

November 6, 2017

The Honorable City Council
Office of the City Clerk
Room 395, City Hall
Mail Stop 160

Attention: Councilmember Nury Martinez
Chairperson Energy, Climate Change, and Environmental Justice Committee

Honorable Members:

Subject: Council File No. 15-1380-S10 – Drinking Water Quality Testing in the Aliso Canyon Gas Storage Field Area

This report has been prepared in response to Council Motion No. 15-1380-S10, which instructs the Los Angeles Department of Water and Power (LADWP) to report on two items: testing conducted before, during, and after the Aliso Canyon gas leak; and to discuss lithium levels found in the water system with respect to applicable health standards and presence in drinking water supplied by other utilities.

I. Water Quality Testing

In order to comply with safe drinking water regulations, LADWP conducts extensive water quality testing across the City of Los Angeles (City) on a continuous basis, including the Porter Ranch area. In 2016, LADWP collected nearly 40,000 water samples throughout the City and conducted more than 140,000 water quality tests to ensure safe and reliable drinking water to all customers. None of the samples collected in the 2015 and 2016 timeframe indicates any negative effect from the Aliso Canyon Gas Leak that occurred between October 28, 2015 and February 18, 2016.

Special, focused testing of the water served in the Porter Ranch area was also conducted during and after the Aliso Canyon Gas Leak. Test results did not reveal any unusual constituents, including benzene, toluene, ethylbenzene, xylene (BTEX), other volatile organic compounds (VOC), or hydrocarbons that might be released by a gas well leak. Similar testing of area surface water was also conducted by the Regional Water Quality Control Board and they did not find any unusual constituents in the

vicinity. LADWP's test results were shared with the Los Angeles County Health officials in June 2016, and they were satisfied with the data provided.

These test results are not surprising given that LADWP water distribution system is well protected against gas contamination or other possible contaminants from the gas leak. There are three main reasons for this:

- a. The pressurized pipes in distribution system help keep contaminants out (liquid, gas or solid).
- b. The distance to the nearest groundwater supply wells is over seven miles. It would take over 180 years for a particle from the Aliso Canyon leak to travel to the nearest well. Furthermore, there would be considerable attenuation of chemical concentrations as the particles traveled this distance and dispersed in three dimensions as shown in the attached map (Enclosure 1).
- c. The nearest atmospheric body of water supply (Susana Tank) is covered, which protects water stored in it from particles in a mist. Also, methane gas will remain in a gas state at the tank surface rather than dissolve in water due to the chemical properties of methane (Henry's constant).

II. Lithium measured in the drinking water

Standards or Guidelines

Lithium is a naturally occurring earth metal found in soil, rocks, dusts, surface water, groundwater, and seawater. It is not regulated by the United States Environmental Protection Agency (USEPA) in drinking water, and there is no public health goal, which would be a first step in acknowledging a potential health affect and setting a regulatory limit. The World Health Organization (WHO) reports that trace amounts of lithium in drinking water may actually have a beneficial effect. Absent a formal regulatory standard, the Oregon Health Authority did prepare a technical paper on lithium in drinking water in 2011. The report indicated that chronic oral exposure to a dose of 140 mg/day may disrupt normal function of the thyroid gland. That level is 700 times higher than the oral exposure from drinking two liters of LADWP tap water per day. This is based on recent test data from the LADWP distribution system discussed in the following section.

LADWP 2017 Sampling and Test Data for Lithium

Because there are no known health consequences and no regulatory standards for lithium in drinking water, LADWP does not normally test for lithium. However, upon learning of Dr. Nordella's study and in response to this Council Motion, LADWP staff analyzed a wide range of samples throughout the distribution system. The analysis was

done on distribution samples collected in the period between September-October, 2017, using USEPA metals test method 2007. A total of 54 samples were tested. The results ranged from "non-detect" to 107 µg/L (1000 µg = 1mg) or parts per billion (ppb). These results are shown in Enclosure No. 2, "Lithium Concentrations by Water Quality Area." "Non-detect" means there was no observable amount within the accuracy range of the laboratory procedure and equipment used for USEPA method.

This data confirms that the levels found in LADWP drinking water are considered "trace levels." At the highest level of 107 ppb, drinking two liters of tap water would lead to an oral exposure of 0.2 mg/day, which is 700 times lower than 140 mg/day cited by the Oregon Health Authority study. The 0.2 mg/day oral exposure is also one-tenth the average amount from daily food consumption, which is 2 mg/day. Lastly, a typical dose of lithium chloride prescribed by doctors for patients with bipolar disorder is in the range of 140 to 1,200 mg/day.

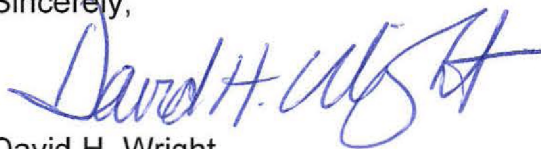
The recent test data also confirms that the likely source of the lithium in the LADWP distribution system is the geothermal sources on the northern end of the Los Angeles Aqueduct. From the map, portions of the City served exclusively by Metropolitan Water District supplies had lithium at non-detect or very low levels. Because lithium is naturally occurring, it is not uncommon for it to be found in surface and groundwater sources, such as the Los Angeles Aqueduct.

Conclusion

LADWP customers can be reassured that the Aliso Canyon gas leak has not impacted the drinking water supply or groundwater wells. Also, the lithium found in LADWP's drinking water samples are considered trace level and will not adversely impact human health. In response to this event, LADWP will continue to monitor its distribution system and sources for lithium. We will update our customers and City Council if there are any noteworthy findings over the next 12 months.

If you have any questions or require further information, please contact me at (213) 367-1338, or have a member of your staff contact Ms. Winifred J. Yancy, Director of Legislative and Intergovernmental Affairs, at (213) 367-0025.

Sincerely,

A handwritten signature in blue ink that reads "David H. Wright". The signature is fluid and cursive, with the first name being the most prominent.

David H. Wright
General Manager

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JL/jy

Enclosures

c/enc: Councilmember Paul Koretz, Vice-Chair, Energy, Climate Change, and
Environmental Justice Committee
Councilmember Paul Krekorian, Member
Councilmember, Gilbert A. Cedillo, Member
Councilmember, Mitch O'Farrell, Member
Councilmember, Mitchell Englander
Councilmember, Bob Blumenfield
Ms. Zina Cheng, Legislative Assistant
Ms. Winifred J. Yancy

MOTION

ENERGY, CLIMATE CHANGE AND ENVIRONMENTAL JUSTICE

On October 23rd, 2015 the largest methane gas leak in US history occurred at the Aliso Canyon Storage Field operated by Southern California Gas Company. Located in unincorporated Los Angeles County, the leak released 100,000 metric tons of methane gas into the atmosphere forcing thousands of residents from Porter Ranch and surrounding neighborhoods to evacuate. Furthermore, the 112 day methane leak caused the temporary closure of two schools and impacted businesses and property values throughout the region.

After several months, the well responsible for the leak was finally sealed on February 17, 2016. On July 31, 2017 the Aliso Canyon Storage Field reopened with the clearance from the California Department of Conservation's Division of Oil, Gas and Geothermal Resources and the California Public Utilities Commission.

On Saturday October 14, 2017, Dr. Jeffrey Nordell presented an independent physician report on the effects of the Aliso Canyon Gas Leak. His report tested urine and hair samples of 106 Porter Ranch residents. Dr. Nordell claims that urine samples showed elevated levels of styrene and ethylbenzene, while hair samples revealed statistically significantly higher levels of uranium and lithium "compared to averages in the rest of California as well as the United States".

Moreover, the report claims that lithium was detected in the water of homes with LADWP water supply while homes with non-LADWP water had no detectable levels of lithium. While the actual report of this independent health study has yet to be released, it is important that City look into these allegations.

I THEREFORE INSTRUCT that the Department of Water and Power (LADWP) report on any and all testing conducted before, during, and after the Aliso Canyon gas leak.

FURTHERMORE, I INSTRUCT the LADWP to report on lithium levels of the water in the areas around the Aliso Canyon Storage Field and compare it to both the rest of the City and adjacent municipalities and on the standard guidelines of lithium levels.

PRESENTED BY:



MITCHELL ENGLANDER
Councilmember, 12th District

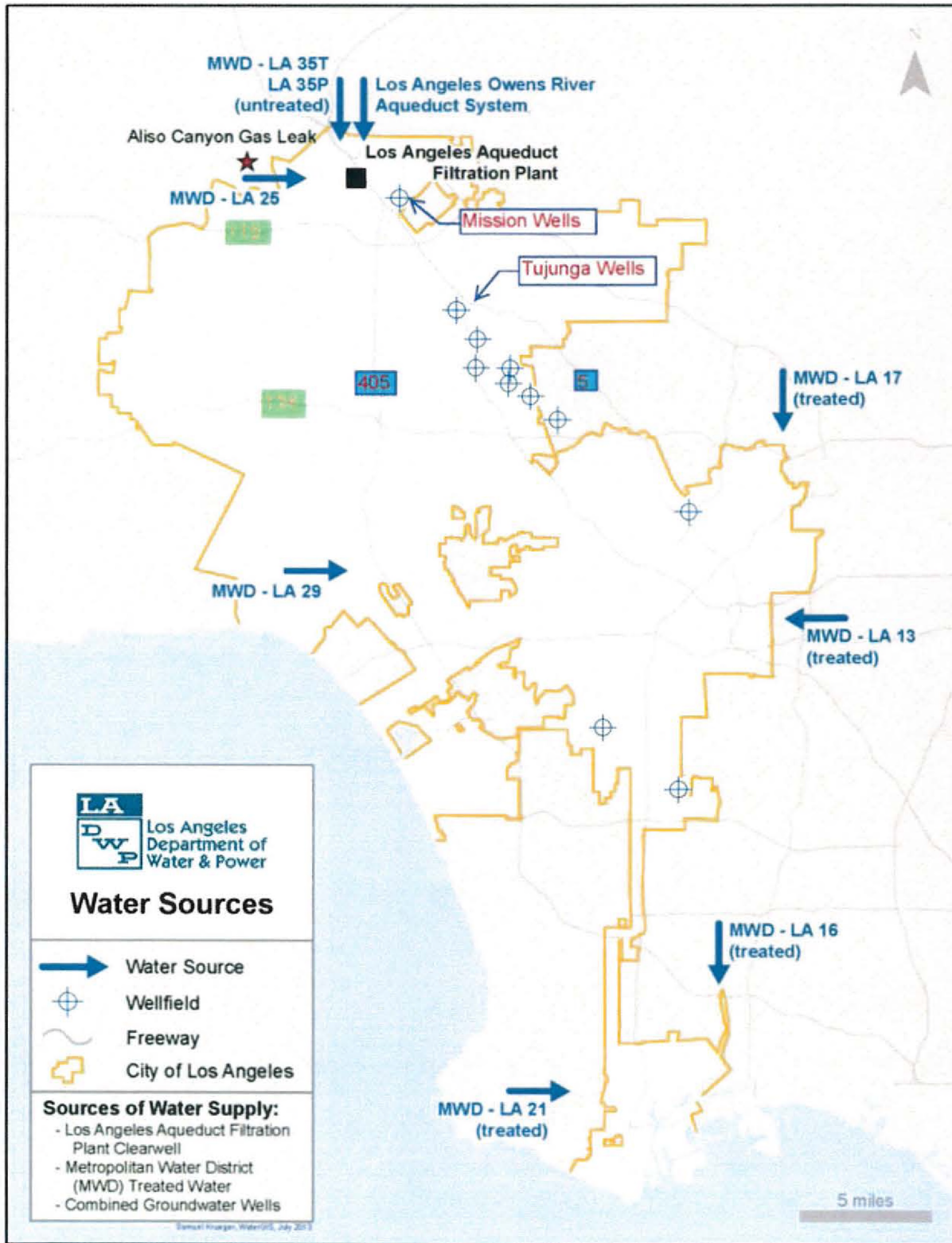
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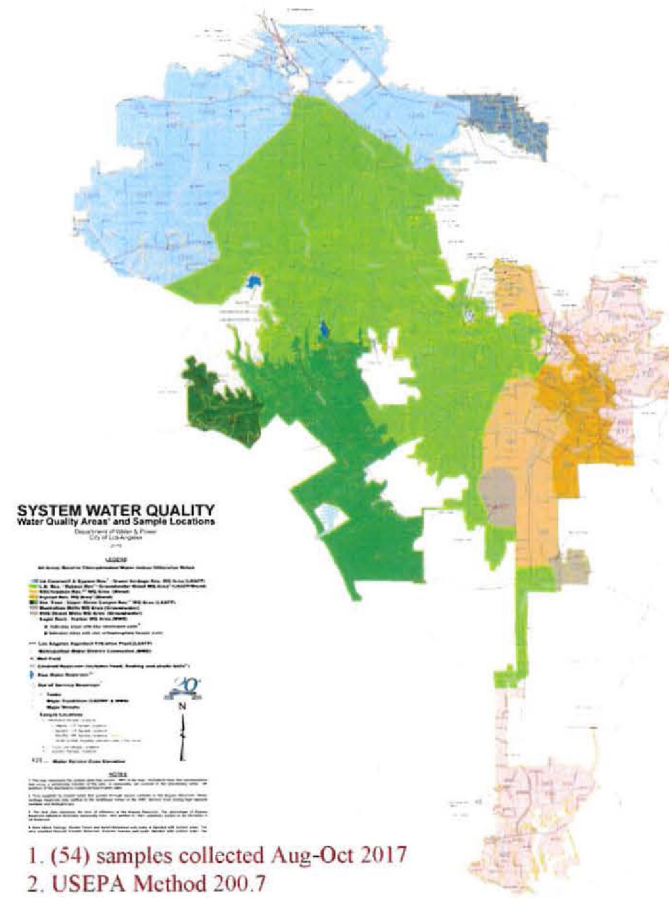


Enclosure No. 1 – Location of LADWP Metro Water Supplies



Enclosure No. 2 – Lithium Concentrations by Water Quality Area

Area	Range of values (ppb)	Primary Source(s)
LAAFP/ North SFV	40 – 107	LAAFP
Green Verdugo	105	LAAFP
SF Valley/ Metro	60 - 105	LAAFP, Ground
Santa Ynez/ Palisades	13	MWD
West LA	Nd - 96	LAAFP, MWD
Downtown	44 - 90	Blend
RSC-SFV Blend	65 – 100	Blend
Eagle Rock/ East LA	16 – 20	MWD
Harbor	Nd	MWD



ND= Non detect

µg= micro gram= 0.000001 gram

µg/L= microgram per liter

*µg/L= microgram per liter = parts per billion (ppb) = "½ a teaspoon in an Olympic size pool of water"