



State and Regional

1. Personnel Report – Eric Shay

New Hires – None

Vacancies – We will soon begin the process of recruiting for two Environmental Scientists to support our SWAMP program. In addition, we are currently recruiting for the following positions:

- Executive Assistant, South Lake Tahoe
- Staff Services Analyst, Leviathan Unit, South Lake Tahoe
- Supervising Engineering Geologist (Division Manager), Victorville

Departures – None

2. Staff Awards – Lauri Kemper

Tom Gavigan – Superior Accomplishment Award for Tom's major improvement in methods, organization, and products which have increased efficiency, consistency, transparency, and quality of work products. Tom led his unit team to develop a simplified, one-page, step-wise set of instructions with embedded template documents for internal review and processing of petroleum contamination cases. Tom and his team also developed a similar set of instructions for issuing closure on a non-petroleum contamination case.

Eric Taxer – Sustained Superior Accomplishment Award for the leadership and implementation roles Eric has played in the Water Board's efforts to improve the effectiveness, efficiency, and transparency of the its Enforcement Program; developing and implementing the Water Board's new Supplemental Environmental Project Program; and developing the Water Board's fledgling Cannabis Enforcement Program in coordination with state-wide efforts.

Rebecca Phillips – Sustained Superior Accomplishment Award for Rebecca's exemplary work over the past two years in taking on new and important assignments, such as assisting the Water Board in tracking performance targets; managing our regional lab contract; and planning, coordinating, and implementing the Victorville office relocation.

3. Climate Change Working Groups Update – *Mary Fiore-Wagner, Brian Judge, Laurie Scribe*

Our internal Climate Change Adaptation Working Groups have sent out a questionnaire on August 4, 2016 to stakeholders, infrastructure owners, governments and interested parties asking for their plans to address climate change and the challenges they face. As we identify additional stakeholders more surveys will be sent out. In the first two weeks of the survey we received over 60 responses and 38 individuals from organizations volunteered to help staff develop collaborative strategies, plans, and policies to further climate change adaptation in our region.

Several staff from the Water Board formed three Working Groups: Stormwater and Low Impact Development (Laurie Scribe lead), Wetlands and Floodplains (Mary Fiore-Wagner lead), and Infrastructure (Brian Judge lead) composed a series of survey questions along with targeted mailing lists to gather wide ranging responses from diverse groups. In addition to the mailed survey, staff plans to attend meetings of existing organizations, such as the IRWMPs, watershed groups, and other local organizations, to have more focused discussions about climate change and survey input from participants.

The questionnaire asks for feedback on the range of options the Water Board may consider to address climate change. The options range from a minimal of suggesting actions to a maximum of requiring actions. For example, the Water Board could either suggest or require implementing agencies to prepare plans and schedules to ensure infrastructure and other facilities are protected from anticipated climate change effects (e.g. higher and more frequent floods, increased erosion, depleted water supplies, catastrophic wildfires, etc.). Other options the Water Board may consider involve wetland and floodplain prohibitions similar to those in place for Lake Tahoe and Truckee watersheds, and requirements for storm water capture and use of low-impact development principles. The survey questions are divided into three main sections:

1. Who are you and what are you doing or planning for climate change?
2. What challenges do you face?
3. What is your opinion about actions and priorities the Water Board is considering?

The survey is available on the Water Board's public website and was distributed to the Water Board's existing lists as well as the newly created climate change adaptation list, which includes all participants from the past Climate Change workshops. In addition to email distribution Water Board staff will be presenting the survey and discussing the Water Board's efforts at various meetings throughout the region later this summer and fall. The survey is available [here](#) and under the "Announcements" section of the Water Board's home webpage and on the Water Board's climate change webpage.

Water Board staff plan a presentation at the November 9-10, 2016 Board meeting in South Lake Tahoe with results from the online survey and public outreach at meetings and a more developed range of alternatives to adapt to climate change.

4. CalEPA Environmental Justice Symposium – Lisa Dernbach and Lauri Kemper

Water Board staff attended the first CalEPA Environmental Justice Symposium, titled “Understanding the Importance of Equity: A Step Toward Environmental Justice,” held at the CalEPA Building in Sacramento on August 8. Opening remarks were made by Matthew Rodriguez, Secretary for Environmental Protection at CalEPA, who iterated the agency’s commitment to creating a more just and equitable California in environmental matters.

The first speaker was Dr. Rachel Morello-Frosch, Professor of Environmental Science, Policy and Management at Cal Berkeley. Considered an expert in her field, Dr. Morello-Frosch provided many examples and statistics demonstrating environmental justice instances in California and the nation. One example is industrial development occurring more often in poverty areas, where residents are subject to pollution burden more than other socioeconomic classes. People who live and work in these areas, often people of color, have chronic exposure to environmental stresses, such as poor air and water quality and excessive traffic and noise. These stresses affect pregnancies, babies’ health, children’s health, children’s ability to concentrate and do well in school, and result in higher instances of hypertension, cardiovascular disease, and cancer in adults. Solutions offered by Dr. Morello-Frosch include more and better communication with affected populations and making them part of the decision-making process. She also suggested that regulatory agencies help with research by providing staff time to share data, equipment, lab analyses, and expertise.

Susana de Anda, Co-Founder of the Community Water Center, spoke second. She showed segments of the documentary “Thirsty for Justice” about the struggle of Central Valley residents and the human right for water. Ms. de Anda shared stories of poor and immigrant communities, who lack basic access to safe, clean, and affordable drinking water. She said polluted wells at schools and in communities were an assault on residents and workers’ personal health and human dignity. She also spoke of domestic wells going dry due to excessive agricultural pumping, such as in East Porterville in Tulare County where some residents have not had running water for over a year. By not adequately regulating the agricultural business, she believed California was condemning future generations with polluted and insufficient water supply problems to solve and pay for later at extreme costs. Ms. de Anda spoke of the grassroots movement that made the Human Right to Water the law of the land in California, and the first of its kind in the nation. After release of the documentary, the State Water Board coordinated bottled water for East Porterville and will soon be hooking up the community to municipal supply from Porterville. Ms. de Anda concluded that government agencies need to step up to replace water sources that have gone dry or have been polluted at all applicable locations throughout the state. And agencies need to provide better communication and education to poor and immigrant communities on water quality, well design, installation, testing, and maintenance.

The final speaker was Vien Truong, Director of the non-profit Green for All. Ms. Thuong described and showed video clips of her organization’s involvement in the Flint, Michigan, municipal water lead-poisoning crisis. Green for All conducts outreach using contemporary means including musicians and other celebrities to inspire social and

environmental action. While the major media outlets focused on government officials and other well-known persons, Green for All made sure that residents affected by lead-tainted water were heard and able to share their stories and sufferings. Green for All ensured the public got to see various degrees of lead-tainted water samples representing municipal water that made its way to homes and businesses. It is estimated that about 10,000 children in Flint were exposed to lead in water and many will likely suffer life-long effects, such as neurological problems. Ms. Thuong emphasized that environmental justice communities are connected to all other communities in one way or another. When states are equitable in providing environmental justice, the economy improves for everyone. This is seen in less frequent health issues requiring medical attention for residents, better school attendance for children, and better attendance and productivity for workers.

5. United States Environmental Protection Agency Partnership – Robert Larsen

Strong partnerships are critically important for water quality protection in the Lahontan Region. To that end, the Water Board maintains valuable relationships with federal, state, regional, and local representatives to ensure our shared water quality goals are met, and support mutual agency initiatives. Staff and agency management regularly meet with agency partners to share ideas and maintain ongoing discussion on important issues. Such coordination is a cornerstone of the Water Board's regulatory approach.

The United States Environmental Protection Agency (USEPA), Region 9 recently



appointed Tomas Torres as the new Director of its Water Division. Mr. Torres visited Lake Tahoe in July to learn more about the Water Board's region and its unique water quality issues. Staff and management met with Mr. Torres, his staff, and Nevada Division of Environmental Protection staff on July 12, 2016 to review the history

of the Lake Tahoe TMDL program and discuss current and upcoming TMDL implementation efforts. Water Board and NDEP staff also shared information regarding other program issues including ongoing remediation work at the Leviathan Mine, bacteria-impaired water bodies, environmental justice programs and ideas to focus basin planning efforts on addressing impairments of beneficial uses. The meeting

provided an invaluable opportunity to bring Mr. Torres up to speed on important Water Board and NDEP programs and continue ongoing dialogue with the USEPA. The Water Board and USEPA committed to having future annual meetings.

Later that week, the Tahoe Regional Planning Agency hosted Mr. Torres and US EPA, NDEP, and Water Board staff on a boat tour of Lake Tahoe to highlight ongoing protection efforts and emerging challenges. The group (pictured below) performed an informal measurement of Lake Tahoe's transparency using a Secchi disk, viewed invasive weed and Asian Clam control projects in Emerald Bay, and toured Tahoe Keys and Marla Bay to get a first-hand perspective on aquatic invasive species issues. Trip participants were able to network with peers and strengthen important connections needed to protect Lake Tahoe's fragile environment.

6. Joint California-Nevada Legislative Committee Session – Robert Larsen

The Nevada Legislative Committee for Review and Oversight of the Tahoe Regional Planning Agency (TRPA) and the Marlette Lake Water System is comprised of six Nevada Legislators, and its duties include reviewing the budget, programs, and accountability of the TRPA and coordinating with California Legislative members. The Committee invited several members of the California Legislature to its July 15, 2016 meeting and hosted Legislative members and staff on a Lake Tahoe boat tour that morning. The afternoon session was held at the TRPA offices, and Nevada Division of Environmental Protection Deputy Director Jennifer Carr and I briefed the Committee on Lake Tahoe TMDL program progress.

Ms. Carr opened the discussion with a review of the causes of clarity loss, and I followed with a review of the TMDL goals. We then talked about the various management practices and restoration efforts currently underway that are achieving our load reduction targets, followed by a brief overview of specific steps each state is taking in the coming year to implement the program. Finally, I provided a quick summary of the Water Board's nearshore assessment work and described our program for focusing nearshore monitoring to guide management actions. The group appreciated the report, was encouraged by TMDL program progress, and requested ongoing engagement to keep the committee abreast of ongoing work.

Ongoing engagement with state Legislative members remains important for educating government representatives on the important regulatory agency work to protect and restore Lake Tahoe. I welcome these opportunities to present to the Nevada Legislative committee and was happy to see members of the California Legislature join in the discussion. Staff will continue to engage with both California and Nevada Legislative members and staff in the future to maintain productive dialogue on important issues.

7. Testing Failure of Underground Storage Tanks in South Lake Tahoe, El Dorado County – Lisa Dernbach

This summer has seen a number of gas stations in South Lake Tahoe with underground storage tanks (USTs) failing leak tests. According to El Dorado County, Environmental Management Department, USTs at four gas stations have either failed annular spacing leak tests or have leak detection systems indicating failure.

The UST Regulations require owners/operators of USTs to test every three years the annular spacing between the primary and secondary walls of tanks and piping for leaks. Most of the USTs in the South Lake Tahoe were replaced in 1998 to meet the State's upgrade deadline and comply with the double-wall provision. The last annular testing for the sites discussed here was in 2013.

At the 7-11 Store on Lake Tahoe Boulevard in the middle of town, the tank alarm system indicated an inward leak in the 91 octane tank. An inward leak means a failure from the outer tank wall towards the inner tank wall and usually does not involve a release to the environment. After reporting the alarm system results, the responsible party worked with the County to conduct appropriate annular space testing that verified the problem. This resulted in product removal and the UST owner/operator placing the tank in "inactive" status. The tank can remain inactive for up to one year before the owner/operator needs to decide to either replace the tank or permanently close it. Since no leak was indicated in the 87 octane tank, it continues to operate by dispensing product.

During spring this year, the tank alarm system at the Tahoe Tom's Gas Station near Stateline repeatedly indicated failure in the annular spacing. Because the alarms were not reported and the tanks were past their annular spacing test due date, the County red-tagged them prior to the 4th of July weekend. Red-tagged tanks are prohibited from being filled by any party, such as a tanker truck driver, at the risk of a \$25,000 fine. In mid-July, the responsible party of the site removed the concrete slab and pea gravel over the 87 and 91 octane tanks to expose pipelines, risers, and sumps, which all indicated leaks. Repairs continue to be made to correct tank equipment as of mid-August. The site owner has applied for a RUST (Replacing, Removing, or Upgrading Underground Storage Tanks) loan from the State Water Board.

As at Tahoe Tom's, the tank alarm system at the former USA Gas Station, now called American 1, indicated failure in the annular space for piping during Spring of this year. The gas station is located on Emerald Bay Road, south of the South Y intersection for Highways 50 and 89. The County red-tagged the tanks as they were past their annular spacing test due date. Even though repairs were made to above-ground tank equipment (dispensers, lines, and pans), test results continue to show failure within the tank system. The responsible party is planning to remove the concrete slab and pea gravel to expose the top of the tanks to attempt to locate other leaks. The owner of this site has also applied for a RUST loan.

The final site is the Swiss Mart Gas Station, also on Emerald Bay Road, but north of the South Y intersection. Besides records at the site showing the tank alarm system being triggered, County staff found hand-written instructions informing employees on how to override the alarm system. Since the tanks are not yet past their annular spacing test due date, the County has issued a new test due date. The operator, in the meantime, is allowed to continue dispensing product.

Of the four sites mentioned, only Tahoe Tom's is an active leaking underground storage tank case implementing corrective actions. Gasoline constituents from releases that

ceased in 2000 continue to adversely impact groundwater quality in a limited area near the tank basin on site and also off site. A high vacuum dual-phase extraction system sporadically operated at the site until excavation activities required it be turned off. Soil contamination remains beneath the tank basin despite 16 years of remedial actions using various methods.

In July, Water Board staff issued a letter that requires the responsible parties to remove all soil contamination in the tank basin in the event that the tanks have to be removed. In the meantime, a water sample collected by Water Board staff in June from the Mark Twain Lodge domestic well contained MTBE at 35 micrograms per liter, the highest detection thus far. Last year, the Lodge owner connected to municipal supply and sued the gas station owner to recover those costs. The County allows the well to continue to be used to provide water for landscaping and to fill the pool. Water Board staff is planning to require the responsible parties to submit a corrective action plan to address the off-site MTBE contamination in soil and groundwater.



8. **(Standing Item) City of Barstow Wastewater Treatment Plant Compliance with Enforcement Orders – Ghasem Pour-ghasemi**

Plant Upgrades Completed

The City of Barstow (City) completed Phase I improvement projects upgrading its wastewater treatment plant (plant) and disposal percolation ponds in July 2015. The cost was \$8.1 million dollars, of which \$2.8 million dollars was from federal grants. The improvements were discussed in the Executive Order (EO) report of September 2015. Phase II is not yet scheduled but will address additional improvements to wastewater treatment. Phase II project will be designed after Phase I loan is paid off (in fiscal year 2016-2017). Currently, one aeration basin, one primary clarifier and two secondary clarifiers are in use. The remainder of the plant is idle due to lack of sufficient wastewater inflow. The effluent treated water is discharged to percolation ponds 1, 2, 3, and 5 as well as the Southern Irrigation Field.

Plant Nitrogen Removal

The effluent average total nitrogen over the last year has been 7.24 mg/L. This demonstrates that the improvements have been effective in reducing effluent total nitrogen levels. In 2004, the effluent total nitrogen concentration was 34 mg/L. Cease and Desist Order No. (CDO) R6V-2004-0029 required “effective immediately” that all effluent disposed to not exceed a total nitrogen concentration of 26 mg/L as nitrogen (30-day average) and required improvements to the plant by July 30, 2009. Thus, the City has fully complied with CDO No. R6V-2004-0029. However, we do not recommend rescinding this enforcement action until revised Waste Discharge Requirements (WDRs) are issued to establish an enforceable total nitrogen effluent limitation of 10 mg/L. Staff intends to prepare revised WDRs as soon as resources allow. The revised WDRs would also consolidate groundwater monitoring that are now required under both the WDRs and the groundwater cleanup order discussed below.

Nitrate Pollution Groundwater Cleanup

Cleanup and Abatement Order (CAO) No. R6V-2013-0045 required the City to design and construct a system to capture and treat nitrate polluted groundwater down gradient of the northern irrigation field in the Soapmine Road neighborhood. Three additional amendments to this CAO were made due to the presence of perchlorate that is migrating from a contaminated site about three miles up gradient of the City’s nitrate source area (formerly used Northern Irrigation Field). The City is not responsible for the perchlorate pollution, but the two plumes of perchlorate and nitrate are now co-mingled. Water Board and City staff agreed that the perchlorate and nitrate groundwater pollution should be addressed simultaneously.

On July 23, 2015, the Executive Officer issued the latest amendment to the CAO No. (R6V-2013-0045-A3) granting an additional two-year extension until November 10, 2017 for the City to start the pump and treat system. In the meantime, the Executive Officer instructed the City and Water Board staff to meet regularly to establish reasonable actions that the City will take to limit the migration of the nitrate plume and address source areas by the new date. The City’s consultant, BKT, has applied for and received a \$1.7 million grant from the California Energy Commission (CEC) to conduct a small

amount of groundwater extraction (0.2 to 0.5 million gallons per day) to treat and remove both nitrate and perchlorate. The proposed extraction will not fully meet the requirements of the CAO. Water Board staff will meet with the City in early September to discuss details of the CEC grant project.

Residential Well Sampling in the Soapmine Road Area

The City continues to conduct residential well sampling of drinking water wells in the Soapmine Road area, as required by CAO No. R6V-2007-0017. In the third quarter of 2016, the City sampled 31 residential wells. Only one residential well exceeded the drinking water maximum contaminant level (MCL) for nitrate as nitrogen of 10 mg/L. A total of seven private wells showed nitrate as nitrogen concentrations exceeding 5 mg/L (e.g. above background). The nitrate concentration trends are going down. However, the groundwater elevation has been also decreasing due to lesser annual precipitation. When the groundwater elevation increases from storm flood events, it is likely that the nitrate concentrations will increase as nitrate is flushed from the source area soil. The City has been providing all residents within the required study area with uninterrupted replacement water service (bottled water) even though the CAO required it to provide bottled water only where nitrate has been detected at concentrations at or exceeding 5 mg/L nitrate-as N at any time in the past four quarters. However, starting July 1, 2016, the City is providing bottled water only to the residents that meet the CAO requirements. At this time, the City provides eight residents with bottled water. The City has also requested to reduce the frequency of the sampling of the number of residential wells that have not exceeded nitrate as nitrogen of 5 mg/L. Water Board staff intends to recommend allowing reduced sampling with triggers to resume sampling if groundwater elevations increase.

9. (Standing Item) Dairy Status Report – Ghasem Pour-ghasemi

There are seven dairies and three heifer ranches in operation in the Lahontan Region for a total of ten concentrated animal facilities (CAFs). Only three active and one inactive dairy are regulated under waste discharge requirements (see table below). The waste discharge requirements for inactive N & M Dairy will not be rescinded until site cleanup is completed. Some CAFs have cleanup and abatement orders issued to them requiring delivery of replacement water to affected residents.

Staff is developing a General Order that would regulate the CAFs and will prohibit unlined wash water ponds, establish criteria for applying manure and wash water to cropped areas, and establish standards for storm water management within the corrals and dairy sites. The General Order will not address cleanup of groundwater pollution. A stakeholders meeting was held on November 19, 2015 to introduce the CAF General Order concept. The stakeholders asked for creation of a Technical Advisory Committee (TAC) to research and make recommendations about minimum monitoring standards. On May 6, 2016, Water Board staff invited approximately 30 people for the first meeting to discuss the formation of TAC group. The group included people from the Mojave Resources Conservation District (RCD), Natural Resources Conservation Service (NRCS), Western United Dairymen, Mojave Water Agency, University of California-Davis cooperative extension, consultants, agronomist, dairymen, and agriculture industry. A second meeting took place on June 22, 2016 and a subgroup of six people

volunteered to provide recommendations for nutrient balance and performance monitoring. Water Board will develop a draft monitoring and reporting program (MRP) and meet with the subgroup in October 2016 to evaluate it before inviting the entire TAC group for another meeting to present the developed MRP.

Approximately 30 residents currently receive replacement drinking water from five dairies and a heifer ranch that have polluted down gradient residential supply wells. The associated enforcement orders require dairy owners to sample residential wells around the dairies every nine months. Replacement drinking water must be provided to any residents with nitrate and total dissolved solids concentrations close to and/or over the primary and secondary drinking water standards.

Staff conducted sampling of the residential supply wells near John Van Leeuwen Dairy in Newberry Springs on January 21, 2016. Results indicated none of the sampled wells exceeded primary or secondary maximum contaminant level for drinking water. Depth to groundwater in Newberry Springs is approximately 150 feet. The table below summarizes the current status of all existing and recently closed CAFs.

Summary of Region 6 Confined Animal Facilities

Facility	WDRs	CAO to Provide Water?	Groundwater Pollution?	Status
Active Dairy				
Harmsen Dairy	No	Yes	Yes	A CAO was developed requiring discharge to the unlined wash water pond to cease. It will not be issued and the facility will be covered under the General Order which will likely prohibit use of unlined waste disposal ponds.
A & H Dairy	Yes	No	Yes	The dairy stopped flood irrigation of pure wash water and now mixes wash water with fresh water that is applied to crops at an agronomical rate.
Dutch Dairy	Yes	Yes	Yes	The dairy over applies wash water to irrigate a small pasture area. The facility will be covered under the General Order which will likely require wash water to be applied at agronomical rates or placed in lined ponds.
B & E Dairy	Yes	No	Yes	A draft CAO was released to the public requiring the dairy to provide replacement water. Water Board staff and dairy owner did additional discovery which indicate all residents within concerned area are connected to the Golden State Water Company with the exception of one resident. B & E sampled that well and nitrate was below drinking water standards, TDS was around 1300 mg/L. The Resident did not want bottled water supplied or routine

Facility	WDRs	CAO to Provide Water?	Groundwater Pollution?	Status
				sampling of his water supply well conducted.
John Van Leeuwen Dairy	No	No	Unknown	The dairy has unlined wash water disposal ponds. Staff sampled nearby residential wells on January 21, 2016. All wells were below the primary and secondary MCL.
Hinkley Dairy	No	Yes	Yes	Operating
High Desert Dairy	No	No	No	Operating
Active Heifers				
Desert View Dairy	No	yes	Yes	Dairy closed. Heifer ranch is moved in.
Green Valley Farms	No	No	No	Operating
Alamo Mocho Ranch	No	No	No	Operating
Closed				
N & M Dairy	Yes	Yes	Yes	Dairy ceased operation as of July 2013. Cleanup in progress.
Meadow Brook Dairy	Yes	No	No	Dairy closed and permit rescinded in June 2013.
DVD Heifer Ranch	No	Yes	Yes	Moved to DVD dairy location. Corrals and structures removed.

10. Summit for Low-Impact Development and Stormwater Best Management Practices (BMPs) for the High Desert, Mojave River Watershed Group

– Tom Browne

On July 26, 2016, the Mojave River Watershed Group hosted a one-day forum for consultants, designers, engineers, and city and county planners at Victorville City Hall. The forum topic was “Low-Impact Development and Stormwater Best Management Practices for the High Desert.” The forum attracted 67 attendees, and there were excellent questions from the audience. This was the first forum held locally specifically to address new requirements contained in the statewide Construction and Small Municipal Separate Storm Sewer System (MS4) permits. The Small MS4 programs are required in portions of unincorporated San Bernardino County, Cities of Barstow, Hesperia, Victorville, and Town of Apple Valley, which are permittees. Low-Impact Development (LID) is a management strategy required in the permits to reduce water quality impacts associated with stormwater runoff.

Speakers included Mark Gray, Director of Environmental Affairs for the Building Industry Association of Southern California. Mark showed photos of recent commercial projects that installed very large stormwater capture / treatment devices below ground. The Building Industry Association is a strong advocate of stormwater LID technologies and

he presented costs for some of these technologies. Sri Srirajan, San Bernardino County Flood Control, and Cynthia Gabaldon, a consultant to San Bernardino County, gave a presentation directed to consultants that are helping cities and counties that have to comply with the MS4 Phase II Permit. Daniel Apt, president of the California Stormwater Quality Association (CASQA), showed examples of stormwater capture / treatment devices that have been installed throughout the state, and talked about their effectiveness and maintenance requirements. David Garcia of Riverside County Flood Control Agency, show-cased the stormwater capture / treatment devices installed at their Agency's headquarters in Riverside. They are gathering water quality data to measure the effectiveness of treatment provided by devices such as bio-swales, below-grade separators, and several types of porous pavement.

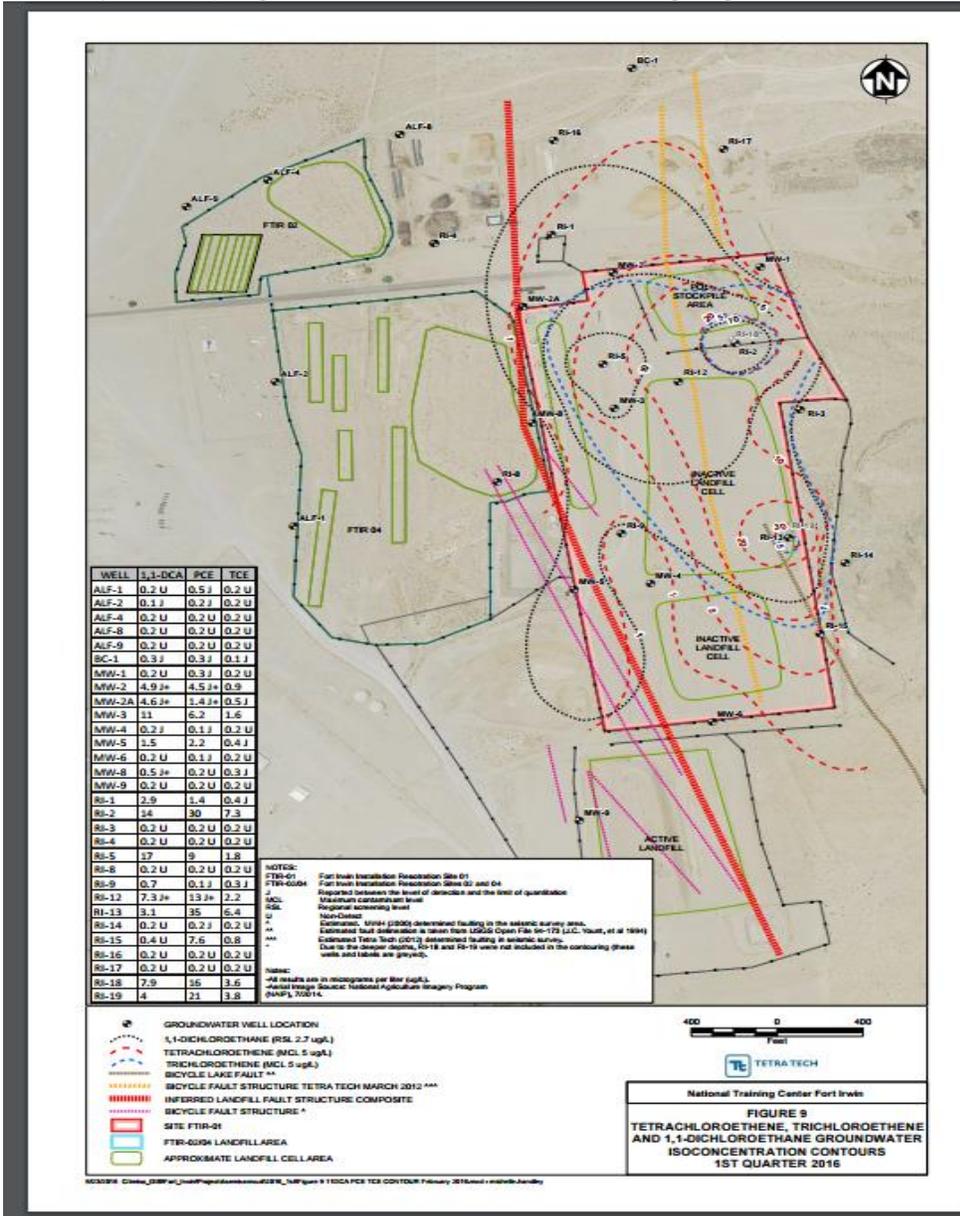
Tom Browne, a Water Resource Control Engineer in the Lahontan Victorville office, presented photos from his stormwater inspections over the last year highlighting successes and failures of permanent post-construction best management practices (BMPs), a new requirement of both the construction and Small MS4 Permits. Tom's presentation focused on the two largest growth industries in the High Desert: solar and residential construction. The brief, intense rains that are typical in the High Desert can really put post-construction BMPs to the test, but that test may not occur until long after construction is completed. Tom had photos of detention basins, swales, and storm drains that had been overwhelmed by such rain storms. Part of Tom's responsibilities at Lahontan include oversight of the Small MS4 permittees. The MS4 Phase II Permit requires new development and some retrofit development projects to incorporate LID features such as porous pavement, arid landscape designs (no grass), and larger detention basins than were previously required.



Tom Browne at the podium lecturing on “Post Construction BMPs in the High Desert”

11. Soil Vapor Extraction Pilot Study, Active/Inactive Landfill FTIR-01, Fort Irwin – Alonzo Poach

In July 2016, the Army installed soil vapor extraction system (SVE) and began running a 12-month long soil vapor extraction pilot study to evaluate clean-up of chlorinated solvents at the inactive portion of the permitted landfill at Fort Irwin (see plume figure below). Evaluation of additional remedial technologies is necessary at the site because groundwater pollution has increased even after the Army implemented the presumptive remedy of capping the landfill and implementing a groundwater monitoring program.



The presumptive remedy is not adequately addressing all contaminants at the site. Maximum concentrations of PCE and TCE are less than 50 µg/L in the source areas and should be conducive to remediation by SVE. The pilot study will provide both interim hot spot cleanup and data that will be used in the upcoming Feasibility Study report to assist in selecting a final remedy.

Initial startup results show approximately a 50-foot radius of influence and the system has run without major

complications in the original step test. The initial startup results are encouraging considering the complex fault systems and bedrock geology of the site. A full report on the performance of the system is expected fourth quarter 2017.

12. (Standing Item) County Sanitation District No. 20 of Los Angeles County (District), Palmdale Water Reclamation Plant, Los Angeles County – Cephias Hurr

Compliance Status

The District's discharge is in compliance with its Waste Discharge Requirements (WDRs) contained in Board Order No. R6V-2011-0012, except for nitrate groundwater pollution caused by historical disposal practices that are separately addressed by a Cleanup and Abatement Order (CAO). With the combination of tertiary treatment, agricultural fields, and winter storage reservoirs, the District has achieved compliance with WDRs through irrigation of agricultural fields at agronomic rates. As discussed below, when offsite private well sampling is completed, additional monitoring wells will be proposed followed by re-assessment of the interim cleanup program.

Cleanup and Abatement Order

The Water Board issued CAO No. R6V 2003-056 requiring both the District and City of Los Angeles World Airports (LAWA) to cleanup and abate the effects of nitrate discharge that caused groundwater pollution. LAWA owns land leased to the District for the Palmdale wastewater reclamation plant and agricultural land where the District's effluent is applied to farm land at the crop agronomic rate. The CAO requires delineation of the groundwater nitrate pollution plume, containment of the nitrate plume using groundwater extraction wells, and implementation of a remediation plan to restore groundwater quality to background levels. Separately, the CAO requires incremental reduction in the amount of nitrogen reaching groundwater using the District's proposal consisting of: improved treatment, expanding the agricultural use of recycled water, and extracting nitrate polluted groundwater for agricultural use. Quarterly monitoring reports are required.

The District has submitted the plans required under the CAO. However, the requirements of achieving plume containment and implementing a final remedial alternative have not been met. Instead, the District has implemented an interim remedial measure with Water Board staff's concurrence that includes improved effluent management, construction and operation of six groundwater extraction wells, and application of extracted groundwater to crop land. Improved effluent management was implemented through expansion of the agricultural reuse site and construction of winter effluent storage reservoirs so that effluent is applied to crops at agronomic rates. This practice has been in effect beginning in calendar year 2010. Recent monitoring data indicate the plume's "hot spot" has shifted to the northwest.

Increasing nitrate concentrations have shifted to the northwest area of originally identified nitrate plume towards a drinking water well located at Air Force Plant 42, Site 4. While the District changed effluent management in the crop farmland area, there has been an approximate 30 feet of water level decline in the area since 2002 with deeper groundwater wells showing elevated nitrate concentration levels; the result of regional groundwater extraction activities in addition to the District's limited nitrate pollution interim extraction wells. Staff concluded that additional actions are needed to contain the plume from further migration to the northwest and to remediate the present high nitrate concentration areas.

The District reported that in the summer 2016, they have begun sampling private wells to assess risk potential to residential receptors down gradient of the plume north of Avenue M. The District proposes to install six additional monitoring wells to replace wells that are dry and also provide further plume delineation. In addition to replacing certain wells, the District would like to remove certain wells from the sampling network. Staff is also reviewing the District's request to convert certain extraction wells into monitoring wells. To address these issues, staff proposes to evaluate and revise the Groundwater Monitoring Program during Fiscal Year 2016/2017.

On June 9, 2016, LAWA submitted an agricultural cropping plan for its non-District farming operations. Staff accepted the plan and made recommendations and requested LAWA to submit its first annual report so that actual results can be compared to expected results.

Compliance Task Status Table

A table showing the status of compliance with actions related to the clean-up of groundwater is included at the end of this report.

SCHEDULE OF TASKS
PALMDALE WATER RECLAMATION PLANT (PWRP)
COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY (DISTRICT)

PERFORMANCE TASK	DUE DATE	STATUS
Required by Cleanup and Abatement Order R6V 2003-056		
Plume Delineation		
1.1.1 – Submit a plan to delineate the nitrate plume to background levels	Feb 16, 2004	Met
1.1.2 – Complete plume delineation	Aug 15, 2004	Met
Plume Containment		
1.2.2 - Submit a final plan (including extraction well locations and pumping rates) and time schedule for containing the plume	Sept 15, 2004	Met
1.2.3 – Achieve plume containment	Sept 30, 2005	Not met – Additional extraction wells are needed to limit plume movement toward an Air Force Plant 42, Site 4 domestic well.
Plume Remediation		
1.3.1 - Submit a plan describing the proposed plume remediation describing how groundwater will be restored to background or	Sept 15, 2004	Not met – The overall cleanup strategy should be evaluated in context of recent groundwater adjudication.

PERFORMANCE TASK	DUE DATE	STATUS
propose alternative cleanup levels pursuant to SWRCB Resolution 92-49		
1.3.2 – Implement the proposed plan for groundwater extraction and agricultural irrigation (or an equally acceptable alternative)	Sept 15, 2005	Not met — In progress
Abatement		
2.1 – Submit a plan describing proposed abatement actions	March 31, 2004	Met – LAWA submitted a Farm Management Plan describing how water and nutrients will be applied at the agronomic rate for their lessees other than the District.
Reporting 3.2 – Submit quarterly status reports until remediation is complete including actions completed in the last three months and expected in the next three months report	February 1, May 1, August 1, and November 1	Ongoing
Required by: Monitoring and Reporting Program No. R6V-2011-0012 <i>The itemized tasks are associated with groundwater cleanup activities</i>		
II.B.3 – Submit quarterly reports for - Groundwater Monitoring Report - Groundwater Extraction Operations Report - Agricultural Site Monitoring Report - Agricultural Vadose Zone Monitoring Report - Agricultural Site Monitoring, Operations, and Chemical Use Monitoring Report - Chemical Use Monitoring Report - Storage Reservoir Site Vadose Zone Monitoring Report - Biosolids Storage and Disposal Report	15 th working day of the second month following each quarterly monitoring period	Ongoing
II.B.4. – Submit annual reports for - Treatment plant - Groundwater monitoring	March 1 st of each year	Ongoing

PERFORMANCE TASK	DUE DATE	STATUS

13. Victorville Office Moves to New Location in Victorville – *Patrice J. Copeland*

After much searching and one false start, and with a lot of help from our staff and staff of the Department of General Services, our Victorville office has moved from the former building that was shared with Aladdin Bail Bonds to a new location at 15095 Amargosa Road, Victorville, 92394. The new office is located approximately 1 mile northwest of the former office, co-located with a few health offices and the High Desert Veterans Center. As a land-mark, it is just north of the Winco supermarket and is accessed via the same Interstate 15 exit (Roy Rogers Drive). A much more modern office, the new facility has a bigger and brighter foyer; larger kitchen/staff break room; additional quiet rooms; a public file review room and computer; a much larger conference room equipped with a 70-inch television, projection screen, and ceiling-mounted projector;



supply room; lab supply room; large separate server room; larger file room/library; more rest rooms; a shower/locker room; and a caged area for our state vehicles. Space in the office has increased by 2,184 square feet relative to the previous office, allowing us to increase the number of offices for staff and visiting staff, with a separate office for the Division Manager and room to grow. New cubicle desks, partitions, and other furnishings were also installed. In addition, Rebecca Phillips procured a gently used stainless-steel refrigerator for the kitchen/break room, purchased with

generous donations from our staff and a donation of \$100 from the Professional Engineers in California Government (Bargaining Unit 9). Modern quartz countertops have been placed in both the foyer and the kitchen; complementary earth-tone painted walls and new carpets complete the look. A new perimeter and interior motion alarm system has also been installed. Water Board members and staff are invited to tour and enjoy our wonderful new office!

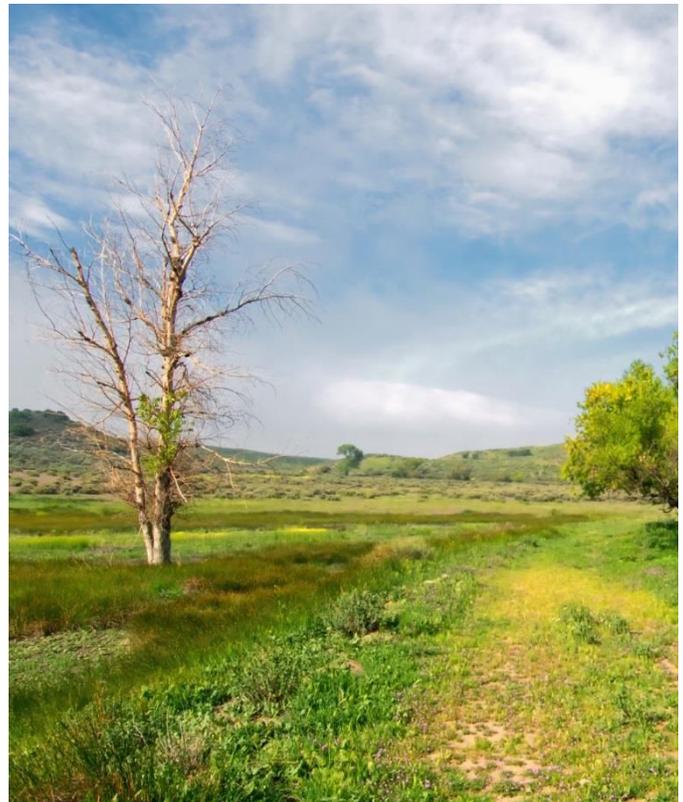
14. Wastewater Treatment Plant Improvements, Fort Irwin – *Alonzo Poach*

Fort Irwin’s wastewater treatment plant has historically encountered issues with meeting effluent limits for nitrogen. Issues with removing nitrogen from effluent are especially a problem when there are higher populations of personnel onsite during troop training rotations. In November 2012, the Board amended Fort Irwin’s Waste Discharge Requirements that require CH2M (owner of the plant) and the Army to construct a new oxidation ditch and make other renovations to the treatment plant to aid in meeting effluent requirements.

In late June 2016, the oxidation ditch for the Fort Irwin wastewater treatment plant was completed and put into full service. The improvements included a new oxidation ditch, new anoxic reactor and associated piping valves and structures. The new improvements are designed to handle and treat flows and increase the quality of the effluent from the plant. The new oxidation ditch is designed to produce effluent with less than 10 mg/L of nitrate as nitrogen. Additionally, having two oxidation ditches will allow for redundancy for maintenance/repair purposes. The cost of improvements was approximately \$7.6 million. The old oxidation ditch is now offline and awaiting renovation. Renovation of the existing oxidation ditch is required to be complete by November 2017. Effluent is sent to percolation ponds (recharging groundwater resources) and tertiary effluent is used for irrigation. The higher quality effluent should improve water quality in the Irwin Basin.

15. Open House and Ground-Breaking Event for the Petersen Ranch Mitigation Bank
– *Jan M. Zimmerman*

The Petersen Ranch Mitigation Bank (Bank), at more than 4,000 acres, is the largest mitigation bank in California and the first Bank in the Lahontan region. The Bank was approved by the Lahontan Regional Water Quality Control Board (Lahontan Water Board) along with other state and federal partners on May 11, 2016. To celebrate, the Bank sponsor's, Land Veritas is hosting an open house and ground-breaking event on Friday October 7, 2016, from 11 am to 2 pm. The event will be held at the Bank property in Leona Valley and will include a barbeque, tours of the restoration activities, and a program of speakers including Los Angeles County Supervisor Michael Antonovich and other local representatives. Representatives from the Lahontan Water Board, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and the California Department of Fish & Wildlife have been invited to come and speak as well. Other invitees include the press, local neighbors, environmental groups, consultants, and builders. This event presents an excellent opportunity to build good relations between regulatory agencies and the community, and to heighten awareness of the restoration and preservation going on at the Bank.



Seasonal wetlands and meadow habitats are among the many types of resources that will be preserved and enhanced within the Bank property. Photo provided by Land Veritas (2016).