



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

September 15, 2017

VIA EMAIL AND U.S. MAIL

The Honorable Dianne Feinstein
United States Senate
Washington, D.C. 20510-0504

Dear Senator Feinstein:

Cadiz Valley Water Conservation, Recovery, and Storage Project

We received your correspondence of August 15, 2017, regarding the above-referenced project. You ask several important questions and this letter provides the best information that The Metropolitan Water District of Southern California (Metropolitan) can assemble at this time.

Metropolitan has reviewed documents regarding the Cadiz Valley Water Conservation, Recovery, and Storage Project (Project), in response to requests from the project proponent and the Santa Margarita Water District (SMWD); however, the data provided has been conceptual and incomplete. Potential issues are the Project's impacts to Metropolitan's Colorado River Aqueduct (CRA) and the water Metropolitan supplies to its member agencies; these member agencies or their sub-agencies serve approximately 19 million retail customers in Metropolitan's service area. Metropolitan, through the California Environmental Quality Act (CEQA), has provided comments on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) in 2011, on the DEIR itself, and the Final Environmental Impact Report (FEIR) in 2012.

The following answers, keyed to your questions, rely on basic information provided by the project proponents, publicly available information, and in-house analysis, as the Project is in a preliminary planning stage and much about it is still unknown.

1. Detailed information about water quality of the groundwater in the Fenner, Bristol, and Cadiz basins, is provided in Attachment 1. The Project groundwater contains arsenic, fluoride, chromium (including hexavalent chromium), nitrate, and bromide in concentrations that exceed the long-term average of Colorado River water supplies. Some of the constituent levels exceed primary maximum contaminant levels (MCL) for drinking water. The Cadiz groundwater supplies would be lower in total dissolved solids than ambient Colorado River supplies.
2. At such time as there is a proposal to use Metropolitan's facilities, Metropolitan will evaluate the introduction of Cadiz water into the CRA as it does other proposed projects with the potential to impact its supplies and operations, providing comments to reduce or

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avoid potential adverse impacts on Metropolitan and its CRA system. Metropolitan will seek to insure that the Project does not interfere with Metropolitan's operations of the CRA and does not degrade CRA water quality. From an operations standpoint, Metropolitan will evaluate what capacity, if any, is available in the CRA after meeting all existing and planned conveyance needs. For the specific connection to the CRA, Metropolitan will evaluate whether the project proponent's design creates new operating requirements or introduces hydraulic interference or other issues. With respect to water quality, Metropolitan may require treatment to address specific constituents. Water quality pump-in requirements may require that the levels of constituents in the Project water are below background levels and/or MCLs to meet regulatory and operational requirements of Metropolitan and its member agencies.

3. Metropolitan evaluates proposals such as the Cadiz Project on a case-by-case basis. Metropolitan would not allow a pump-in project to degrade the CRA water quality; Cadiz water would likely need to be treated to meet water quality standards (CRA historical values) prior to pumping into the aqueduct. The treatment method would be determined by the Project proponent, and a specific treatment technology has not been defined at this point. The Project proponent, not Metropolitan, will need to estimate the cost to treat the water that could be delivered by the Project.
4. Current CRA operations maximize flow at eight pumps for the majority of the year unless or until information on the allocation of State Water Project (SWP) supplies become certain and the SWP allocation will permit reductions in pumping on the CRA. To accommodate the estimated Project quantity of 50,000 acre-feet per year and the flow in an 11 month period, Project flow to the CRA would be about 73 cubic feet per second (cfs). The CRA typically operates at an eight pump flow for more than nine months per year in recent history. The 73 cfs Project flow rate would require additional space at the top of the canal sections which is not available during periods of eight pump flow. Additionally, 70 percent of the length of the CRA consists of tunnels, conduits and siphons which present challenges at higher flows as they have limited head space and are not designed for pressurization. Accordingly, there is not sufficient capacity to transport Project water under these conditions. Other operational scenarios may exist where capacity is insufficient to transport Project water. As an example, this year Metropolitan is maximizing storage of its water supplies by using the CRA to convey large amounts of water to storage in groundwater basins adjacent to the CRA while maximizing use of allocated and surplus SWP supplies across Metropolitan's service area.
5. Assuming that capacity was available to move Project water, Metropolitan would require an appropriately sized stabilization reservoir, and valves and/or gates which provide for flow control as well as complete isolation of the stabilization reservoir and interconnection from the CRA. The Project would also require sophisticated and reliable

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monitoring and regulating equipment. The Project facilities upstream of the CRA interconnection would be operated by the proponent. These facilities would include the wells, treatment facilities, conveyance pipeline, and the stabilization reservoir. These measures would help ensure that introduction of Project water would not adversely affect the hydraulics of the CRA or unreasonably interfere with CRA operations. With regard to the cost of new infrastructure, the conceptual proposals to date have not included Project cost estimates, nor specific enough information for Metropolitan to make its own estimates.

6. The facilities identified in the FEIR may not be adequate to meet Metropolitan's requirements for introduction of water into the CRA. Additional treatment and adequate reservoir capacity are not contained in the current project description, and would likely need to be addressed in additional environmental documentation.
7. Metropolitan is comprised of 26 member agencies. A majority of these agencies receive water delivered through the CRA, and would be potentially affected by changes in constituents in the water supply. Additionally, prior to water entering Metropolitan's system, CRA deliveries may be sent to Coachella Valley Water District and Desert Water Agency for delivery to the groundwater basins that these agencies use for their water supply. These agencies may have concerns regarding capacity effects and variations in water quality.

If you have any additional questions, please feel free to contact me.

Very truly yours,


Jeffrey Kighlinger
General Manager

JS:vsm

Attachment

CADIZ PROJECT

Table with columns: Detection Limit for DOW and UNITS, DDW MCL (ACTION LEVEL / (updated 8/2017)), USEPA MCL, north of project site, DANBY WELL north of project site, and 21 monitoring wells (PW-1 to 21N, Cadiz office, 33, 21N, Cadiz office, 33, 21N). Rows include Inorganic Sampling (General Physical), Inorganic Sampling (General Mineral), Inorganic Sampling (Trace Metals), and Volatile Organic Compounds.

Production Well Located by Spreading Basins
 (Well/Date / Laboratory)

Constituent	Detection Limit for DDW and UNITB	DDW MCL / (ACTION LEVEL / (pvc) (updated 8/2017)	USEPA MCL	north of project site	PW-1	PW-1	PW-1	PW-1	PW-1	PW-1	PW-1	PW-1	PW-1	PW-1	21N	Cadiz office	33	21N	Cadiz office	33	21N	
				DANBY WELL north of project site 11/29/2001	01-23-02 MWD & Weck	10-24-01 MWD & Weck	7-31-01 MWD & Weck	2-27-01 MWD & WCAS	10-24-00 MWD & WCAS	9-26-00 MWD & WCAS	6-21-00 MWD & Weck	10-25-99 MWD	PW-1 (#=12) Monthly 3/56-9/99 /APCL	PW-1 3-01-00 /APCL	PW-1 1-29-99 /APCL	01-23-02 MWD	01-23-02 MWD	01-23-02 MWD	10-24-01 MWD	10-24-01 MWD & Weck	10-24-01 MWD & Weck	7-31-01 MWD & Weck
2,3,7,8-TCDD Dioxin	5 X 10 ⁻⁶ mg/L	3 x 10 ⁻⁷ (1x10 ⁻⁷)	3 x 10 ⁻⁹	<10.0E-9		<4.00E-9					<4.00E-9							<3.1E-9	<4.0E-9			
Nitrogen/Phosphorus Pesticides																						
Atrazine	0.001 mg/L	(0.0011)	0.003	<0.001		<0.001					<0.001							<0.001	<0.001	<0.001		
Biomachlor	0.01 mg/L	Unreg B		<0.01		<0.01					<0.01							<0.01	<0.01	<0.01		
Butachlor	0.00038 mg/L	Unreg C		<0.00038		<0.00038					<0.00038							<0.00038	<0.00038	<0.00038		
Diazinon	0.00025 mg/L	Unreg B (0.014)		<0.00025		<0.00025					<0.00025							<0.00025	<0.00025	<0.00025		
Dimethoate	0.01 mg/L	(0.001)		<0.01		<0.01					<0.01							<0.01	<0.01	<0.01		
Malathion	mg/L	(0.16)																				
Mekachlor	0.016 mg/L	Unreg C		<0.0005		<0.0005					<0.0005							<0.0005	<0.0005	<0.0005		
Methidathion	0.0005 mg/L	Unreg C		<0.0005		<0.0005					<0.0005							<0.0005	<0.0005	<0.0005		
Molinate	0.002 mg/L	(0.01)		<0.002		<0.002					<0.002							<0.002	<0.002	<0.002		
Phenathrin	0.002 mg/L	Unreg B		<0.002		<0.002					<0.002							<0.002	<0.002	<0.002		
Sinazine	0.001 mg/L	0.004 (0.004)	0.004	<0.001		<0.001					<0.001							<0.001	<0.001	<0.001		
Thiobenzarb	0.001 mg/L	0.07 (0.001 ^(#)) (0.042)		<0.001		<0.001					<0.001							<0.001	<0.001	<0.001		
Microbiology																						
Heterotrophic Plate Counts	cfu/mL	TT	TT	840		310					310							6-800				
Total Coliforms	MPN/100mL	TT	TT	<1	<2	<2					<2							<2	<2	30		
Fecal Coliforms	MPN/100mL	T	T		<2	<2					<2							<2	<2	<2		
Cryptosporidium	ooocyst/100L	TT	TT																<2	<2	<2	
Giardia	cyst/100L	TT	TT																<2	<2	<2	
Enteric Viruses (Total Culturable Virus)	MPN/100L	TT	TT																<1	<1	<1	
Other Organic Chemicals																						
a-Benzene Hexachloride (a-BHC)	mg/L	(0.000016)		<0.00005		<0.00005					<0.00005							<0.00002				
b-Benzene Hexachloride (b-BHC)	mg/L	(0.000025)		<0.00005		<0.00005					<0.00005							<0.00005				
2,4-Dinitrophenol	mg/L	(0.1)																				
1,4-Dioxane	0.003 mg/L	(0.003)																				
Dithionamide	0.1 mg/L	(0.2)																				
Ethion	mg/L	(0.004)																				
Formaldehyde	10 mg/L	(0.1)																				
Isopropyl N (3-Chlorophenyl) Carbamate (ICPC)	mg/L	(0.35)																				
Methyl Isobutyl Ketone (MIK)	0.005 mg/L	(0.04)		<0.005																		
Methyl Parathion	mg/L	(0.002)																				
N-Methoxyethylamine (NDMA)	0.00001 mg/L	(0.00002)																				
Parathion	0.00002 mg/L	(0.030)																				
Polychlorinated-benzene	0.0001 mg/L	(0.02)																				
Phenol	0.005 mg/L	(0.0050)																				
Trithion	mg/L	(0.007)																				
Caplan	0.0001 mg/L	(0.35)																				
Chloropictin	0.001 mg/L	(0.037)																				
Testbury alcohol	mg/L	(0.12)																				

NOTES:
 In MCL/Action Level/PHG column
 (1) Number in parenthesis and smaller font is a California Public Health Goal
 (#) Number in parenthesis and bold italics is/was a California Action Level
 (# 2nd) Indicates value is a California secondary MCL

Half highlighted values: Results exceed local Primary CDR MCL or USEPA MCL
 Whole highlighted: Results exceed Reporting FAC - action level in public basin goal
 Blue highlight: Insufficient detection limits (too high)
 +: No more than 5% of the samples/months may be positive.
 NS: No Standard. Monitoring required in California
 ND: Not Detected.
 TT: Treatment technique in place of MCL.
 Unreg A B C D E: Unregulated. Monitoring was required in past years.