into the project, it has reached its capacity and ADEQ has notified recently the utility that it is in some instances exceeding its hydraulic capacity or hydraulic load. We had recommended that lift station 16, which currently pumps its effluent to Marwood, would be redirected and pumped to the Section 14. So those two specific locations will be diverted.

Q. So Mr. Capestro has a number showing the current customers and customers with meter sets and these redirected flows resulting in 816,790 gpd design capacity needed at Section 14. Are you with me on that document?

A. Yes, sir.

Q. But you are testifying that phase one only has 681,000 gallons per day. So what is it going to take to get -- and the next phase will be to take it from 681 to it can go up to 1.3 under the current permit, right?

A. That was the purpose actually for moving ahead with the first vadose well, because we could see this coming. That vadose well, if, when this starts to

occur, will give us the ability to increase that flow to meet this 800,000.

Q. And what else will need to take place for the company to go beyond the 681,000 that the first phase?

A. We will start adding incremental cassettes to the plant.

Q. And does that -- is that similar with Del Oro?

A. Yes.

Q. Where you can go from 681 to some number in between 1.3 as needed?

A. Yes, yes.

Q. Okay. But going above 681 will require some additional signoff by ADEQ given the issue you discussed?

A. That was our agreement with ADEQ.

Q. Okay. There was a lot of talk early on in this proceeding about taking that same plant from 1.3 to 2 million.

A. That's correct.

Q. How did that -- where did that 2 million come from? How did that option come about?

A. We were provided from the utility with a growing list of pending connections. That list, again, because, particularly in the Palm Shadows area, they have been under a moratorium of any building over there for some

time, and the issue, the list of those people that were wanting commitment letters was growing, at least growing in size.

So we asked them to provide us with an accounting of that, kind of an update of that. And when we did that, it indicated that we would, we could conceivably within that two-year horizon time that I talked about that it takes to get a permit processed and to get plant built, that we could easily be, have that demand hit us before we would -- within that horizon. So we suggested that, you know, it was time to move forward and get an APP started.

One of the problems we have had in the initial project is everything we did was under the gun. I mean we were behind on all of these. I mean we were building plants while we were in violation. We were applying for things while we were in violations. That places an, for me as an engineer, places me in an uncomfortable role with ADEQ staff because we know that our client is under pressure to get things done quickly, and we also recognize on the other end that the typical state agencies have a certain methodical process that they go through. And we don't like being -- it is never a comfortable position to be in to ask an agency to work outside of the comfort zone with regards to their normal

routines.

Now, ADEQ does have what they call an expedited process that you can go through. But at least in my experience the expedited process wasn't any quicker than the regular process.

Q. Well, if you are under the gun, why hasn't this thing been finished up? And I don't want you to get into the financial aspects sitting there currently, but why wasn't this finished when the consent order was signed October 2006? It is now May, 2009. Even before the company's claimed financial crisis hit, couldn't this project have been finished? What is taking so long?

A. When we entered into a contract with Far West, we were, we entered into the agreement with Far West with the understanding that these improvements were immediate and that we needed to provide an expedited schedule, fast track construction, fast track procurement of equipment, all of which we set out to do immediately.

The first thing we did was we brought in the temporary unit at Del Oro. Now, we did that for obvious reasons, to -- well, I will just give you an idea. I think within two weeks we completed the master plan for this utility, which was pretty fast by most standards.

And we were working basically around the clock at the offices to get that done.

Once that was completed, we immediately brought in the temporary unit and got it working. But that temporary unit, the purpose of that was not just to meet the requirements of the first consent order, because when we went out looking for units we used the work that we did in the initial master plan to try to make sure that the unit we were bringing in at that time on a temporary basis would be a unit that could be, could serve as a pilot unit to test the validity of our conclusion that membrane technology was the right technology to use at this utility. So it was serving dual purposes at the time.

As soon as we had about 90 days of operation under our belt, we knew that plant was going to work just fine, the technology was appropriate, then we moved immediately on getting construction plans going. We submitted all of the major procurement for tankage and for, and for the membrane units. Those bids went out. And in one of the criteria of all of those procurement efforts was that the manufacturers that were submitting had to demonstrate how they could deliver equipment to us quickly.

We had a goal, and we believe to this day that

goal is achievable, that we should have been down and out of there February of 2007. And we were on track in our opinion to get that accomplished.

Q. What happened?

A. Well, we, again, I said that we had been working with ADEQ staff at some length way before the second consent order was in place. And this is a permit review level, engineering staff level. And they seemed to understand pretty clearly what it is we were trying to do. We were very open and transparent with regards to what our plans were. I think they were very appreciative of the fact that we were able to deploy the first unit at Del Oro so quickly. And we gave every indication that we thought we could do the same or similar deployments at the other locations.

But we -- I was informed at some point by Far West that in their negotiations for their consent order, that they had been instructed that there, that all construction had to halt on all sites and that we could, we should not procure equipment nor should we do any construction work on any of these sites until the APP permits were actually finalized.

Upon receiving that information, I then did engage back with staff again and asked, because this is not an atypical request for us to make of a state

regulatory agency, is would it be possible for the utility to continue on its current fast track schedule if the utility was willing to accept the risk that there may have to be some significant modifications or modifications to what they build as a result of the final approval of the APPs at these sites.

Now we, as engineers, were fairly confident that we, you know, that we could get close enough to what ADEQ would approve, that those modifications would be minimal. And at least the staff level we were dealing with, I think that met with a fairly favorable response at least in those early meetings.

But, again, at some level within ADEQ the decision was made and was passed on to Far West water and sewer that no, that would not be appropriate and we would have to wait until the APPs, which the final APP wasn't issued until late in 2008.

Q. Wasn't that well over a year after they were applied for?

A. Well over a year, almost 18 months.

Q. Did it surprise you that, given the exigency of the situation, that ADEQ didn't find some way to expedite this process, truly expedite it?

A. We expressed our concern that there was a public health and safety issue here, particularly at Palm

Shadows. Palm Shadows was just obviously not handling their waste. It was only, in my opinion, partially treated sewage. It was, it was not being percolated so it wasn't going anywhere. And it was a very difficult situation. It was a very difficult situation knowing technically where that utility was located and yet not being able to do anything about it without fear of being in violation of a regulatory position on this.

Now, having said that, you ask me if I am surprised about it. I pretty much reflected -- you know, before I became in private practice I served four years with the U.S. Public Health Service, so I was on the other end of the spectrum for awhile. That was in the day before the EPA and when the U.S. Public Health Service controlled these kinds of permits.

And, you know, I have to look at ADEQ and say, well, you know, what has happened at this, in the process. And I think we were probably the victims of a breakdown in trust between the utility and the department with regards to, you know, would we really carry these things out the way we said we would carry them out given the history.

So I can understand where they were coming from, but it did cause us a substantial issue with regards to what, the way we at Coriolis had envisioned this

construction taking place.

Q. So irrespective of who -- or let me rephrase that. For one reason or another, you got hung up in the regulatory process waiting for permission?

A. That's correct.

Q. And while that happened, did the cost of this, these improvements increase?

A. Yes. We were almost two years between the time that we had halted our procurement process and the time that we started to take bids, started to receive final bids. And unfortunately that occurred, started to occur in the summer of 2008, right about the time that prices were increasing dramatically, particularly those involving plastics, plastic piping and the like, plastic conduits, copper. Most all the metals had gone up significantly in price. And we saw our electrical bids, we saw our base electrical bids, you know, go up considerably both for wiring and electronics. We saw all our piping, mechanical stuff go up higher. The value of the dollar went down because our membranes were being purchased from a Canadian company. And we, we simply lost position, a significant position with regards to the strength of the dollar that had to be made up in that procurement. There were a number of issues that were, that were occurring in the summer of

2008 that elevated the price.

Now, that wasn't -- and that would be expected any time you have a project that goes off schedule by a year or two years. It is, you know, you run the risk of having increases in cost. We did everything we could to try and suppress that.

And then the other, you know, then we had some things that were added to the project as a result of the APP process, which probably wouldn't have made any difference whether that was done in 2007 or 2009. And you know, those were to be expected. We knew we would have some of that.

Q. Sounds like you had a lot of interaction with representatives from ADEQ --

A. Yes, sir.

Q. -- throughout this process. And that was -- I think Ms. Campbell said you weren't really part of the negotiations of the consent order. This is more of the permitting and designing. It is that process you interacted with them on?

A. Yes. I would describe it as sort of two levels of conversations. We were down at the staff level. I mean I was down at the staff level, my staff and the ADEQ staff. We were trying to work out the details, you know, exactly what we were going to build, how we were

going to build them, how they were going to be deployed. And I have got to say that we, we found the staff level, our staff level communications to be very helpful.

They understood our situation. They looked for ways to try to accommodate us where they could within the regulations. There were obviously sometimes when they may have been overruled. But, you know, it was a partnership at that level. It was oftentimes, I know specifically when we ran into the constraints on the Del Oro site, I wasn't quite sure how in the world we were going to handle that, and we engaged ADEQ staff in that conversation. And, you know, together we worked, we got the regs out, read them and they were very helpful in helping us map out a solution to that.

So I mean that, but beyond that, I mean in any discussions with regards to this consent order, I would describe myself as an observer in some of those conversations and providing some technical counseling to the Capestros outside of those conversations.

Q. And the individuals you mentioned, I heard the name Don Bell and an individual named Kwame -- I won't even attempt his last name.

A. Agyare.

Q. Okay. Were there others as well or were those the two primary individuals?

A. Oh, yes. I am trying to think of all the --
Q. Okay. So there were quite a few?
A. Edwina Vogan on the 208 planning was very helpful. We unfortunately hit the 208 planning at a really bad cycle because it was at a time when they were getting ready to revise the old plan and adopt the new plan but the new plan was still going through hearings and hadn't been fully adopted yet. And there was a lot of discussion who really had jurisdiction, was it going to be the city, county or go back to the state. Edwina really intervened with that. I am sure there were other people involved but she was my contact.

Marcy Mullins on the reuse side has been very helpful. She helped us through the issues where we could use reuse water. We knew we could use it on golf courses. Some point early on there was a debated whether or not we should be using B plus water or A plus water and what was in the best long-term interest of this utility that would give them the greatest flexibility. Marcy helped us walk through that decision --

Q. So you and all these folks were working together on staff's common goal, which is to get in compliance with the consent orders?
A. Yes.

Q. Were the Capestros doing everything they reasonably could to move the project along without delay to your knowledge?

A. Yes. We told them that we had to have -- we gave them thresholds or boundaries in which we said that certain events needed to occur by certain time frames, including the raising of money, easements or land acquisitions. And, you know, they, obviously all those kinds of things run into snags, but, you know, they were -- I always found them to be diligent in trying to get those things done to try to meet our schedule.

Q. Just a couple more questions back to Section 14 and then I will be done. You described that you can add cassettes to go incrementally between 681 and 1.3?

A. Yes, sir.

Q. Had you not designed it that way would it have cost more to expand the plant beyond 681 than it will now?

A. Yes.

Q. And it will take longer to add capacity beyond 681 if you had done it differently?

A. Yes, that's correct.

Q. Is it set up the same way to go from 1.3 to 2 or does that now involve additional construction and activities?

A. That's additional construction, sort of a breakpoint at that point. At 1.3 we reached the limit of the module designs of the biological units there and essentially another biological design needs to be deployed. In addition, we have to put another screen in. All the headwork is in.

It is a, it is a true expansion of the plant on that site. So there is a lot of additional units. We are not able to make existing units work more effective.

Q. And that's why the estimated 4.2 million price tag from that expansion from 1.3 to 2 million?

A. Yes, that's correct.

MR. SHAPIRO: Your Honor, if I could just have a sec.

(Brief pause.)

MR. SHAPIRO: Just one more quick area, Mr. Lee. Then I will let my colleagues at you.

ALJ RODDA: We will go to lunch.

MR. SHAPIRO: I am sorry?

ALJ RODDA: Then we will do lunch.

BY MR. SHAPIRO:

Q. Okay. You are aware that the company is hauling effluent away from Palm Shadows?

A. Yes, sir.

Q. Why is it doing that first from an operational,

engineering, you know, utility perspective?

A. Well, as I mentioned before with Palm Shadows, the problem is there is no way to get rid of the effluent. That's sort of compounded by the fact that the plant itself is not functioning. It is not, it is not meeting a discharge limit that would be satisfactory on a long-term basis for reuse anyway.

But the fact that it is not, those percolation cells are not percolating causes a dilemma that you are now building a reserve of wastewater in there that's -- I guess percolation ponds, the best way to describe it is a bathtub, they just fill up. You get a little bit of, you get a little of relief from evaporation but not enough to make up for the daily flow that comes into that plant.

When this first started to occur, and where we actually started to notice it early on, we have always fought odor problems at Palm Shadows, even after we did the initial work and knocked out, you know, 95 percent of all the odor problems, our biggest nemesis was always over at Palm Shadows. And we were -- and partly that's because of the ineffectiveness of the treatment process to remove solids. So the solids were building up in these, in the ponds which is preliminary to the percolation cells.

So we were on that site quite a bit looking at trying to figure out what was going on with, because that sludge and the primary basin in our opinion was the source of our odor issues and we were trying to figure out a way to deal with that.

Well, it became pretty obvious the more you are out at those ponds that those ponds were rising, and that while they may have percolated at some level in the past, their ability to do so was diminishing relatively quickly.

We actually had an ADEQ inspection, I believe it was ADEQ inspection, maybe it was an ACC inspection, I can't remember now, I think it was ADEQ, in which we, the subject came up while we were walking through Palm Shadows. And so this is something that we, more than something we have to keep our eye on. This is something we have to come up with a plan how we are going to alleviate.

We were instructed to make contact with Marcy Mullins' division to see if we can get an interim plan in place for the disposal of that effluent as dust control. We did make those contacts. We did go through the regs with her and there was a provision in there to do exactly that. We did apply for it. We were successful in getting that. And for a time, we were

able to use that effluent in a dust control and we brought those pond down to a pretty significant level. The problem is that the regulations I believe only allowed for that permit to be issued by the department for 90 days. We at the end of that -- and going into it we knew 90 days wasn't going to be sufficient, but we thought there might be an opportunity to reapply for another 90 days and sort of evergreen this, continue to go forward. Unfortunately, we were informed by the department that there was no provision in the regulations that allowed you to do a renewal of the application. It was 90 days one time, and that was it.

So we then looked at a fallback position of taking a look at some of our other plants, particularly, well, the only other one that we had that had a percolation pond was Seasons. Seasons seemed to be percolating very well. As a matter of fact at least a couple of their ponds were dry most of the time. So we thought there is an opportunity here maybe to take some of that effluent over to the Seasons ponds that are percolating and at least on a temporary basis we could handle the situation.

Well, the -- and we did that for awhile. And unfortunately, the amount of wastewater that we were -- I think it was a combination of the amount of wastewater

and the quality of wastewater that was going over to Seasons from Palm Shadows was such that it didn't take long before we exceeded that percolation capacity of those ponds as well. And we were just, all we were doing was transferring the problem from Palm Shadows to Seasons.

At that point I contacted the department again and was somewhat desperate. I said, you know, I just don't know there is any other -- I said the water is coming to us regardless, I mean it is there at Palm Shadows, I can't ignore it, it is going to be going down the streets here before long, and if I don't come up, or parenthetically we, don't come up with a solution for this, we are going to have a public health issue in place.

It was somewhere during one of those conversations that I asked or suggested that maybe we could take this partially treated wastewater to one of the municipal systems in Yuma if Yuma would agree. And there was no, there was nothing the department indicated that would be any issue with them. However, they indicated that the arrangements would have to be made with the City of Yuma under their rules and regulations to make sure that they would stay in compliance with their APP permits. So I subsequently made that

recommendation to the utility.

The utility engaged directly in negotiations with the City of Yuma. And the history of that has been that they were successful in negotiating a renewable agreement there to take effluent and discharge it into an upstream manhole to their sewage treatment plant and currently that's how we are dealing with that wastewater.

Q. Why does it have to be treated further to go into the city's system?

A. Well, I am not -- I don't know what the city's permit requirements are. But the city would, I believe, under their ordinances, and I don't represent the City of Yuma but this is pretty typical of most municipal utilities, is that this size of discharge, because of the amount and because of something that comes in a batch type instead of continuous type flow, would be considered an industrial discharge. And they have an industrial pretreatment ordinance that they are required to maintain through the EPA. And I suspect what they did is basically used that industrial pretreatment ordinance as the basis to enter this agreement with Far West Water & Sewer.

And that does, that basically classifies the Far West Palm Shadows is a pretreatment unit but it does not

give them a credit as being completely treated effluent.

Q. But based on what you said, it isn't really completely treated effluent given the quality of the --

A. We think it is absolutely appropriate treatment. We believe that that, that if that's in fact what the City of Yuma is doing, that that would be a proper way to do so. I mean we would, if we were advising a community, that we were on the other end, we would have advised them to treat it the same way. That also required for the city generally to take routine measurements of organic load and suspended solids load. And the charges that are made on those types of industrial discharges are made up of three parts.

One is hydraulic flow, the volume of sewage that you are discharging.

The other is the strength of the biochemical oxygen demand, or BOD. And as long as that's not over normal domestic sewage then you are okay. We should be okay here in this case.

And then the other is on total suspended solids. And, again, as long as we are not, as long as we are not over normal domestic sewage, we should be okay. That one is a little more of a challenge. I think there are probably times in which we exceed that piece so probably, again, it makes it appropriate for the city to

use this kind of a format to accommodate Far West.

Q. And as far as you are concerned there really wasn't any viable alternative to the city at this point, you exhausted other alternatives?

A. I couldn't think of another idea, nothing. And we, we were really in a box. I mean, and it was a situation that we did not have or I did not feel at that time the utility had a day to waste, that they were going to end up, they were going to end up with a severe issue on their hands if they did not engage the city. And fortunately the city was willing to work with the utility. If that had not been the case, I don't know what might have happened, next system would have been.

Q. The need to have this effluent hauled to the city under the conditions that's being done and the costs, will that go away when the plant projects are finished?

A. Yes, sir.

Q. But for the delay that you have experienced, would the company still be forced to incur these costs to haul this effluent away?

A. If we had completed the facility in February of 2007, this cost would not, this situation would not have occurred.

MR. SHAPIRO: Okay. Thank you very much,

Mr. Lee.

We will tender him for cross-examination when you are ready.

ALJ RODDA: Okay. Thank you, Mr. Shapiro, Mr. Lee.

Let's take a lunch break and come back at 1:30.

MR. SHAPIRO: Thank you, Judge Rodda.

(A recess ensued from 12:10 p.m. to 1:26 p.m.)

ALJ RODDA: Let's go back on the record. And Mr. Lee is still on the stand.

And, Ms. Wood, do you have some questions for this witness?

MS. WOOD: I do. Thank you, Your Honor.

CROSS-EXAMINATION

BY MS. WOOD:

Q. Good afternoon, Mr. Lee.

A. Good afternoon.

Q. Mr. Lee, you are registered engineer here in the State of Arizona?

A. Yes, ma'am.

Q. And as such you are familiar with the laws and regulations that guide your practice?

A. Yes.

Q. And the installation of sewer systems?

A. Yes, ma'am.
Q. Is it appropriate for a subdivision to grant an assurance of capacity if they don't yet have capacity?
A. No, it is not.
Q. Okay. Looking at that map that's to the, I guess it would be to your right, there are several areas which have diagonal lines on them.
A. Yes.
Q. And what do those lines represent? Like, for example, the lines that are over at Las Barrancas 2 and 3, what do those areas indicated?
A. These are areas that are to be serviced by, well, depending on their color, they are, the color designations in those areas are indicating what areas are going to be served by what particular treatment plant.
Q. Well, hasn't this company been under a building or assurance granting moratorium by virtue of the DEQ order since 2006?
A. It depends on which treatment plant that we are talking about. Del Oro, for instance, under the first consent order after the temporary plant was installed, we are allowed to make additional connections into that service area subject to prior approval by ADEQ. So we have to submit, if a request comes in, the department

has, or, excuse me, utility has to submit a request to ADEQ showing how many connections there are and to the extent that there is any capacity in the existing facility to handle that flow.

Palm Shadows, there are no connections. There are no avenues for them to be able to add additional capacity. Section 14, I am not sure I recall exactly what the situation of Section 14 was. But at Marwood, as I recall, there was no moratorium on Marwood but subject to the normal terms and conditions that you had to assure that you had capacity if someone were to submit something to you.

Q. Okay. Do you have a copy of Exhibit R-1 in front of you?

A. R-1?

Q. Yes, should be in that pile in front of you. It says -- and it should be very nearly one of the first exhibits.

A. Yes, ma'am.

Q. Can you turn to R-1. There are a set of exhibits attached to that. Can you go to the third set of exhibits.

A. Third set?

Q. It says exhibit even though this is Exhibit R-1. Attached to it is an exhibit called Exhibit 3, which

includes the consent orders.

A. Yes.

Q. Okay. Now, I want you to go to page 8 of the first consent.

A. Yes.

Q. And look at paragraph K. What are the restrictions on Del Oro with regard to --

A. Well, just a second. I am on page -- you said page 8?

Q. M-hm, paragraph K. And this is the first consent agreement entered regards specifically Del Oro.

A. Okay. I am sorry. I found it.

Q. Okay. And what does that paragraph require in terms of additional connections?

A. Well, it just, as I said before, they cannot add additional connections at Del Oro without approval from ADEQ in writing that there is sufficient capacity to handle those additional connections.

Q. Now, this agreement was superceded by a subsequent agreement that was entered in October 2006, correct?

A. That's my understanding, yes.

Q. Okay. The next attachment in Exhibit 3 is the second agreement. Can you go to page 9 of that agreement, then look under paragraph 4.

A. Yes. I have it.

Q. Okay. And --

MR. SHAPIRO: I am sorry, what page?

MS. WOOD: Page 9.

BY MS. WOOD:

Q. And how were the terms modified?

A. Well, it appears that it is just a little more definitive on what Far West has to include in their request in terms of the request of number of questions, their discharge, volume and assessment of the impact of additional discharge and the operation of the wastewater treatment plant and effluent quality which I don't believe is reflected in the earlier consent order.

Q. And it also says that this will be in place until what time?

A. Until such time as Far West obtains an ADEQ or individual APP operation of a wastewater treatment plant with a design flow of 495,000 gallons per day prior to adding new connections to the Del Oro system.

Q. Okay. So they have gotten that Del Oro APP. Is it, is it completed and what date was it complete, do you know?

A. The permit?

Q. Uh-huh.

A. In terms of completing you mean approved by the

department?

Q. Yes.

A. I believe, this is only from memory because I don't have anything in front of me, but I believe it was in the summer of 2008.

Q. So is it then that all of these, if you look at the Del Oro plant, that these areas which don't have platted subdivisions underneath them, and I am looking specifically at the corner, I think it is of Fortuna Road, just south, or I guess it is just north of the freeway, where it says I guess Mesa Del Sol commercial, is that an area that has been or is going to be developed?

A. You know, in terms of the status of these, these are all pretty much accounted and audited by the utility. I am not, I am not for sure that I know what their status is of these right now. I know that they are, I know that they are, that these areas are planned to be accommodated by the design of the treatment plant but I don't know what their status is as to whatever they have requested assurance letters or whether assurance letters have been given to them.

Q. Okay. Well, you can't give an assurance letter unless you have capacity, correct?

A. That's correct.

MR. SHAPIRO: Objection. Again, that calls for a legal conclusion by an engineering witness.

MS. WOOD: Who just testified he was knowledgeable.

ALJ RODDA: I think he just said that.

MR. SHAPIRO: Unfortunately I couldn't object. I tried to do it now.

ALJ RODDA: Okay.

BY MS. WOOD:

Q. In any event, so they wouldn't have been able to grant any kind of assurance unless they had capacity, is that correct?

MR. SHAPIRO: Objection. I thing that the rule that Mr. Lee agreed to was that they have to have an APP to give an assurance of capacity.

MS. WOOD: You know, I appreciate Mr. Shapiro rephrasing my questions but I have asked two separate questions. And this question is related to the rules and regulations of ADEQ.

MR. SHAPIRO: I will object. It calls for a legal conclusion.

ALJ RODDA: Okay. But I think he is familiar with the rules.

So would you ask your question again, though, so it is clear what you are asking.

BY MS. WOOD:

Q. So they have -- I am going to back up. Okay?

There are two constraints. This particular utility has a constraint put on it by virtue of an order, correct?

A. Yes, that's correct.

Q. There is also just a rule that applies to every single sewage provider in the State of Arizona with regard to granting assurances and that rule is that you can't grant capacity assurances unless you already have the capacity, is that correct?

A. That's correct. The primacy is to who is allowed to provide that assurance, whether that is under the purview of the utility itself or whether it has to be submitted to ADEQ, I think is the basic difference here.

In this case, at least on the interim until these APP permits are completed and construction, it is my understanding, not being a lawyer, but it is my understanding that they would be required to submit any type of a request for assurance along with the utility's calculations that there is sufficient capacity. That would have to be submitted to ADEQ for approval.

Q. Okay. You drafted this map which is identified as I guess A-7 and A-20, the two maps. You drafted

those both?

A. Yes.

Q. Okay. And how did you get the information to identify those areas where you are saying is the service area of the company?

A. These were provided by the utility.

Q. Okay. That's what I was trying understand.

I am going to give you what is marked as Exhibit R-29, Mr. Lee, this is, R-29 is labeled as Far West Water & Sewer existing wastewater treatment plant and service area, correct?

A. That's correct.

Q. It is page 2-4 of an engineering -- you know, I have my glasses on and I am trying to read the really little font at the bottom.

Is this part of a submittal you did on Del Oro in October of 2006?

A. I am, I am familiar with this. I am not sure what document it was attached to. But I am familiar. I know what the purpose of this document was for, so...

Q. Okay. What was the purpose of this document?

A. As I recall, this was to -- part of an indication of the planning activities for each of these contributory service areas of each treatment plant to indicate what areas would be applicable for service from

each of these facilities, including Section 14, Marwood, Palm Shadows, Del Oro and Seasons.

Q. Now, I am going to look at the Marwood area for a moment. You know where Marwood is?

A. Yes, ma'am.

Q. Okay. Looking, there is an area that's labeled Marwood wastewater treatment plant service area that is just to the north, I believe, of 48th Street. And to the west of it looks like Foothills Boulevard. Do you know where the mini mart is?

A. Yes.

Q. Do you see that area? To the south of it, there is nothing there. It doesn't indicate that it is in a service area or that there is anything there at this point in time.

A. That's correct.

Q. Okay. That is now listed on your current map as part of the service area. What is there?

A. That is a plan, a new development that has gone in -- I think in comparison to here, the map, represented by Exhibit A-20, is a recently completed map with information provided to us within the last few weeks by the utility. The map that we are comparing it to, R-29, is part of an engineering report that was completed in October of 2006, I believe, which was the

best information we had at the time in October. We have learned a lot about the system since then and in the area that you are referring to, that is a new subdivision that was put in since then.

Q. And what is the name of that subdivision?

A. Oh, El Rancho Encantado.

Q. Have you done some work on El Rancho Encantado?

A. Yes, we have.

Q. What did you do?

A. We provided engineering services for the installation of a low pressure sewer system.

Q. Okay. And we had some prior testimony that you did some engineering to the tune of $257,000 for El Rancho Encantado. Did you do something more than that, too?

A. I don't know. I don't remember the amounts, but the only, only items that we did was the design for the low pressure sewer system.

Q. And that's that, that site is owned by Mr. and Mrs. Capestro?

A. I believe it was H&S development company is who were the developers of that site, as I recall.

Q. Okay. Now, there is also, and if I could just ask you to kind of cross-reference two maps for comparison purposes, I am moving over to Section 14 now,

there is an abundance of yellow striped subdivisions in the top of Section 14 wastewater treatment service area that do not appear on this section, this Exhibit R-29. It looks like Las Barrancas 1, 2, 3; Ravines 2 and 3; Arroyo 2, 3 and 4. Where did you get the information about that again?

A. These were provided to us by the utility.

Q. Do you know them to be existing facilities or subdivisions?

A. We know that they, the ones that are platted we know are platted subdivisions. In terms of what has been completed on those with regards to streets, I am not sure.

Q. Okay. These weren't in the October 2006 document either?

A. No, they were not.

Q. Okay. Could you have satisfied the needs of these communities with $150,000, or, excuse me, the 150,000 gallon per day plant that Section 14 was at the time in 2006?

A. I would have to go back and take a look at those calculations to be able to answer that specifically. I know that those were analyzed by our office at the time they were presented to us which was well after October of 2006. And hydraulically they appeared to be

sufficient capacity to handle those. We had directed that it was subject to the fact that these facilities need to be upgraded.

Q. Meaning they had to be expanded?

A. No, that they needed to be upgraded. These facilities, they had hydraulic capacity to handle these flows but they were continuing to have some nitrogen issues with regard to water quality effluent.

Q. Do you have a copy of Exhibit A-17?

A. Yes, I do.

Q. According to A-17, this is a document that was provided by Mr. Capestro?

A. That's right.

Q. And looking at page 1, Section 14 --

A. Yes.

Q. -- he says that the current peak flows of Section 14 are 117,000 gallons each day?

A. I understand, yes.

Q. And you know Section 14 as it was configured in 2006 was a 150,000 gallon per day plant, correct?

A. Yes, correct.

Q. Okay. If you add in, I am thinking, five new subdivisions, do you think they are going to have enough capacity with a 150,000 gallon plant to satisfy the needs of those new subdivisions?

A. First of all, I think we would have to take another look at the outstanding APP permit that designated the 150,000 gallons per day to determine whether or not that was based on average day flow or whether it was based on peak flow. I suspect it was based on average day flow.

Q. Okay.

A. Which would probably mean you would want to go to the second page.

Q. Okay. So do you believe --

A. 102,000.

Q. -- that the 150,000 gallon per day plant in 2006 would have been able to satisfy these five new subdivisions when, according to this document, it is at 102,000 gallons per day already?

A. We had indicated that, and I will have to, really I should confirm this from our files, but as I recall, the Las Barrancas subdivisions we felt that there were, was capacity in there.

Q. Which Las Barrancas, sir, for clarity?

A. I believe it is called Las Barrancas phase one.

Q. Okay.

A. Which was the only one that I can remember being in question at the time in that service area.

The other, El Rancho Encantado phase 1 and phase

2 --

Q. I don't want to traipse apart from Section 14. We can go back.

A. Those were planning on going to Marwood.

Q. Okay. So you are planning -- oh, okay. Well, maybe you are talking about Section 14. El Rancho Encantado is part of Marwood's service area. But you are saying you were going to redirect those flows to Section 14?

A. That's the portion I was referring to earlier. El Rancho Encantado phase 1 and 2 were going to Marwood under the current regime that they had under the current plan. But once the upgrade was made at Section 14 they would be part of the redirected flow that would go to Section 14's improved plant.

Q. So they would not go into the Marwood plant that's at 340?

A. That's correct.

Q. 340 gallons per day, let me be clear.

I want to move over to the Palm Shadows area, wastewater treatment --

A. Okay.

Q. -- service area. There is on your map Rancho Rialto, an area to the east of Fortuna Road and I-8, and several sites to the south of 40th Street that don't

appear on this map that you did in 2006, in October of 2006.

A. Yes. That, I am not sure the exact reason for that discrepancy, except that it may have simply been that we did not have, you know, accurate mapping information in October of 2006. I am not really familiar with Rancho Rialto's situation so...

The service area was outlined to be included in that, but I, I don't have personal knowledge of that particular subdivision as far as why it shows up on this one now and it didn't show up in October of 2006 other than there are probably several instances here where we have better information on the Exhibit A-20 than we had on R-29.

Q. And you said again you got this information from the utility?

A. Well, maybe in this particular case it is probably important to point out two things. First yes, information regarding particular subdivisions and who is being served by which were provided by the utility for incorporation in the map. But where there is an existing subdivision that appeared as a result of the mapping program, those may have picked up, may have been picked up simply because we had better mapping information. These maps that we used back in October of

2009 were the best information -- or 2006 -- were the best information we had at the time.

Q. Didn't you tell me that you couldn't attach or include any additional connections to Palm Shadows at all?

A. Well, that's my understanding, yes.

Q. Okay. So there are significantly more connections here south of 40th Street and also the other Rancho Rialto and the others. You didn't include them in there you are saying because you didn't know about them?

A. No. You asked me specifically about that Rancho Rialto. That one I am not particularly familiar with.

The others you were talking about, Villa Chaparral and a couple of others that show outside of this particular area, it is my understanding with those, that those are pending applications that are out there that are being held in abeyance until such time as we have capacity --

Q. Okay.

A. -- from Palm Shadows.

Q. That's the point I am trying to get to.

A. Okay, sorry.

Q. You or your company drafted Exhibit R-29?

A. Yes, ma'am.

MS. WOOD: Okay. Move for the admission of Exhibit R-29.

ALJ RODDA: Any objection?

MR. SHAPIRO: No.

ALJ RODDA: Okay. R-29 is admitted.

(Exhibit No. R-29 was admitted into evidence.)

BY MS. WOOD:

Q. Palm Shadows does not work, correct? The wastewater treatment plant doesn't work?

A. The Palm Shadows sewage treatment planted fails to meet adequate water quality and its effluent cannot be disposed through the percolation cells that they have. In both those instances I would describe the plant as not working.

Q. Okay. You have been an engineer registered engineered for some 38 years?

A. Yes, ma'am.

Q. You understand the standards that apply to the practice of your profession?

A. Yes, ma'am.

Q. Okay. Is it below the standard of practice to install a wastewater treatment dependent upon percolation on land that does not percolate due to clay content?

A. All I can say is that the standard of care that

we would provide on most of these, on this type of a site in advance of locating any type of treatment process, we would consider it appropriate to drill a test well, test hole, exploratory hole to understand the underlying geology of the site.

Now, again, I wasn't involved in that original design. I have not been retained nor have I really looked to see what may have transpired that resulted in the design that occurred. All I can tell you is that in our review of the files I have not been able to find such an exploratory boring. If one exists, I don't know, but I would, I would say that it would be a reasonable standard of practice to assure that one should have existed before the plant was built.

Q. If one was not done, would it have been below the standard of practice for your profession to install that percolation pond atop of clay soil?

A. The only other explanation for that, and I am being careful when I answer this because you are asking me to render an opinion on another professional engineer and we have certain ethical restrictions from doing that, but in generality, the only explanation that might be resultant from that is if that engineer was extraordinarily familiar with this territory and knew what the underlying geology was, for instance may have

completed other exploratory wells in the neighborhood of this site, and for that reason felt comfortable in his conclusions. But I am not aware of that and I don't know if that's the case. But there could be an answer, I guess is what I am saying, as to why he did not do an exploratory hole. We would not do that but...

Q. Because it is --

A. Well, because first of all I don't have that kind of prior experience in that site and I would not have been able to rely on that in this case.

Q. Now, originally when Palm Shadows was designed it had two evaporation and percolation fields. Now it has how many?

A. I think there is, I have the map here, I think there was six I think last count, something like.

Q. Why does it have the additional percolation and evaporation ponds?

A. Well, that's history that predates me. The cells that are there have been there since I first started working. And I don't know how it came about. I don't know what the sequence of events were that occurred to cause it to grow from two to its current state.

Q. You didn't discuss it with anybody?

A. No. It really wasn't a concern of mine as to

how it occurred. Each of these facilities have a fairly complex history to them. And as far as I was concerned, as far as it was germane to what we are trying to accomplish, it was more important to understand what was there now as opposed to how they got to that point, because I am, it was really only charged with designing a fix to these facilities, not really trying to determine how they got to their current state or current condition.

Q. Were they permitted?

A. Permanent?

Q. Yes, the additional ponds.

A. Well, they -- I am not sure if you, how you classify a permanent versus a temporary pond, because once you dig a hole in the ground it is only there until you fill it back up again essentially. I think, I think the, from my view, these ponds were constructed in a manner that they were intended to be there for awhile. There was no -- even if you were doing something just temporary you would think maybe you would have your excavated material stockpiled, for instance, nearby where you could fill it back in again. And that didn't exist.

Q. So my question, were they permitted, do you know?

A. Oh, permitted.
Q. Permitted.
ALJ RODDA: I thought you said permanent.
MS. WOOD: I apologize, permitted. I apologize.
THE WITNESS: Okay. No. My understanding, and this goes back to some early conversations we had with the staff at ADEQ and in listening in on some of the conversations with regard to the consent orders, I do believe that some of those were installed without a permit.
BY MS. WOOD:
Q. Okay. Can you tell us what the purpose is of the Fortuna Road extension?
A. That was done outside of our contract but my understanding was that the utility, that there was a -- the county was making some road improvements and they had an opportunity to install water and sewer lines in that roadway as a result of the fact that they were going to be removing all the pavement and it would give them an opportunity to put that in and install it before a hard surface was laid on that roadway.
Q. Your contract related to the ADEQ compliance issue?
A. Well, actually our contract was more broad, was broader than that. It certainly focused on the issue of

the initial consent order and on the outstanding NOVs that were in place at the time. And what would be required to rectify that situation. It also went beyond that to give some recommendations, long-term recommendations both on the water system and the sewer system as far as any additional improvements that may be required.

Q. Okay. You would agree with me that the Fortuna Road project is not part of ADEQ's requirements in terms of the consent order?

A. No, I don't remember seeing anything.

Q. Okay. You have been paid approximately $4.3 million, $4.4 million for design and engineering according to the documentation we received from the company. Is there any money that you have received that you have not yet spent on services provided?

MR. SHAPIRO: Excuse me. Let me object; misstates facts in evidence.

BY MS. WOOD:

Q. Okay. You tell me, how much have you been paid?

MR. SHAPIRO: It wasn't how much he has been paid; it is what he has been paid for that generated our objection.

ALJ RODDA: I think that in additional to design and engineering there was some contract management. I

think that's what the earlier testimony was.
BY MS. WOOD:
Q. Let's just go to Exhibit A-8.
A. A-8.
Q. It says on A-8, page 7 of 21, under the category of design and construction management, 4.333, about $4,333,866. Is that the amount that you were paid?
A. That's my understanding, yes.
Q. And that was paid to Coriolis?
A. Yes, ma'am.
Q. Or UAM or both?
A. Coriolis.
Q. Are there any of those funds that you have receive that you still have and have not yet provided services? Do you have a balance?
A. No, we do not.
Q. Okay. And when you say no we do not, you mean both Coriolis and UAM?
A. Well, Coriolis is an LLC that involves UAM and Midwest Environmental Services. UAM provides engineering services. Midwest Environmental Services provides procurement and construction management services. And what you are referring to is work from both parties on behalf of Coriolis.
Q. So would it be that you have received more than

$4.4 million through your work as -- through Midwest as well?

A. No. The Midwest and what is being referred to here is that that $4.3 million represents both engineering design activities performed by Universal Asset Management and procurement and construction management services provided under the Coriolis partnership.

Q. Around Section 14 there was a purchase of $200,000 to Schechert trust for three and a half acres. Why do you need three and a half additional acres at Section 14?

A. This is a transaction was initiated as I recall between our geo -- or hydrogeologist HSI and the utility as we were exploring locations for the vadose wells.

As I recall, HSI informed the utility that there was insufficient room within the boundaries of the current tract of ground to install all three of these vadose wells and it was recommended that they get, that they obtain additional property to be able to accommodate these wells and make sure they were within their boundary. So to me, my understanding is that's the primary reason for that additional purchase.

Q. Okay. And the vadose wells are the wells that you need to put effluent in in the event that there is

inadequate absorption at the golf course?

A. That's correct.

Q. And that inadequate absorption issue is in amounts in excess of 681,000 gallons per day, correct?

A. That's correct, yes.

Q. I am going to ask you a question about each one of the treatment sites. And you tell me the answer. The question I am asking is is it complete. So is Palm Shadows complete in terms of its being converted to a lift station and the force main being completed?

A. No. It cannot be completed until Section 14 is completed.

Q. Is the Seasons plant complete?

A. No. The Seasons plant cannot be completed until Del Oro phase one is completed so that the temporary unit can be moved to Seasons.

Q. Okay. Is Del Oro complete?

A. Del Oro is not complete. It is waiting, it is awaiting start-up by Zenon.

Q. Is Section 14 complete?

A. Section 14 is not complete.

Q. And is the Marwood lift station complete?

A. The Marwood lift station or the station number 16?

Q. Uh-huh.

A. No. It cannot be, that cannot be completed until such time as the Section 14 is completed.

Q. Where is the Paula Street lift station? If you could, identify it on the map.

A. I don't have the street names on here and I am not that familiar with the streets. But it is in this general vicinity here.

Q. And is the Paula Street lift station part of the process of transferring Palm Shadows' effluent to Section 14?

A. No. There was a gravity line that was installed -- well, if you can hear me from this, but this crosshatched area in here shown as being ultimately served here, there is a number of small lift stations that serves this area in here that were -- before we got involved there was a gravity line that was built down here.

Q. Just for clarification of the record, you are pointing to what is identified as the Marwood treatment plant area. It is highlighted in blue and it is on I guess the north part of Foothills Boulevard just south of I-8?

A. Yes.

Q. Okay.

A. And it was completed down to 40th Street. This

was well in advance of us actually starting the project but it was never connected. The gravity line is dry there now. The lift stations were never tied in because they didn't have anyplace to go. So in this project our force main from Palm Shadows runs right by this area. And so we, we chose to recommend a Paula Street lift station to basically allow that line which already has been put in the ground to go live and to eliminate all these little lift stations.

Q. How is that portion of the system connected to the Marwood treatment plant to the south?

A. I am not sure exactly how this is connected. I think this goes down to what is called lift station number 16 which will ultimately get discharge over here to Section 14, part of the diversion.

Q. Okay. With regard to the Paula Street lift station, was that part what ADEQ required or was that something that you took up because it was convenient?

A. To my knowledge it was not an ADEQ requirement.

Q. Thank you.

Where is the City of Yuma treatment plant in relationship to Palm Shadows?

A. I don't know.

Q. Okay.

A. I have never been to that treatment plant.

Q. The reason I asked you that question is several of the public commenters, members of the public commented on the fact that Palm Shadows was being the force main was being I guess -- what is it? About four, four and a half miles?

A. Yes.

Q. Okay. It was being built four and a half miles to go to Section 14 instead of being hooked up to the City of Yuma. Did you give any consideration to that as an option?

A. We had discussed this with the owners early on in the project, with the owners of Far West. And we were told that that had been explored with the city and that the City of Yuma had declined an interest in receiving that sewage. So we ruled it out as an option. And then when we later reviewed the 208, which is a regional planning document, the 208 did not indicate that that area would be going to the City of Yuma.

So in order to stay in compliance with the 208 -- and the 208 actually showed a treatment plant in the vicinity of Palm Shadows' current plant. It also showed another one in the vicinity of Section 14. And it actually showed a third one roughly in the middle. So at some point there would have been some thought apparently in planning that there would be three plants

in that area.

But there was no indication of any of that service area going to the City of Yuma. That doesn't necessarily preclude it couldn't have been an option. But, and I don't know if that's part of the reason why the City of Yuma indicated they weren't interested in it, because they felt it was not in accordance with their 208, but it could have been.

Q. You indicated that when Palm Shadows was having some overflow, or at least it was reaching the top of the ponds, that you hauled some of the effluent to Seasons for a period of time.

Did you ever haul any effluent or did the company ever haul any effluent to Marwood or any of the other wastewater treatment plants?

A. Not under my direction. To my knowledge, the only place that we -- that they attempted to send it to was to Seasons. But you would have to ask the operators on that. Not under my direction anyway or recommendation.

Q. The reason I ask you that is Seasons plant by your map that you drafted is, what, is a 50,000 -- how many gallons per day is it current at?

A. 70,000 gallons per day.

Q. And the information provided by Mr. Capestro,

which I think is in Exhibit A-17, if you have it in front of you --

A. Yes, I do.

Q. -- is that the exhibit where he sets forth how much is being sent to the -- or how much each individual plant is using in, you know, how much effluent is being processed at each plant, is that the document that identifies that?

A. Yes. You are talking about Exhibit A-17?

Q. Uh-huh.

A. Yes.

Q. Okay. How much is being processed at Seasons on average?

A. According to the A-17 document Seasons has an average flow of 73,000 gallons per day.

Q. Okay. When you hauled the effluent from Palm Shadows to Seasons did you treat it or did you just put it in the dry ponds?

A. It only went into the percolation ponds but did not go through the treatment plant.

Q. Is that why it is not reflected in this?

A. Yes.

Q. Okay. Just trying to understand it. How much space does a vadose well require or does it depend on the size?

A. Well, it really depends on the area of influence that they want to have at the area, at the point of injection in the underground formations. I am not a hydrogeologist so I am probably not the best person to respond to that. I only know that that's part of the issue.

And typically what will happen is the hydrogeologist will give us a spacing requirement. They will say they have to be 200 feet apart or 300 feet apart or whatever the case may be. But that's normally something we don't, I don't direct myself. That's done through our hydrogeologist.

Q. I am just going to ask you a series of questions about money you received in the course of this project.

The 1.883593 that you received in terms of the water projects that are identified on Exhibit A-8, that's not related to the ADEQ project at all?

MR. SHAPIRO: Objection; misstates facts in evidence. Mr. Lee didn't receive 1.8 million.

BY MS. WOOD:

Q. Did you receive any money for the water projects?

A. Yes. We received funds for the design of a water treatment plant expansion.

Q. Okay.

A. Surface water treatment plant expansion.
Q. Can you look at Exhibit A-8. It says under total construction draws for water.
A. What page are you on?
Q. I am on A-8, page 7 of 21.
A. Okay.
Q. Did you and your company receive $1,888,593?
A. I am still not finding that number.
ALJ RODDA: It is the total.
MS. WOOD: Yes, at the total of the bottom. I wasn't going to go through each individual thing.
ALJ RODDA: You were assuming that this company received all those amounts as opposed to just the 500,000?
MS. WOOD: I was going to ask.
ALJ RODDA: Oh, okay.
THE WITNESS: No. I mean a portion of those are certainly ours, but some of these involve other costs as well.
BY MS. WOOD:
Q. Okay.
A. So they are not ours.
Q. Let me ask it this way, because you are very familiar with the ADEQ order, correct?
A. Yes.

Q. Okay. None of the items listed in the water section that total the amount of $1,883,593 for construction draws is related to the requirements of the ADEQ order, correct?

A. Of the, either the first or second consent order I would agree, yes.

Q. Yes. And in addition to that, if you look under the column where it says sewer, and it says mapping and asset management, $246,328, that's not related to the ADEQ order either, is it?

A. That's correct.

Q. Likewise, the next item for software for sewer, 104,800, that's not related to the ADEQ order either?

A. That's correct.

Q. And below that, there is an entry for 25,000 for master planning sewer. And there is also below that sewer AMWS fuel dispensing program in the amount of $5,931. Neither of those are related to ADEQ order requirements, are they?

A. There could be some argument that the master planning would be appropriate. We usually do that before we would enter into APP, the APP permits.

Q. Okay. But the $5,931, no?

A. Correct.

Q. Likewise, to the extent that you or your company

received 257,000 for the project at El Rancho Encantado, that would not be related to the requirements of ADEQ either, would it?

A. That's correct.

Q. The ADEQ order did not require 2 million gallons per day. So to the extent the company has represented that cost might well be $420,000, that would not be related to the ADEQ order either, would it?

MR. SHAPIRO: Can I have that question read back please before he answers. Thank you.

BY MS. WOOD:

Q. Let's just look at an exhibit together.

A. Okay.

MR. SHAPIRO: I would still like the question.

ALJ RODDA: Well, she is going to withdraw the question.

MR. SHAPIRO: Okay. If she withdraws it, that's fine.

MS. WOOD: I think it is Exhibit A-17 but let me just -- I am looking for the exhibit that's labeled summary of construction. Which number is that?

MR. SHAPIRO: Well, I have got a summary.

ALJ RODDA: Summary of what?

MS. WOOD: It is a summary of construction and it says to be completed.

MR. SHAPIRO: Oh, I think --
MS. WOOD: It is in exhibits were provided.
MR. SHAPIRO: I think it was A-14, I think. But...
ALJ RODDA: Yes, I think you are right, summary additions to plant and construction work in progress.
MR. SHAPIRO: No. I think she is looking for the one-pager though.
Is that correct?
MS. WOOD: Yes, I am.
MR. SHAPIRO: Okay. Then I was wrong.
ALJ RODDA: 11?
MS. WOOD: Actually A-11 it is.
ALJ RODDA: Yea, I get the prize.
MS. WOOD: Yes, you do.
MR. SHAPIRO: Now if I could just get the --
BY MS. WOOD:
Q. I am going to withdraw that question, Mr. Lee, and start with another one.
If you could put A-11 in front of you. Is the 418,000 for Del Oro phase two, is that something that needs to be done imminently to satisfy the needs of currently connected ratepayers?
MR. SHAPIRO: I am sorry, I would like that question read back, too. Thank you.

(The record was read by the reporter as requested.)

MR. SHAPIRO: Okay.

THE WITNESS: Yes. This represents the biological tankage units which are a significant portion of the APP permit requirement. The reason this is divided into two phases is to allow the -- to basically be able to sequence construction such that we can keep that plant operational. And then, by placing new membranes into service, that's phase one, once they are in service we can remove the temporary membranes that are there. They will then move to Seasons and at that point we bring the tankage in for the biological processes that go ahead of the membrane, permanent membrane units.

BY MS. WOOD:

Q. I am reading this summary. And it says up above phase one to 300,000 gallons per day. And it says required to complete. And there is zero in there. Do you see the top there?

A. Yes.

Q. Okay. So to complete the first phase to 300,000 gallons per day, you don't need any money?

A. Well, what the 300,000 gallons per day phase one accomplishes, it basically puts us in the same position

after the construction of phase Del Oro phase one that we are in today.

Q. Correct. You have a temporary plant in?

A. All we have done is replaced the temporary membranes with permanent membranes.

Q. Okay.

A. The problem is that that plant, even the temporary plant, is relying right now on the existing aeration system in the existing tankage to support nitrification and denitrification. And it does it but it struggles during certain portions of the year.

The intent was as soon as the permanent membranes were in place, that would allow us to remove the temporary membrane plant. The reason that's important to us is because the temporary membrane plant sits on the only piece of real estate available for us to put the permanent biological tankage units in place.

It is a little bit misleading in my opinion to have these phases solely dependent upon their capacity because there are other issues at this site beyond capacity that causes it to be broken into two phases.

Q. Okay.

A. It is not because we were trying to get to 300 and then go to 495. It was really, you know, to be able to sequence the plans so we could remove the temporary

plant and make room for the permanent tankage without interrupting service.

Q. So the permanent tankage --

Is that the correct term?

A. Yes.

Q. -- that you are putting in place there is also tankage on the lot, right?

A. Yes. There is, well, there is tankage on the lot that we are currently using --

Q. Okay.

A. -- for this purpose. But it is, it is marginal in its ability to perform in the way that it should perform. And this is, this is not a situation that an engineer would want to rely on as a permanent installation. And I am sure it is one that the staff at ADEQ would not allow us to continue to use. And it was not the, it was not presented that way in the APP permit application that we would simply put in some more membranes and not put in the biological treatment units.

Q. Okay. When you spoke earlier today you talked about this site being kind of its end capacity at 495,000, correct?

A. That is correct, yes.

Q. And you said that the reason you were building to the 495,000 was in anticipation some day it would be

used but that's not what you needed right now, but you were doing it to, I guess, minimize the future cost because you recognize this is a tight little space and you have to do it all together basically?

A. Let me -- I will go through that sequence of events again. If you think in terms of the plant capacity, which is sort of one element of the plant, it is difficult to do that under any kind of plant condition because everyone always thinks in terms of hydraulic capacity only or number of connections.

If you take a look at the three major components of this plant that affect or that are affected or impacted by capacity it would be the head works of the plant. Now we are using the existing headworks of this plant. The existing headworks of this plant already had enough capacity to handle 495,000. It just so happens that worked out. So we had to do very little to it. We were able to basically use what was there.

The next step in the treatment process after the headworks is the biological treatment units. This is what does the heavy lifting for the nitrification and denitrification. And it allows us to meet the low nitrogen limits that we have in the APP permit. The tankage that is there now is inadequate to really do that on a permanent basis.

We have chosen a modular size of biological units for all of these plants. So everything is interchangeable. It so happens that that modular size is about 500,000. Actually those tankages may be 500,000, might be able to push it to 600,000.

The next component in that process are the membranes, the permanent membrane units. Now, permanent membrane units can be staged. On this particular site, it would make little sense to put in smaller tankage because if you did so you would simply be relegated. You would say that site could never go beyond 300,000 because it is very difficult to ever go in and upgrade that site to pick up just another 195,000 gallons per day of capacity.

The membranes on the other hand are different. The membranes, we can operate those. The cassette units themselves -- you got two costs with the membranes. You got the tankage that they sit in and the cassettes themselves. We put, we install the tankage to maximize the site. But we do, we only put the cassettes in that are mandated as a result of the current connections.

As I said before, the plant ends up being rated by its weakest leak. So if we put -- even though we put in all this other capacity for biological headworks, the plant will only be rated 300,000 so long as we only have

300,000 gallons per day cassettes installed. And as we get more capacity and the way that site will grow is through the addition of the new, of additional cassettes in the process.

Q. Can that current plant with the temporary membrane in place operate until the company has enough money to replace it?

A. Can it operate? Well, I guess the best evidence of that is that we are making it work now. Okay? We have had a few times, particularly in the winter months, when the population comes back in, the peak flows come up, that that plant has struggled to meet the nitrogen levels. So we would -- I don't think that would get any better in time.

So it is, it probably -- it is working okay now but marginally. It is, if we were to say just leave it in place we would run the risk, I think, next year of having difficulties meeting nitrogen levels and we could end up with NOVs as a result.

Q. Now, your Seasons plant, that's operating in its current capacity, it is operating in compliance with the ADEQ requirements, correct? I am not talking about the consent agreement. I am talking about the standard provisions that apply to all sewer facilities in the State of Arizona.

A. I haven't actually looked at Seasons' DMRs or monthly reports lately. So I am not sure how well that one is functioning with regards to its discharge limits.

Q. How about the --

ALJ RODDA: If it wasn't working, wouldn't you have heard about it?

THE WITNESS: Well, we would, I would have probably seen an NOV. But sometimes those NOVs are delayed from the time they actually occurred. So they could be a quarter behind in terms of reporting that. And given that the last quarter would have been one of our higher months, it is possible that we could have some issues there that I am not aware of.

ALJ RODDA: Thank you.

BY MS. WOOD:

Q. Well, you would agree with me that the priority on this particular sewer utility is Palm Shadows, correct?

A. Well, yes. We have really been kind of cautious about prioritizing anything up to this point because the consent order didn't really, it did not provide any prioritization. It was all issues were equally important and therefore they are all moving as rapidly as we could towards completion.

If I were to, if I were to be given the latitude

of saying, okay, regardless of the consent order, Gary, what would you as an engineer prioritize, I would certainly prioritize Section 14 as being the most critical thing to maintaining the utility. And then followed by that would be the ability to resolve this issue of Palm Shadows by directing the flow to Section 14.

ALJ RODDA: Is Section 14 the critical part because it has to be ready to take the Palm Shadows?

THE WITNESS: Yes, ma'am, yes.

MS. WOOD: Your Honor, I don't have any other questions right now.

ALJ RODDA: Okay. Great.

Mr. Torrey, you have significant questions?

MR. TORREY: I have quite a few, Your Honor.

ALJ RODDA: Let's take a little break then, ten minutes.

(A recess ensued from 2:32 p.m. to 2:44 p.m.)

ALJ RODDA: Let's go back on the record. And, Mr. Torrey, do you have some questions for this witness?

MR. TORREY: Yes, I do, Your Honor.

ALJ RODDA: Don't forget your microphone, though.

CROSS-EXAMINATION

BY MR. TORREY:

Q. Good afternoon, Mr. Lee.

A. Good afternoon.

Q. I believe you and I spoke a few weeks back in a telephonic conference between you and your attorneys. And I believe Mr. Capestro was on the conference call as well as Staff's engineer. Do you recall that?

A. Yes, sir.

Q. Essentially the topic of conversation at that time was the consent order and the work remaining to be done. Do you recall that?

A. Yes, sir.

Q. And what I would like to do right now, Ms. Wood asked you to look at an exhibit labeled R-1 on the stand in front of you. And I believe you still have a copy of that.

A. Yes, sir.

Q. If you would, turn for me to the second consent order. I believe she said it was in Exhibit 3 of that document. Exhibit 3 should be in with the first consent order followed immediately by the second.

A. Yes, sir.

Q. The second consent order beginning on approximately page 8, there is a subsection 3 entitled

compliance schedule. Do you see that?

A. Yes, sir.

Q. And before I begin with the consent order itself, I believe in our discussion, our telephonic discussion, there was a different order that was more appropriate to approach these.

So I will ask you: In your professional opinion, in handling each of the projects that you were retained to administer, which project do you believe is the single most important project of any of them to complete at this time?

A. Well, I guess it depends on what the goal is. If what we are trying to do is to comply with this consent order, given that the consent order is based on existing notices of violations of each of these facilities, it would probably be not appropriate for me to say that one NOV is less important than the other, that they would, it would appear to me that ADEQ has determined that all of these NOVs need to be corrected and in short order.

Now, having said that, from an operational standpoint, outside of the consent order itself, in terms of dealing with day-to-day issues, not just of compliance but of just operations --

Q. Actually, Mr. Lee, if I could stop you right

there for just a second. Let's just assume as a premise that the ADEQ and the company have agreed to this consent order and that all of the projects listed in this consent order were equally important to be completed, since the company can't avoid action by ADEQ unless all of these items are resolved. Would you agree with that premise?

A. Yes, that's correct.

Q. Now, based upon that, there is probably a certain order to these projects that makes them the most efficient, there is a most efficient way to accomplish each of these projects. Would you agree with that?

A. Well, these projects are of the size that it is not really, you don't really need to do one and then do another but let me run through a sequence that I think might get to the heart of what your question is.

We are experiencing chronic issues of day-to-day operational issues at Palm Shadows. Palm Shadows has had, even after our system-wide odor control problem, it consistently generates odor complaints and we have to go out and deal with those on a chronic basis. In addition, we have this issue that has been described of getting rid of the effluent through the percolation ponds which requires us to go at extraordinary expense to take that effluent by truck over to the City of Yuma.

So just on a day-to-day operational schedule, whatever we can do to resolve the issue of Palm Shadows would certainly rank pretty high in my professional opinion as far as getting the overall job completed.

That being said, that requires us to have Section 14 complete. So in order of sequence you would need to do, you would need to complete Section 14 and you would need to then make the necessary closure issues of Palm Shadows as your high priority.

We, in terms of Del Oro, the issue at Del Oro is such that we are, you know, we have met the first consent order requirement for 300,000 gallon per day temporary facility. It is temporary. It is, it probably has the least amount of work that needs to be completed in order to be done. And by that I mean completed with both their, what we call, phase one and phase two.

It would, I would think that it would not make a lot of sense to just completely stop work on Del Oro and put all of our efforts on Section 14 and Palm Shadows given the fact that we are so close to having Del Oro completed. But that would leave us then with Seasons. And Seasons could be the, well, it will be the last one we complete because we can't do anything there until the temporary plant can be relocated to Seasons.

Section 14, Palm Shadows, Del Oro and Seasons would be the order.

Q. Now, if I could have you take a look at Exhibit R-1, and, if you could, turn to page 11 at this time. There is a section, subsection G that appears on line 12. Do you see that?

A. Yes.

Q. And that is entitled Section 14 wastewater treatment plant, is that correct?

A. Yes.

Q. Subparagraph 1 begins with the requirement that the company shall submit to ADEQ a request for expedited third-party review of an APP application. As of today has that been done?

A. Yes. That was completed and we have received our APP permit.

Q. And was that something that your company specifically was tasked to do?

A. Yes, that's correct.

Q. Okay. If I could direct your attention a bit further down the page to approximately line 23, paragraph 2, within 90 calendar days of the effective date of the consent order Far West shall submit to ADEQ an administratively complete APP application for expedited review, do you see that?

A. Yes, sir.
Q. Has that been completed?
A. Yes, that has been completed.
Q. And again was that something that your company provided?
A. Yes, sir.
Q. Directing your attention to the third subparagraph beginning at line 28, Far West shall submit to ADEQ an administratively complete notice of intent, do you see that?
A. Yes, sir.
Q. Has that been completed?
A. Yes, sir.
Q. And, again, was that something that your company performed for Far West?
A. Yes, we did.
Q. If you could, turn the page to page 12. Beginning at approximately line 5, subparagraph 4, 60 calendar days of receipt of construction authorization from ADEQ, Far West shall complete expansion of Section 14 collection system, do you see that paragraph?
A. Yes.
Q. Now, has that been completed?
A. It has been completed with the exception of the, that particular notice of intent including the

conversion of the lift station at Section 14 and that has been delayed until Section 14 is prepared -- I am sorry. That collection apparently included the conversion of the Palm Shadows lift station and that has been delayed until Section 14 is prepared to receive sewage from Palm Shadows.

Q. This specific language directs Far West to complete the expansion of the collection system itself. Has that been completed, the collection system itself?

A. Yes, the collection system itself. The issue here is how you define collection system. I am referring to it as in terms of how the permit was issued for that. And the permit included the piping network, which we normally consider collection system. But it also, we also included in that the conversion of the lift station at Palm Shadows. And I -- just for clarification, that has not been and will not be completed until Section 14 is ready to receive wastewater.

Q. You said that you weren't involved in the negotiation of the consent agreement but you did provide technical expertise or technical guidance to the company at that time, is that correct?

A. Yes, sir.

Q. At the time that this agreement was negotiated,

do you believe that the parties intended for the piping that you mentioned at Palm Shadows be considered part of that collection system?

A. Well, the piping system? Yes, definitely the piping would have been considered in that, yes.

Q. So in your professional opinion, as of at this time, since the piping to Palm Shadows has not been completed, does that mean that the company would not yet be in compliance with this subparagraph?

A. Yes, just, I may be splitting hairs here, but the piping system is complete. It is the conversion of the pumps that are not completed. And I suppose it could be argued that, yes, the collection system is complete. But the pumping units going direct flow to the collection system is not.

Q. Okay. When you say a pump conversion, because I am certainly not technically proficient --

A. I understand.

Q. -- as part of management can you for the record explain what that involves.

A. Well, considering the Palm Shadows existing treatment plant, the only element that will remain of the existing facilities at Palm Shadows is the influent lift station or pumping station. That pumping station currently pumps the gravity flow that's coming to Palm

Shadows and takes it up to an elevation that it can run by gravity through the existing tankage. That's the way it works now.

What is going to happen when we are ready to receive sewage in Section 14 through this completed piping system will be we will have to go in and redo that piping, we will put a new set of pumps in there that have the capacity to be able to pump over to the Section 14.

Q. So the actual physical part of that is located at the plant of Section 14, but the pump work that needs to be done on the facilities that are currently on Palm Shadows is what is remaining, is that correct?

A. Yes, that's correct.

Q. Now, based on your professional opinion, do you believe that ADEQ would consider the pumps at Palm Shadows to be part of this project as you do?

A. I don't like, I hesitate to answer for ADEQ. I just want to be clear as to what exactly has been completed and what is not.

Q. Okay. Approximately how much is it going to cost to complete that modification to the pumps that you just mentioned?

A. At Palm Shadows, oh, I don't have an estimate but I would say 150,000.

Q. Once those pumps are completed, or the modification is completed, then they will be connected by the piping that you said is already in place and then that, the sewage, can be taken down to the Section 14 plant, at that time all of the requirements for subparagraph 4 will be met, is that correct?

A. That's correct.

Q. Okay. If I could direct your attention down to the next paragraph below subparagraph 5 on page 9, beginning with the line within 30 calendar days of completing expansion of Section 14, Far West shall submit to ADEQ administratively complete request for discharge authorization, do you see that?

A. Yes.

Q. Clearly it is not within 30 days of completion of the expansion. But has that project been at least begun or has anyone prepared any of the documentation that you will need to submit that?

A. We are prepared to make that submittal once we, once my Staff is convinced that Section 14 is fully commissioned.

Q. So just to summarize, as far as the consent order is concerned, the requirements for Section 14, the pumping requirements of Palm Shadows is really the only thing that is still outstanding to be completed to be in

compliance with the Section 14 part of the consent decree?

A. Yes.

MR. SHAPIRO: Mr. Torrey, you are asking again from an engineering and physical perspective, correct? We are not asking compliance questions, ADEQ legal questions?

MR. TORREY: That is correct. I am not asking him to speak to ADEQ. I want to know his professional position as an engineer, does he believe that the company has done enough.

MR. SHAPIRO: Thank you very much. I just wanted to clarify that.

THE WITNESS: My only hesitancy in my response, I mean technically we have met these with the exception noted with regards to the pumps in terms. But from an engineering perspective, Section 14, while we have, I guess, completed all the paperwork that's required here, Section 14 is not an operational upgrade at this point. And it has some work that needs to be completed before we could do that.

BY MR. TORREY:

Q. But in terms of what ADEQ has required, do you believe you would be able to, once the work is completed that we have gone over, do you believe the company would

be able just to approach ADEQ in good faith and be able to say that they have made the modifications required to meet the requirements of the consent decree?

A. Well, I am sure the expectation at ADEQ is the construction will actually be completed. I don't read that in here the way this reads. But logic would tell me that they are expecting us to present to them under this item number 5 within 30 calendar days after construction is completed, I think they are expecting that construction to be complete as part of this order otherwise it would just be the paperwork with all that has been filed but nothing other than the piping system completed. I don't think that was the intent.

But again I am not -- I don't want to try to interpret this consent order other than just from an engineering standpoint that would be my opinion.

Q. Okay. And again just, whatever questions I ask you, just assume that what I am asking for is your opinion as an engineer.

A. Sure.

Q. I will direct your attention now a little further down on page 12 and continue with subparagraph H on line 17, the Palm Shadows plant.

A. Yes, sir.

Q. Line 18, subparagraph 1 begins and discusses the

minor modification to the Palm Shadows plant APP authorizing installation of the appropriate technology, et cetera. Do you see that line?

A. Yes.

Q. Has that minor modification been completed at this time?

A. We submitted a letter in response to this within the 30 day time period that, as I recall, that indicated that there was no minor modification that was going to bring this plant into compliance. We have attempted a couple things and they did not work.

Q. And so from a strictly technical standpoint, since the minor modification is not going to work, what is going to be required to accomplish what ADEQ would like to have done in that paragraph?

A. Well, we felt that by notifying them of that effect, that we had complied with that, you know, with their intent. Our understanding of the intent was do your best to try and find something that would be a temporary fix, and which we did. But that temporary fix did not work and we informed them of that. And there was just, there was no minor modification in our professional opinion that could be applied.

Q. All right. Then continuing down the page to approximately line 24, subparagraph 2, within 200

calendar days of the effective date of this consent order, do you see that?

A. Yes, sir.

Q. Do you believe that at this time that Far West has complied with subparagraph 2 there?

A. Yes, sir.

Q. Again directing your attention a little lower to subparagraph 3, within 90 calendar days Far West shall complete all closure requirements, do you see that?

A. Yes, sir.

Q. And based upon your discussion of what needs to be done at Palm Shadows I am assuming that's not done yet?

A. That's correct.

Q. Has the company prepared to any kind of documentation for when that eventually arrives or is that just --

A. Well, the closure plan indicates very specifically what needs to be done. We have submitted those. We have received some comments back from ADEQ. You know, I believe one of those comments are that they will not issue that closure plan until Palm Shadows is actually ready physically to be closed.

Q. Do you believe there would be any significant or major expense associated with making that compliance

item --

A. Well, there is expense associated with that. But I don't have, I don't remember what the amount is. But it is -- there is an expense associated with that.

We are required to do some additional groundwater testing, particularly in this instance where they have had percolation ponds. I mean from a professional standpoint, we believe that the testing will not indicate any major cleanup to groundwater mainly because we have this large layer of clay that's prevented this from getting to the groundwater. But, you know, we will have to clean up the site and we will have to fill the ponds in, decommission the existing tankage that's out there now. So there will be some expense associated with that.

Q. Do you have an estimation for approximately what the total cost may be?

A. We have a cost estimate for that. I don't recall offhand what that amount is.

Q. If you could, turn the page to page 13, subparagraph 4 at the top of the page. Unless approved by ADEQ Far West shall not construct any new connections to the existing Palm Shadows plant, you are in compliance with that, correct?

A. To the best of my knowledge, although we, our

firm is not, you know, we are not in the position to authorize connections. We have not been asked or requested by the utility to look at any authorizations for new connections.

Q. To the best of your knowledge the company is not connecting customers to that plant?

A. That's correct.

Q. And you mentioned after Seasons comes on line and Palm Shadows is able to divert its flow, what is the next most significant project you feel needs to be done?

ALJ RODDA: Did you say Seasons?

THE WITNESS: Section 14.

BY MR. TORREY:

Q. Section 14, my mistake.

A. Well, yes, Palm Shadows -- or Section 14 completed, Palm Shadows is redirected, and I would say concurrently with that the finishing up of Del Oro.

Q. All right. If you could turn back to page 8 of that consent order, line 23, subparagraph E discusses the Del Oro wastewater plant, correct?

A. Yes, sir.

Q. Subparagraph 1 says within 45 calendar days of the effective date Far West shall complete installation, begin operation of the temporary membrane bioreactor. Do you see that paragraph?

A. Yes, sir.

Q. Is it your testimony today that that temporary is on line?

A. Yes, sir.

Q. And so as far as your professional opinion is concerned the company is meeting their requirements of paragraph 1?

A. Yes, that's correct.

Q. The paragraph, subparagraph 1 also has a listing beginning on approximately line 31 of the standard uses for the effluent that is discharged. And I believe those are A through G. Do you believe that the company is in compliance with those requirements as well?

A. Yes, sir.

Q. Okay. Then looking at subparagraph 2 on page 9, beginning about line 10, beginning the month in which this consent becomes effective, until issuance by ADEQ of an APP authorizing a design flow of 495,000 at Del Oro, Far West shall collect representative effluent samples, do you see that?

A. Yes.

Q. Is that being done at this time?

A. Yes, it is.

Q. Below that, subparagraph 3, within 90 days of the consent decree Far West is supposed to submit to

ADEQ a complete APP for operation of the new MBR, do you see that?

A. Yes, sir.

Q. Has the company completed that?

A. Yes.

Q. Subparagraph B, an administratively complete application for coverage under the Type 2 reclaimed water general permit, has the company submitted that?

A. Yes.

Q. Subparagraph C, an administratively complete APP for closure of the Santec wastewater plant and the Clear Solution plant, has that been accomplished?

A. Yes. We have filed closure plans.

Q. Okay. Are the plants -- you filed a closure plan but the plants themselves are still operational at this time or have they been closed?

A. Yes. Same situation at Palm Shadows, closure plans are under review. We may have some comments on those, now, but they are -- the closure plan has not been approved yet by ADEQ.

Q. So at the time that the actual closure is -- that ADEQ approves the actual closure there will be some additional expense to make that actually happen, is that correct?

A. Yes, but it will be less than we have at Palm

Shadows. There is -- we are using most of the existing facility there so there is a lot less tankage, underground tankage, for instance, that is going to be decommissioned. We do not have the percolation ponds that we have to deal with. We have not been attempting to percolate into the groundwater tables so there is less geotechnical work that needs to be confirmed at that site but there is some expense, yes.

Q. And moving down on the same page, subparagraph 4, page 28, that's the requirement that Far West not connect new customers or new connections to the Del Oro system without written approval from ADEQ. Would you agree with that?

A. That's correct.

Q. And to the best of your knowledge is the company complying with that?

A. To the best of my knowledge, yes.

Q. Once the modifications are done to Del Oro, what is the next project that is in line that you anticipate will need to be done at that point?

A. Well, that could be kind of a tossup between the two little plants at Del Rey and Villa Royale and Seasons. Neither of these particular locations to my knowledge are generating any particular consumer complaints or odor issues. And we are satisfactorily

percolating effluent at Seasons.

So I would say it would sort of be a tossup between those two, that since, since the priority we just described is completion of Del Oro, it probably would be the next logical thing to decommission these two little plants that are contributory to Del Oro and get those behind us.

Q. All right. Let's discuss that. The exhibit in front of you, page 10, subparagraph F, do you see that?

A. Yes, sir.

Q. And that of course mentioned Del Rey and Villa Royale. And subparagraph 4 begins on, or subparagraph 1 begins on line 4, within 90 calendar days of the effective date Far West shall submit an administratively complete notice of intent. Did the company comply with that?

A. Yes.

Q. Dropping down to subparagraph 2, within 90 calendar days Far West shall complete the expansion of the Del Oro collection system, do you believe that that is done at this time?

A. No, it is not.

Q. All right. And what needs to be done still to make that happen?

A. Well, there is two issues here. One is that it,

I think it has been determined that we should get Del Oro completed before we do this piping. And the second issue is, I believe, we are still waiting for the, an easement from the golf course to gain access.

Q. The further issue that you mentioned, I believe you said the piping, what physically, what physical labor needs to be done to complete?

A. Well, we have some trenching that has to occur, but because we are in the middle, both these plants are in the middle of a golf course essentially, there is, in order to have the least amount of destruction, we are going to need to do some what we call trenchless construction, which we use directional boring equipment, long distance directional boring equipment so we could basically tunnel that pipeline or piping system under the golf course without disturbing the surface. And those are mainly the two elements that need to be completed in the piping system.

Q. Now, you mentioned trenching and directional boring. Has the company chosen which of those methods it is going to use?

A. It will be a combination of the two. Directional boring is very expensive so you want to limit that only where you need to do it. Right now we have done that just under the fairways of the golf

course. And then it would be open trenched the rest of the way.

Q. I assume that has been completed at this time, correct?

A. We have basically staked the right of way. We are prepared to do that construction work. The construction work is not started, not commenced.

Q. Approximately how much do you believe it is going to cost the company to complete that aspect, the trenching and the boring?

A. Again we have an estimate somewhere in here for that. I don't have that memorized. But it is, it is a fairly short endeavor I can tell you. We believe that probably within two to three weeks that piping system will be completed once it is authorized to start.

Q. Is the amount of that estimate listed on any of the exhibits that have been admitted so far?

A. It should be in one of the construction exhibits, yes.

Q. And will it be clearly marked so that I can find it at a future date?

A. Yes. It should be. It is, I believe there is -- I know we supplied part of the data request that, a breakdown by plant. Del Rey and Royale were separated. It includes the cost of piping as well as

the closure of those two little plants and the pumping station improvements at each of those.

Q. When you say the exhibit includes the cost of piping, does that term piping include the labor as well as actual pipe of some kind that has to go in?

A. Yes. It is installed, complete and ready for operation.

Q. Has the piping itself already been purchased?

A. I know there was a procurement, a purchase order issued for it. I don't know the status of that purchase order.

Q. So once the, once the negotiations are worked out with the golf course for how this is going to happen, then you can get right to work on that project?

A. Yes. The piping you are referring to, you know, these are small diameter piping readily available at supply stores. It is not something that has a long lead time on.

Q. All right. Dropping down to subparagraph 3, you see the within 30 calendar days Far West shall submit to ADEQ an administratively complete request for discharge authorization, is that correct?

A. Yes.

Q. And do you believe, has that been completed at this time?

A. We have not submitted this, no.

Q. Has it been completed?

A. It hasn't been. Well, there may be a draft in our office but it has not been submitted to ADEQ.

Q. Okay. Dropping down to subparagraph 4, within 90 calendar days of the effective date, submit to ADEQ an administratively complete APP for closure of Villa Del Rey, have you submitted that?

A. Yes, to my knowledge, that closure plan has been submitted.

Q. And if I could get you to turn to page 11, approximately line 3, subparagraph 5, within 60 days Far West shall close the Villa Royale plant, and clearly that hasn't been done at this time?

A. That's correct.

Q. And once that is done, approximately do you have an estimation for how much that's going to cost the company to finally complete that?

A. I don't recall. I don't recall what that would be. It is, I would say, probably less than $50,000 at each site. They are fairly small sites. That would exist. I am pretty sure that we have to provide them an estimate of the costs in the closure applications.

Q. And that includes, the $50,000 includes the labor required to complete subparagraphs A and B,

correct, removing the material that may contribute to a continued discharge or to eliminate a reasonable probability of further discharge from the facility?

A. Yes.

Q. Okay. And I guess that leaves the final project, which would be the Seasons plant, correct?

A. Yes, sir.

Q. And if you could turn to page 13 of that exhibit, approximately line 4, subparagraph I discusses Seasons, is that correct?

A. That's correct.

Q. And subparagraph 1 says within 30 calendar days of effective date of this Far West shall submit to ADEQ an application to amend APP number, do you see that subparagraph?

A. Yes.

Q. Has the company prepared that or submitted that?

A. It has been submitted and approved.

Q. Okay. And regarding subparagraph 2, Far West is supposed to operate the Seasons with a maximum design flow of 70,000. Are you in compliance with that to the best of your knowledge?

A. Well, actually according to an earlier exhibit that I was looking at for some other purpose, there was an indication in the testimony of Andy Capestro that

show the average flow at Seasons as be -- here it is.

A-17 indicated that it was actually at 73,000 gallons per day, slightly over that consent order permit limit.

Q. And so looking down at subparagraph 3, if the amended APP does not provide a schedule for completion of the expansion of Seasons, Far West shall complete all approved upgrades within 90 days of the issuance of the amended APP, has that contingency arisen at this time?

A. No, not to my knowledge. It was, it was clear in the APP for Del Oro that the intent was to move the, and in the Seasons APP application, that the intent was to move the temporary plant from Del Oro to Seasons.

Q. And so we have gone over all of the projects that are listed in the ADEQ compliance document. And so far the only item that I see that was a significant expense was approximately the $150,000 that it was going to take to convert the lifts at the Palm Shadows plant, is that correct?

A. To be in compliance?

Q. To be in compliance with the ADEQ requirements.

A. Yes, if it were -- no. In short, we have a significant expense in order to make Section 14 operational. We have a significant expense to make Del Oro operational. We have all the work left at Seasons

for it to be completed and operational.

Q. Okay. Let me take these one at a time, then. The company has asked for, I believe I went over it with Mr. Capestro, subject to check, I believe the request here is approximately four and a half million dollars overall for this financing or for this interim rate. Do you recall that?

A. Yes.

MR. SHAPIRO: Objection; misstates the company's request.

ALJ RODDA: I think it was 2.1 million.

MR. TORREY: I am sorry. I think that's correct.

MR. SHAPIRO: Thank you.

ALJ RODDA: I think the 4.6 you were referring to is the cost to pass open invoices plus the expected future cost.

MR. TORREY: Wherever that came from.

ALJ RODDA: Okay, all right.

BY MR. TORREY:

Q. So in order to make Section 14 operational, which you said is key to complying with ADEQ all the way around, what needs to be done to that plant right now to get it operational?

A. Well, we have a number of outstanding invoices

that need to be paid in order to be able to get vendors, to have vendors commission their facilities, commission their individual pieces of equipment. We have a number of outstanding electrical and mechanical and some equipment items that have got to be delivered to the site that need to be paid for, or at least funding needs to be secured so that funding can be identified in order to get those contractors and suppliers engaged, you know, to complete that project.

That's not unique to Section 14. That would also be the same situation at Del Oro, as well. The actual amounts of those I think are in previous testimony of Andy Capestro and the utility actually does most of the tracking on all that.

Q. Okay. Let me see what I can come up with here in terms of Section 14. What are you aware of that physically needs to be installed or built on that site?

A. Well, we have, we have membrane units that need to be completed and commissioned. We have electrical and electronics that need to be completed. I believe the site may also be waiting for blowers and compressors. There is some mechanical piping that needs to be completed as well, maybe other items. Those are the ones that come to mind.

Q. For the membrane units, do you know if those

have been purchased or paid for at this time?

A. My understanding -- well, I know that the purchase orders were issued because we, we drafted purchase orders for the utility. My understanding is that there are some outstanding invoices that have not been paid to the vendor, which is GE Zenon.

Q. Okay. So the invoices haven't been paid but does that mean membrane units were not already delivered anyway?

A. I am not sure what is on-site. But the problem, whether they are on-site or not, is they are, in our opinion, still technically in the possession of Zenon. And we do that specifically because to take ownership of those ahead of time would mean that warranty terms would start, would have started at the time we took ownership. We won't accept those until they have been tested and until they have been commissioned. And we do that specifically to protect the integrity of the warranty. Otherwise we, at this point, we would have used up most of the warranty period for that before it actually went into service.

Q. Approximately how many membrane units are we talking about for that plant?

A. Oh, I don't recall. I don't remember how many units there are.

Q. Can you estimate?

A. Well, it depends on what you mean by membrane units. There are the tankage units themselves. There are six or eight of those, I think. And each of those have a certain number of cassettes in them. But I don't recall the number of cassettes that we have in each of those units.

Q. All right. So to the best of your knowledge these tankage units, have the tankage units themselves been delivered?

A. Yes.

Q. And so the separate membrane cartridges that you are talking about, have they been delivered?

A. They may have been delivered, probably in storage. We would not normally install those until we are ready to commission.

Q. And those are the items you said you would not accept yet to maintain protection of the warranty, is that correct?

A. Well, as you recall earlier, we have designed most all the elements of these plants as skid mounted packaged units. So we don't, in our procurement within this case with Zenon, we don't distinguish between the component part of the package. In other words, we don't accept delivery on pieces and not others.

When they do their testing they will be testing not only the integrity of the membrane cassettes but they will also be testing the integrity of the control systems, valve systems, instrumentation that we have and their piping system, make sure there are no leaks. So it will all be complete when they commission it and prove to us through testing that it is operating properly.

Q. Okay. So in order for them to come down and actually do the commissioning you will have had to have paid those invoices, is that correct?

A. My understanding is the utility has been in conversations with GE and that GE has given them some specific terms and conditions under which they would come in and do the testing. That would be better to ask of Mr. Capestro.

Q. Well, we are not putting him back on the stand.

A. I tried.

Q. All right. Now, once the membrane units have been commissioned and are on-site, you said there is some electrical work in addition, correct?

A. Yes. I think there is a significant amount of electrical work that needs to be completed, wiring, conduits, and instrumentation packages. And I would -- I am pretty sure that we are still awaiting blowers and

compressors out there as well.

Q. Who would do that electrical work? Would that be something H&S could do or would that be something Zenon would be required to do?

A. Well, no. That's a specialty. Specialty work requires licensed electrical contractors. And we are using a local, I believe it is Amtek Electric, to perform those services. But I don't think H&S has qualifications for that.

Q. I believe I have seen some documentation somewhere for the approximate amount for Amtek specifically to perform that. So I will move on to the next.

The blowers and the compressors, is that something also that's going to come from Zenon or is that something that needs to go somewhere else?

A. No, that's a separate package. And I think there is, I think there is maybe at least two, maybe, suppliers that are involved. I believe they came through a manufacturer's rep by the name of Fluid Equipment. There may also be an issue with some diffusers as well which would be a third element of that.

I know all of the purchase orders were issued on that. I am not sure what the status of those are given

the delayed payments.

Q. And you mentioned the piping. Now, that's the piping to connect the Palm Shadows, is that correct?

A. No. That's internal piping on the site.

Q. Okay.

A. And there is probably not a great deal of that left to be done, but there is some that's necessary.

Q. You know pipe itself is already purchased?

A. Yes, I believe all the materials are.

Q. And is that also something as a specialty that has to be completed by a specific contractor or can H&S do some of that?

A. H&S, just from my observations, H&S is predominantly a housing type contractor. I wouldn't qualify them necessarily as what we call a heavy commercial contractor for water and wastewater plants. If the piping were relatively small diameter piping, it might be cased, but to the extent that any of this, you know, eight inch or larger diameter pipe, I would be skeptical that we would want to have H&S attempt to do it. It would be something they probably haven't done before so...

MR. TORREY: If I could get one minute, Your Honor.

(Brief pause.)

BY MR. TORREY:

Q. Mr. Lee, after the Section 14 becomes operational, you discussed Palm Shadows and the need for the modifications at Palm Shadows. We have gone over the cost for that. And then we also discussed Del Oro. And now specifically I would like to ask you some questions about what needs to be done physically in terms of construction right now at Del Oro in order to get that plant operational.

A. Sure. Well, to complete phase one, we need, the utility needs to settle up financially with Zenon, much as the same situation as we discussed at Section 14.

At that point, we would then be in a position to complete the phase two staging of that plant which would be the, which would require us to remove the temporary 300,000 gallon per day unit off the site. And we would then bring in the tankage for the biological units. Those are already purchased. Those are on-site. That's bolted steel construction. So it is relatively quick to put up.

And then we would have the same issue with blowers and compressors and some electrical instrumentation and piping that would be required.

Q. The blowers and compressors, are those, aren't those part of the entire package of the tankage and

membranes?

A. Well, if you are, when you are looking at the packages, you have your, you have your biological units which I will refer to as your nitrification, denitrification units at the front. Then you have your filtration units downstream. These all work together with each other.

But to try and simplify it, you have that tankage package. That tankage package really, although it comes from different suppliers, when it is all assembled together it includes the tankage, the diffusers, the blowers and compressors, all associated -- and the mixers -- all associated with making that tankage work biologically. That is providing oxygen in there. It is providing a mix of the liquid in the tanks. So that's all sort of one group and that all gets put together as one package.

Then you move downstream and you move into the membrane units. The membrane units have a number of instrumentation items on and pumps on their skid. They are not just tanks with membranes in them. You have got vacuum pumps. You have got recirculation pumps. You have got three way valves and lots of instrumentation on those units which are all part of the Zenon package.

So when I refer to packages those are sort of

the two biological packages, if you will, and the filtration package.

Q. So in order to get that temporary plant removed and the new items brought on-site and installed, that requires Zenon to do that, doesn't it?

A. No. Zenon, Zenon's package with the exception of the commissioning of the cassettes at Del Oro is installed. It is there on-site. And that is the, that is the sum total of Zenon's involvement in Del Oro.

When the temporary unit is removed and we bring in this biological package, that will not involve Zenon. Much as it did with the Section 14, it will be the same mechanical, electrical and tank contractors. That will be the blower and mixer suppliers that would be involved in that one that were involved in Section 14.

Q. And once all those components are first removed and then brought, the new ones brought on-site, put together by the contractors, then Zenon commissions the whole package, is that how it works?

A. Well, no. We could actually, I mean it is our intent to require Zenon to commission at the completion of what we call phase one staging, actually before the temporary unit is removed. Because, remember, what we are doing here is we are doing a conversion. We are taking the sewage that's now being treated by the

temporary unit, and we are going to flip a switch and one day all that is going to go over to the new permanent membranes. So we want to make sure those permanent membranes have been fully tested and commissioned before we flip that switch. So we really need Zenon in there and their work completed before we can say that that conversion can be safely made.

Now, could we do that technically without Zenon? The answer is possibly yes, but we would void our warranty.

Q. Right. And for obvious reasons you don't want to do that.

A. That's correct.

Q. Now, do you have any idea, outside of the amount that it costs to get Zenon to come down to commission these, approximately how much would the company need to spend to get the other projects in line so that Zenon can do its part and the company can or the plant can come on line?

A. Well, I know that I saw here in an Exhibit A-11 a pretty good breakdown. I think it was described to me that this was provided by the company, by the utility. I think these are pretty representative of the amounts that are required in terms of open invoices and in terms of work required by plant site.

Q. So that's spelled out in A-11?

A. A, Exhibit A-11, yes.

Q. Okay.

A. And while I didn't prepare this, it looks pretty representative to me.

Q. Okay. The costs represented in A-11 for Del Oro, are those similar to what the costs will be at Section 14 we talked about earlier? Is there any significant difference in the costs?

A. No. The Section 14 is a larger facility, and therefore the open invoices are larger in Section 14 than they are at Del Oro. And there is -- oh, I mean they are comparative in costs with regards outside of Zenon in terms what is needed to be completed, dollar-wise was needed to be completed.

It appears here between Section 14, it required to complete somewhere between, looks like, somewhere around half a million dollars or so. And if I add these numbers right here on Del Oro, it is a little over 400,000, so, with the exception of the obvious outstanding invoices.

Just to be clear, I guess, Exhibit A-11 is saying that the grand total of open invoices for all facilities is $3,350,933 and the amount of required work to complete is 1,272,663.

ALJ RODDA: Do you know, does that 1.272, the $1.2 million to be completed, does that include the decommissioning costs?

THE WITNESS: Well, as I was looking at these, I asked, I was asking myself the same question. I did not prepare this, so I don't know that for sure. And those closure costs, while they are not insignificant, you know, I still think those are, you know, for all of these facilities could be less than $250,000.

ALJ RODDA: And then earlier, I think in response to something Mr. Torrey asked you about, the Del Rey and Royale costs of the piping, you were talking about trenching and boring and you said you didn't know off the top of your head what the cost was, and here it has 74,000. Is that the cost of that?

THE WITNESS: That looks right.

ALJ RODDA: Okay. I am sorry to interrupt you, Mr. Torrey.

BY MR. TORREY:

Q. Okay. Mr. Lee, I wanted to bring your attention back to the map that was produced earlier, the Exhibit A-20 that was also up on the board. I was a little bit confused when you went over the capacity issues for Section 14 and for Palm Shadows. And so if I could just get you to clarify a couple things.

A. Okay.

Q. Right now Exhibit A-20 shows, Section 14 says before and 150,000 gpd. Does that mean that right now Section 14 is supposed to be there, is supposed to be able to treat 150,000 gallons per day?

A. What we are referring to is the capacity that's referred to in the consent orders. I believe that's what we are registering against. And in the consent order I believe it registers Section 14 authorized for 150,000 gallons per day.

Q. And so does that mean that the plant itself is supposed to be authorized or built so that it can treat 150,000 gpd?

MR. SHAPIRO: Excuse me. Are you asking about -- again, you said the plant. Are you talking about the plant as it sits today or the plant that's expected to be built as part of the project, Mr. Torrey?

BY MR. TORREY:

Q. The plant as it will appear when it is completed, is it supposed to be able to treat 150,000 gpd?

A. Oh, okay. No. The -- what the 150,000 gallons per day is referring to is the capacity of the existing facility prior to upgrade.

Q. Let me make sure that I am understanding. There

is a plant on-site operating right now, is that correct?

A. That's correct.

Q. And how much is that treating right now?

A. Well, it is permitted for 150,000 gallons per day.

Q. Is permitted for 150,000 per day, but what is it actually treating? What are the actual flows today?

A. There is, there was an earlier exhibit prepared, A-17, which attempted to summarize both peak and average days flows. And I believe that 150,000 is referring to average day flows. Section 14 is indicating that it is treating about 102,000 gallons per day average day flow.

Q. And that's on page 2 of that document?

A. Yes, sir.

Q. Okay. Now, the 102,000 if I am not mistaken, according to what I see on the map, it looks like you have the crosshatched or, well, that's not crosshatched, but the yellow section to your map that shows FME 27, 28, 29, and 30. Do you see that on your map, A-20?

A. What were the numbers again?

Q. The FME 27, 28, 29, and 30 in the lower right corner.

A. Oh, yes. Okay.

Q. Are those existing subdivisions with homes present right now?

A. Yes.

Q. And is that where the --

A. Well, those are existing subdivisions. I don't know how many homes there are in that location.

Q. But however many homes there are, is that where the 102,000 gallons per day is being treated as coming from?

A. A significant amount, yes.

Q. You say significant amount. Does that mean that there are more than one source for that 102,000?

A. Well, according to this drawing you have the Ravines there. You also have some of the Arroyo subdivision. You know, they are small, but they are showing as being contributory to Section 14.

Q. And according to the map, Las Barrancas looks like it is also platted, but are there homes currently there that are contributing as well?

A. I don't know if they are contributing. I don't know if there is any homes there or not yet.

Q. So currently the plant is treating 102 and permitted for 150,000 gallons per day?

A. That's correct.

Q. And the company is working out increasing the capacity to accommodate the Palm Shadows flows, correct?

A. It is -- it will accommodate the Palm Shadows

flow plus some redirected flow from Marwood.

Q. And according to A-20 Palm Shadows has got 200,000 gpd that it is going to redirect to Section 14, is that accurate?

A. They have 200,000 gallons per day currently under that APP and, but it is expected that there will be more than 200,000 that actually gets delivered over to the Section 14 plant.

Q. Approximately how much is going to come from Marwood?

A. About a little over 100,000 gallons.

Q. So as it is right now, Section 14 will need to be something over 400,000 gallons per day to be able to treat what you have got planned once these projects are complete, correct?

ALJ RODDA: Would you hit him?

MR. SHAPIRO: It is the water, not Kevin.

ALJ RODDA: I said would you, not did you. I am sorry, Mr. Torrey.

(An off-the-record discussion ensued.)

THE WITNESS: It, just looking at current flows, okay, with all the permitted capacity, we are actually having more than 200,000 gallons per day coming to Palm Shadows, about 263,000 gallons per day average. That gives us just under half a million gallons per day at

current average day flows that would be going to Section 14.

We also have a number, and I think I referred to this earlier, as we always have to be cautious about looking at actual flows versus what we have in terms of committed or assured capacity that is out there, when you, when you consider that committed capacity, you rise to about 816,000 gallons per day.

BY MR. TORREY:

Q. Now, let me stop you right there for just a second. There was some discussion about committed capacity between you and Ms. Wood earlier today, is that correct?

A. Yes, sir.

Q. Now, I was not really clear on where the assured capacity comes from. My understanding was that the company could not assure capacity to someone without being first permitted for that. Is that correct?

A. Yes.

Q. And so the company does have some assured capacity right now over and above the 463 that you have, or 4 -- almost half a million?

A. That's my understanding, yes.

Q. Where is that assured capacity coming from? Who has got that assured?

A. Well, I don't know the specifics of where those come from. But a large part of that, I am sure, is made up of incomplete subdivisions that have partial housing in them and have what I think was referred to in earlier testimony as in-fill. I think that's a, probably a large portion of what that difference makes up.

Q. Okay. And so then overall you have got a figure that, with all of your assured committed capacity, you need about 816,000 at Section 14 as it stands right now today?

A. Yes, sir.

Q. Now, on the map you have got a designation of after and 1.3 million gpd.

A. Yes.

Q. What accounts for the difference between the 800,000 and the 1.3 million that you have got on the map?

A. I am going to -- I am basically reviewing this Exhibit A-17 that was submitted earlier. Again, this wasn't prepared by myself. But these basically serve as the basis for information provided by the utility to us.

The 816,000 includes -- let's look at the difference here. There are additional houses or additional lots that are listed in terms of limited to subdivisions already being serviced. As I recall

required design flows -- let me see if I can run through this A-17. Again, it wasn't prepared by me but I think I follow the logic here in this.

This A-17 starts out by providing actual, what appears to be the actual wastewater flow measurements that they have taken. So it is not related to a calculated number. It is related to a flow number. And that's where Section 14 comes up with four hundred -- if we were to have everything connected to Section 14 today, we would expect to get about 475,000 gallons per day inflow.

Q. Can I stop you for just a second. Can you tell me what page --

A. Oh, I am sorry.

Q. -- you are on with the exhibit?

A. Yes, A-17 and that first comment was directed on page 2. They are not numbered. It would be the second page.

Q. Okay.

A. But it is stated as flows to be transferred. I believe these appear to be actual flows probably taken from flow meters. Then if you go to page 2, which I was referring to earlier, these are limited to current customers with meter sets. So...

ALJ RODDA: But now you are looking at page 3

now?

THE WITNESS: I am sorry. Yes, page 3.

And what this is is not actual flows but this is taking the number of actual connections and multiplying it by the 187.2.

BY MR. TORREY:

Q. Which is the ADEQ requirement?

A. The ADEQ requirement. So in order for us to be able to say we could handle, for instance, 1230 homes, we have to be able to show capacity for 187.2 gallons per day for each of these homes.

Now, we are given some relief on RV parks. We are lowered to 100 gallons per day. So that gets us to 816,000. That's a calculated number. Then that's followed up on what I will refer to as the second to the last page. And these are required design flows limited to subdivisions already being serviced by the Section 14 wastewater treatment plan with all the flows being transferred or talked about being transferred.

And I believe here is where we are referring to previously approved subdivisions. And the difference between this calculation and the previous calculation is the difference in number of vacant lots in these approved subdivisions that haven't been served.

ALJ RODDA: So that gets Section 14 up to about

a million gallons per day, right?

THE WITNESS: Yes, ma'am.

ALJ RODDA: And then it is being permitted at 1.3 million?

THE WITNESS: Well, the permit process was segregated kind of into two phases, and not so much because of the requirement to go to 1.3 million but because of our issue, our concern over whether we needed to bear the expenses of three vadose wells and this issue of sort of taking this one step at a time.

As you can see from the current flows, even, you know, there is a difference between the calculated flows and the actual flows. With that little bit of breathing room in place, and in discussions with ADEQ staff, we felt it was better to basically say that the first step in this would be 681,000 gallons per day, which would, you know, currently meet our current flow requirements and give us a little bit of time to test out the effectiveness of the effluent being applied to the golf course, and allow us jointly with ADEQ staff to revisit whether or not we were going to need these additional two vadose wells. And once that decision is made we could then complete the plant up to 1.3 million gallons per day.

ALJ RODDA: According to, is it according to the

consent order that has got 1.3 million? That's the requirement in the consent order?

THE WITNESS: Yes. And the requirement was to file an APP permit for 1.3 million, which is what we did and which was subsequently approved. But in the stipulations within that APP approved permit, what is imbedded in there is the sequence how we get to 1.3 million.

ALJ RODDA: So you might not have to do that phase two right away, is that what you are saying?

THE WITNESS: That's correct. We should have a little bit of time in which we could test out the effectiveness of the golf course. And the flows would tend to indicate that. The calculated flows do not, but the actual flows do.

BY MR. TORREY:

Q. Mr. Lee, this discussion of the diversion of some of the flows from Marwood, why is, why are some of the flows being diverted from Marwood to Section 14?

A. Well, we had early in the evaluation, system-wide evaluation, we had, I believe, that Marwood would reach its capacity. It was not -- I don't recall as any part of the NOVs that Marwood ever exceeded capacity but we could tell that it was certainly past the 80 percent rule that we normally consider before we

start looking at doing something different. It would have been a significant cost to upgrade Marwood at its current location to an A plus or to even get it to additional capacity.

We felt it was more prudent to simply redirect some flow that would have normally gone to Marwood to give Marwood a little more breathing room with regards to capacity and to redirect that flow over to the new plant at Section 14. It is easier to incorporate that additional capacity in the upgrading of Section 14 than it would be to try to accommodate it at Marwood.

Q. Of the areas that are, the subdivisions that are currently being served by Marwood, is there still room for growth or additional subdivisions in any of that service territory that Marwood is serving?

A. Well, we knew we were getting very close to whether or not there was any room or not. If I had been asked that question before I had viewed Exhibit A-17, I probably, my first reaction would have been that there would be some but it would be relatively small. However, in looking at these actual flows that they are showing at Marwood now, they are showing an average daily flow at Marwood of 306,000 gallons per day and a peak flow of 381,000 gallons per day. So it is, it is getting pretty close to being at capacity.

Q. I guess what I am referring to is I am looking at the map here at A-20. I am looking at the blue service territory here that is covered by Marwood. And I see El Rancho Encantado phase 2 and phase 1. Now, are those two fully built out --

A. No, sir.

Q. -- at this time?

A. They are not but the capacity has been incorporated in this 340,000 number.

Q. Okay. And so you see the line at the south side of those two developments. And the rest of that section is empty. And I am assuming that there is no development going on or that currently there is no development in that section?

A. That's my understanding, yes.

Q. Is it the intent of any of the developers in the area to actually develop those sections at some future point?

A. It is my understanding that there are additional phases planned for the section.

Q. But if those are brought on line immediately you believe Marwood would be over its capacity to treat?

A. It would be very, very close to it given these numbers that we are seeing here now so...

Q. And so, and that's why you believed it was

prudent to divert some of the flows now ahead of time?

A. Well, actually we had recommended the diversion of those flows before we were aware that there was even any plans for a El Rancho Encantado type subdivision.

Any time we have a facility that is nearing its capacity and there are areas adjacent to a service territory that could be developed, we felt it would be prudent to begin to download that facility so that it would have capacity available for additional homes.

MR. SHAPIRO: Judge, might it be time for a break, if Mr. Torrey gets at a good point?

ALJ RODDA: I don't know. Do you have much further?

MR. TORREY: I am fine if you want to take a few minutes right now, and I can talk to Mr. Becker about these consents.

ALJ RODDA: Okay.

MR. SHAPIRO: I just knew we have been going for over an hour and a half.

ALJ RODDA: All right. Take a short break.

(A recess ensued from 4:04 p.m. to 4:16 p.m.)

ALJ RODDA: Let's go back on the record and see what we can do before we have to come back tomorrow, Mr. Torrey.

MR. TORREY: Thank you, Your Honor.

BY MR. TORREY:

Q. Mr. Lee, the approximate cost to connect up Marwood to divert those flows, do you have that isolated figure somewhere?

A. It is in our cost estimates. I don't remember it offhand.

Q. Is it in one of the exhibits?

A. Yes.

Q. Okay.

A. It would be a breakdown that had Del Rey and Royale in it, the same one.

Q. I wanted to ask you a couple questions about the golf course. Since you are here at the Commission you are going to have to answer about some golf course. The golf course over near Section 14 is already in existence, is that correct?

A. That's correct.

Q. And it is already, people are already playing golf on that course, correct?

A. Yes.

Q. And it is currently being watered with effluent, is that right?

A. Yes. And I believe they also supplement with groundwater.

Q. Now, do you have any approximate figure for how

much effluent is being used on that golf course today?

A. Well, I would assume we could relate back to Exhibit A-17. And it is showing a current average day flow of about 100,000 gallon, a little over 100,000 gallons a day. I would assume that's all being consumed by the golf course.

Q. Now, you said that is being supplemented by groundwater as well.

A. Yes, I believe that's correct.

Q. Now, I was a little bit confused because you mentioned the vadose wells earlier. And it is my understanding that the whole purpose of the vadose well is to be able to take that effluent, drop it down in the hole in the ground and it will diffuse and that's the way of disposing of effluent, is that correct?

A. Yes, sir.

Q. If you have a golf course that is currently being watered through as much effluent as possible but supplemented with groundwater, why would you need a vadose well when you could simply divert more effluent to the golf course and not have to use groundwater?

A. Oh, well, I mean that's exactly to the point of why we had the negotiations we did with ADEQ.

There is a formula, if you will. It is actually a computer model that determines based on the number of

parameters how much water a golf course in the Yuma area could absorb. It is a water balance, if you will. And that, and the model theoretically, theoretical calculation indicates that the maximum it could take is 681,000 gallons per day.

We believe that that model is conservative and that we would be able to do much more than that. The indication that ADEQ had based on the model was that we could transport 681,000 gallons to the golf course and it would require up to three vadose wells in order to get rid of the remaining volume of water.

We negotiated that we would only build one vadose well at this time and then we would stop and we would try to confirm the actual ability of the golf course to take water using field results. We would sort of, I guess you would say, stress the golf course by putting as much water as we could and measuring the results.

We believe that in all likelihood it will be able to take much more than 681,000 gallons. But barring those field tests, ADEQ is unwilling to agree to that in the permit.

Q. Now, has the company considered the possibility of being able to sell effluent to other places that have turf areas that would like to be able to water those

areas but don't produce enough of it on their own?

A. Well, I don't know, I don't know what they have considered with regards to, you know, any commercial arrangements they may have with anyone other than the golf course.

I can tell you that in our recommendations in terms of going, determining, number one, that we were going to take this water quality to an A plus water quality that was one of the factors, was by going to A plus it does give us ability to direct effluent to multiple uses. And that's actually the highest quality of effluent. So it opens the door to be able to use it on a number of different applications.

Q. Looking at, for example, Del Oro in, the service area of Del Oro, it appears that there is significant turf areas in those areas. Is the effluent from Del Oro being used on those turf areas right now?

A. To my knowledge the only place it is being used is at the golf course.

Q. Is it possible or has the company considered any --

ALJ RODDA: When you say, I am sorry, when you say that do you mean the golf course that's near Del Oro?

THE WITNESS: Yes, ma'am.

ALJ RODDA: Okay. I am sorry.

BY MR. TORREY:

Q. So is it possible then that some of the effluent being produced in Section 14 could be used by the turf areas in the area of Del Oro's service area?

A. Well, we would have to, and we have considered this, but we would have to apply for a different style of reuse permit, more of a general reuse permit that would allow the utility more flexibility in terms of where it directs its effluent.

Right now our reuse permits are very specific. They go to a specific golf course. And if we wanted to change that we would have to amend that reuse permit. There is another permit that is more general in nature that gives you wider flexibility and we would have to go through that process if we chose to, you know, redirect this effluent or maybe have the option to direct it in multiple, to multiple end uses.

Q. Based on your experience in this field, do you believe it would be more cost effective for the company to be able to sell this effluent to the people who need it as opposed to drilling and using vadose wells?

A. Well, if there was a customer that was, you know, willing to purchase the effluent, you know, and we could plug them into the equation and therefore show

more reuse area than we have with the current golf course, you know, it would just, it would mean that we could avoid building additional vadose wells.

I think the problem, and this just is from an engineering perspective, not from a commercial perspective, but because I am not in the turf business or the golf course business, either one, I think the issue is a lot of the turf in that area has been converted to salt tolerant grasses. And as a result, these grasses are probably more capable of absorbing the groundwater there if that were not the case, then I think you would have more people coming and asking for effluent for reuse. But as long as these turfs can absorb the high total dissolved solids present in the groundwater, it probably means that groundwater is a cheaper option for them.

Q. Does, and if you know the answer, and I am just throwing this out there, in terms of the company being able to purchase this effluent for reuse somewhere else, does the distance that effluent has to be transported, does that play into the equation whether it is cost effective for the company?

A. Absolutely. Absolutely.

Q. Okay. And just one last set of questions for you, Mr. Lee. I am referring to A-20, the Marwood

plant. The indication on this map is that there is 340,000 gpd after the designation of before. Does that mean that as of today actual flows in the Marwood plant are about 340,000 gallons per day?

A. No. That's referring to what is rated capacity based off the current APP or current ADEQ position with regards to that plant.

Q. And does that include commitments to treat water from El Rancho Encantado phases 1 and 2?

A. Well, if you were to, I mean in trying to register whether there is adequate capacity, yes, that would include those. But what is presented here is simply what the rated capacity is of that plant irregardless or irrespective what is actually coming to them.

Q. Do you have a figure right now for how much is actually coming to Marwood as of today?

A. Again I will refer to A-17. And the current average day flow --

Q. Which --

A. -- that is being reported in A-17, sheet 2, is 306,000 gallons per day.

Q. Does that 306,000 include El Rancho Encantado phases 1 and 2 or those are going to come on at a later point?

A. No. Those are actual flows.

Q. Okay. Approximately how many houses, do you know, are in place in El Rancho Encantado phases 1 and 2?

A. I don't know that there are -- I don't know how many there are. I don't think there are very many.

MR. TORREY: Your Honor, I have no further questions for Mr. Lee.

ALJ RODDA: Great. Thank you, Mr. Torrey.

EXAMINATION

BY ALJ RODDA:

Q. Mr. Lee, we have covered a lot of ground over the course of today and you answered most of my questions, and maybe even ones that I asked you already answered, but just to make sure.

A. Okay.

Q. Looking at that Exhibit A-8, which is the loan disbursements, and the page 7 of the 21, the $500,000 that was paid to your company for designing construction management for the water, does that ring a bell?

A. Yes, ma'am.

Q. What was that, what were you doing with that?

A. We designed expansion of the surface water retreatment plant from its current capacity of 6 million

gallons per day to an initial expanded capacity of 9 and the ability to go to 12.

Q. And so you designed that. Has that work been done on that plant?

A. No. That has been delayed as a result of the other issues affecting the project.

Q. The other issues affecting the sewer project or --

A. The utility in general. When -- the original schedule was to immediately complete the wastewater improvements. And those were initially scheduled to be completed in February of 2007. And then we hoped by that time, if we would have received the approved permit, to expand the water treatment plant and then we could move into construction on the water treatment plant in 2008 or early 2009. Of course the permits, we were not able to meet the February '7, or February 2007 date, so the wastewater improvements were pushed out and then we ran into budget issues associated with the sewer project. And so the water project is just in hiatus right now until this gets resolved.

Q. And did you get far enough to have a project estimate, estimated typical cost for the project?

A. Yes. We have run two or three estimates on that project over the course of time. I think the most

recent, if we were to complete the full 6 million gallon per day additional capacity, I believe that last estimate is around 15 million.

But you would -- water is a little bit easier to phase than wastewater in that, while we might build the building infrastructure and piping infrastructure large enough to do that, we are using the exact same membrane technology from the water that we are using in the wastewater.

Sounds a little odd but the membrane units are basically identical and can be staged. And it is relatively manageable units. So we could start at half a million gallons additional capacity and keep rolling our way up.

The reason for doing that was that the membranes are relatively expensive. They are one of the larger costs in the improvements, whether we are talking wastewater or water. So we want those membranes, we want to preserve their life as long as we can. We constantly run integrity, operators will constantly run integrity tests on those water membranes. The integrity tests on water treatment membranes are much higher than they are on wastewater. So the idea is, once they have reached their useful life and fail to meet the integrity test on the water, they can be pulled from the water

plant and we can use them to replace aging membranes in the wastewater plant, so they sort of get an extended life as a result.

Q. And is that project a critical project for the water side of the business? Was that, too, so it could use their full allotment from the irrigation district?

A. Yes. To the extent that their allotment becomes endangered, at some point it could become critical. I think if I were to look at the, if I were to measure criticality right now on the water side, I would probably elevate the rehabilitation of their existing wells, which is about a $3 million cost, and the rehabilitation of their existing steel tankage which suffers from a fair amount of corrosion, which has a cost of about $1 million. I would rate those higher right now in priority.

Q. Okay. And have you made recommendations to the company when they should really be doing this rehab of the wells and the tanks?

A. I believe they actually started the rehabs. We had actually one well that failed on us. We encouraged them to try and get as much as they could done during the summer before the next interruption of surface water, regularly scheduled interruption of surface water, because once for that period of time that the

canal is closed for our water supply, we are entirely reliant on those wells. So every year that goes by that we have not rehabilitated those wells makes the system that much more vulnerable to possible interruption in service.

Q. You just mentioned summer. That made me think about the seasonality of the customers for this company. Do the golf courses use up effluent, or use of any water, wouldn't that go up in the summer? Does that go up in the summer, do you know?

A. Yes. The, the way the water balance works it is not so much because of use of the golf course as it is just the agronomy of growing the turfs on the golf courses and the fact you have some evaporation taking place during the warmer months. Our critical months with our water balance I believe were January and February, the cooler months, even though we are still warm down here. Those were our Achilles' heel. We could not get past that 681,000 gallons a day in those.

Q. So you are saying you had too much effluent because there wasn't enough evaporation?

A. Yes, that's correct. Well, having too much, we could not -- the formula indicates we could not exceed 681,000.

Q. Okay. So that was another one of my questions.

When you talked about the limits and the formula for the 681,000, that's what you are just mentioning, the agronomy of --

A. Right. It is related to the types of soils, the topography of the land, the type of turf that they use and the atmospheric environmental conditions associated. And that is calculated for every month. And you look at a balance for the entire year.

But you have to -- if we were to just look at what it could take over the year, it is far more than the 681,000. But we have two months that indicate that we would have to store it someplace during those months in order to have it available in the remaining summer months.

Q. Okay. Now, I think you testified also that that Paula Street lift station, that was not part of the ADEQ consent order, right?

A. That's correct.

Q. But was it a project that your company recommended that Far West do?

A. Yes. It was really for two reasons. One, that gravity sewer line is already built and in place and not being utilized. They have built it, my understanding was, because of a number of issues they had with these little lift stations that are meant to be decommissioned

as a result of that line. And then the other is that the wastewater that is currently being discharged by those lift stations is going to Marwood. So that's part of our diversion, to be able to put that Paula Street lift station in.

Q. So the Paula Street lift station will utilize that existing system or gravity system that's not being used?

A. That's correct.

Q. And it will also divert the Marwood flows over to the Section 14?

A. Yes. Those flows that are going to be, those flows that will go down that gravity line, they currently are being pumped via the small pump station through Marwood by going down the gravity line to the Paula Street lift station and now going to Section 14.

ALJ RODDA: All right. I don't think I have anything further.

Mr. Shapiro, how much do you have?

MR. SHAPIRO: I don't have a lot. And I am going to try and get it done so Mr. Lee can catch his flight in the morning.

ALJ RODDA: Oh, when are you scheduled?

THE WITNESS: 6:00 a.m.

ALJ RODDA: Okay, got to do him.

REDIRECT EXAMINATION

BY MR. SHAPIRO:

Q. Okay. At this time, Far West has an APP for all four of the plants that will come on line when the project is complete, correct?

A. That's correct.

Q. So Far West can give developers that are requesting assurances of capacity up to the limits of the APP?

A. Subject to completion of the construction.

Q. Which means that they can't connect somebody --

A. That's correct.

Q. -- until they complete the plant?

A. That's correct.

Q. But they can tell somebody we will have capacity when we complete it?

A. That's correct.

Q. And what the developer does and when he decides to go ahead and build, he builds too early, he has to wait?

A. That's a risk, yes.

Q. You wouldn't build capacity before developments are taking place typically; I mean you need to know that you are going to need the capacity before you build it, right?

A. Yes. I mean someone could come in tomorrow with a thousand lots. You wouldn't build capacity in there to accommodate that.

Q. Right. So you don't have to wait until, you don't have to wait until the develop -- the capacity is complete to tell the developer, okay, we now built the capacity, now you can go start your development?

A. To the extent that you have, you have an APP approved to do that, because you have to be in compliance with the Section 208 regional plan.

Q. Right. Do you know what capacity assurances Far West has or has not given to developers?

A. Well, we have an accounting of that. I don't have it.

Q. But you just have the end result of them saying, you know, include this one in; you are not part of the process of telling the developer we will give you an assurance?

A. No. That goes through the utility.

Q. Okay. Does a subdivision that's already served what we call in-fill, that doesn't need a new assurance, right?

A. That's correct.

Q. Presumably it has an assurance from before, that's why they have already started billing?

A. Once provided it is pretty well permanent.

Q. Could Far West continue to operate Section 14 as it is operating today and ever get in compliance with the consent order?

A. No.

Q. Could you bring in the flows from Marwood and Palm Shadows if you didn't increase capacity at Section 14?

A. No, sir.

Q. You really don't know how or why the engineer came to his conclusions regarding Palm Shadows' effluent treatment and disposal, do you?

A. No, sir.

Q. Do engineers have crystal balls that allow you to see in the future?

A. No.

Q. I just wanted to make sure it didn't come with your certification.

Mr. Capestro testified that, I think he said, roughly 90 percent of the physical construction is complete. Do you agree with that estimate for the project to comply with the ADEQ consent order?

A. Yes. That sounds close.

Q. How long physically once the money is in place would it take to finish everything?

A. To finish everything? I would say probably -- well, the -- just look at the priorities that we talked about earlier, I would say you are talking just a matter of weeks with regards to the two higher priorities, probably allow ourselves a couple months to get that done, probably four months, maybe five months to finish the rest of it, finish all of it.

Q. Can effluent be hauled from Palm Shadows anywhere without some costs being incurred?

A. No. Any time we start to truck or tank effluent, there is going to an additional cost.

Q. Back to Exhibit A-8, page 7, which you probably memorized now. This shows a total of 1.883 for a bunch of water stuff. When was all this stuff done or when was it all completed?

A. Oh, it has been over the course of the last, well, over the course of our engagement. I would say it is probably, well, evenly distributed, most of it having been completed prior to this fall or prior to the summer of 2008.

Q. In your opinion an engineer, is all of the $17.669 million that's reflected as being spent, was this all done to improve Far West's ability to provide water and wastewater utility service?

A. Yes.

Q. Do you believe therefore that it benefits the customers that all this was done?

A. Yes.

Q. Today would you agree that the priority for Far West is compliance with the consent order in total?

A. Yes.

Q. If Far West were to prioritize one project over the others, what is to say the others would ever get completed if the problem getting completed was lack of funding?

A. In comparison to the wastewater?

Q. No, no. I am talking strictly the projects that need to be done to get in compliance with the consent order. If we just pulled one out and complied with it and finished it, that doesn't mean there will be funding available to finish all the other ones, does it?

A. Well, yes, I can't address the funding side of it. But as I stated earlier, it is difficult for me to prioritize within those notices of violations. If a, if the facility has received a notice of violation, whether it is two or ten, to me it is equally incumbent to get each of those corrected as quickly as possible.

Q. And to your knowledge, the reason the company isn't able to complete them is a financial reason?

A. That's correct.

Q. They are not just bored with this project and decided to take a couple years off and take off to Tahiti? You don't have to answer that. I will strike it.

But you did explain that Palm Shadows and Section 14 are top priority because of the need to divert flows from Palm Shadows and Marwood and to deal with the Section 14 nitrate problem, correct?

A. That's correct.

Q. And then Del Oro is a priority because I think you said earlier that you don't know how much longer the temporary plant is going to last, correct?

A. That's correct.

Q. And the majority of what this whole project is about and what still needs to be completed really surrounds that aspect of this, right? Getting rid of Palm Shadows and getting Section 14 and Del Oro up and running, isn't that the vast majority of what your efforts are involved with?

A. Yes. As I said, we didn't set out to prioritize those. And to some extent the scheduling of activities were dictated by the release or the approvals of the APP permits, although they were pretty much all submitted simultaneously, they were not all approved simultaneously.

And so I believe Del Oro is the first one to get approved, so we obviously moved forward on Del Oro. That's why Del Oro was further along than Section 14. Section 14 was the last one to get approved.

Q. You said there were some limits on which H&S could do. They weren't in the business of, I think you said, some heavy utility construction or electrical; that wasn't their bailiwick so to speak?

A. Yes.

Q. As construction manager have you had any concerns with H&S' qualifications to do the work they have been asked to do as part of this project?

A. No. We were pretty specific with H&S as far as what we thought their qualifications were.

We -- as I understand it, I am on the engineering side, they were on the construction side, but from what I understand of those conversations, they have been limited to some pump station work, some piping work, underground piping work, and building construction, which each of these facilities have. Electronics, instrumentation, complicated mechanical work on the plant, we basically said we didn't believe they were qualified to do that type of work.

Q. And the company and its affiliate, H&S, haven't tried to force themselves to do work that you didn't

feel they were qualified for?

A. No, we have no arguments in that regard.

Q. Are you aware that ADEQ has recently raised some concerns over the Marwood level of treatment capacity?

A. Yes, I understand that just after, just as I arrived here for the hearing. It is not surprising. We expected that to occur.

Q. The remaining costs that are shown on Exhibit A-11 required to complete what is listed as phase two for Del Oro and phase two for Section 14, it is roughly 700,000 something dollars. Did that just mostly relate to the cassettes that have to be brought in to go to the next levels? Is that the primary step that is required to go from what we show as phase one here to phase two?

A. Phase two, to go to 495 you are talking?

Q. Yes. 495 for developer and 681 to 1.3, is that what those numbers primarily would involve, is additional cassettes or is there other things?

A. Well, there is a mixture in here. I would say probably most of that you are correct, in Section 14. Del Oro phase 2, a substantial portion of that is involved with setting these, the biological tanks and blowers and diffusers.

Q. Which you described that process earlier. Thank

you.

When you are doing this modeling for what a golf course can take with respect to effluent, this is an engineering, hydrology, landscaping type analysis, correct, not a business analysis?

A. That's correct.

Q. This doesn't take into account what a golf course owner may be willing to pay for effluent?

A. No. It is strictly a water balance.

Q. Do you know the comparative costs of effluent produced by Far West versus ground water down there, pumping groundwater?

A. No.

Q. Do you know whether there is anybody who -- well, back to Mr. Torrey's question, do you know whether there are folks out there who are possible buyers of effluent?

A. Not aware of that. But I have not been involved in that activity either.

Q. So you don't really know whether there are people out there that want or need to buy effluent?

A. No, sir.

Q. And you are not aware of anybody who is certainly required to buy effluent?

A. I will put this way. In the course of this

design activity, now three years in this practice, two and a half years anyway, we have, I have not had anyone come to me either from the utility or from outside the utility that has requested to be considered to purchase effluent.

MR. SHAPIRO: That's all we have.

ALJ RODDA: Okay. Ms. Wood, did you have any? Keep in mind we need to finish up.

MS. WOOD: Yes, I know.

RECROSS-EXAMINATION

BY MS. WOOD:

Q. I am going to ask you one question and then ask you to move to an exhibit.

The first question I have: You are not saying that it is appropriate for Far West to give capacity assurances unless it has already got permitted capacity, are you?

A. No. They have to have permitted capacity in order to do that, yes.

Q. Okay. Thank you. And now I would like you to look at Exhibit R-10.

A. R-10?

Q. Uh-huh.

A. Okay.

Q. The page I need you to look at is the third from the end. This page is entitled subdivisions being serviced by Marwood wastewater treatment plant. Do you see that?

A. Yes.

Q. Okay. On this page there are several subdivisions. There is an outline of commercial customers, there are projected connections, every single one of them owned or operated by Far West affiliated, correct?

A. I don't know who owns these.

Q. Well, let's look at them together. The first section is FME No. 15 through 26. On the far side of the document it has a description of who these documents -- or who these lots were developed by. These are all privately owned and previously developed by H&S Developers, correct?

A. Yes.

Q. Okay. And you move down to the commercial section. And it says, where it talks about ownership, it says Foothills Hardware, restaurants, clubhouse, Village Plaza, Schechert Plaza, grocery store, Ocotillo Plaza owned by a Schechert family member or H&S, both affiliated with Far West. And then it says all others not affiliated. Correct?

A. Yes.

MR. SHAPIRO: Objection. Your Honor, I am going to object. This goes beyond the scope of my redirect and therefore inappropriate recross.

MS. WOOD: I think I can lay the foundation for the questions I want to ask. This is what I am trying to do.

ALJ RODDA: Okay.

MS. WOOD: I am going to get there. You may not like the way I get there, Mr. Shapiro, but I promise I will get there.

BY MS. WOOD:

Q. They also have the next two projected developments, El Rancho Encantado 1 through 4. Those are also all Capestro owned sites, correct?

A. Yes, ma'am.

MR. SHAPIRO: Your Honor, let the record reflect a continuing objection to this line of question.

ALJ RODDA: I am allowing it.

MR. SHAPIRO: Thank you.

BY MS. WOOD:

Q. So with regard to the Marwood wastewater treatment plant, the reason you know that it is going to approach its maximum capacity is because the Capestro family and affiliates continue to develop the area in a

way which is going to result in it to reach capacity, correct?

A. Well, we know that, we know that there are open areas adjacent to the service areas that are likely to be developed. Who develops those I don't know. Obviously by looking at the exhibit, those that have, you know, that Capestros' related affiliates have been the primary developer in the service area.

Q. Okay. And again I go back to my primary question, if you don't have the capacity permitted you are not supposed to grant capacity assurances, correct?

ALJ RODDA: Do you really need to ask that question again? Didn't you already ask it?

MS. WOOD: I can move on if you want.

ALJ RODDA: Yes. You are asking the same questions, really you are. I think --

MS. WOOD: I am done. Thank you very much.

ALJ RODDA: Mr. Torrey.

RECROSS-EXAMINATION

BY MR. TORREY:

Q. I just have one follow-up question. I wasn't sure whether you stated the specific cost of an individual vadose well, to drill it and completely outfit it for one well.

A. I believe we budget around 500,000. Each well will be a little different on its design but I think an average of 500,000 is probably accurate.

Q. And it is assuming that you already own the land?

A. Assuming you already own the land, that's just a simple construction, equipment, materials.

Q. And how much effluent does that single vadose well typically take and is able to process?

A. Well, they are all going to be different depending upon the nature of the receiving vadose area geology.

I believe that, and when we completed this first vadose well and the hydrogeologists completed an in situ test on that to try and simulate what we thought it would take in terms of effluent, I believe we did that with pure water. And by that I mean I don't think we used effluent in that process. I believe it took around, tested around 200-, 250,000 gallons a day on that well. We think maybe in pure operation we will do better than that.

Q. Do you have any reason to believe that that's likely to be a typical amount for a vadose well in this particular geographical area?

A. We would assume that there is not a great deal

of variation at that depth and in the geology. But it is, it is always tricky to try to estimate porosity of underground aquifers from one location to another, but I think, if I were to be doing a planning document, I would probably proceed along that assumption.

MR. TORREY: No further questions, Your Honor.

ALJ RODDA: Okay. Ms. Wood, if that wasn't the same question, I am sorry. Did you get to ask all your questions you wanted to ask?

MS. WOOD: That's fine. I am fine.

ALJ RODDA: Okay.

MS. WOOD: Thank you.

ALJ RODDA: Mr. Shapiro.

FURTHER REDIRECT EXAMINATION

BY MR. SHAPIRO:

Q. Mr. Lee, is permitted capacity the same as built capacity?

A. No. We have to certify. Typically your APP permit, that gives you permitted capacity which allows you to go to a certain level. We then have to follow that up with, when -- as that capacity is built, we have to follow that up with a letter to the department indicating that it has been built, it is operational.

Q. So built capacity is what you got out there

ready to operate; permitted is what the regulators tell you you can build?

A. You are authorized to build, yes.

MR. SHAPIRO: Okay, thank you.

ALJ RODDA: Okay. Any other questions for this witness?

(No response.)

ALJ RODDA: All right. Mr. Lee, I think you are excused.

THE WITNESS: Thank you.

ALJ RODDA: And we are adjourned for the day and we will meet back at 9:00 a.m.

(The hearing recessed at 4:58 p.m.)

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, COLETTE E. ROSS, Certified Reporter No. 50658 for the State of Arizona, do hereby certify that the foregoing printed pages constitute a full, true and accurate transcript of the proceedings had in the foregoing matter, all done to the best of my skill and ability.

WITNESS my hand this 29th day of May, 2009.

COLETTE E. ROSS
Certified Reporter
Certificate No. 50658