



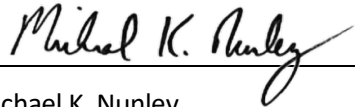
**Consulting Engineer Services
Task Order 2
Derrick Reservoir Preliminary Engineering**

This task order is made and entered into as of the ___ day of _____ 2021, and adds the enclosed scope of services to the Consulting Engineer Services Agreement made and entered into on March 22, 2021 (Original Agreement) by and between the City of Coalinga (City) and Michael K. Nunley & Associates Inc. (MKN) (hereinafter "Consultant").

IN WITNESS WHEREOF, the authorized representatives of the parties hereto have accepted and executed this task order effective as of the date first above written.

MKN & Associates, Inc.

City of Coalinga

By: 
Name: Michael K. Nunley
Title: CEO/President

By: _____
Name: Sean Brewer
Title: Assistant City Manager

TASK ORDER 1 SCOPE OF SERVICES

MKN will prepare a preliminary engineering report including recommendations, evaluation of two roof replacement alternatives, and associated cost estimates. Our services will be performed on a time and materials basis per our standard 2021 rate schedule, with a budget not to exceed \$44,064. We are open to discussing the scope and fee further should the City decide to revise the assumed scope.

MKN will adhere to the following tasks summarized below:

TASK GROUP 100 – PROJECT MANAGEMENT, MEETINGS, AND QA/QC

Task 101 – Project Kick-Off Meeting

MKN will attend a kick-off meeting with City staff to review project scope, schedule, responsibilities of project team members, project deliverables, and any construction and operational concerns. Kick-off meeting notes will be prepared and provided to the City to document meeting discussions and action items.

Task 102 – Visit and Progress Meetings

MKN assumes the following review meetings and/or site visits (total of 2 meetings) are needed to complete this project:

- One site visit (up to four hours) for MKN Staff and Structural Subconsultant
- One-hour Virtual Draft Preliminary Engineering Report Review Meeting

Task 103 - Project Management and Quality Control

MKN will perform quality control reviews of all deliverables prior to submitting to the City. A qualified technical reviewer who is not involved in the day-to-day effort will perform an independent review of the project.

TASK GROUP 200 – PRELIMINARY ENGINEERING REPORT

Two main options of roof replacement will be evaluated: one with rafters under the roof and one with no rafters. The potential for an aluminum dome roof will also be reviewed. All the options will be reviewed for constructability, life expectancy, maintainability, and length of reservoir downtime required for construction. Opinions of probable costs will then be developed for the different alternatives. Finally, after reviewing the alternatives and probable costs MKN will prepare a recommendation for the roof remediation. The findings and recommendation will be included in the PER.

Task 201 – Review of Previous Reports, Drawings, and Documentation

MKN will review previous reports, drawings, and available documentation to familiarize ourselves with the background of the reservoir as well as previous work performed.

Task 202 – Roof Replacement Analysis

MKN will evaluate two main options of roof replacement: one will be a conventional coated steel roof with rafters under the roof and one with no rafters or external rafters. The potential for an aluminum dome or low-rise, column-supported aluminum roof will also be reviewed. All the options will be reviewed for constructability, life expectancy, maintainability, and length of reservoir downtime required for construction. Opinions of probable costs will then be developed for at least two of the different alternatives. Finally, after reviewing the alternatives and probable costs, MKN will prepare a recommendation for the roof remediation. The findings and recommendation will be included in the PER.

Task 203 – Structural and Freeboard Analysis

MKN and our structural subconsultant will perform the calculations necessary to determine the required operating freeboard for the existing reservoir and the amount of additional wall height necessary to maintain the current usable capacity. The structural analysis will incorporate the field measurements into an evaluation of the tank's compliance with AWWA-D100 in relation to overturning, sloshing, anchorage, foundation requirements, and utilize previous UST measurements to ensure the wall shell adequately addresses hydrostatic conditions. Two different methods of maintaining or adding tank volume will be investigated: first, extending the top wall of the tank (or adding a roof knuckle in lieu of adding a wall shell course if freeboard calculations allow) and raising the roof and second, raising the existing wall by adding a section of new wall to the bottom of the wall shell and subsequently raising the overall roof height. The feasibility of each method will be reviewed for constructability and practicality. Opinions of probable cost will be developed for each of the feasible options. MKN will review the alternatives and cost then we will document a recommendation. MKN will also assess the existing inlet and outlet reservoir valve vaults. Findings will be summarized in a draft PER. The PER will be updated to address City comments in a final PER.

Task 204 – Connections and Penetrations

MKN will review each of the penetration locations to determine the necessary modifications required to meet the current AWWA requirements. These modifications are anticipated to include relocation, and/or installation of flexible fittings. Opinions of probable cost will be developed for these recommended modifications and will be presented in the PER.

Task 205 – Exterior Coatings Recommendations

Based on the 2019 CSI report, additional testing (adhesion, compatibility, and heavy metals) is recommended to determine the preferred approach to rehabilitating the exterior shell coatings. MKN will perform this testing and will

evaluate exterior coatings per AWWA D-102, ASTM, SSPS, and NACE current guidelines and standards, including identification of hazardous materials per CAM 17. Top coating is assumed to be the most cost-effective approach to rehabilitating the tank, as the existing coatings appear to be adequately adhered and are assumed to be lead bearing. The analysis will review the available alternative coating rehabilitation methods for each area. The analysis will review different materials, methods (remove and replace or overcoat). Opinions of probable costs will then be developed for the different alternatives. Finally, after reviewing the alternatives and probable costs, MKN will include a recommendation for the rehabilitation of each surface.

Task 206 – Replacement Estimate

After completing the above Group 200 tasks, MKN will prepare an opinion of probable cost for the construction of a new 7.6 MG welded steel (AWWA D100) or prestressed concrete (AWWA D110 Type I) reservoir to replace the existing.

Task 207 – Prepare Evaluation Summary Table and Alternatives Review with City

After completing the above Group 200 tasks, MKN will prepare an evaluation summary table of the various rehab alternatives. The evaluation summary table will include key considerations for each improvement and associated order of magnitude level costs. The evaluation summary table will be used to eliminate options that are not feasible and provide the City with preliminary cost info for budgeting purposes. MKN will meet with the City to review the evaluation summary table.

Task 208 – Preliminary Engineering Report

The results of the preceding reservoir analysis will be summarized in a draft PER identifying alternatives, costs and recommendations. MKN will attend a review meeting with City staff (scoped and budgeted in Task Group 100) to review the draft PER and receive comments. Following the review meeting, comments will be integrated into the final PER and delivered to the City.

Deliverables:

- Draft Preliminary Engineering Report (electronic copy in PDF format):
 - Including draft opinion of probable construction costs and relevant structural calculations
- Final Preliminary Engineering Report (electronic copy in PDF format)
 - Including Final opinion of probable construction costs and relevant structural calculations

SCHEDULE

MKN anticipates that all work as stated above to complete the Draft and Final Preliminary Engineering Report will take place over the course of three (3) months from the date that this proposal is accepted and that MKN is given Notice to Proceed. MKN will provide a detailed schedule upon acceptance of this proposal.

GENERAL ASSUMPTIONS:

- Deliverables will be in electronic format.
- MKN shall be entitled to rely reasonably upon the accuracy of data and information provided by or through the City of Coalinga and will use good professional judgment in reviewing and evaluating such information. If MKN identifies any error or inaccuracy in data or information provided by or through the District or determines that additional data or information is needed to perform the services, MKN shall promptly notify the District.
- Survey, geotechnical investigation, and permitting of any kind is not included.

FEE

MKN will perform the scope of services on a time and materials basis in accordance with the fee schedule presented below with an initial not to exceed fee of \$45,673.

FEE SCHEDULE FOR PROFESSIONAL SERVICES

ENGINEERS AND TECHNICAL SUPPORT STAFF

Project Director	\$225/HR
Operations Manager	\$212/HR
Principal Engineer	\$197/HR
Senior Project Engineer	\$186/HR
Project Engineer/ Senior Scientist	\$164/HR
Senior Water Resource Planner	\$164/HR
Water Resource Planner	\$150/HR
GIS Specialist	\$144/HR
Assistant Engineer II	\$141/HR
Assistant Engineer I	\$120/HR
GIS Technician	\$120/HR
Supervising Drafter	\$145/HR
Drafting/Design Technician II	\$135/HR
Drafting/Design Technician I	\$110/HR
Administrative Assistant	\$80/HR
Engineering Intern	\$65/HR

Routine office expenses such as computer usage, software licenses and fees, telephone charges, office equipment and supplies, incidental postage, copying, and faxes are included as a 3% fee on labor cost.

DIRECT PROJECT EXPENSES

Outside Reproduction	Cost + 10%
Subcontracted or Subconsultant Services	Cost + 10%
Travel & Subsistence (other than mileage)	Cost
Auto Mileage	Current IRS Rate - \$.58/mi.

The not to exceed fee is based on the estimated level of effort shown in the fee estimate below.

City of Coalinga Derrick Reservoir Rehabilitation Project - Preliminary Engineering												
	Operations Manager	Principal Engineer	Senior Engineer	Assistant Engineer II	Supervising Drafter	Total Hours (MKN)	Labor (MKN)	ODCs (MKN)	Structural Subconsultant (\$SG)	Coatings (CSI)	Non-Labor Costs	Total Fee
Hourly Rates	212	197	186	141	147							
Task Group 100: Project Management, Meetings, and QA/QC												
Task 101 Kick-off Meeting (Virtual)	1	1	2	1		5	\$922	\$ 28	\$ 330	\$ -	\$358	\$ 1,280
Task 102 Site Visit (1/2 Day) & Progress Meeting (1 hr)	1	2	6	1		10	\$1,863	\$ 56	\$ 1,540	\$ -	\$1,596	\$ 3,459
Task 103 Project Management & QA/QC	6	10				16	\$3,242	\$ 97	\$ -	\$ -	\$97	\$ 3,339
Subtotal	8	13	8	2	0	31	\$ 6,027	\$ 181	\$ 1,870	\$ -	\$ 2,051	\$ 8,078
Task Group 2: Preliminary Engineering Report												
Task 201 Review of Reports Drawings and Documentation		2	3	4		9	\$1,516	\$ 45	\$ -	\$ -	\$45	\$ 1,561
Task 202 Roof Replacement Analysis		1	2	6		9	\$1,415	\$ 292	\$ -	\$ -	\$292	\$ 1,707
Task 203 Structural and Freeboard Analysis	1	1	2			4	\$781	\$ 23	\$ 6,930	\$ -	\$6,953	\$ 7,734
Task 204 Connections and Penetrations		2	2	6		10	\$1,612	\$ 48	\$ -	\$ -	\$48	\$ 1,660
Task 205 Exterior Coatings Recommendations		6		4		10	\$1,746	\$ 52	\$ -	\$ 3,482	\$3,534	\$ 5,280
Task 206 Replacement Estimate		1	2	4		7	\$1,133	\$ 34	\$ -	\$ -	\$34	\$ 1,167
Task 207 Evaluation Summary Table and Alts Review	2	2	4			8	\$1,562	\$ 47	\$ -	\$ -	\$47	\$ 1,609
Task 208 Preliminary Engineering Report (Draft)	2	10	20	32	10	74	\$12,096	\$ 363	\$ -	\$ -	\$363	\$ 12,459
Task 208 Preliminary Engineering Report (Final)	1	4	7	12	2	26	\$4,288	\$ 129	\$ -	\$ -	\$129	\$ 4,417
Subtotal	6	29	42	68	12	157	\$ 26,149	\$ 1,034	\$ 6,930	\$ 3,482	\$ 11,446	\$ 37,595
TOTAL BUDGET	14	42	50	70	12	188	\$32,176	\$ 1,215	\$ 8,800	\$ 3,482	\$ 13,497	\$ 45,673