MINUTES OF THE AUGUST 17 CV SALTS WORKSHOP

Board Chairman, Dr. Karl Longley and Vice-Chair, Denise Kadara, began the workshop with a brief public forum comment period.

Agenda Item #3 Public Forum: Mr. Chris Rufer of Morning Star Packing Company, L.P. (Morning Star), spoke regarding a prior Morning Star enforcement item, an Administrative Civil Liability for expansion of its cooling ponds without Board notification. He indicated that Morning Star had found documentation indicating that the company had informed Board staff of their expansion plans prior to construction.

The Public Forum was followed by Central Valley Water Board staff and CV-SALTS stakeholders presenting informational items on three proposed basin plan amendments serving as case studies for the stakeholder driven, CV-SALTS initiative.

Agenda Item #4: Jeanne Chilcott, Environmental Program Manager in the Rancho Cordova office provided an overview of the workshop presentations, followed by Jim Brownell, Engineering Geologist and Anne Littlejohn, Senior Environmental Scientist in the Rancho Cordova office, who presented along with a stakeholder panel on a proposed basin plan amendment to set a salt/boron water quality objective and add an implementation and monitoring and surveillance program for Reach 83 of the Lower San Joaquin River (LSJR). The stakeholder panel consisted of LSJR Committee members, David Cory (San Joaquin Valley Drainage Authority), Debbie Webster (Central Valley Clean Water Association), Dennis Westcott (San Joaquin Tributaries Authority), and Karna Harrigfeld (Stockton East Water District).

Agenda Item #5: Anne Littlejohn and Cindy Au Yeung, Environmental Scientist in the Rancho Cordova office, presented on a proposed process to be incorporated into the Basin Plan for determining appropriate beneficial use designation and level of protection of Municipal and Domestic Supply (MUN) uses in agriculturally dominated water bodies. A stakeholder panel, consisting of David Cory (San Joaquin Valley Drainage Authority), Debbie Webster (Central Valley Clean Water Association), Elissa Callman (Sacramento River Source Water Protection Program) and Roberta Firoved (CA Rice Commission), was also present to provide additional information and discussion regarding this item and to answer questions.

Agenda Item #6: Jeanne Chilcott, Pam Buford, Senior Environmental Scientist, Jacob Westra, Assistant Manager of Tulare Lake Bed Water Storage District and Dustin Fuller, Manager of Tulare Lake Drainage District provided background on evaluating the de-designation of the MUN and Agricultural Supply (AGR) beneficial uses in a portion of the Tulare Lake Bed Groundwater Basin. Technical representatives for the Districts were present to provide additional information or answer questions, if necessary.

Comments from the public were heard following the completion of the presentation of each item.

Presentations by Central Valley Water Board Staff and CV-SALTS Stakeholders

Item 4. Salinity Water Quality Objectives in the Lower San Joaquin River (LSJR)

Jeanne Chilcott, Environmental Program Manager presented:

- An overview of the CV-SALTS Workshop presentations and their context in the overall CV-SALTS initiative goals and objectives.

Jim Brownell, Engineering Geologist presented:

- The background and setting for the need to establish a salt/boron water quality objective and the associated implementation and monitoring program for Reach 83 of the LSJR;
- How 50 years of diversion of the SJR's upper watershed by Friant Dam have left minimal water flow in the LSJR resulting in predominantly high saline waters remaining in the lower reaches of the river;
- State Board Decision 1641, the Salinity Control Program adopted to protect Delta Water Quality utilizing a compliance point at Vernalis, and requirements to establish upstream water quality objectives for salt and boron;
- The 2010 Draft Staff Report evaluating crop sensitivity to salinity in the LSJR Basin
- The Board Approved Real Time Salinity Management Program for the LSJR;
- The need to maximize salt export out of the LSJR basin.
- The incorporation of the project into CV-SALTS in January 2010 and formation of the LSJR Committee in October 2010 which:
    - Reviewed beneficial uses;
    - Established baseline water quality and Water Quality Objectives (WQOs);
    - Performed modeling of river flow and salinity through the WARMF model;
    - Performed crop salt sensitivity modeling utilizing the Hoffman model;
    - Developed WQO alternatives; And
    - Selected a preferred alternative.

David Cory, San Joaquin Valley Drainage Authority representative and LSJR Committee Co-Chair presented:

- The evaluation of existing beneficial uses of the LSJR;
- Identification and protection of the most sensitive uses, MUN and AGR Irrigation;
- Running of the Hoffman model for identification of appropriate salinity WQOs to protect crops;
- Identification of water quality criteria for consideration:
    - 700 EC, which is from Ayers and Westcot (1985) and is the Vernalis objective (April-August),
    - 1010 EC, a value close to the Vernalis Objective (Sept.-March) of 1000 EC and based on the Hoffman model on crop sensitivity using a 10% leaching fraction, almonds as the most salt sensitive crop encompassed by 95% of the commercial cropping pattern, and the 5th percentile driest years,
    - 1350 EC based on modeling potential future water quality conditions, and

- 1550 EC, which is based on the Hoffman model adjusted for a 15% leaching fraction.

Karna Harrigfeld , Stockton East representative and LSJR Committee Co-Chair presented:

- The seven WQO alternatives evaluated: 1) No objective; 2) 1550 EC; 3) Two tiered - 1350EC and 1550 EC during critical water years; 4) 1550 EC objective year round with 1350 EC performance goal during certain water year type irrigation seasons; 5) 1350 EC year round; 6) 1010 EC year round; and 7) 700 EC year round;
- The selection criteria utilized which included but were not limited to: insuring existing Vernalis objectives would be met; reducing dependency on New Melones Reservoir releases for dilution; and allowing salt transport out of the Basin.
- Four (4) of the 7 alternatives (1, 2, 4 and 6) were selected for more detailed examination;
- Results from modeling three basin-wide salinity management alternatives: ; implementing currently planned salinity reduction efforts; treatment of all water discharged by Salt and Mud Sloughs; and removal and management of all Salt and Mud Slough discharges;
- The results of the planned salinity management alternative indicated that an EC of 1350 could be attained, however, due to uncertainty of model output, Alternative #4, 1550 EC objective and 1350 EC performance goal, was selected;

Anne Littlejohn, Senior Environmental Scientist in the CVWB Rancho Cordova office provided opportunity for Board comment and introduced:

- Special considerations of the preferred alternative
  - Extended dry periods (droughts);
  - The 1350 EC performance goal and 10 Year Basin Plan reopener option; and
  - POTW compliance options.

Dennis Westcot, San Joaquin Tributaries Authority and LSJR Committee Member presented information on extended dry periods, use of performance goals and a 10-year reopener opton:

- The goal of the project to develop a plan for long-term sustainability of the river while protecting beneficial uses along the river and downstream and reducing dilution flows from New Melones Reservoir;
- The definition of Extended Dry Periods (for the SJR Basin)– based on assigning a value between 1 and 5 to the water year types (1 for critical, 2 for dry, 3 for below normal, 4 for above normal and 5 for wet). If the sum of the current water year and two previous water years is less than or equal to 6 then the current water year is in an extended dry period. Also, the year following an extended dry period year is considered an extended dry period to allow flushing out of residual salinity in the system;
- Water quality objectives appropriate for extended dry periods were determined using the Hoffman model for AGR-irrigation adjusted for 75% crop yield (2,470 EC 30-day running average) and the short term salinity MCL of 2,200 EC (average of 4 quarters of sampling) to protect MUN.

- Because of the uncertainty in the data, performance targets of 1,350 EC are proposed with a 10 year reopener to review the control program and evaluate the monitoring data;

Anne Littlejohn, Senior Environmental Scientist and Debbie Webster, Central Valley Clean Water Association and LSJR Committee Member presented:

- Special considerations for POTWs- 2 options under the existing Vernalis control program:
    - End of pipe discharge limits of 700 and 1000 EC by 2022; or
    - Real-Time Salinity Management Program participation.
- Upstream options are currently under development.
- POTW Related Issues:
    - Under the current permitting, WQOs can be incorporated as end of pipe limits;
    - Current permitting doesn't account for increased salinity of POTW discharges due to water recycling and water conservation;

Anne Littlejohn, Senior Environmental Scientist concluded the presentation with:

- Next Steps and the Timeline:
    - Board hearing and draft staff report – October-November 2016;
    - Public/Peer Review – November – December 2016;
    - Board hearing (split) December 2016;
    - Response to Comments – January 2017; and
    - Board hearing to consider adoption – February 2017.

Board Comments/Questions/Discussions Regarding the Presentation

Chair Longley – Expects that the modeling tools to get better and that we'll be better off in 5 to 10 years in the data confidence.

Public Comments/Questions/Discussions Regarding the Presentation

Michael Garobedian of the Friends of the North Fork asked about the CV-SALTS Executive Committee wildlife salinity standards reference in the presentation.

Jeanne Chilcott explained that the LSJR Committee is a sub-committee of the CV-SALTS Executive Committee and that the referenced CV-SALTS wildlife salinity standard report (Aquatic Life Study) is available on the Regional Boards website and the Central Valley Salinity Coalition's website.

D. Madden of the City of Turlock commented that City of Turlock is involved in a recycled water project along with the City of Modesto to pipe approximately 35,000 acre feet of recycled water (at full build out) to the Delta Mendota Canal, which will reduce their discharges to the LSJR.

Item 5. Potential Basin Plan Amendment to Establish a Region-wide Process for Evaluating the Municipal and Domestic Supply (MUN) Beneficial Use in Agriculturally (Ag) Dominated Surface Water Bodies

Anne Littlejohn presented:

- Background:
    - State Board Resolution # 88-63 Sources of Drinking Water Policy established that all surface water bodies have MUN beneficial use unless exempted (exemption requires a basin plan amendment);
    - Blanket MUN designation may result in overly conservative permitting restrictions;
    - The need to establish a streamlined process to evaluate MUN in Ag dominated water bodies that is consistent and transparent;
    - Workshop focus on implementation since previous workshops covered categorization of water bodies and development of limited MUN beneficial use.
- Breadth of stakeholder engagement that included numerous state agencies, agriculture, POTWs, urban water users, and water purveyors
- Review of establishing default MUN beneficial use designations for different categories of Ag dominated water bodies:
        - C1 (Constructed Ag Drain/Combo) – No MUN and no MUN WQO;
        - M1 (Modified Ag Drain/Combo) – No MUN and no MUN WQO;
        - C2 (Constructed Ag Supply) – Limited MUN (LMUN) and narrative WQO;
        - M2 (Modified Ag Supply) – LMUN and narrative WQO;
        - B1 (Natural Ag Drain/Combo) – LMUN and narrative WQO;
        - B2 (Natural Ag Supply) – LMUN and narrative WQO; And
        - Controlled Recirculating System – No MUN and no MUN WQO.
- Case studies/examples:
    - The Sacramento River MUN Basin Plan Amendment case study, where the process was used successfully to remove MUN use from 12 Ag dominated water bodies, and provided a template for water body categorization reports;
    - The San Luis Canal Company case study, where the water body categorization report documented 232 constructed or modified Ag drains. (Staff propose to remove MUN use from all SLCC water bodies);
    - Controlled Recirculating (Closed) Systems, which include two types: seasonally closed and year round.

Cindy Au Yeung, Environmental Scientist in the CVWB Rancho Cordova office presented:

- The implementation program for the region-wide process, which is initiated on an as needed basis rather than utilizing a mandated time schedule;
- The three main components in the process which each contain specific steps, checks and balances:
    1. Initiation Process

- An applicant submits a Notice Of Intent to the Regional Board with a surface water body categorization report and/or closed recirculating system application,
- Board staff reviews the report as well as photos, construction records and maps, verifies whether MUN diversions exist, reviews existing water quality monitoring programs within and downstream of the water bodies, and ground truths a minimum of 10% of the proposed categories.
- Closed systems require additional information, an emergency plan and a notification process;
- Staff develop draft interim category/beneficial use designations along with any monitoring program requirements to protect downstream beneficial uses;

2. Executive Officer (EO) approval process
    - EO issued Notice of Tentative Approval;
    - A 30-45-day public comment period;
    - Additional review as needed, then EO issued a Notice of Approval; and
    - Updated "Reference Document" posted on the Regional Board website. The "Reference Document":
        - Stores the interim designations;
        - Is outside of the Basin Plan, so it can be updated without a formal Basin Plan Amendment Process;
        - Has a finite timeframe – 5 years with a possible 3 year extension; and
        - Allows interim permit limits to be set;
3. Proposed Board adoption process:
    - The Board considers adoption of bundled water body MUN use changes every 3 to 5 years;
    - The State Board/OAL/USEPA approve the beneficial use amendments;

- Timeframe for proposed process is 8.5 months to 1 ½ years for a bundle of adjustments for use in interim permit limits versus 3 to 5 years for individual basin plan amendments;
- The key issues for the Stakeholder Panel members included:
    - The water body listing level of detail needed? What length of tributary do we use for non-listed water bodies? ½ mile proposed by staff;
    - What level of public involvement for the interim permitting timeframe is needed? and
    - The monitoring and surveillance requirements;

<u>Board and Staff Comments/Questions/Discussions Regarding the Presentation</u>

Jeanne Chilcott reminded the Board members that the intent of the process is to streamline and reduce the time necessary to make appropriate MUN use changes.

Patrick Pulupa, Senior Counsel for the CVWB made the analogy of the process as being a busload of people going through an intersection rather than individual cars.

Chair Longley suggested that 1 mile be used for the tributary length in the listing process.

Stakeholder Panel Comments/Questions/Discussions Regarding the Presentation

Elissa Callman, Sacramento Source Water Protection Program, expressed that the surface water purveyors are concerned that implementation program doesn't have sufficient monitoring to evaluate MUN de-designation or application of Limited MUN use. She also indicated that use of watershed sanitary surveys may not be sufficient for evaluation purposes, as they lack water quality data. She recommended that Board staff post the Notice of Intent early to allow enough time for a proper review. In response, **Chair Longley** indicated that he understands Elissa's comment that watershed sanitary surveys may not be inclusive of all the pieces needed to evaluate the beneficial uses and **David Cory** noted that the process is to show protection of downstream uses including Limited MUN in Ag dominated water bodies.

David Cory indicated that he agrees with the use of existing monitoring programs for the monitoring and surveillance program because we don't want to duplicate efforts.

Debbie Webster indicated that existing monitoring for a particular constituent that is no longer needed for the particular discharger shouldn't have to continue solely for the purpose of monitoring for a MUN use change or removal. She also agreed that there has to be public involvement and sometimes the time might need to be extended.

Roberta Fivored, CA Rice Commission, indicated that the Irrigated Lands Regulatory Program is still developing and it shouldn't be expanded just for monitoring purposes for MUN use changes.

Anne Littlejohn concluded the presentation with:

- Next steps and the timeline. Timeline for project includes a split Board hearing/adoption process:
    - Board hearing announcement and posting of meeting materials including the draft staff report – end October to November 2016
    - Public review – November to December 2016
    - Board hearing in December 2016
    - Response to public comments in January 2017
    - Board hearing to consider adoption in February 2017

Board and Staff Comments/Questions/Discussions Regarding the Presentation

Pamela Creedon indicated that regarding Elissa's concerns, that the Board is not giving free license to degrade water quality and impact downstream uses in this process.

Chair Longley commented that what the EO spoke about is correct, the Board is not removing protections; the anti-degradation policy is still in-place and applies.

Public Comments

Phoebe Seaton of the Leadership Council for Justice and Accountability commented that it seems that anti-degradation analysis is important and when would it be performed? Answer – Jeanne Chilcott indicated that it would be done during the permit renewal or at bundle adoption.

Chase Hurley of San Luis Canal Company indicated that the process is important for them as they have Ag drain combo canals. He stated that SLCC conducts monitoring inside and outside of district boundaries to ensure that degradation of water will not occur.

Elissa Callman reiterated her stakeholder panel comments and had additional comments –

Debbie Liebersbach of Turlock Irrigation District indicated that she doesn't think the intent of the process is to degrade the Ag drain water, but to reduce unnecessary restrictions. She also recommended extending the tributary length to 1 mile or less to reduce the number of water bodies that would have to be listed.

Dennis Westcott of the San Joaquin Tributaries Authority indicated that they support the staff recommendation and that this process is needed to allow them to recycle and reuse water. He also recommended increasing the tributary length in the non-listing process to 1 mile.

Michael Garobedian of Friends of the North Fork asked why is this process underway now? Did something change? **Answer – Jeanne Chilcott** indicated that things have changed due to the Sources of Drinking Water Policy being adopted into our Basin Plans. Later legal review indicated that the Board had to do a basin plan amendment to de-designate MUN, even if an exception existed. Now water resources are very important and the strict implementation could cause an issue, so we need this streamlined process to evaluate the MUN use and de-designate or re-designate where appropriate.

Item 6. Proposed De-designation of MUN & AGR in a Portion of the Tulare Lake Bed Groundwater Basin

Jeanne Chilcott presented background information:

- Concern that the protection of MUN and AGR beneficial uses is overly restrictive in the project area due to naturally occurring salinity in groundwater;
- The project area and characteristics, indicating that the project area is approximately 24 miles by 24 miles in size, consists of a closed basin (no drainage out of the basin), and was the historic end point of river channels with only highly modified channels for ag conveyance remaining;
- The unique geology of the project area, with a significant clay thickness in the lake bed center and that the main extensive, impermeable, clay layers in the region are the A through F Clays, with the E Clay being the laterally extensive Corcoran Clay;
- The most salinity sensitive beneficial use for groundwater in the area is MUN and AGR;
- Maximum contaminant levels used to evaluate MUN protection
- The conservative use of Ayers and Westcott (1985) to interpret the narrative AGR objective:
    - EC < 700 uS/cm – no restrictions;
    - EC = 700 – 3000 uS/cm – Slight to moderate restrictions;

    - EC > 3000 uS/cm – Severe restrictions;
- The recent events making us look closer at beneficial uses including:
    - New Waste Discharge Requirements for Tulare Lake Drainage District in December 2015, requiring tile drains under evaporation ponds
    - The State Recycled Water Policy, which requires salt and nutrient management plans for all groundwater basins; and
    - The long-term Irrigated Lands Regulatory Program evaluation of groundwater protection;
- Recent direction:
    - The latest Triennial Review prioritized evaluation of appropriate beneficial use designation/protection in Tulare Lake Basin groundwater;
    - The project adopted as a CV-SALTS case study related to managing limited water supplies, encouraging reuse and recycling and identifying potential salt management areas;

Jacob Westra, Assistant Manager Tulare of Tulare Lake Bed Water Storage District presented:

- The MUN/AGR evaluation approach, which utilized water district boundaries to define the preliminary project area;
- The data collection efforts, which included:
    - Historic information, subsurface geological evaluation, groundwater quality and gradients, well reconnaissance (used a helicopter to survey well locations from the air), and a zone of capture analysis for surrounding municipal supply wells;
- The preliminary horizontal boundary review, which looked at:
    - Groundwater quality, communities and existing wells and well use;
    - Dividing the area into 5 evaluation sub-areas: north, east, south and west “fringe” areas extending on both sides of the preliminary boundary, and a central sub-area; and
    - A geological technical report of the proposed area and the surrounding fringe areas by Dr. Kenneth Schmidt;
- The vertical boundaries review, which included evaluation of groundwater quality, existing wells and well use as related to extensive underlying clay layers
- The sub-area review, which included:
    - Review of groundwater quality in monitoring wells, aerial survey for wells, ground truthing of well locations, review of historic data and a subsurface geological evaluation that included 13 cross-sections in the fringe areas and 4 cross-sections in the central area;
- The pulling in of horizontal boundary in fringe areas where groundwater EC < 5000 uS/cm and at the Alpaugh Groundwater Project area;
- Project outreach efforts, which included:
    - Discussion of project at TLDD Board meetings and personal communications with landowners covering approximately 90% of the proposed de-designation area;
- Letters of project support received from the local land owners and the surrounding communities;

Pam Buford, Senior Environmental Scientist in the Fresno office presented:

- Staff California Environmental Quality Act (CEQA) scoping activities;
- The four (4) alternatives for MUN de-designation and the six (6) alternatives for AGR de-designation;
- The evaluation criteria was used to propose project alternatives and the selected alternatives:
    - Alternative 3 for MUN – De-designate MUN beneficial use in portion of the historical Tulare Lake Bed based on application of the Sources of Drinking Water Policy exception 1a. where groundwater EC > 5,000 uS/cm; and
    - Alternative 5 for AGR – De-designate AGR-Irrigation Supply and Livestock Watering beneficial uses within combined horizontal and vertical boundaries based on groundwater EC threshold of 5,000 uS/cm and greater;
- The final proposed de-designation area:
    - Utilizes confining clay layers to limit vertical boundaries
    - Excludes vertical areas where e-log data indicated relatively good groundwater quality;
    - Includes the areas where groundwater EC was equal to or greater than 5,000 uS/cm;
    - Has an average shallow groundwater EC ranging from over 9,000 uS/cm to over 34, 000 uS/cm;
    - Includes 45 active wells that are completed below the proposed de-designation vertical boundaries (below confining clay layers) ;
    - Is not within the influence of surrounding communities' active municipal supply wells (based on zone capture analyses performed by TLDD's consultant, Dr. Kenneth Schmidt);
- How the project meets the needs identified by CV-SALTS for salinity management zones;

Dustin Fuller, General Manager of Tulare Lake Drainage District (TLDD) presented on:

- The immediate and long-term benefits of the project, which include:
    - Restoration/reclamation of the soils that have been impacted by salinity buildup;
    - Sustainability of agricultural operations in the area;
    - Easier permitting of the salt management areas within the proposed de-designation zone; and
    - Potential utilization of the de-designation zone as a salt management area for a broader portion of the Tulare Lake Basin;
- TLDD current operations, which includes:
    - Managing agricultural drainage from 33,000+ acres annually;
    - Operating 3,453 acres of evaporation basins;
    - A plan to expand evaporation basin acreage by 1,800 acres, which will be used for drainage from an additional 18,000 acres of agricultural lands;
    - Disposal of approximately 120,000+ tons of salt annually;

    - Plans to help meet land owner desires to drain an additional 50,000 acres in order to restore its agricultural productivity;
- How TLDD has tried almost every technology available to manage salt including:
    - Algae blooms, agroforestry, flow-through wetlands/bioremediation, Nepa Forage/Jose Tall Wheat Grass, enhanced evaporation spray field technology, wet chemistry heavy metals removal processes, reverse osmosis processes and solar distillation processes;

Pam Buford concluded the presentation with:

- Next steps, which include:
    - Final review of the sub-areas, finishing of the CEQA environmental review and economic analysis, finishing of the draft Staff Report; and determining the need for peer review;
- Timelines:
    - Complete CEQA and economic analysis – Fall 2016 (Oct-Nov. 2016);
    - Draft Staff Report peer review-?
    - Draft Staff Report public review – Fall 2016; and
    - Board workshop- Winter 2016;
    - Board Adoption Hearing – Spring 2017;

Public Comments

Phoebe Seaton indicated that her group has concerns about the number of domestic wells in the area between the current boundary and the initially proposed boundary and looks forward to seeing information on the outreach to domestic well owners in the staff report

Melissa Thorne of Valley Water Management indicated that they are highly supportive of the project. She indicated that the streamlined process for applying the Sources of Drinking Water Policy exceptions is needed for groundwater.