Lahontan Regional Water Quality Control Board

EXECUTIVE OFFICER'S REPORT

April 2012

NORTH BASIN

1. **Lake Tahoe Nearshore Update** – *Daniel Sussman*

   Staff participates in the Nearshore Agency Working Group (NAWG) that manages a Southern Nevada Public Lands Management Act (SNPLMA) funded grant to evaluate Lake Tahoe's nearshore ecology and aesthetics. The grantee is a collaborative group of researchers from University of Nevada at Reno, University of California at Davis and the Desert Research Institute collectively referred to as the Nearshore Science Team, or NeST. In February the NeST and NAWG met for the second time with executives from the NAWG agencies (Lahontan, Tahoe Regional Planning Agency, Nevada Division of Environmental Protection, US EPA). The February meeting was the second of three meetings scheduled with agency executives and was convened to update the executives on grant progress and solicit input and direction from the executives. The following are highlights from the meeting.

   Though the Lake Tahoe TMDL focuses on mid-lake transparency, its implementation is anticipated to benefit nearshore conditions. Agency executives asked the NeST to develop a qualitative description of the anticipated beneficial effects of TMDL implementation on nearshore clarity and algae growth.

   The grant requires the development of a nearshore conceptual model, a description of the drivers affecting the nearshore environment. The NeST will also develop a diagram of this conceptual model to communicate this information to a broad audience. A narrative of the conceptual model will explain the degree to which existing and anticipated management and policy actions benefit nearshore conditions. Impacts and actions related to aquatic invasive species will be included in both these efforts.

   The NeST is responsible for developing a nearshore monitoring protocol. The executives requested the NeST develop several different levels of monitoring plans with associated cost estimates. The differences between these plans will likely be variation in the number of sample areas, monitoring frequency, and parameters monitored. Practically, this means the plans will have differences in confidence in the monitoring results and will likely show differences in the resolution of the image of nearshore environmental conditions that monitoring provides. With optional plans, the agencies can decide how to best fund an effective and cost efficient monitoring plan and scale the monitoring plan commensurate with funding priorities.

   The grant products include suggested standards which the agencies can assess

for inclusion into regulatory documents, such as the Lahontan Basin Plan, TRPA Code, etc.

Staff, as a NAWG member, will continue to engage with TRPA, NDEP, and US EPA to manage the grantees. A third, final, meeting with the agency executives will be scheduled for June, with final products and public outreach to follow.

2. **Compliance with the Region-wide Timber Waiver Implementation Monitoring Reporting Deadline for January 15, 2012** *– Anne Holden*

The Timber Waiver requires enrollees to conduct implementation monitoring for projects enrolled under Categories 4 through 6 of the Timber Waiver. Category 1 – 3 projects are low-risk and project proponents are not required to perform implementation monitoring. Implementation monitoring consists of visual inspection of project areas such as roads, stream crossings and landings to ensure all management practices designed to prevent erosion and sediment delivery are in place and functioning prior to the winter period. Implementation monitoring is typically conducted by project implementers in the late summer through fall, and monitoring reports are due January 15 of each year.

For the January 15, 2012 reporting deadline, implementers of 69 of the 82 projects subject to implementation monitoring requirements submitted reports on time, for a compliance rate of 84 percent. No water quality violations were noted in any implementation monitoring reports.

Timber harvesting and vegetation management projects conducted by private entities and federal agencies had similar reporting compliance rates. Of the thirty-seven federal agency (mostly the US Forest Service) projects subject to implementation monitoring, five reports were not submitted, for a reporting compliance rate of 86 percent. For the private entities, forty-five projects required implementation monitoring; eight reports were either not submitted, or were submitted late, for a reporting compliance rate of 82 percent.

Staff is contacting those Timber Waiver enrollees that have not submitted the required monitoring reports.

3. **Update Report on USEPA Wetland Grant Center** – *Tobi Tyler*

In February and March Water Board staff held meetings on the Sierra Nevada test of the Wetland and Riparian Area Monitoring Program (WRAMP), funded by a USEPA grant. The pilot project was created to support California's Wetland and Riparian Area Protection Policy. This policy was established to help reverse trends in wetland loss, mitigate future risks to aquatic resources, and produce measurable improvement in the abundance, diversity and health of the state's wetland and riparian resources.

The Tahoe WRAMP tasks include: (1) establishing a multi-agency Regional Team, (2) testing the draft wetland and riparian mapping protocol ability to map the Tahoe Basin's Stream Environment Zones (SEZs), (3) using the mapping protocol to assess the distribution and abundance of wetlands and other aquatic habitats in selected demonstration watersheds, (4) integrating the Sierra Nevada ecoregion into the California Wetlands Portal by adding the base map and selected wetland projects to the "Wetland Tracker" portal, and (5) developing a methodology to assess montane wet meadow for inclusion into the California Rapid Assessment Method (CRAM).

The pilot project includes testing the mapping protocol and assessment methodology on SEZs in two demonstration watersheds (Upper Truckee River in California and Third Creek in Nevada). This

mapping effort and rapid assessment approach is consistent with the USEPA's Level 1, 2, 3 approach to wetland protection whereby Level 1 is mapping, Level 2 is rapid assessment and Level 3 is more intensive assessment, such as bioassessment.

Evaluation of the project results from last year's mapping and assessments on the Upper Truckee River watershed validates the usefulness of the CRAM tools in other areas of mountain environments that are less well-known than the Tahoe area. There will be another round of CRAM training this summer and assessments performed on Third Creek near Incline Village using a similar approach that was used on the Upper Truckee River watershed.

Last year's mapping efforts included the use of light detection and ranging (LiDAR), which provided a much greater level of accuracy for the geographic information system (GIS) map than the more common tools used to develop the National Hydrologic Dataset, the US Geological Survey's surface water map for the nation. The results of the mapping efforts will be used in the development of mapping standardization for the California Aquatic Resource Inventory for all streams and wetlands in the state.

A first version of the CRAM Wet Meadow Module was developed in February 2011 for a Caltrans project. The Wet Meadow project team convened in March to initiate discussions on the module and will decide on twelve sites for wet meadow assessments this summer using the module. The meadow team will then participate in analysis of results and refinement of the module this fall.

4. **Bridgeport Grazing Waiver Hearing Scheduled for June 2012** – *Doug Cushman*

In June 2007 the Water Board adopted a conditional waiver of waste discharge requirements (Waiver) for grazing activities in the Bridgeport valley. This Waiver expires in June 2012 and must be reissued. The current Waiver required compliance with the interim fecal coliform standard by December 2011. Water quality data collected by the ranching community over the last few years indicates that this interim standard has not been achieved. The Water Board, in the existing Waiver, acknowledged that achieving compliance with the Basin Plan water quality objective for fecal coliform would be challenging and was prepared to consider a site-specific objective once it was demonstrated what could reasonably be achieved through adaptive management efforts by the ranching community.

Water Board staff prepared and circulated for review a draft waiver to replace the existing Waiver. The Bridgeport Rancher's Organization, the Inyo-Mono County Agricultural Commissioner, and a joint letter from three members of the California Legislature have been submitted. Water Board staff met with representatives of the Bridgeport Ranchers Organization in March and mutually agreed to delay Water Board consideration of this replacement waiver to either the June or July 2012 Water Board meeting. Delaying consideration of the draft waiver was a request in all three comment letters.

Based on discussions at the March meeting and the comments received, Water Board staff will be circulating a revised draft waiver in April. It is our intent to clarify expectations regarding the adaptive management approach to implementation of best management practices, the Water Board's commitment to consider site-specific water quality objectives in the future and to address other comments on the initial draft waiver. Stakeholders will be provided with an additional period to review and comment on this revised draft before it is scheduled for consideration by the Water Board.

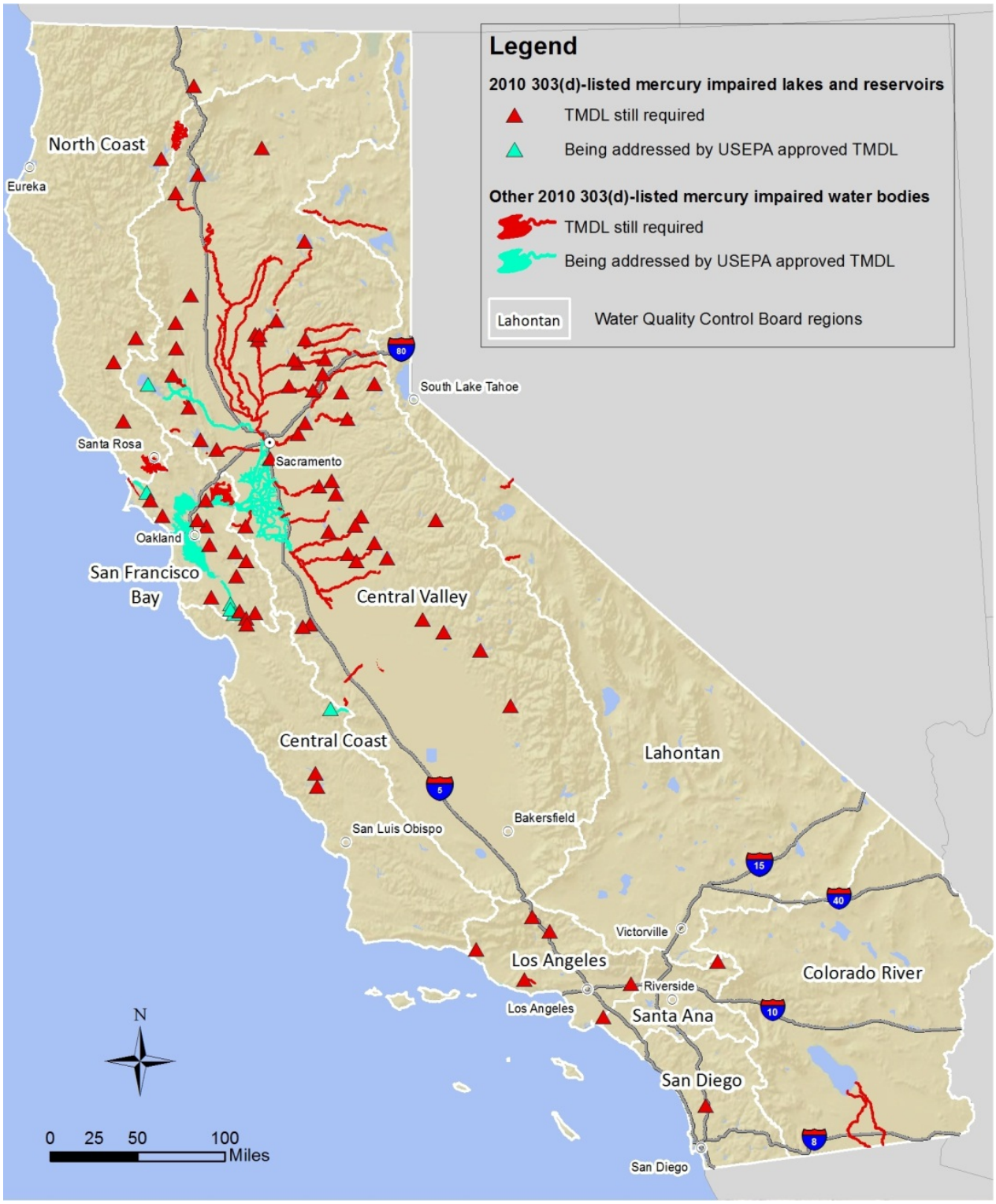
5. **CEQA Scoping for Statewide Mercury Control Program for Reservoirs** – *Carly Nilson*

Staff of the State and Regional Water Boards are developing two components for the Statewide Mercury Control Program: (1) water quality objectives for mercury; and (2) an implementation plan consisting of actions to reduce mercury inputs to reservoirs and to reduce the risk to people eating fish caught in reservoirs. The statewide program has a goal of addressing many mercury-impaired waterbodies in the state, the majority of which are located in the central part of the state (please see map on next page). This effort would apply to 74 reservoirs listed in California for mercury impairment and any future listings.

Lahontan Water Board staff is involved in the development of the program and is actively assisting in the stakeholder process. Some of the proposed implementation measures being analyzed include: emissions controls for industry; source control for urban areas and mines; evaluation of reservoir chemistry and water management; and evaluation of fisheries management actions that would focus efforts on fish species that have lower potential to accumulate methylmercury.

In March 2012 the State and Regional Water Board staff held CEQA Scoping meetings in Sacramento, Oakland, Redding, and Riverside. Next steps include Policy and Staff Report preparation, public comment on Staff Report, public workshops, and hearings to consider adoption. It is anticipated that water quality objectives will be considered by the State Water Board in Summer 2013 and the implementation plan in Winter 2013/2014.

For more information on this evolving project including the Scoping document, please visit the http://www.waterboards.ca.gov/water_issues/programs/mercury/.


Legend
2010 303(d)-listed mercury impaired lakes and reservoirs
TMDL still required
Being addressed by USEPA approved TMDL
Other 2010 303(d)-listed mercury impaired water bodies
TMDL still required
Being addressed by USEPA approved TMDL
Lahontan
Water Quality Control Board regions
North Coast
Eureka
South Lake Tahoe
Santa Rosa
Sacramento
Oakland
San Francisco Bay
Central Valley
Central Coast
Lahontan
Bakersfield
San Luis Obispo
Victorville
Los Angeles
Riverside
Colorado River
Los Angeles
Santa Ana
San Diego
San Diego
N
0 25 50 100
Miles

SOUTH BASIN

6. **Pacific Gas and Electric (PG&E) Company Compressor Station, San Bernardino County** -
Lisa Dernbach

PG&E has submitted a proposal to remediate hexavalent chromium in the lower aquifer in Hinkley. Hexavalent Chromium was first detected in the lower aquifer in 2010. Prior sampling showed that hexavalent chromium from PG&E historical discharge occurred only in the upper aquifer. PG&E was ordered by the Water Board to investigate the extent of hexavalent chromium contamination in the lower aquifer and identify the pathways that caused or allowed it to move into the lower aquifer.

In September of 2011, PG&E submitted an investigation report showing the extent of hexavalent chromium in the lower aquifer as being approximately one-half mile long and occurring almost two miles downgradient of the Hinkley compressor station (near the Desert View Dairy). Subsequent monitoring reports have shown the lower aquifer plume as being stable in size but increasing in concentration.

Investigations performed by PG&E as required by the Water Board determined that a clay layer separates the upper and lower aquifer. This clay layer exists in the area around the compressor station where PG&E historically disposed of hexavalent chromium into unlined ponds and it extends north for about two miles. The presence of this clay layer is one factor that has protected the lower aquifer from contamination.

PG&E speculated that agricultural pumping from several sources was pulling hexavalent chromium from the upper aquifer to the lower aquifer in the area where the confining clay layer ended. To abate this movement, PG&E replaced pumping wells screened in the lower aquifer with shallow wells screened in only the upper aquifer. In addition, PG&E extended a pipeline carrying fresh water from south of the compressor station to the Desert View Dairy to reduce groundwater pumping needed for daily operations.

Now that the forces pulling hexavalent chromium to the lower aquifer have ceased, the Water Board staff is concerned that natural groundwater flow conditions will expand the plume in the downgradient direction to the north where domestic wells could be threatened. To counter this action, Water Board staff order PG&E to develop and propose a remedial plan. In response, PG&E proposes to pump from two extraction wells screened in the upper aquifer. PG&E has indicated that the reverse effect of groundwater pumping will pull the hexavalent chromium from the lower aquifer to the upper aquifer and then out the pumping wells. PG&E has proposed to initiate this action during summer 2012 so that extracted water can be applied to nearby field crops.

Water Board staff intends to approve the remedial measure and include a condition that PG&E maintain hexavalent chromium plume containment in the lower aquifer yearlong instead of just during the summer months as proposed by PG&E. Water Board staff will review monitoring reports to verify the effectiveness of clean up actions in the lower aquifer.

7. **Detection Monitoring Wells Going Dry at Solar Thermal Facility, Harper Dry Lake, San Bernardino County** - *James Brathovde*

   The SEGS VIII & IX facilities and the adjacent, under-construction Mojave Solar project are solar thermal facilities. Since the solar thermal power plants produce more than 50 megawatts, the California Energy Commission (CEC) also has regulatory authority through the Warren–Alquist Act.

   In contrast to photovoltaic panel technology, solar thermal facilities use groundwater and solar energy to run steam turbine generators. Wastewater from the steam turbines is disposed and evaporated in double-lined surface impoundments. The detection of leaks from the surface impoundments is achieved with a comprehensive vadose zone monitoring system and a groundwater monitoring well network.

   Beneath the SEGS VIII & IX facilities, perched groundwater occurs on top of a 75 to 100-foot- thick clay aquitard that occurs around 50 feet below ground surface. Groundwater monitoring wells used to detect potential releases from the surface impoundments were completed in the perched zone. Four of the six groundwater monitoring wells have gone dry.

   The shallow (perched) water was the result of recharge from alfalfa irrigation. The drying of this perched groundwater likely occurred when the solar thermal plants replaced farming in the 1990s.

   Water Board Staff, CEC staff, and the Discharger are evaluating the need to replace the perched groundwater monitoring wells at SEGS VIII and IX with wells that monitor the groundwater beneath the aquitard. All parties are concerned that penetrating the aquitard and monitoring underlying groundwater may not provide timely data to determine a potential release from the surface impoundments.

   Decisions made on the need for groundwater monitoring at SEGS VIII and IX will likely affect leak detection monitoring practices at the Mojave Solar project.

8. **Salt/Nutrient Management Plan Meeting - Antelope Valley Regional Water Management Group** – *Jan M. Zimmerman*

   Beginning in May 2006, member agencies of the Antelope Valley Regional Water Management Group (RWMG) have met and developed an Integrated Regional Water Management Plan (IRWMP). The IRWMP is a watershed-based approach for addressing water supply, water quality, flood control, land use, and environmental resource management as related to the Antelope Valley. The Antelope Valley IRWMP was adopted by the member agencies. The Antelope Valley RWMG was formed through a Memorandum of Understanding among 11 public agencies for development and implementation of the IRWMP.

   Water Board staff attended a stakeholder subcommittee meeting for the Antelope Valley RWMG Salt/Nutrient Management Plan (SMP) in March. The stakeholders discussed the current lack of engagement by agricultural community in the SMP development. Representatives of the subcommittee reported that they attended a January meeting of the Los Angeles County Farm Bureau's Board of Directors. During this meeting they presented the subcommittee's scope of work to develop a SMP for the Antelope Valley basin and invited the Farm Bureau to participate in

the effort. While there was some expression of interest at this meeting, the agricultural community has not formally engaged with the subcommittee. The SMP subcommittee members expressed concern regarding the lack of coordination with the agricultural community and, if further outreach efforts are unsuccessful, the subcommittee may request that the Water Board assist in encouraging agricultural community to participate in the SMP planning effort.

Also during the meeting, the subcommittee members discussed the potential for municipal stormwater to contribute salt and nutrient loading to the basin. Subcommittee members expressed an understanding that most stormwater recharge occurs in the foothills and that the majority of the runoff that does reach the valley floor evaporates in the dry lakes. Based on this, some questioned the potential for impacts on groundwater. Water Board staff pointed out that there are a number of existing and planned regional recharge facilities away from the foothills where stormwater runoff percolates. However, due to the lack of municipal stormwater quality data for the area, the quality of the water that is or will be percolating into the ground has not been characterized.

Water Board staff suggested that stormwater samples be collected from several of the regional detention and retention facilities where recharge does occur. This effort should be designed to characterize the quality of the water percolating into the ground with respect to the constituents of concern identified in SMP scope of work. Representatives for the cities of Lancaster and Palmdale agreed to consider adding stormwater sampling and analyses to their respective programs.

Subcommittee members have produced a map showing the distribution of the active monitoring and production wells and the locations of the proposed recycle, reuse, and recharge projects within the region. For each project, the subcommittee tentatively identified potential compliance wells, which will be included in the SMP regional monitoring program. Water Board staff reiterated the importance of including only those wells with known well construction data into the regional water quality monitoring program. Casing materials, screened intervals, lithology, and perched aquifer zones as well as the regional aquifer all play an important role in interpreting water quality data.

9. **Lake Arrowhead Dry Weather Spills** – *Mike Coony*

In mid-February the Lake Arrowhead Community Services District (District) had an 18,000 gallon raw sewage spill into Lake Arrowhead during the night. The discharge occurred in to Blue Jay Bay, which is located in the southwest corner of Lake Arrowhead. The spill was from an overflow of a sewer manhole adjacent to Blue Jay Bay. The District responded and traced the blockage to a collection of rags in a pump station intake pipe. The District cleared the blockage and stopped the overflow.

Water Board staff inspected the site on the next day. Raw sewage flows by gravity into the pump station from Lake Arrowhead Village, Blue Jay, Twin Peaks, and Rim Forest. Because the pump station serves a considerable fraction of the District's service area, the overflow rate was relatively high and resulted in a large overflow volume.

The District posted sewage contamination warning signs. Water Board staff directed the District to collect daily coliform

samples. Coliform values in Blue Jay Bay decreased to background levels in two and one-half weeks. The overflow did not directly affect the drinking water intakes located on the opposite side of Lake Arrowhead.

Water Board staff issued a Notice of Violation for the overflow. As a possible corrective action, the District is considering replacing some manhole covers at locations vulnerable to overflows into Lake Arrowhead. The replacement covers would include monitoring of water levels in the manhole and equipment that communicate this information to the District using wireless remote telemetry. This would result in immediate District notification of a problem rather than the current method for an observer to call the District's emergency line for an overflow already in progress.

An unrelated manhole overflow incident occurred on the southeast side of Lake Arrowhead in early March due to a blockage in the collection system. The estimated sewage discharge to Lake Arrowhead was 650 gallons. With the lower volume, coliform values returned to background in one week.

10. **Mojave River Watershed Group, Community Cleanup Events along the Mojave River** – *Jan M. Zimmerman*

The Mojave River Watershed Group (MRWG) is a consortium of the High Desert co-permittees under the Phase II Small Municipal Stormwater permit: The co-permittees include the County of San Bernardino, City of Victorville, Town of Apple Valley, and City of Hesperia. On the second Sunday in March, the MRWG along with approximately 20 student volunteers from Victor Valley College gathered at the corner of Ridgecrest Drive and Yates Road in the City of Victorville near a tributary of the Mojave River. In just two hours, MRWG team members and students collected approximately 1.1 tons of trash, 14 tires and a five-gallon paint bucket from out of the river bed. The group reported that the pile of garbage and the items collected were astounding.

Recognizing that there are a number of High Desert areas that could benefit from the help of local volunteers, MRWG has focused a portion of its 2011/2012 public outreach plan toward the facilitation of these types of cleanup events that increase the level of active participation by the community. Our experience with these events has resulted in the empowerment of citizens and – more importantly – the education of the community regarding stormwater pollution prevention, both of which are likely to increase involvement in similar upcoming events. To date, the public education team has worked with Victor Valley College, Girl Scouts of San Gorgonio Council, local elementary schools, and Service Learning Project students at Excelsior Charter School to hold cleanup events.

In addition to the large quantity of debris collected, the success of MRWG cleanup events is evident by the development of partnerships within the community. Without securing these community partners, MRWG would not be able to make such a positive impact in the High Desert community – and participants wouldn't be asking for more events.

Because this was MRWG's first event with Victor Valley College, only the campus club members were targeted for participation. However, following the success of the cleanup event, all agreed to plan a future event open to all students giving them the opportunity to benefit the

community. We are proud to say that in the coming weeks, MRWG will be working with the students to identify a date for a future cleanup and look forward to making an even bigger difference for the next event.

11. **Nitrogen Removal at Wastewater Plants – EPA Training** – *Jehiel Cass*

In March Water Board staff participated in a US EPA web-based training seminar regarding state-of-the-art biological nitrogen removal at wastewater treatment plants. Enhanced nitrogen removal involves modifying activated sludge processes by creating alternating zones of oxygen-poor (anoxic) and oxygen-rich (aerobic) environments conducive to different bacteria that promote nitrification and de-nitrification. A beneficial finishing (polishing) process will add carbon (such as methanol or ethanol) along with final filtration.

Sewage contains different forms of nitrogen with variable concentrations of organic nitrogen (complex amino acids, sugars, and proteins), ammonia ($NH_{3)}$, ammonium ions (NH_4^+), nitrate (NO_3^-) and nitrite (NO_2^-). Raw untreated sewage contains total nitrogen from 20 – 70 mg/L (40 mg/L average). Of this, organic nitrogen ranges from 8 – 25 mg/L (15 mg/L average) and ammonia ranges from 12 – 45 mg/L (25 mg/L average). Untreated sewage contains very little nitrogen that is in the form of nitrate or nitrite.

The Water Board imposes stringent effluent limitations for ammonia which is toxic to fish on dischargers of treated sewage discharged to surface water. The specific level is relative to temperature and pH. Phosphorus and nitrogen in surface water also contribute to algae blooms depleting dissolved oxygen supporting fish and other wildlife. When sewage (treated or untreated) is discharged to groundwater, most of the non-organic nitrogen is oxidized to nitrate nitrogen. With complete nitrification, groundwater beneath sewage disposal ponds at treatment plants without nitrogen removal may contain up to 25 mg/L nitrate as nitrogen.

The maximum contaminant level (MCL) is the highest level of a constituent allowed in public drinking water supplies. It is the drinking water standard. For municipal drinking water beneficial uses the Basin Plan considers this level to be the water quality objective. The MCL for nitrate as nitrogen is 10 mg/L and the value for nitrate as nitrate is 45 mg/L. Receiving water nitrate concentrations above 10 mg/L are considered "contamination" because the beneficial use of drinking water is impaired.

Sewage treatment plants using activated sludge technology for nitrogen removal may attain final effluent concentration for total nitrogen ranging from 6 – 10 mg/L. Enhanced nitrogen removal technologies may achieve total effluent nitrogen concentrations slightly lower than 3.0 mg/L, as limited by dissolved organic nitrogen. Of the many case studies examined, the Truckee Meadows Water Reclamation Plant, located near Reno Nevada, was cited as attaining the lowest total nitrogen concentrations at 1.6 mg/L (2009 – 2010).

The training concluded that biological nutrient removal processes are complex and require careful process control monitoring systems, but that final total effluent nitrogen concentrations in the range of 3-8 mg/L are achievable at moderate cost.

12. **Site 29 Record of Decision Amendment, Operable Unit 2, Edwards Air Force Base** – *John Steude*

The Air Force has prepared a Draft Record of Decision (ROD) Amendment for Site 29 that will improve the remedy selected for the site. As part of implementing the remedy, the Air Force found that more cleanup could be done at Site 29. Through a ROD Amendment, post-ROD changes can be made to a remedy based on new information.

Site 29 is a historic dump area where the types and locations of buried wastes were poorly documented. When the ROD was signed in 2009, much of the land surface of the site was buried beneath concrete rubble. Based on site investigations conducted, the volume of buried waste beneath the rubble was estimated to be 490,000 cubic yards. Removal of the concrete rubble from the land surface during implementation of the remedy, and the subsequent results of geophysical investigations and trench studies, indicated that the quantity of buried waste at Site 29 is only 21,711 cubic yards.

The ROD Amendment proposes to change the selected remedy from closing the subsurface wastes in place to a "clean closure" by removal and appropriate treatment or disposal of the remaining wastes. This change results in a remedy that is cost-effective and more protective of human health and the environment. Clean closure of the site will restore the land and make it available for unrestricted land use, and eliminate the need to cap the landfill and perform post-closure monitoring.

A Final ROD Amendment is being prepared and is expected to be available for review in the near future.