



Technical Advisory Committee Meeting

September 14, 2021 • 1:30 p.m.

[Join Zoom Meeting](#)

Meeting URL: <https://us02web.zoom.us/j/87457108844?pwd=NWxySjFiTXVERXg4NzAyc0xMcU9kUT09>

Or Join by Telephone: (669) 900-6833 Meeting ID: 874 5710 8844 Passcode: 567390

TECHNICAL ADVISORY COMMITTEE CHINO BASIN DESALTER AUTHORITY

3550 E. Philadelphia Street, Suite 170, Ontario, CA 91761

September 14, 2021 • 1:30 p.m.

[Join Zoom Meeting](#)

According to the directives from the California Department of Public Health and Executive Order N-08-21 issued by Governor Gavin Newsom, members of the public are invited to participate via video or teleconference:

Meeting URL: <https://us02web.zoom.us/j/87457108844?pwd=NWxySjFiTXVERXg4NzAyc0xMcU9kUT09> Or Join by Telephone: (669) 900-6833 Meeting ID: 874 5710 8844 Passcode: 567390

CALL TO ORDER

ROLL CALL

PUBLIC COMMENT

Members of the public may address the Committee on any item that is within the jurisdiction of the Committee; however, no action may be taken on any item not appearing on the agenda unless the action is otherwise authorized by Subdivision (b) of Section 54954.2 of the Government Code. Those persons wishing to address the Committee on any matter, whether or not it appears on the agenda, are requested to submit their request to comment to the Executive Assistant no less than one hour prior to the start of the meeting at (909) 218-3230 or ccosta@chinodesalter.org. Comments will be limited to five minutes per speaker.

ADDITIONS TO THE AGENDA

In accordance with Section 54954.2 of the Government Code (Brown Act), additions to the agenda require two-thirds vote of the legislative body, or, if less than two-thirds of the members are present, a unanimous vote of those members present, that there is a need to take immediate action and that the need for action came to the attention of the local agency subsequent to the agenda being posted.

- 1. MINUTES OF AUGUST 24, 2021 TECHNICAL ADVISORY COMMITTEE MEETING**
- 2. CHINO I OPERATIONS REPORT**
Report By: Chris Waggener/Inland Empire Utilities Agency
- 3. CHINO II / CRF OPERATIONS REPORT**
Report By: Daniel Cardenas/Jurupa Community Services District
- 4. WATER DELIVERIES**
Report By: Thomas O'Neill, CDA General Manager/CEO
- 5. HAZEN & SAWYER AGREEMENT FOR CHINO I DESALTER MEMBRANE SYSTEM OPERATION MONITORING USING POWER-BI DYNAMIC DASHBOARDS**
Report By: Thomas O'Neill, CDA General Manager/CEO
- 6. SOUTH ARCHIBALD PLUME UPDATE**
Report By: Cindy Miller, South Archibald Plume Program Manager

7. CHINO I GAC UPDATE

Report By: Cindy Miller, Hazen & Sawyer Program Manager

8. BOARD MEETING AGENDA ITEMS REVIEW

Report By: Thomas O'Neill, CDA General Manager/CEO

9. NEW BUSINESS/FUTURE TECHNICAL ADVISORY AGENDA ITEMS REVIEW

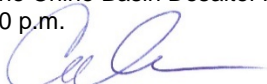
Report By: Thomas O'Neill, CDA General Manager/CEO

ADJOURN

Any person with a disability who requires accommodations in order to participate in this meeting or for package materials in an alternative format should telephone Executive Assistant C. at (909) 218-3730, at least 48 hours prior to the meeting in order to make a request for a disability-related modification or accommodation. Copies of records provided to Board Members which relate to any agenda item to be discussed in open session may be obtained from Chino Basin Desalter Authority at 3550 E. Philadelphia Street, Suite 170, Ontario, CA 91761

Declaration of Posting

I, Casey Costa, Executive Assistant to the Chino Basin Desalter Authority, hereby certify that a copy of this agenda has been posted at the Chino Basin Desalter Authority's main office, 3550 E. Philadelphia Street, Suite 170, Ontario, CA 91761 by August 20, 2021 at 1:30 p.m.



Casey Costa, Executive Assistant



Technical Advisory Committee Meeting

Agenda Item

No. 1

**CHINO BASIN DESALTER AUTHORITY
TECHNICAL ADVISORY COMMITTEE**

MINUTES

August 24, 2021 • 1:30 p.m.

A meeting of the Chino Basin Desalter Authority Technical Advisory Committee was held via audio/teleconference. CDA General Manager O'Neill called the meeting to order at 1:30 p.m.

Committee Members Present:

Mark Wiley, City of Chino Hills
Chris Bonadurer, City of Ontario
Chris Waggener, Inland Empire Utilities Agency
Ben Armel, Jurupa Community Services District
Bryan Smith, Jurupa Community Services District (Alternate)
John Lopez, Santa Ana River Water Company
Derek Kawaii, Western Municipal Water District

Others Present:

Thomas O'Neill, CDA General Manager/CEO
Michael Chung, CDA CFO/Treasurer
Jose Garcia, CDA Principal Accountant
Pete Vicario, City of Chino
Bob Bowcock, Integrated Resources Management/SB County Airports

PUBLIC COMMENT - There were no public comments.

ADDITIONS TO THE AGENDA – None

AGENDA ITEMS

1.	MINUTES OF AUGUST 10, 2021 TECHNICAL ADVISORY COMMITTEE MEETING Minutes were approved as presented.
2.	CHINO I OPERATIONS REPORT Report By: Chris Waggener/Inland Empire Utilities Agency <ul style="list-style-type: none">• Plant Production Average - 11.89 MGD• 8/4 - SAWPA on-site permit inspection• 8/5 – 3” RO train sample drain line system installed. Salt tank sensors calibrated, bleach pump #4 tubing replaced.• 8/7 – Flows adjusted to new allocations• 8/9 – Oil changed on end user boosters 4, 8, and 10. Plant tour with IEUA's asset management dept.• 8/10 – acid tank fill line replaced with all new piping. Sampling well #I-18 and Well I-21 for Title 22 and Priority Pollutants.

	<ul style="list-style-type: none"> • 8/12 – Motor oils changed on all RO motors (I-5), cracked blind flange on RO train #5 concentrate line repaired, moved sand pile out of parking lot. • 8/15 – Power blip at 08:04 that powered down RO Train 5 and end user boosters. End user deliveries stopped for approximately 10 minutes.
<p>3.</p>	<p>CHINO II OPERATIONS REPORT/CRF OPERATIONAL UPDATE Report By: Daniel Cardenas/Jurupa Community Services District</p> <ul style="list-style-type: none"> • Plant Production Average – 19.1 MGD • Gwinco/ Aquasystec onsite for Air Stripper Project / Well II-12 Project • 8/13/21 Chino II Well II-11 disinfection. • 8/16/21 Worked with WMWD and Cla-Val for repairs and adjustments on control valve for WMWD turn-out • 8/10/21 Chino II Temporary chlorination initiated for Air Strippers. <p><u>CRF Update</u></p> <ul style="list-style-type: none"> • 8/11/21 CRF Repaired Seed Feed Line into Pellet Reactor # 2 • 8/12/21 CRF Worked with TE Roberts Inc to clean out EQ Basin and Pellet Scales
<p>4.</p>	<p>PURCHASE OF REVERSE OSMOSIS (RO) MEMBRANES ELEMENTS Report By: Thomas O’Neill, CDA General Manager/CEO</p> <p>General Manager O’Neill reviewed the recommendation to approve a purchase order with Dupont for the supply of RO membrane elements in the amount of \$389,700. The RO membrane changeout program for FY 2021/22 includes the replacement of 298 membrane elements at Chino I Desalter, 522 at the Chino II Desalter, and 210 at the CRF. The RFQ was prepared calling for specific Filmtec or Toray membrane elements, with no substitutions as they are the only membranes currently approved for use at the Desalters. Dupont was the lowest bidder, supplying Filmtec membranes totaling \$389,700 vs Toray’s total bid amount of \$447,32.90. There were no objections to moving this item forward to the Finance Committee.</p>
<p>5.</p>	<p>ACCEPTANCE OF GRANT OF PIPELINE EASEMENT BETWEEN TDC REMINGTON PARTNERS LLC THE CHINO BASIN DESALTER AUTHORITY Report By: Thomas O’Neill, CDA General Manager/CEO</p> <p>General Manager O’Neill reviewed the recommendation to accept a Grant of Pipeline Easement from Remington Partners LLC to access a 24-inch raw waterline installed along the 65th Street alignment in the southern portion of parcel 144-010-009. An easement was previously acquired but never recorded. The pipeline also runs through the southern portion of parcel 144-010-058 and an easement will also be pursued for this section of the pipeline. There were no objections to moving this item forward to the Finance Committee.</p>

6.	SOUTH ARCHIBALD PLUME UPDATE Report By: Cindy Miller, South Archibald Plume Program Manager <ul style="list-style-type: none">• Well II-12 was placed in service this morning (August 24, 2021) and is currently pumping to the Chino II Desalter.
7.	CHINO I GAC UPDATE Report By: Cindy Miller, Hazen & Sawyer Program Manager <ul style="list-style-type: none">• Currently working with Contractor on submittals.• Submitting application for Prop 1 Grant funds that may be available.
8.	BOARD MEETING AGENDA ITEMS REVIEW Report By: Thomas O’Neill, CDA General Manager/CEO General Manager O’Neill reviewed upcoming Board Items.
9.	NEW BUSINESS/FUTURE TECHNICAL ADVISORY AGENDA ITEMS REVIEW Report By: Thomas O’Neill, CDA General Manager/CEO General Manager O’Neill reviewed upcoming TAC Items.

There being no further business, the meeting was adjourned at 2:03 p.m.

Submitted by Casey Costa, CDA Executive Assistant



Technical Advisory Committee Meeting

Agenda Item

No. 2



Chino I Desalter Treatment Plant Operations

Summary of Activities

August 16th, 2021 to September 7th, 2021

Well Field

Well Name	VFD Speed	Original Design Rate (gpm)	Current Production Rate (gpm)	Percent of Production	Operational (Yes/No)	Production Rate (gpm)	Status (Idle/Run)	Current Operation (gpm)
****I-1	0%	600	0	0%	No	0	Idle	0
****I-2	0%	300	0	0%	No	0	Idle	0
****I-3	0%	600	0	0%	No	0	Idle	0
I-4	0%	300	0	0%	Yes	0	Idle	0
I-5	95%	1,200	1,115	12%	Yes	1,115	Run	1,115
I-6	0%	350	0	0%	Yes	0	Run	0
*I-7	80%	1,200	251	3%	Yes	251	Run	251
I-8	79%	900	651	7%	Yes	651	Run	651
I-9	96%	1,200	1,032	11%	Yes	1,032	Run	1,032
I-10	97%	1,200	1,134	12%	Yes	1,134	Run	1,134
I-11	100%	1,200	1,078	11%	Yes	1,078	Run	1,078
****I-13	0%	2,000	0	0%	No	0	Idle	0
I-14	92%	2,200	1,649	17%	Yes	1,649	Run	1,649
I-15	95%	2,000	2,020	21%	Yes	2,020	Run	2,020
I-16	100%	250	139	1%	Yes	139	Run	139
****I-17	0%	200	0	0%	No	0	Idle	0
I-20	74%	400	280	3%	Yes	280	Run	280
I-21	100%	400	239	2%	Yes	239	Run	239
gpm	Total	16,500	9,587	100%	100%	9,587	100%	9,587
MGD		23.76	13.81			13.81		13.81

Primary RO Treatment

Train	Recovery Rate	Production (gpm)	(MGD)
1	79.0%	1,205	1.74
2	79.0%	1,205	1.74
3	79.0%	1,205	1.74
4	79.0%	1,205	1.74
5	79.0%	1,205	1.74
		6,025	8.68

Ion Exchange Treatment

Train	(gpm)	(MGD)
1	477	0.69
2	477	0.69
3	477	0.69
4	477	0.69
	481	2.75

VOC Bypass

Production (gpm)	(MGD)
0	0.00

Brine Flow

Production (gpm)	(MGD)
1,528	2.20

Summary of Activities

8/18/21- RO Train #2 CIP 2nd stage influent valve replaced.

8/19/21- Replaced leaking valve on Chlorine supply lines, replaced roller assembly and tube on CL2 pump #5.

8/23/21- Began low pH CIP on RO Train #1 1st stage.

8/24/21- Changed out Cartridge filters in vessels #1&2. Finished RO Train #1 1st Stage CIP, started 2nd stage CIP.

8/25/2021- Cartridge filters changed out on Vessels 3-5. Well #i-13 started, failing on VFD overtemp.

8/26/21- Well #i-13 VFD fan replaced, Well running to waste. Finished RO Train #1 2nd stage CIP. RO Train #1 placed online.

8/30/21 - Started RO Train #3 1st stage low pH CIP.

8/31/21- New fill solenoid installed on BST#2, Concrete repaired in Acid Tank containment area.

9/2/21- RO Train #3 CIP finished (1st and 2nd stage). Placed back online. Well #20 failed, Motor going to ground.

9/7/21- Chlorine generator Cathode flange replaced, cell was hosed out and cleaned and placed back in service.

Plant Efficiency

	Flow in (gpm)	Flow Out (MGD)
Wells	9,587	13.81
Brine	-1528	-2.20
	8,060	11.61

Plant Production

	All Treatment Trains (gpm)	(MGD)
Primary RO	6,025	8.68
Ion Exchange	481	2.75
Raw Bypass	0	0.00
	6,506	11.42

* Air Problem

** Sand Problem

***Cooling Problem

****Out of Service



Technical Advisory Committee Meeting

Agenda Item

No. 4

FY 2021/22 CDA (Chino I and Chino II) Water Deliveries (Draft)

Month	Chino	Chino Hills	JCSD	Norco	Ontario	SARWC	Western MWD	Total
Jul-21	468.277	392.249	1,099.665	93.028	774.910	111.395	328.058	3,267.582
Aug-21	435.578	362.918	1,006.008	86.648	749.330	104.004	306.291	3,050.777
Sep-21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Oct-21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov-21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec-21	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jan-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Feb-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mar-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Apr-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun-22	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total FY 21/22 Deliveries	903.855	755.167	2,105.673	179.676	1,524.240	215.399	634.349	6,318.359
Contract Entitlement								
Annual (AF/YR)	5,000.0	4,200.0	11,733.0	1,000.0	8,533.0	1,200.0	3,534.0	35,200
Monthly (AF)	416.7	350.0	977.8	83.3	711.1	100.0	294.5	2,933.3
Delivered through August 2021 (AF)	903.9	755.2	2,105.7	179.7	1,524.2	215.4	634.3	6,318.4
	108.5%	107.9%	107.7%	107.8%	107.2%	107.7%	107.7%	107.7%

Notes:

1. Actual deliveries to date are shaded.

Water Deliveries Through

Aug-21

Submitted By:

Tom O'Neill, General Manager/CEO

Date

Approved By:

CDA Technical Advisory Committee

Approved On:



Technical Advisory Committee Meeting

Agenda Item

No. 5



SUBJECT: HAZEN & SAWYER AGREEMENT FOR CHINO I DESALTER MEMBRANE SYSTEM OPERATION MONITORING USING POWER-BI DYNAMIC DASHBOARDS

RECOMMENDATION:

Staff recommends that the Board:

1. Approve a Professional Services Agreement with Hazen and Sawyer for consulting engineering services in the not-to-exceed amount of \$106,000; and
2. Authorize the General Manager/CEO to finalize and execute the agreement, with subsequent authorizations up to a not-to-exceed total of \$106,000.

BACKGROUND:

Separation Processes Inc. (SPI) has been providing Reverse Osmoses (RO) operational support, monthly data review and quarterly reports since the Chino I and Chino II Desalters were placed in service. This support was beneficial but due to the timeline it took for the data to be reviewed, it didn't inform the operators of potential problems in a timely manner.

CDA and Operations staff reviewed different live data systems to provide the operators with the necessary tools to monitor the RO trains and review their performance in real time. This would replace the procedure of collecting of weekly data, then sending it to a consultant to compile monthly and quarterly reports.

In FY 2020/21, the CDA contracted with Hazen & Sawyer to implement the Power BI Dynamic Dashboard system which is currently in use at the Chino II Desalter. The Hazen & Sawyer system is a simple, cost-effective approach to address real time RO performance that empowers operations staff and reduces reliance on outside consultant support in the long term. Because of the uniqueness of this project and Hazen's proposed system, Hazen was retained through a sole source contract.

Under this proposed agreement, CDA will contract with Hazen and Sawyer to perform Operations Upgrades at the Chino I Desalter to improve efficiency and performance of operations monitoring. The upgrades will leverage powerful programming tools, including Python Data Analytics and Microsoft Power BI Dynamic Dashboards, to streamline and improve monitoring and data analysis, thus improving system performance and potentially saving significant operator effort and labor costs.

System analysis and upgrades will be performed over an approximate 4-month period, followed by on-site implementation of the dashboards and training of operations staff. Tasks to be performed include:

1. Historical Data Review and Acquisition – Historical operational data will be extracted and analyzed using Python, a programming language which will allow efficient analysis of large

volumes of data to clean/modify, address outliers, and verify data ranges and data variability are true system performance.

2. Visualization Dashboards – Historical data will be utilized to develop dashboards that will graphically visualize key performance indicators related to membrane system performance, allowing operators to easily access real-time data and make quick and accurate decisions regarding system operation.
3. Implementation of Dashboards and Develop Forms for IPAD Input– Hazen staff will integrate the Power BI dashboards into the Chino I Desalter computer system. While on-site, field verification of each RO train will be performed to ensure proper integration of the programs into the existing operations. Development of I-form for documenting all hand/manual data for conductivity profiles, CIP's and membrane replacements
4. Training – A training seminar will be held for Operations staff.

The budget necessary to complete the tasks is \$106,000 as outlined in the attached letter proposal. The services for optional monitoring operations support is already included in Hazen & Sawyer's existing on-call contract.

IMPACT ON BUDGET:

The FY 21/22 Capital Budget includes \$105,326 for the Power BI Dynamic Dashboard at the Chino I desalter.

ATTACHMENTS:

- 1) Hazen and Sawyer Proposal

Prepared by: Thomas O'Neill, CDA General Manager/CEO

Page 2 of 2

Board of Directors: Approved Continued Denied

CDA GM/CEO Acknowledgement: _____ **Date:** _____



Hazen and Sawyer
7700 Irvine Center Drive, Suite 200
Irvine, CA 92618 • 949.557.8549

September 10, 2021

Tom O'Neill
General Manager/CEO
Chino Basin Desalter Authority

Re: Membrane System Operation Monitoring using Python Data Analytics and Microsoft Power BI Dynamic Dashboards for the Chino I Desalter

Dear Mr. O'Neill,

When operating and managing a membrane facility, keeping a close eye on the performance data is paramount. Operating a membrane plant is akin to piloting a submarine. That is to say it has to be accomplished by means of indirect observation. With respect to a membrane process this is accomplished by analyzing normalized data. Normalized operating data uses mathematical operations to dampen or reduce effects of temperature and flow variations. This allows the analyst to focus on and detect changes to the membranes resulting from foulants and scalants and identify to best correction measure. The following proposal is similar to what was done at Chino II and outlines our approach to extract data from your data historian, normalize it, and present it in easy to view dashboards.

Scope of Services

Task 1- Data Review and Aquisition

The output dataset will be extracted and collected in tabular from the Chino I data historian and imported to Python where it will be cleaned/modified to address outlier data and to make sure data ranges and data variability are true system performance. Python is the programming software that will allow data reduction, analytics and manipulation. The data output from the Python analytics will then be used by Microsoft Power BI to generate graphical dynamic dashboards. Power BI is powerful business analytical software created by Microsoft specializing in presenting large datasets visually. Hazen has leveraged this software to analyze membrane system performance with near real time data.

Deliverables

Memorandum documenting approach to accessing data in historians with Python and Power BI and the approach to data security. The memo shall include information on how data is stored, format it is store in, and what Python and Power BI will do with the data it looks at in the database.

Task 2- Visualization Dashboards

It is important to turn data into knowledge that will enhance the ability to make informed decisions at the right time for the right reasons and serve as the foundation for a future asset management program. Microsoft's Power BI tool is being extensively used for turning data into knowledge and presenting it in an easy-to-understand format with interactive Dashboards. Easily understandable and interactive tailored dashboards will enable Chino Basin Desalter Authority (CDA) operators to be more self-reliant and better control the quality, production and reliability of the membrane plants. Dashboards will be developed that display of metrics and key performance indicators (KPIs) used to monitor membrane condition. In the Power BI service, dashboards help you keep a finger on the pulse of your business performance, displaying KPIs or maintenance triggers using intuitive visuals that indicate the progress of KPIs towards defined targets or levels of service. Dashboards display tiles, which you can select to open reports for exploring further. Dashboards and reports connect to datasets that bring all the relevant data together in one place.

Hazen will provide CDA with a non-proprietary decision support tool (i.e., Power BI) built on a Microsoft-based platform that will graphically visualize key performance indicators (KPIs) and metrics related to membrane system performance to be viewed on easily understandable, tailored Dashboards. It will include Operations dashboards that view data from cartridge filters, RO pumps, RO trains, one CIP/Cond Profile/Maintenance dashboard that will be created by conversion of the existing Windows Application dashboards. The developed dashboards will provide CDA staff key information regarding:

- Membrane process performance trends (Normalization)
- Deviation from targets and set points
- Analytical data

Deliverables

- Draft and Final Customized visualization dashboards (in Microsoft Power BI)

Task 3- Implementation of Dashboards and Develop Forms for IPAD Input

Hazen will supply two engineers, one membrane expert and one programming expert integrate the power BI dashboard into the local computer system.

While on site, field verify of each RO train will be performed. This will include a detailed review of each data point to ensure the tag number logged into the dashboard is properly addressed to the correct instrument on the correct train.

As a second part of this task, Hazen will:

1. Develop an I-Form or equivalent Microsoft form to install on CDA provided iPads. Hazen will assist CDA in purchasing iPads for Implementing Data from Conductivity Profiles, CIPs and Membrane Replacements. Cost of iPads and software are not part of the Hazen Scope of Supply.

2. Additional I-forms for documenting all hand/manual data outside of the RO system can be provided but are not part of this scope.
3. Hazen will confirm how CDA wants the I-Form/MS Form data to get into the historian storage System. It would be beneficial to be only on the WIFI within the plant such that data can be stored directly to the historian and not have potential for data breach through cloud based services.

Deliverables

- Forms for data collection of RO system manual data on Ipads
- Python script to convert IPad Data for RO system to format for use in the PowerBI Dashboard.
- Field Verification of dashboard operation inside the facility. Field verification of the forms and data collection from the Ipad onto the historian system.

Task 4 – Training

Following the implementation of the data acquisition and dashboard rollout, Hazen will develop a half day training seminar to familiarize the operations staff with the dash boards and how to interpret them. Training material will be developed in conjunction with management operations staff to ensure the content is tailored to CDA's needs.

Deliverables

- Electronic and hard copies of the training material.

Task 5 – Monthly Operations Support (Optional)

Hazen will develop a form for reporting to the Operators on a weekly basis for a period of 6 months.

Hazen will review the data, analyze the dashboards and then provide the form filled out with the interpretation of the data. The filled out form will document condition of the RO system operations.

The form will be transferred to the Operations Team after the first 6 months and they will develop a weekly report of their interpretation of the data and performance of the RO System.

Deliverables

- Weekly form filled out to report to Staff any observations and trends that are being observed.
- Monthly call with operators to help them with understanding and interpreting the Dashboards and how to use them in their daily routines.

- Email follow-up report summarizing the discussions and what interpretation was provided with any required recommendations.

Project Team

The Hazen team presented in the organizational chart below was selected based on the prior work at Chino II to implement the same type of project.



Budget

We propose to conduct the primary tasks as described in this proposal for a not to exceed amount of \$106,000 including ODCs. We have also included a budget for Optional Task 5, if requested. The following table shows an estimated number of hours for each person, task and deliverable.

	Project Director	Project Manager	Data Scientist	Title	Project Engineer	Hours	Total
	KA	BR	JR	RM	RG		
Salary Rate (\$/hr.)	\$ 309	\$ 198	\$ 271	\$ 208	\$ 139		
Primary Services							
Task 0 - Project Management							
0.1 - Kickoff Meeting	2	2	2	2		8	\$ 1,974
0.2 - Monthly Management		14				14	\$ 2,774
Task 1 - Data Review and Acquisition							
1.1 - Data Review Workshop	2	2				4	\$ 1,015
1.2 - Data Review		35	35	8	8	86	\$ 19,199
1.3 - Memo		4	8			12	\$ 2,960
1.4 - QA/QC	2	8	8			18	\$ 4,371
Task 2 - Visualization Dashboards							
2.1 - PowerBI Connections		8	20	20	20	68	\$ 13,958
2.2 - Dashboard Creation	1	10	8		20	39	\$ 7,245
2.3 - Data Visualzation Workshop	2	2	10		2	16	\$ 4,003
2.3 - QA/QC	2	2	2			6	\$ 1,557
Task 3 - Implementation of Dashboards- Ipad Forms							
3.1 - Implementation		28	46	34		108	\$ 25,095
3.2 - Field Verification of Each Train	24	4	4		24	56	\$ 12,646
3.3 - QA/QC	1	2	2			5	\$ 1,248
Task 4 - Training							
4.1 - Develop Training Material		4			8	12	\$ 1,907
4.2 - Onsite Training		8			8	16	\$ 2,700
4.3 - QA/QC	1					1	\$ 309
Subtotal	37	133	145	64	90	469	\$ 102,962
Direct Expenses							\$ 3,038
Primary Services Total							\$ 106,000
Optional Services							
Task 5 - Operations Support							
5.1 - Report Form and Weekly Data Review		24	24			48	\$ 11,258
5.3 - Monthly Reporting / Interview		12	12			24	\$ 5,629
5.3 - QA/QC	6					6	\$ 1,856
Subtotal	80	302	326	128	180	1016	\$ 18,743
Direct Expenses							
Optional Services Total							\$ 18,743
Grand Total Primary services plus Optional Services							\$ 124,743

Schedule

This project is estimated to require approximately 4-6 months to complete the first four primary tasks from receipt of Notice to Proceed. Based on receipt of Notice to Proceed by October 1 and depending on availability of CDA staff and ability to provide the data required, the intent is to finish Tasks 1 – 2 by December 15. A six-month duration is assumed for the optional task 5 and would commence the first month following the completion of tasks 1 through 3.

Hazen appreciates the opportunity to submit our proposal to Chino Basin Desalter Authority. Please contact me at 714-814-4909, or by email at cmiller@hazenandsawyer.com if you have any questions or comments about our proposal.

Regards,



Cindy L. Miller, P.E.
Vice President/ Irvine Operations Manager

Copy: Kevin Alexander
Brad Reisinger
Mary Hambel



Technical Advisory Committee Meeting

Agenda Item

No. 8

Chino Basin Desalter Authority
Board Meeting Agenda Items

October 7, 2021 Board Meeting (Regular)		TAC	Finance
Hazen & Sawyer PSA for CI Desalter Membrane System Monitoring	O'Neill/CDA	9/14/2021	9/23/2021
Quarterly Financial Reports	Garcia/CDA	-	9/23/2021
Quarterly Operations Report/Presentation	O'Neill/CDA	-	-
Quarterly South Archibald Plume Report/Presentation	Miller/H&S	-	-

November 4, 2021 Board Meeting (Special)		TAC	Finance



Technical Advisory Committee Meeting

Agenda Item

No. 9

Chino Basin Desalter Authority

TAC Meeting Agenda Items

September 28, 2021
Meeting Minutes
Chino I Operations Report
Chino II / CRF Operations Report
South Archibald Plume Update
Chino I GAC Update

October 5, 2021
Meeting Minutes
Chino I Operations Report
Chino II / CRF Operations Report
Water Deliveries
South Archibald Plume Update
Chino I GAC Update