Good Morning. I'm Julie Chan. I'm a California Professional Geologist with 24 years experience in the field of groundwater hydrology. I manage the Groundwater Basins Branch of the San Diego Water Board.

In my talk today, I'll give you a bit of my own perspective on Salt and Nutrient Management Planning. But mainly I want to talk about how the Regional Board's foundation planning document…The Water quality Control Plan for the San Diego Basin" addresses permitting Recycled Water Projects and how the new State Policy's mandate for Salt and Nutrient Management will change that.

Maria instructed us to emphasize our experience in Salinity management issues and planning, so for what it's worth as a young groundwater hydrologist, I worked on salinity and drainage issues in the western San Joaquin Valley in the mid 1980s when the problems with bird reproduction and development caused by selenium in agriculatural drainage water impounded in Kesterson Reservoir were discovered.

I also supervised the Basin Planning Program for 4 years, so I know what it takes to get an amendment through the CEQA and public participation process.

OK, after 24 years in the business of water supply and water quality, here's my personal perspective. As a modern society, we have managed to engineer solutions to the water supply problems of supporting large populations in the arid west. Those solutions involve importing water and the salts and nutrients that come with it, and recycling the water we have already used. If we want sustainable development, we have to address salt and nutrient management in our groundwater basins, and the Recycled Water Policy wisely sets us on that road.

Salt and nutrient management planning has been sorely needed in the San Diego Region for decades. Historically, this Regional Board has denied Waste Discharge Requirements for waste water disposal projects because this type of planning had not been done, and the project proponent was unwilling to shoulder the financial burden.

Without an understanding of salt and nutrient mass balance, and fate and transport in a basin, or an understanding of where beneficial uses are actually being realized, or could potentially be realized, we are forced to issue very strict discharge specifications based on very conservative assumptions. I want to repeat this because it's important.

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Unfortunately, as is often the case, it comes down to funding…who will do the studies? Such studies are typically beyond the means of a single project proponent applying for waste discharge requirements. The Regional Board's Basin Planning Program is probably the most underfunded program at the Water Boards. Cities and Counties are also strapped for cash for planning studies. Although, this is putting the cart a little before the horse, the success or failure of the State Policy's mandate for Salt and Nutrient Management Planning will rest on finding the money to fund it.

So I'll get off my soap box now and move on to what the Basin Plan has to say about waste discharge requirements for recycled water projects.

I'll start by reading a quote from the Basin Plan. Note that I will replace the term "Reclaimed Water" with "recycled water" so as not to offend anyone's sensibilities.

"The Regional Board supports water recycling to meet the growing water needs of the Region. A long-standing policy of the Regional Board is to encourage and promote water recycling while taking into consideration the need to protect beneficial uses of surface and ground waters and protect the public health."

The New State Policy says the same thing a slightly different way.

"It is the intent of the State Water Board that all elements of this Policy are to be interpreted in a manner that fully implements state and federal water quality laws and regulations in order to enhance the environment and put the waters of the state to the fullest use of which they are capable."

Note, there are two parts to this direction…

1. promote water recycling, or as the New Policy states, put the waters of the state to the fullest use capable; and
2. protect beneficial uses, or as the New Policy states, fully implement state and federal water quality laws and regulations to enhance the environment.

Unfortunately, these two charges are not always in perfect harmony.

At this point, I want to throw in a little history here…the State and Regional Board's policies regarding recycled water date back to 1977 when the State Board adopted its *Policy with Respect to Water Reclamation in California*. In 1986, The Regional Board amended the Basin Plan to include an "*Action Plan for Water Reclamation.*" That Policy was updated when the Basin Plan was updated in 1994. Now we have the new State Recycled Water

Policy before us to embrace and implement. Let's look at how the New State Policy will change the Regional Board's approach to regulating recycled water discharges.

We'll start with a little Basin Plan 101. Hopefully, for most of you, this is review material.

1. States required to adopt water quality control plans by the federal Clean Water Act that establish water quality standards and a plan of implementation.

2. Basin Plans fulfill this requirement, and are part of the States Water Quality Regulatory Framework.

3. Basin Plans designate the beneficial uses of all surface and groundwaters in the Region.

4. And they designate the water quality objectives needed to support those beneficial uses in all surface and groundwaters of the region.

5. Finally, Basin Plans must have a plan of implementation describing actions that are necessary to protect the beneficial uses and achieve the water quality objectives. That happens to be Chapter 4.

Ok, Let's turn to Chapter 4, the Implementation Chapter,

Ultimately, Chapter 4, will need to be updated to be consistent with the New Recycled Water Policy.

As it currently reads, the Basin Plan describes "Water Recycling" as a process consisting of:

1. Treatment of wastewater to a level of quality suitable for reuse.
2. Transportation of reclaimed water to reuse areas; and
3. Application of reclaimed water to an actual use.

When the Regional Board issues waste discharger requirements, water reclamation requirements, or master reclamation permits for recycled water projects, our policies, then and now, require that we address these three processes in a manner the "encourages and promotes water recycling" but also "protects beneficial uses." So, how do you do both?

The Basin Plan currently contains implementation provisions to address both of these aspects.

These include:

1. Consider special amendments to the Basin Plan to encourage water reclamation.
2. Comprehensive water quality monitoring programs to confirm hydrogeology and accurately measure water quality effects.
3. Consider buyout of a beneficial use that is only minimally realized, and that if protected, would stand in the way of a recycled water project.
4. Alternate method of showing compliance with the nutrient WQOs for discharges to inland surface waters.

Here is the real meat of the plan:

5. Provisions for Implementation of groundwater quality WQOs:
    a. Numeric effluent limitations upgradient of muni reservoirs shall be no lower than the quality of the Basin's water supply concentration plus an incremental increase equal to the typical incremental increase added to the water supply

as a result of domestic use, and no higher than the Basin Plan WQO.

b. If assimilative capacity is available and receiving water WQOs will not be exceeded, numerical effluent limitations can be based on the discharge quality and assimilative capacity analysis results.
c. Require implementation of effective salinity source control measures to ensure a reclaimed water quality that is suitable for long-term ag and landscape use.

6. In certain basins we are authorized to regulate recycled water discharges in a manner that protects waters produced by existing water supply wells.
7. In certain basins, when applying modified standards, we can require reuse in a manner that will displace the need for approximately equal volumes of imported water.

PROBLEMS WITH THIS APPROACH: It's not comprehensive. We address salt and nutrient loading one discharge at a time, data are usually lacking to evaluate cumulative affects of all discharges, and there is usually no basin-wide ambient monitoring in place to track water quality trends. As a result, the Regional Board is left setting discharge specifications based on the most conservative assumptions regarding mass loading, fate and transport, and actual beneficial uses.

Basin Plan amendments: Basin Planning is the most underfunded program at the Board. It is funded entirely by the general fund, with no money for contracts to conduct the scientific studies needed to support amendments.

NEW STATE POLICY:
What's different, What's better?

Remember the 2 aspects of our Basin Plan and the State Policy… to encourage and promote water recycling while taking into

consideration the need to protect beneficial uses of surface and ground waters and protect the public health.

So, regarding

Charge 1. To encourage and promote water recycling:

1. Strengthens the mandate to increase the use of recycled water.
2. Establishes steamlined permitting provisions for landscape irrigation projects that include streamlined monitoring requirements.
3. For projects with recycled water treated by reverse osmosis and recharged through surface spreading, permit such projects within one year of receipt of recommendations from the CDPH.
4. Assign high priority to such groundwater recharge projects.
5. Provides consistent method for anti-degradation analysis of recycled water projects

Charge 2. Protect beneficial uses of surface and groundwater and protect the public health.

1. Compliance with salt and nutrient management plans.
2. Annual monitoring of CECs.
3. Twice annual monitoring of priority pollutants.
4. Irrigation projects subject to operations and management plans.
5. Requires control of incidental runoff.

ADVANTAGES: Salt and Nutrient management planning will require a basin-wide understanding of all sources of salts and nutrients, their fate and transport, and their impacts on existing and future beneficial uses. The plans can include requirements for ambient monitoring to ensure that water quality is protected for

existing and future uses. The plans can identify mechanisms for salt export.

PROBLEMS: Who has the authority to require implementation of the plans?

The Regional Board can require anyone seeking WDRs for wastewater disposal to land to comply with the plans, but that leaves out imported water.

So to sum up…Salt and Nutrient Management Plans for our Region's Groundwater Basins are long overdue, they will lead to more informed regulation of wastewater discharges, and finally, finding the funding to do the planning is critical to the success of the State Policy.

Now, before I leave the podium I want to bring your attention to a document in your workshop package. This is a memo from State Water Board Executive Director Dorothy Rice to the Regional Boards. This memo sets out the State Board's direction to the Regional Board regarding implementation of the Policy. So you can see we've received our marching orders.

One thing I want to call your attention to are the "Priority Basins" for Salt and Nutrient Management planning identified in the memo. State Board has already told us we can consider these suggestions, and are free to prioritize basins for planning as we and the stakeholders see fit.

So with that I'll take questions.