

**MEETING OF THE GROUNDWATER QUALITY COMMITTEE
OF THE BOARD OF DIRECTORS
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA
4040 PARAMOUNT BOULEVARD, LAKEWOOD, CA 90712
12:00 P.M., WEDNESDAY, DECEMBER 22, 2010**

AGENDA

EACH ITEM ON THE AGENDA, NO MATTER HOW DESCRIBED, SHALL BE DEEMED TO INCLUDE ANY APPROPRIATE MOTION, WHETHER TO ADOPT A MINUTE MOTION, RESOLUTION, PAYMENT OF ANY BILL, APPROVAL OF ANY MATTER OR ACTION, OR ANY OTHER ACTION. ITEMS LISTED AS "FOR INFORMATION" MAY ALSO BE THE SUBJECT OF ANY "ACTION" TAKEN BY THE BOARD OR A COMMITTEE AT THE SAME MEETING.

- 1. DETERMINATION OF A QUORUM**
- 2. PUBLIC COMMENT**
- 3. APPROVAL OF THE MINUTES OF OCTOBER 26, 2010**
Staff Recommendation: Approve as submitted.
- 4. GROUNDWATER CONTAMINATION UPDATE**
Staff Recommendation: For information.
- 5. GROUNDWATER QUALITY UPDATE-STATE WATER RESOURCES CONTROL BOARD AND CHEMICALS OF EMERGING CONCERN**
Staff Recommendation: For information.
- 6. CONTRACT AMENDMENT FOR NELLOR ENVIRONMENTAL ASSOCIATES, INC.**
Staff Recommendation: Extend the termination date for the agreement with Nellor Environmental Associates, Inc., to December 31, 2011 and increase the contract amount by an additional \$20,000.
- 7. DIRECTORS' REPORTS, INQUIRIES, AND FOLLOW UP OF DIRECTIONS TO STAFF**
- 8. ADJOURNMENT**

Posted by Abigail C. Andom, Deputy Secretary, December 17, 2010.

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All public records relating to an agenda item on this agenda are available for public inspection at the time the record is distributed to all, or a majority of all, members of the Board. Such records shall be available at the District office located at 4040 Paramount Boulevard, Lakewood, California 90712.

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UNAPPROVED
MINUTES

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**MINUTES OF OCTOBER 26, 2010
SPECIAL MEETING OF THE GROUNDWATER QUALITY COMMITTEE
OF THE BOARD OF DIRECTORS OF THE
WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA**

A special meeting of the Groundwater Quality Committee of the Board of Directors of the Water Replenishment District of Southern California was held on Tuesday, October 26, 2010, 12:55 p.m., at the District Office, 4040 Paramount Boulevard, California. Chairperson Sergio Calderon called the meeting to order and presided thereover. Administrative Specialist Sheryll A. Moffat recorded the minutes.

1. DETERMINATION OF A QUORUM

Committee: Directors Sergio Calderon and Albert Robles
Staff: Ted Johnson, Phuong Ly

2. PUBLIC COMMENT

None.

3. APPROVAL OF THE MINUTES OF AUGUST 24, 2010

The minutes were approved as submitted.

4. GROUNDWATER CONTAMINATION UPDATE

Ms. Phuong Ly, Water Quality Specialist, said that she would be discussing two contaminated sites at today's meeting: one is the Arco (BP) Refinery in the West Coast Basin and the other is the former Ashland Chemical Company in the Central Basin. At the Arco Refinery, she said that there is contamination in the groundwater and the refinery has been operating since 1923. She did note however that there were no contaminants of concern in the nearest drinking water wells. With regards to ongoing remediation efforts, she said that light non-aqueous phase liquid (LNAPL) recovery has been conducted at the site since 1977. Additionally, she said that Arco is a member of the Carson Regional Groundwater Group (CRGG) which is a group of refineries that are working with the United States Environmental Protection Agency (USEPA), the California Regional Water Quality Control Board (RWQCB), the United States Geological Society (USGS) and WRD to evaluate and clean up the commingled groundwater plumes associated with CRGG in this area of Carson.

Ms. Ly said that the second site, formerly occupied by the Ashland Chemical Company, is a 10-acre site that is currently being developed as an active business park with commercial buildings. She said that from the 1960s through 2002, Ashland Chemical conducted chemical blending, packaging, and distribution at the site. There were multiple underground storage tanks and aboveground storage tanks used as part of the site

operations. She said that between 1998 and 2003 soil removal actions and soil vapor extraction was conducted at the site and in 2003, the California Regional Water Quality Control Board (RWQCB) issued a "no further action" letter for the site soils. Since 1990, a groundwater pump and treat system has been operating at the site. Ashland Chemical is working with RWQCB to further assess the lateral and vertical extent of groundwater contamination beneath the site.

5. GROUNDWATER QUALITY PROJECTS/PROGRAMS

Mr. Johnson said that at the request of this Committee, staff has reviewed the projects and programs related to the Groundwater Quality Committee which include the Goldsworthy Desalter, the Groundwater Quality Program, the Geographic Information System (GIS), the Regional Groundwater Monitoring Program, the Safe Drinking Water Program, and the Hydrogeology Program.

Regarding the Goldsworthy Desalter, the plant is operating well and staff is looking into possible plant expansion to remove more saline groundwater.

Mr. Johnson said that the Groundwater Quality Program tracks potential groundwater contamination including chemicals of emerging concern, drinking water standards, the Groundwater Contamination Program, and the Contamination Forum. With the cooperation and support of all the members of this Forum, WRD has developed a list of high-priority contaminated groundwater sites within the District. He said that WRD is also participating in the Water Augmentation Study (WAS) of the Los Angeles and San Gabriel River Watershed Council to evaluate the feasibility of capturing more storm runoff and letting it percolate underground to recharge groundwater. He said that staff is currently working with USGS to conduct a study of the Omega Superfund site area and a State grant to help fund this project was received.

The Geographic Information Systems is the District's database, mapping and graphics program that produces all of the water quality maps.

The Regional Groundwater Monitoring program involves the installation of monitoring wells throughout the District. He said that the District's monitoring network has improved vastly in the past 15 years and additional wells are planned to complete the network.

The Safe Drinking Water Program includes the wellhead treatment program, where the District funds grants or loans for treatment systems to remove contaminants from for water pumped out of potable wells in the Basins.

The Hydrogeology Program involves the monitoring of groundwater conditions in the Basins and includes the Well Profiling Program which has been very popular and successful to investigate the source of water and contaminants to wells.

6. DIRECTORS' REPORTS, INQUIRIES, AND FOLLOW UP OF DIRECTIONS TO STAFF

The committee directed staff to have WorleyParsons examine the Carson Regional Groundwater Group (CRGG)/Potentially Responsible Parties (PRP) to determine the feasibility of cost recovery for the District's expenses. This may open the opportunity to further motivate/leverage refineries to offset pumping and switch to recycled water.

The Committee requested an update on how many replenishment assessment exemptions the District has authorized and the amount of extracted groundwater being exempted.

The Committee requested that staff meet with Torrance regarding the potential Goldsworthy Expansion to build a partnership, especially cost-sharing of the project.

7. ADJOURNMENT

There being no further business to come before the Committee the meeting was adjourned at 2:12 p.m.

Chairperson

ATTEST:

Director



MEMORANDUM

ITEM NO. 4

Prepared by: Phuong Ly

Reviewed by: Ted Johnson

Approved by: Robb Whitaker

DATE: DECEMBER 22, 2010
TO: GROUNDWATER QUALITY COMMITTEE
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: GROUNDWATER CONTAMINATION UPDATE

CONTAMINATED GROUNDWATER SITES

With the cooperation and support of stakeholders such as the United States Environmental Protection Agency (USEPA), California Regional Water Quality Control Board, Los Angeles Region (RWQCB), and California Department of Toxic Substances Control (DTSC), WRD developed a list of high-priority contaminated groundwater sites within District boundaries. This list is a living document, subject to cleanup and "closure" of sites as well as discovery of new sites warranting further attention. Currently, the list includes 46 sites across the Central and West Coast Basins.

WRD has been working with the lead regulatory agencies for each of these sites to keep abreast of their status, review and provide recommendations as needed, facilitate progress in site characterization and cleanup, and provide technical and financial assistance when necessary. Below is a discussion of two sites that were recently updated with information obtained from the lead regulatory agency.

SHELL (TESORO) LOS ANGELES REFINERY, CITY OF WILMINGTON (WEST COAST BASIN)

The 300-acre site has operated as an oil refinery since 1928. Tesoro Incorporated (Tesoro) purchased the LAR from Shell Oil Products US (Shell) in May 2007, but Shell currently retains environmental liability for prior releases. Crude oil processing equipment is mostly located in the central and southern areas of the plant while crude oil and product storage tanks are located in the northern and north-central portions of the plant. Due to historical site activities, groundwater beneath the site is contaminated and investigation/remediation activities are being conducted under the oversight of the RWQCB. Details follow regarding these ongoing investigation and remediation activities.

Constituents of concern in groundwater beneath the site include gasoline, diesel, volatile organic compounds (VOCs), and fuel oxygenates. One or more of these constituents have been detected in the water table aquifer, the Gaspar/Gage Aquifer, the Lynwood Aquifer, and the Silverado Aquifer. As of July 2010, no chemicals of concern have been detected in the nearest active production (drinking water) well.

Remediation activities at the site consist of light non-aqueous phase liquid (LNAPL) recovery (since January 1985). As of May 2010, cumulative LNAPL recovered from groundwater totals

799,641 barrels (33.58 million gallons). Continuous studies are conducted on site to assess additional site remediation technologies, to evaluate other potential sources of contamination, and to track the progress of the LNAPL recovery system and make modifications as necessary.

Additionally, Shell is a member of the Carson Regional Groundwater Group (CRGG), which is a group of refineries that are working with the USEPA and RWQCB to track commingled dissolved phase plumes in the region. CRGG is working with USEPA, RWQCB, the United State Geological Survey (USGS), and WRD to develop a 3-dimensional groundwater flow model to better understand the potential flow paths of LNAPL, petroleum hydrocarbon constituents, & fuel oxygenates to receptor wells (i.e., nearby drinking water production wells) in the region. CRGG has also installed multiple groundwater monitoring wells throughout the region that are screened in the Gage, Lynwood, and Silverado Aquifers. These wells are sampled on a semi-annual basis.

WHITTIER ARCO, CITY OF WHITTIER (MONTEBELLO FOREBAY, CENTRAL BASIN)

The approximately 0.5-acre site is an active gasoline station with a convenience store and a car wash. Source of contamination at the site are five former underground storage tanks (USTs) that have now been replaced with three double-walled USTs (two 10,000-gal gasoline USTs and one 5,000-gal gasoline UST) and four fuel dispenser islands. Soil and groundwater contamination has occurred at the site, but the site is actively undergoing investigation/remediation activities under the oversight of the RWQCB. Details follow regarding these ongoing investigation/remediation activities.

Chemicals of concern in groundwater beneath the site (specifically, the Gaspar Aquifer) are gasoline, volatile organic compounds (VOCs), and fuel oxygenates. As of January 2010, no chemicals of concern have been detected in the nearest active production (drinking water) wells.

In 2004, the former USTs were replaced and 947.3 tons of contaminated soil were removed from the site. Between 2006 and 2009, four soil vapor extraction (SVE) wells and eight air sparge wells were installed and an SVE/air sparge treatment system was constructed on site. In June 2009, the property owner replaced the existing consulting firm with another firm and site conditions were reassessed. It was determined by the new consulting firm that the treatment system was underpowered and that the existing SVE and air sparge wells were too shallow (due to significant drops in water levels). As a result, RWQCB recently approved the installation of five new dual phase extraction wells on site, which was scheduled for installation in late 2010. Once these new extraction wells are installed, a high vacuum dual phase mobile extraction system will be used gather data from the wells to design a final on-site treatment system.

FISCAL IMPACT

None at this time.

STAFF RECOMMENDATION

For information.



MEMORANDUM

ITEM NO.5

Prepared by: Ted Johnson
Reviewed by: Phuong Ly
Approved by: Robb Whitaker

DATE: DECEMBER 22, 2010
TO: GROUNDWATER QUALITY COMMITTEE
FROM: ROBB WHITAKER, GENERAL MANAGER
SUBJECT: GROUNDWATER QUALITY UPDATE – STATE WATER RESOURCES CONTROL BOARD AND CHEMICALS OF EMERGING CONCERN

SUMMARY

The State Water Resources Control Board (SWRCB) adopted a new recycled water policy in May 2009 that recognized the importance and increased role of recycled water in California. One of the provisions in this policy is how to address new classes of chemicals, such as pharmaceuticals, personal care products, and industrial chemicals, collectively known as “chemicals of emerging concern (CEC),” that may be present in recycled water. The Policy authorized the formation of a science advisory panel (Panel) to address this issue and use the best science available for its work.

The Panel was convened in May 2009, and is comprised of the following experts – human health toxicologist, environmental toxicologist, risk assessment/ epidemiologist, biochemist, civil engineer familiar with design and construction of recycled water treatment facilities, and chemist familiar with advanced laboratory methods for the detection of CECs.

The Panel was tasked to provide responses and recommendations to the following questions:

- What are the appropriate constituents to be monitored in recycled water and what are the applicable monitoring methods and detection limits for them?
- What toxicological information is available for these constituents?
- Would the constituent list change based on level of treatment? If so, how?
- What are the possible indicators (i.e., surrogates) that represent a suite of CECs?
- What levels of CECs should trigger enhanced monitoring in recycled, ground, or surface waters?

The approach and conceptual framework that the Panel developed and used to prioritize CEC monitoring was generally considered acceptable:

- Compile occurrence data or measurable environmental concentrations (MEC),
- Develop monitoring trigger levels (MTL) based on toxicological relevance,
- Compare the MEC with the MTL, and prioritize those CECs with MEC/MTL is > 1, and
- Screen the priority CECs to ensure robust analytical methods are available.

The Panel utilized these approaches to screen candidate CECs for toxicological relevance, i.e. potential health impacts. A key finding is that for groundwater recharge projects, they found only 4 compounds that met their criteria, MEC/MTL >1, that should be monitored, including

- 17 Beta-estradiol – steroid hormone,
- Caffeine – stimulant,
- Triclosan – antimicrobial, and
- n-Nitrosodimethylamine (NDMA) – disinfection byproduct.

In addition, 4 additional CECs were identified for surface spreading and direct injection operations as viable performance indicator compounds, including N,N-Diethyl-meta-toluamide or DEET, gemfibrozil, iopromide, and sucralose with certain surrogate parameters (e.g., ammonia, dissolved organic carbon, and conductivity).

It was noted that any monitoring program is for information only and is not intended to be used for regulatory compliance purposes. They further recommended that responses to the detection of these and any other CECs are to be flexible and adjustable, based on findings, and may include repeat monitoring, source investigations, and/or shutdown of operations, depending upon the ratio of MEC/ MTL.

The Panel submitted their final report to the SWRCB on June 25, 2010. Staff from the SWRCB have reviewed their report and have prepared recommendations to their Board to adopt not only the Expert Panel's recommendations, but also considerable additional constituents that did not get the scrutiny or review that the Expert Panel provided.

The recycled water reuse industry is concerned about the SWRCB adding of these additional constituents without a scientific basis, and is preparing to testify regarding these concerns at a SWRCB hearing on December 15 in Sacramento and to submit written comments to the SWRCB by December 27 (or its extension due date). WRD will be one of the agencies testifying and submitting written comments. A verbal report on the results of the hearing will be given at the Committee meeting.

FISCAL IMPACT

None.

STAFF RECOMMENDATION

For information.



MEMORANDUM

ITEM NO. 6

Prepared by: Ted Johnson

Reviewed by: Nancy Matsumoto

Approved by: Robb Whitaker

DATE: DECEMBER 22, 2010

TO: GROUNDWATER QUALITY COMMITTEE

FROM: ROBB WHITAKER, GENERAL MANAGER

SUBJECT: CONTRACT AMENDMENT FOR NELLOR ENVIRONMENTAL ASSOCIATES, INC.

SUMMARY

The District is under contract with Nellor Environmental Associates, Inc. (NEA) to provide as-needed professional consulting services associated with expanding our use of recycled water for groundwater recharge, including the Water Independence Now (WIN) and Groundwater Reliability Improvement Program (GRIP) initiatives. The contract term will expire at the end of December and Staff is recommending continuation of their services in 2011. This is a budgeted item in the current Fiscal Year.

Ms. Margie Nellor, President of NEA, is the person directly working for the District. She has nearly 30 years of experience in the environmental field and was formerly with the Los Angeles County Sanitation Districts (LACSD), where she was in charge of water reclamation permits and associated research programs activities of the LACSD water reclamation plants. As a consultant, she has a wide array of experience in the recycled water industry, specializing in regulatory issues and research on emerging contaminants. In particular, she provided technical assistance that resulted in the successful adoption of the petition by the State Water Resources Control Board that removed the use of notification levels as enforceable effluent limits for the Alamitos Barrier Recycled Water Project.

Ms. Nellor has greatly assisted the District with many tasks during the past year, including preparing technical reports, memoranda and other documents related to GRIP, participating in monthly status calls, representing the District regarding review of the State's Recycled Water Policy and Chemicals of Emerging Concern, and assisting staff with numerous tasks including forming strategies for expanding the use of recycled water for recharge and working within the regulations of the California Department of Public Health and Regional Water Quality Control Board. This work is expected to continue in 2011 as the pursuit for recycled water for groundwater recharge continues.

FISCAL IMPACT

This is a budgeted item in the current Fiscal Year.

STAFF RECOMMENDATION

Extend the termination date for the agreement with Nellor Environmental Associates, Inc., to December 31, 2011 and increase the contract amount by an additional \$20,000.