



# COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY

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GRACE ROBINSON HYDE  
Chief Engineer and General Manager

July 10, 2014  
File No. 32-11.01-55

**VIA ELECTRONIC MAIL**

Ms. Celine Gallon, Senior Environmental Scientist  
California Regional Water Quality Control Board  
Los Angeles Region  
320 West Fourth Street, Suite 200  
Los Angeles, CA 90013

Dear Ms. Gallon:

**Upper Santa Clara River Chloride TMDL Schedule Justifications**

The purpose of this letter is to justify the minimum practical durations needed to design and construct the proposed facilities for compliance with the Upper Santa Clara River Chloride TMDL (TMDL). As previously specified, the Sanitation District (District) has requested that the final TMDL compliance deadline be extended to July 1, 2019. Descriptions of permitting, design and construction activities required to complete the project and justifications for the durations can be found in Attachment 1. A Gantt chart that includes these activities with their associated durations, start dates and finish dates is found in Attachment 2. Attachment 3 includes a summary table of similarly-sized Districts' projects and associated durations.

If you have any questions regarding this report, please contact me at (562) 908-4288, extension 2501 or at [pfriess@lacsd.org](mailto:pfriess@lacsd.org).

Very truly yours,  
Grace Robinson Hyde

Philip L. Friess  
Department Head  
Technical Services

PLF:MB:lmb  
Enclosures

cc: Jenny Newman, Los Angeles Regional Water Quality Control Board

ATTACHMENT 1  
UPPER SANTA CLARA RIVER CHLORIDE TMDL  
Description of Activities and Justifications  
July 2014

**Activity**

- | <b>ID</b> | <b>Task Name and Justification</b>  |
|-----------|---|
| <b>2</b>  | <b>UV Disinfection Facilities</b>   |
| 3         | <p><u>Design</u>: Preliminary and final design of UV Disinfection Facilities are projected to require a minimum of 36 months. Multiple UV disinfection technologies and configurations will be evaluated prior to final equipment selection and preliminary design. On-site pilot testing may be conducted to obtain treated water quality data necessary for design of a UV disinfection facility; ensure that the treatment objectives can be achieved; establish operating parameters to properly size the facility and minimize uncertainties regarding footprint and utility requirements; achieve more accurate estimates of operating costs and capital costs; and account for unforeseen conditions that may otherwise have gone undetected. As an alternative, data from UV system pilot testing performed by others with similar wastewater may be used for design. Results from the pilot testing will be used to solicit Request for Proposals (RFPs) for the procurement of specialized equipment. Preliminary design will be performed to summarize project scope, determine design criteria, select treatment processes, and generate selected layouts. Detailed design will start immediately upon completion of preliminary design and incorporate the selected proprietary equipment and layouts.</p> <p>Design for this particular project will require a minimum duration of 36 months because it must work within the extremely limited space restrictions at the Valencia and Saugus Water Reclamation Plants (WRPs), replace existing WRP equipment, and must not impact current WRP operations during construction. Open space at the WRPs is extremely limited, which presents a challenge to the design of the site layout and sequencing of operational and construction activities. Facilities may be sited at existing equipment locations, such as the chlorine contact basins. Existing equipment would still be required to operate, resulting in the need for careful staging of the operation and demolition of existing equipment with the installation and operation of new equipment. Furthermore, staging of operational and construction activities would require the diversion of a portion of Saugus WRP flow to Valencia WRP to maintain compliance. For example, in the event that a portion of disinfection equipment at Saugus WRP is taken offline during construction, then a portion of flow must be diverted to disinfection equipment at Valencia WRP.</p> <p>In addition, the District is currently evaluating alternatives to the existing WRP tertiary pressure filters, such as cloth filters. The outcome from this evaluation may result in changes to the UV disinfection facility design, such as changes to site layout, infrastructure, and construction schedule.</p> <p>As indicated in Attachment 3, design durations for Districts' projects with similar construction costs indicate an average design duration of 34 months. This duration does not include activities unique to the subject facilities, such as the evaluation of multiple UV disinfection technologies and configurations, pilot testing, issuance of an RFP for equipment procurement, limited space restrictions, staging of operation and construction activities, and the potential evaluation of new WRP tertiary filters. Pursuant to the aforementioned challenges associated with the design of this project, the projected minimum duration of 36 months is considered aggressive and intended to expedite the project schedule.</p> |
| 4         | <p><u>Advertise/Bid/Award</u>: A minimal advertisement period will be used to expedite the project schedule. Attachment 3 summarizes advertising periods used in previous large Districts' projects. The listed projects utilize the current Districts' procedures for contract advertising, receipt of bids and award of contract. As indicated in Attachment 2, a three-month period for these activities is aggressive.</p>  |

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- 5 Construct/Startup: The minimum construction and startup period required to build the facilities is projected to be approximately 30 months: 3 months between award of contract and issuance of Notice to Proceed (NTP), 24 months for construction, and 3 months for startup. The period between award of contract and NTP includes signing of contract documents, receipt of required bonds and insurance, State Water Resources Water Board (SWRCB) final review and approval of State Revolving Fund (SRF) loan commitments, and a pre-construction meeting.

As stated in Activity 3, this project must work within the extremely limited space restrictions at the Valencia and Saugus Water Reclamation Plants (WRPs), replace existing WRP equipment, and must not impact current WRP operations during construction. Facilities may be sited at existing equipment locations, which would still be required to operate, resulting in the need for careful staging of the operational and construction activities, including the diversion of a portion of Saugus WRP flow to Valencia WRP. In the event that the existing WRP tertiary pressure filters are replaced, additional construction activities, such as mobilization, demolition, etc. must be coordinated with the construction of UV disinfection facilities. Furthermore, it is likely that there will be multiple construction contractors working on concurrent compliance project components within the Valencia WRP and at both WRPs at the same time, which is likely to present additional unforeseen challenges in construction.

As indicated in Attachment 3, construction durations for District's projects of similar magnitude and cost indicate an average construction duration of 37 months. This duration does not include activities unique to the subject facilities, such as limited space, staging of operation and construction activities, and potential replacement of WRP tertiary filters. Pursuant to the aforementioned challenges associated with the construction of this project, the projected minimum duration of 24 months allotted for construction of the subject facilities is aggressive and intended to expedite the project. A three-month testing and startup period has been included to allow time to assure proper and reliable functioning of all processes prior to operation.

**6 MF/RO & Brine Minimization Facilities**

- 7 Design: Preliminary and final design of MF/RO and Brine Minimization Facilities are projected to require a minimum of 36 months. Pilot testing of membrane technologies may be conducted to obtain treated water quality data necessary for design of a membrane filtration facility; ensure that the treatment objectives can be achieved; establish operating parameters to properly size the membrane facility and minimize uncertainties regarding footprint and utility requirements; achieve more accurate estimates of operating costs and capital costs; and account for unforeseen conditions that may otherwise have gone undetected. As an alternative, data from membrane pilot testing performed by others with similar wastewater may be used for design. Results from the pilot testing will be used to solicit RFPs for the procurement of specialized equipment. Preliminary design will be performed to summarize project scope, determine design criteria, select treatment processes, and generate selected layouts. Detailed design will start immediately upon completion of preliminary design and incorporate the selected proprietary equipment and layouts. As indicated in Attachment 3, design durations for Districts' projects with similar construction costs were, on average, 34 months. This duration does not include activities unique to the subject facilities, such as pilot testing and issuance of an RFP for equipment procurement, and is considered aggressive and intended to expedite the project schedule.
- 8 Advertise/Bid/Award: A minimal advertisement period will be used to expedite the project schedule. Attachment 3 summarizes advertising periods used in previous large Districts' projects. The listed projects utilize the current District's procedures for contract advertising, receipt of bids and award of contract. As indicated in Attachment 2, a three-month period for these activities is aggressive.

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- 9 Construct/Startup: The minimum construction and startup period required to build the facilities is projected to be approximately 30 months: 3 months between award of contract and issuance of NTP, 24 months for construction, and 3 months for startup. The period between award of contract and NTP includes signing of contract documents, receipt of required bonds and insurance, SWRCB final review and approval of SRF loan commitments, and a pre-construction meeting. As indicated in Attachment 3, construction durations for District's projects of similar magnitude and cost indicate an average construction duration of 37 months. It is likely that multiple construction contractors will be working concurrently on compliance project components at the Valencia WRP and at both WRPs at the same time, which is likely to present additional unforeseen challenges in construction. The projected 24 months allotted for construction of the subject facilities is aggressive and intended to expedite the project. A three-month testing and startup period has been included to allow time to assure proper and reliable functioning of all processes prior to operation.

**10 Brine Force Main & Pump Station**

- 11 Design: Preliminary design will be performed to investigate and identify major obstacles, such as river and freeway crossings, and develop potential alignments for the pipeline. Substructure research (i.e., underground utility identification) will be initiated to help screen, evaluate, and determine the most feasible alignment. Following preliminary design, the typical process for pipeline design involves detailed substructure research of the potential alignment, conducting field and aerial surveys to establish the proposed alignment for the pipeline, development of detailed plans and specifications, and obtaining the required rights of way, including any permits and property necessary to construct the pipeline.

Initial substructure research and development of a recommended alignment for a 2.5-mile pipeline through Unincorporated Los Angeles and City of Santa Clarita is anticipated to take four months. Typically, initial substructure research involves obtaining as-built plans from utility owners and mapping proposed alignments based on substructure information received. Thorough investigation is necessary to prevent damage to existing utilities and reduce the possibility of encountering utility conflicts during construction, which would delay project completion. After the most feasible alignment has been selected based on an understanding of the locations of existing substructures, 50% plans of the proposed project are developed and submitted to owners so that they can confirm that their facilities are depicted correctly. Owners also have the opportunity to comment on the proposed construction and include requirements to ensure their facilities are protected. This process is repeated at 90% design completion to confirm that the project plans correctly reflect owners' comments. Due to the semi-urban nature of the project area, this project will involve coordination with many utilities, which will take a significant amount of time since some owners do not respond quickly and sometimes require several reminders.

Survey of 2.5 miles is anticipated to take approximately 6 months. Survey not only includes aerial work but also field mapping and right of way drafting along the entire alignment. Once survey is completed, 50% plans will be developed to show the pipeline in plan and profile. Once the alignment is cleared with all utilities, work toward 90% completion would proceed. During this time, a soils investigation is completed, detailed plans and special provisions are developed, and permitting with the local jurisdiction(s) to obtain requirements for construction is initiated as well as acquisition of property.

Design duration can vary significantly depending on a number of factors such as project location, setting, permitting and right of way issues. For a 2.5-mile long pipeline to be constructed through semi-urban areas, the projected design duration of 30 months is aggressive.

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- 12 Encroachment Permits: Permitting is typically initiated after responses to 50% plans are received from owners and local jurisdictions. This ensures that the selected alignment is acceptable. This level of information allows the local jurisdiction(s) to establish traffic control requirements and street restoration/resurfacing requirements. These requirements would then be incorporated by the District in subsequent 90% plans and specifications. In addition, if the alignment is not entirely in public right of way, acquisition of property or easements would also be completed at this time. Permitting and property acquisitions are time consuming and need to be obtained prior to the contractor starting physical construction.
- 13 Advertise/Bid/Award: A minimal advertisement period will be used to expedite the project schedule. Attachment 3 summarizes advertising periods used in previous large Districts' projects. The listed projects utilize the current District's procedures for contract advertising, receipt of bids and award of contract. As indicated in Attachment 2, a three-month period for these activities is aggressive.
- 14 Construct Startup: Completing construction of 2.5 miles of pipeline and a pump station is anticipated to require a minimum of 15 months. Following award of a contract, it is anticipated that approximately 3 to 6 months will be required for the contractor to obtain approval of critical submittals that would allow work to commence. The pipeline work will involve implementation of traffic control, trenching and shoring, installation of pipe, pipe testing, bedding, backfill, compaction and resurfacing with work progressing in a linear fashion and all within a limited work area. Because of the semi-urban nature of the project site, traffic control set-ups may be complex and the contractor may need to support and protect in place many utilities, which will result in low pipe laying production. In urban areas, contractors may expect average daily pipe laying production rates of 100 feet. This rate can be lower if groundwater is encountered, a trenchless method is required, or other difficulties arise during construction. The Districts have seen higher production rates in unimproved areas where contractors have large work areas and do not have to dig deep, resurface or implement traffic control, but due to the location of the pipeline, higher production rates are not expected to be feasible. In addition, once the 2.5-mile pipeline and pump station is constructed, testing would need to be conducted to ensure there is no leakage before placing the system into service. The projected construction duration of 15 months is aggressive.
- 15 Deep Well Injection Test Well**
- 16 Permits, Easements & Design: The District is required to obtain a conditional use permit (CUP) from the Los Angeles County Department of Regional Planning for DWI site development. The CUP application requires the completion of preliminary site design tasks that include the following: site survey, geotechnical investigation, grading plan, building/facility footprints, traffic engineering, and drainage design. The CUP application also requires preparation of a Supplemental EIR, due to a change in DWI site location from the previous EIR. The preliminary site design must be complete before the Supplemental EIR process can move forward..

The District also must obtain an EPA Underground Injection Control (UIC) Class I non-hazardous well permit for the test well. This effort includes: geologic modeling and area of review (AOR) analyses; preparation of well design; testing and QA/QC programs; responding to comments received from the EPA and public during the permit review process; preparation of any additional analyses requested by the EPA; and on-going consultation with the EPA to secure the permit. Acquisition of property and easements from the County and utilities are also required. As indicated in Attachment 2, an estimated 19 months is needed to complete these tasks, which is aggressive.

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- 17 Advertise/Bid/Award: A minimal advertisement period will be used to expedite the project schedule. Attachment 3 summarizes advertising periods used in previous large Districts' projects. A three-month period for contract advertising, receipt of bids and award of the contract is aggressive and, due to schedule constraints, this task may be started prior to receipt of all permits (Activity 16).
- 18 Mobilize Drill Rig/Submittals: According to information provided by the District's DWI consultants and a reputable local drilling company, the time to mobilize a drill rig capable of drilling to depths of 12,000 feet below ground surface range from 3 to 12 months. The time required to mobilize the drill rig has been scheduled at 6 months and design submittals typically take 3 to 6 months, which can proceed concurrently. Once submittals are complete and the rig is mobilized, well drilling can start. As indicated in Attachment 2, an estimated 6 months is needed to complete these tasks, which is aggressive.
- 19 Construction & Testing: Drilling and completion of the DWI test well is projected to require 2 months. At least 1 month is needed to obtain and analyze test results, revise the geologic model, and complete model runs and ascertain whether DWI will meet the needs of the project. As indicated in Attachment 2, an estimated 3 months is needed to complete these tasks.
- 20 Deep Well Injection Production Wells**
- 21 Permits & Design: The District must obtain an EPA UIC Class I non-hazardous well permit for the DWI production wells. Similar to the test well, the tasks required for the UIC permit include: geologic modeling and AOR analyses; preparation of well design; testing and QA/QC programs; responding to comments received from the EPA and public during the permit review process; preparation of any additional analyses requested by the EPA; and on-going consultation with the EPA to secure the permit(s). The EPA UIC permit application review process typically requires approximately 24 months. Due to schedule constraints, 23.5 months has been provided to complete these tasks, which is aggressive.
- 22 Easements: The District will need to acquire well casing and brine easements for DWI. Casing easements are needed from the surface owner for sites where a deviated well is located under private property. Brine easements are needed from the surface owner or mineral rights owner for sites where brine is to be injected underground. The time required to obtain numerous easements is difficult to predict. The schedule includes a duration of 31 months for this activity, which is aggressive. Due to scheduling constraints, pursuit of easements is scheduled to begin 17 months prior to completion of the test well is completed and the District receives confirmation that DWI is viable (Activity 19).
- 23 Advertise/Bid/Award: A minimal advertisement period will be used to expedite the project schedule. Attachment 3 summarizes advertising periods used in previous large Districts' projects. The listed projects utilize the current District's procedures for contract advertising, receipt of bids and award of contract. As indicated in Attachment 2, a three-month period for these activities is aggressive.
- 24 Mobilize Drill Rig/Submittals/Construct Site Facilities: According to information provided by the District's DWI consultants and a reputable local drilling company, the time to mobilize a drill rig capable of drilling to depths of 12,000 feet below ground surface range from 3 to 12 months. The time required to mobilize the drill rig has been scheduled at 6 months and submittals typically take 3 to 6 months. Once submittals are complete and the rig is mobilized, well drilling can start. Initial construction of site facilities will include installation of temporary security fencing, grading, and construction of an injection well gallery. As indicated in Attachment 2, an estimated 6 months is needed to complete these tasks, which is aggressive.

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- 25 Construct Wells: Drilling of the DWI production wells is projected to require 10 months of construction 24 hours per day, 7 days per week, which is aggressive. Each of the two shallower wells is expected to require 6 weeks and each of the four deeper wells is expected to require 8 weeks. These durations are based on the experience of the District's DWI consultants.
- 26 Finish Site Facilities & Startup: Construction and startup of the site surface facilities is projected to require 12.25 months, which is aggressive. This activity includes completion of injection wells (well perforation and installation of well internals) and construction of a pump house, transformer, yard piping, a paved maintenance pad, roads, and drainage facilities. The pump house will contain injection pumps, piping and instrumentation, brine storage tanks, and electrical switchgear. Due to schedule constraints, construction of ancillary facilities is scheduled concurrent with well completion despite the limited space onsite. System testing and startup will be completed concurrent with construction of support facilities due to schedule constraints. Landscaping will be completed after facility startup and is not included in this activity duration.

ATTACHMENT 2  
 UPPER SANTA CLARA RIVER CHLORIDE TMDL  
 Schedule  
 July 2014

USCR Chloride TMDL Compliance Schedule					2014												2015												2016												2017												2018												2019											
ID	Task Name	Duration	Start	Finish	Q3				Q4				Q1				Q2				Q3				Q4				Q1				Q2				Q3				Q4																																			
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4																																				
1	<b>Permitting, Design and Construction</b>	<b>1481 days</b>	<b>Mon 10/28/13</b>	<b>Mon 7/1/19</b>	[Gantt bar spanning from Mon 10/28/13 to Mon 7/1/19]																																																																							
2	<b>UV Disinfection Facilities</b>	<b>1481 days</b>	<b>Mon 10/28/13</b>	<b>Mon 7/1/19</b>	[Gantt bar spanning from Mon 10/28/13 to Mon 7/1/19]																																																																							
3	Design	36 emons	Mon 10/28/13	Wed 10/12/16	[Gantt bar from Mon 10/28/13 to Wed 10/12/16]																																																																							
4	Advertise/Bid/Award	3 emons	Wed 10/12/16	Tue 1/10/17	[Gantt bar from Wed 10/12/16 to Tue 1/10/17]																																																																							
5	Construct/Startup	30.08 emons	Tue 1/10/17	Mon 7/1/19	[Gantt bar from Tue 1/10/17 to Mon 7/1/19]																																																																							
6	<b>MF/RO &amp; Brine Minimization Facilities</b>	<b>1481 days</b>	<b>Mon 10/28/13</b>	<b>Mon 7/1/19</b>	[Gantt bar spanning from Mon 10/28/13 to Mon 7/1/19]																																																																							
7	Design	36 emons	Mon 10/28/13	Wed 10/12/16	[Gantt bar from Mon 10/28/13 to Wed 10/12/16]																																																																							
8	Advertise/Bid/Award	3 emons	Wed 10/12/16	Tue 1/10/17	[Gantt bar from Wed 10/12/16 to Tue 1/10/17]																																																																							
9	Construct/Startup	30.08 emons	Tue 1/10/17	Mon 7/1/19	[Gantt bar from Tue 1/10/17 to Mon 7/1/19]																																																																							
10	<b>Brine Force Main &amp; Pump Station</b>	<b>1028 days</b>	<b>Thu 5/21/15</b>	<b>Tue 4/30/19</b>	[Gantt bar spanning from Thu 5/21/15 to Tue 4/30/19]																																																																							
11	Design	30 emons	Thu 5/21/15	Mon 11/6/17	[Gantt bar from Thu 5/21/15 to Mon 11/6/17]																																																																							
12	Encroachment Permits	12 emons	Fri 11/11/16	Mon 11/6/17	[Gantt bar from Fri 11/11/16 to Mon 11/6/17]																																																																							
13	Advertise/Bid/Award	3 emons	Mon 11/6/17	Sun 2/4/18	[Gantt bar from Mon 11/6/17 to Sun 2/4/18]																																																																							
14	Construct/Startup	15 emons	Sun 2/4/18	Tue 4/30/19	[Gantt bar from Sun 2/4/18 to Tue 4/30/19]																																																																							
15	<b>Deep Well Injection Test Well</b>	<b>660 days</b>	<b>Mon 10/28/13</b>	<b>Sun 5/8/16</b>	[Gantt bar spanning from Mon 10/28/13 to Sun 5/8/16]																																																																							
16	Permits, Easements & Design	19 emons	Mon 10/28/13	Thu 5/21/15	[Gantt bar from Mon 10/28/13 to Thu 5/21/15]																																																																							
17	Advertise/Bid/Award	3 emons	Tue 4/21/15	Mon 7/20/15	[Gantt bar from Tue 4/21/15 to Mon 7/20/15]																																																																							
18	Mobilize Drill Rig/ Submittals	6 emons	Mon 7/20/15	Sat 1/16/16	[Gantt bar from Mon 7/20/15 to Sat 1/16/16]																																																																							
19	Construction & Testing	3 emons	Mon 2/8/16	Sun 5/8/16	[Gantt bar from Mon 2/8/16 to Sun 5/8/16]																																																																							
20	<b>Deep Well Injection Production Wells</b>	<b>1173 days</b>	<b>Thu 1/1/15</b>	<b>Mon 7/1/19</b>	[Gantt bar spanning from Thu 1/1/15 to Mon 7/1/19]																																																																							
21	Permits & Design	23.5 emons	Thu 1/1/15	Tue 12/6/16	[Gantt bar from Thu 1/1/15 to Tue 12/6/16]																																																																							
22	Easements	31 emons	Thu 1/1/15	Wed 7/19/17	[Gantt bar from Thu 1/1/15 to Wed 7/19/17]																																																																							
23	Advertise/Bid/Award	3 emons	Tue 12/6/16	Mon 3/6/17	[Gantt bar from Tue 12/6/16 to Mon 3/6/17]																																																																							
24	Mobilize Drill Rig/Submittals/Construct Site Facilities	6 emons	Mon 3/6/17	Sat 9/2/17	[Gantt bar from Mon 3/6/17 to Sat 9/2/17]																																																																							
25	Construct Wells	10 emons	Sat 9/2/17	Fri 6/29/18	[Gantt bar from Sat 9/2/17 to Fri 6/29/18]																																																																							
26	Finish Site Facilities & Startup	12.25 emons	Fri 6/29/18	Mon 7/1/19	[Gantt bar from Fri 6/29/18 to Mon 7/1/19]																																																																							

Date: Wed 6/4/14



ATTACHMENT 3  
 UPPER SANTA CLARA RIVER CHLORIDE TMDL  
 Similar-sized Sanitation District Project History  
 July 2014

Project	Award Date	Design Duration (mos.)	Adv/Bid/Award (working days)	Construction Duration (mos.) <sup>1</sup>	Contract Cost (\$)
Valencia WRP Stage 4	07/08/92	31	45	36	22,500,000
JWPCP Secondary Treatment Facilities Stage III Reactors and Clarifiers	03/11/98	26	107	41	95,713,799
JWPCP Digestion Tanks 17-23	08/09/00	31	126	36	46,682,000
Valencia WRP Stage 5	02/14/01	36	74	36	39,500,000
Los Coyotes WRP Nitrification/Denitrification Facilities	06/22/05	26	83	30	14,993,000
JWPCP Skimmings Odor Control System	09/14/05	42	58	33	31,787,777
Lancaster WRP Stage Five Recycled Water Pump Station and Storage Facilities—Phase I	11/28/07	41	60	51	43,245,000
Westlake Farms Phase I Mixing and Composting Facilities <sup>2</sup>	09/13/10	33	110	30	45,475,200
Whittier Narrows UV Disinfection Facilities	01/09/08	39	110	42	8,290,154
<i>Averages:</i>		34	86	37	38,687,437

<sup>1</sup> Construction duration is the time from issuance of Notice to Proceed until the construction work is complete as required by Contract Documents.

<sup>2</sup> Project is under construction. The duration is the estimated construction time from Notice to Proceed.