



February 7, 2019  
Revision No. 1 Dated: April 12, 2019  
Proposal No.: MWKELRTX.001C

Mr. Chad Bartee, PE  
City Engineer, City of Keller  
1100 Bear Creek Parkway  
Keller, Texas 76248

**Subject:        Proposal for Professional Engineering and  
Construction Management Services of the  
Rehabilitation of the Pearson Ground Storage Tank (GST) #1**

Dear Mr. Bartee:

As requested, Kleinfelder Inc. (Kleinfelder) is pleased to submit this proposal for professional engineering and construction services for rehabilitation of the Pearson Ground Storage Tank (GST) #1, owned and operated by the City of Keller, Texas. The following sections provide our understanding of the project and our proposed scope of services, related budget and schedule to assist the City of Keller.

## **PURPOSE AND SCOPE OF BASIC SERVICES**

This proposal is to provide condition assessment, design document preparation, bidding assistance and construction support services for the rehabilitation of the 3.0 MG Pearson GST #1. The following scope of services describes the detailed tasks that will be performed by Kleinfelder to successfully execute this project.

### Task 1 – Project Planning & Management Services

Kleinfelder's project manager will interface with City of Keller's project manager on a regular basis. Regularly meetings (up to six progress meetings) & a kick-off meeting will be conducted by the project manager to review schedule, budget, and project coordination issues.

Manage the project scope of work for a period of 13 months, including monitoring schedule and budget, making staff assignments to maintain the project schedule, and general management and coordination of project staff and the Client as described below:

- Monthly Invoice. Prepare and submit monthly invoices including budget status, and expenditures during the previous month.

Upon issuance of Notice to Proceed, Kleinfelder will develop a health and safety plan, review available information provided by the City of Keller (Client), and prepare a field assessment work plan with an inspection schedule.

### *Task 1.1 - Develop Health and Safety Plan*

Kleinfelder will prepare a Health and Safety Plan for the site, including a list of project personnel responsible for health and safety, hazard analysis for the anticipated activities, required personal protective equipment, contingency measures and forms. Field personnel will be briefed on the plan. Kleinfelder's field team will consist of engineers and the professional divers.

### *Task 1.2 - Review Available Information.*

Kleinfelder will review the information provided by the City. Our team may request the following tank information:

- Record drawings for the tank
- Shop drawings from the tank construction
- Any available rehabilitation record for previous coating and improvement
- Any available inspection records or photos including previously completed dive reports
- Current site photos of known deficiencies
- Any special access issues at the tank site
- Any known sedimentation issues
- Any maintenance record for the GST for the past ten (10) year

### Task 2 – Condition Assessment of Tank

Prior to conducting the condition assessment for the Pearson GST #1, divers and equipment will be disinfected prior to entering the tank. Kleinfelder will furnish all the necessary materials, equipment and labor required to accomplish the disinfection. Disinfection will be performed in accordance with the requirements of AWWA C652 "Disinfection of Water Storage Facilities" and the regulations of the State of Texas.

Kleinfelder will perform condition assessments to the water storage tank listed below, in accordance with the procedures stated in the following subtasks.

- Pearson GST #1 – 3.0 MG

### *Task 2.1 - Tank Condition Assessment Procedure*

Our team will:

- Perform an appropriate safety briefing for its staff prior to each site visit.
- Photograph the tank to capture the potential issues which have been observed.
- Perform visual assessment for the tank, in accordance with the elements in Table 1 for each asset group. For visual assessment of tank, Kleinfelder will use appropriate personal protective equipment (PPE) and fall protection and ensure that entry into tank is in accordance with the Health and Safety plan.
- Diving operations will be conducted in accordance with:
  - a. OSHA, 29 CFR, 1910 Subpart T – Commercial Diving Operations
  - b. ADCI, Consensus Standards for Commercial Diving Operations and Underwater Operations
- When diving is performed, a minimum 3-man dive team according to OSHA regulation will perform the inspection. Divers will provide photographic and video graphic documentation of the inspection with narration.

- Ensure that all divers and other equipment are disinfected prior to entering the tank.
- Perform the following tests and measurements: dry film thickness (coatings), coating adhesion, and heavy metals. The measurements will be compared with the original tank specifications or previous tank rehabilitation record if available.
- Make a visual observation of the GST. The foundation (as observed on the ground); the interior of the tank including the sidewall plate and floor plates if no sediment is present; interior columns; the roof structure will be reviewed; and other accessible structural components will be reviewed. For any inaccessible features, photographs will be utilized to review and catalogue the areas. Man lifts, or scaffolding will not be used. Field observations will be compared to record drawings and assessed.
- Complete a condition assessment form for the tank, recording descriptive information and condition assessment for tank assets.
- Review record information collected during Task 1 as a post-condition assessment activity.
- Perform a general evaluation of site security

Kleinfelder will perform the following observations in Table 1 for the water storage tank to include at a minimum – coating system, structural, safety, security, operational and sanitary conditions as well as general details.

**Table 1 – Evaluation of Tank System for the Tank**

Tank System	Method/Observation
<b>Coating Systems</b>	
Tank Exterior Coating System	<p>The condition of the tank exterior coating systems will be evaluated by the following methods:</p> <ul style="list-style-type: none"> <li>• Observation of the coating, where access permits</li> <li>• Coating adhesion test in accordance with ASTM D 3359, Standard Test Method for Measuring Adhesion by Tape Test, Method A</li> <li>• Steel Thickness measurements on tank wall</li> <li>• Heavy metal tests on coatings to be coordinated with Owner as applicable</li> </ul>
Tank Interior Coating System	<p>The condition of the tank interior coating systems will be evaluated by the Video captured by the professional divers and/or Remotely Operated Vehicle (ROV) inspection if it is unsafe to access/enter the tank</p> <ul style="list-style-type: none"> <li>• Observation of the coating, where access permits</li> <li>• Thickness measurements on tank, if needed</li> <li>• Heavy metal test on coatings to be coordinated with Owner or as required</li> <li>• Depth and location of corrosion pitting or general corrosion</li> </ul>

Tank System	Method/Observation
<b>Structural</b>	
Tank Exterior Structural and Appurtenances	Perform an exterior observation to assess the condition of the following: <ul style="list-style-type: none"> <li>• Tank foundation</li> <li>• Structural steel, roof plates, shell plates, floor plates where access permits</li> <li>• Access ladders, platforms, walkways, and railing</li> <li>• Roof accessories, vents, roof hatches and railing</li> <li>• Exterior valves and piping connected to the tank, inlet/outlet piping, tank drain, piping, overflow pipe, flap valve and overflow structure as applicable</li> </ul>
Tank Interior Structural and Appurtenances	The condition of the tank interior structural systems will be evaluated by the Video captured by the professional divers and/or Remotely Operated Vehicle (ROV) inspection if it is unsafe to access/enter the tank: <ul style="list-style-type: none"> <li>• Roof plates, roof framing, and upper portions of the shell above the high-water level</li> <li>• Visible portions of the tank and appurtenances at floor level</li> <li>• Overflow weir and pipe</li> <li>• Ladder, and platforms/walkway if applicable</li> <li>• Level sensor/transmitter and sample taps</li> </ul>
<b>Safety &amp; Security</b>	
Safety and Security Features	Perform an observation of safety and security features at the tank site to assess the condition of the following: <ul style="list-style-type: none"> <li>• Fall protections systems</li> <li>• Ladders and railings constructed to OSHA requirements</li> <li>• Safety devices</li> <li>• Locking ladder guards if applicable.</li> <li>• Fencing, gates, lighting and access points</li> </ul>
<b>Operational</b>	
Pipe and Valve Vaults	Perform an observation of pipe and valve vaults at each tank site to assess the condition of the following: <ul style="list-style-type: none"> <li>• Vault structure</li> <li>• Access hatch, manhole covers, ladders, safety railing and platforms</li> <li>• Pipe and valve coating</li> <li>• Pipe and valve support</li> </ul>
Electrical, Instrumentation and Control Systems	Perform an observation of electrical, instrumentation and control systems at each tank site to assess the condition of the following: <ul style="list-style-type: none"> <li>• Pressure, level and valve controls</li> <li>• Power panels, switches and grounding</li> <li>• Supervisory Control and Data Acquisition (SCADA) and Remote Terminal Units</li> <li>• Interior, exterior lighting and obstruction lights</li> </ul>
Tank System	Method/Observation
<b>Sanitary</b>	
Pathways for Contamination Evaluation	Perform an observation of the tank system to assess potential pathways for contamination as safe access is available: <ul style="list-style-type: none"> <li>• Roof and walls</li> <li>• Roof hatches</li> <li>• Roof drainage</li> <li>• Venting</li> <li>• Screening</li> <li>• Overflows</li> </ul>

The City's responsibilities include:

- Provide access to Pearson GST #1 for Kleinfelder staff. Kleinfelder's tank inspection team will require support from one City maintenance staff person, from the time of arrival to completion of the assessment.
- Fill the tank to highest operational level as per the agreed schedule and be ready to isolate the tank from the distribution system during the assessment of the tank if needed.
- Opening electrical panels, guards, or hatches for Kleinfelder to visually evaluate electrical components.
- Operating tank electrical system (i.e. turning the power off/on to the pumps). This will include drawing down the level of water, if needed.
- Disinfection Residual Date in the system, if needed.
- Providing the record drawings as well as any existing information on the tank.

### Task 3 – Preliminary Engineering Assessment Report (PEAR)

Kleinfelder will analyze condition assessment findings and develop a list of repairs and operation and maintenance actions. Kleinfelder will develop preliminary planning-level opinions of probable cost for construction of recommended tank repair/refurbishment projects. Planning-level opinions of probable cost will be based upon recently awarded Contracts in the area.

#### *Task 3.1 - Preparation of Tank Evaluation Report*

Kleinfelder will provide a draft evaluation report for the Pearson GST #1, approximately four (4) calendar weeks after the completion of field assessment activities. The report will include the following information:

- Project background
- Existing site and facility information
- Summary of observations of coating, structural, safety & security, and operational assets
- Summary of deficiencies and further recommended actions
- Opinion of probable construction cost (OPCC)

A final report will be issued two (2) weeks after city review comments are received.

#### *Task 3.2 - Electronic Deliverables*

One complete electronic copy (pdf format) of the evaluation report will be provided. Kleinfelder will respond to any comments received from the City staff on the draft report and produce the final version of the report.

The City's responsibilities include review and comment on draft evaluation report.

Upon receiving the comments, Kleinfelder will meet with the City staff to discuss assessment work findings and discuss comments on draft report for the design phase improvements. Following the meeting, Kleinfelder will finalize the report.

### Task 4 – Design Phase Services

After approval of the Preliminary Evaluation and Assessment Report (PEAR) by the City of Keller, Kleinfelder will produce a set of design plans, specifications, and opinion of probable cost estimate for the rehabilitation of the Pearson GST #1.

#### *Task 4.1 - Preparation of Plans for Pearson GST #1*

Drafts of the design plans, specifications and contract documents shall be submitted to the City of Keller at 60% and 90% completion levels. A minimum of one (1) week will be allotted for internal review of the documents by the City of Keller before proceedings to the next level.

#### *Task 4.2 – Design Review Submittals*

Submittal	Drawings	Specifications	Opinion of Cost
60%	Plans, Sections, and Most Details	Draft	Preliminary
90%	Plans, Sections, and Details	Draft	90%
Bid Documents	Bid Ready	Bid Ready	Final

It has been assumed that City of Keller will reproduce and distribute drawings and specifications for bidders.

#### *Task 4.3 – Opinion of Probable Construction Cost*

Prepare updated opinion of probable construction costs at 60% and 90% submittal stage.

#### *Task 4.4 - Electronic Deliverables*

One complete electronic copy (pdf format) of the deliverables will be provided. Kleinfelder will respond to any comments received from the City staff on the draft deliverables and produce the final version of the deliverables.

The City's responsibilities include:

- Review and provide comment on the 60% and 90% Submittals.

#### Task 5 – Bid Phase Services

Kleinfelder will provide Bid Phase services to include the following:

##### *Task 5.1 – Bid Phase Services*

Kleinfelder will attend the pre-bid meeting for the project and prepare up to two (2) addendums. In addition, Kleinfelder will assist the City of Keller in tabulating and comparing the bids, and evaluating bidder qualifications based on reference verification, reproduce and distribute contract documents to the successful bidder, maintain a list of bidders if needed. It is assumed that City of Keller will advertise for bids, Kleinfelder will submit the electronic bid documents to the City and assist the City with up to one (1) pre-bid meeting to answer the questions from the prospective Bidders.

##### *Task 5.2 – Preparation of Conformed Documents*

Kleinfelder will compile the information from the addendums and prepare the conformed set for construction documents; one electronic copy will be provided.

## Task 6 – Construction Administration Services

### *Task 6.1 – Construction Coordination Meetings*

Kleinfelder will attend the pre-construction meeting. Kleinfelder will attend construction meetings with the contractor, subcontractors, and City staff on a monthly basis to discuss the progress of the project. Attendance at up to six (6) meetings is included as a part of this scope.

### *Task 6.2 – File Preparation*

Kleinfelder will maintain a file of shop drawings with review comments, RFIs, change orders, and other documents processed by Kleinfelder.

### *Task 6.3 – Shop Drawing Review*

Review technical documents submitted by contractor. Submittals will be reviewed by the Kleinfelder for general conformance to the contract documents. Subsequent to Kleinfelder's review, we will return the submittal to the contractor. Kleinfelder will maintain a log of shop drawings that have been submitted, and the disposition. Our fee is based upon an estimated twenty (20) shop drawings submittals.

### *Task 6.4 – Requests for Information*

Review, coordinate with City staff and respond to contractor's request for information (RFIs). When appropriate, suggestions and alternatives will be provided to the contractor and/or City staff. A log of RFIs will be maintained. Up to ten (10) RFIs are included as a part of this contract.

### *Task 6.5 – Contract Change Orders*

Analyze and make recommendations to City staff regarding contract change orders during the course of the construction projects. Change orders will be evaluated from an engineering perspective. Up to two (2) change order requests are included as a part of this contract.

## Task 7 – Record Drawings

Prepare record drawings based on information/red lines supplied by the contractor. One electronic copy of record drawings after construction completion will be prepared.

## Task 8 – Construction Observation Phase

During the rehabilitation construction phase, Kleinfelder will provide a qualified project representative to perform periodic field visits and construction observation services. Each trip consists of 5 hours per trip, including travel and reporting, 2 to 3 trips a week for six consecutive months. During the field visits, the project representative will observe the prime contractor's progress and evaluate the overall activities and progress of the project. In a proactive manner, we intend to identify potential issues that may impede project progress or potentially add cost to the successful completion of the project. If there are any issues identified, they will be discussed with the City to manage both the schedule and cost through project completion. Kleinfelder will provide field reports within seven (7) business days. The actual cost for field inspection may vary from our estimate due to factors beyond our control. We will coordinate closely with the City during the construction and keep you apprised of the actual effort expended versus our projections. In an event if the time for one trip gets extended beyond 5 hours then that will be considered as two trips.



Because the duties of the field representative vary from day to day, and sometimes from hour to hour, the primary field representative will be a Certified Welding Inspector or NACE certified with extensive coatings observation and testing experience.

## **ADDITIONAL SERVICES/ASSUMPTIONS**

The following services are not included in the *Scope of Basic Services* and will be considered as *Additional Services*, if and when they are required or requested:

- Package to TCEQ for any exception
- Any Computational Fluid Dynamics (CFD) modeling for the tank mixing system
- Right of entry to City property will be granted
- The services of specialty sub-consultants or other special outside services other than those described in the above Scope.
- Assessment of third-party communication systems installed on the tanks.
- Costs, including equipment replacement, associated with decontamination of personnel/equipment as a result of encountering hazardous/toxic materials at site.
- Meetings, other than those described in the above Scope.
- Additional report copies or submittals; or report revisions after final submission.
- Additional or increased insurance coverage (if available) other than described in the Services Agreement.
- Coordination with regulatory agencies other than described in the above Scope.
- Any other services not specifically included in the above Scope.
- No Subsurface Utility Engineering (SUE) work is included
- No record research included
- No boundary work or property delineation included
- No topographical survey is included

If Kleinfelder is obligated to prepare for or appear in litigation or arbitration proceedings on behalf of the Owner, Kleinfelder shall receive additional compensation to be mutually agreed upon.

## **COMPENSATION**

Kleinfelder proposes to perform Tasks 1 to 7 for a total lump sum fee in the amount of **\$130,570**. The lump sum fees include applicable labor, overhead, and expenses. Task 8 will be performed on time and materials basis for a total estimated fee of **\$32,100**. The fee breakdown by Task is listed below.

Task 1 – Project Management and Planning	\$12,900
Task 2 – Tank Assessment	\$10,100
Task 3 – Preliminary Engineering Assessment Report	\$18,125
Task 4 – Design Phase Services	\$50,400
Task 5 – Bid Phase Services	\$ 9,295
Task 6 – Construction Administration Services	\$27,725
Task 7 – Record Documents	\$ 2,025
<b>Total Lump Sum Fee</b>	<b>\$ 130,570</b>
Task 8 – Construction Observation Services (6 months)	\$32,100
<b>Total Estimated Project Fee</b>	<b>\$ 162,670</b>



The fee will not be exceeded without prior approval. The construction observation service is based on the resident project representative providing periodic observation for 5 hours a day, 3 days a week for the construction period of 6 consecutive months.

Invoices will be issued on a monthly basis. The net cash amount of this invoice is payable on presentation of the invoice. The City and Kleinfelder may subsequently agree in writing to provide for additional services to be rendered under this agreement for additional, negotiated compensation.

## ANTICIPATED SCHEDULE

Notice to proceed for Design:	By May 13, 2019
Condition Assessment and PEAR to the City for Review:	By June 10, 2019
City's review comments on PEAR:	By June 20, 2019
PEAR Review Meeting	June 21, 2019
60% Design Submittal to the City for Review:	By July 22, 2019
City's review comments on 60% Submittal:	By August 1, 2019
60% Design Review Meeting	August 2, 2019
90% Design Submittal to the City for Review:	By August 19, 2019
Submittal for TCEQ Review	By August 21, 2019
City's review comments on 90% Submittal:	By August 27, 2019
Finalize the Design and ready for Bid:	By September 10, 2019
Advertisement Phase:	September 12, 2019 to October 10, 2019
Bid opening	October 10, 2019
Construction Contract Preparation:	October 10, 2019 to October 14, 2019
Council Approval	October 15, 2019
NTP to the contractor:	November 1, 2019
Construction Phase:	November 1, 2019 to April 30, 2020

## LIMITATIONS

Our work will be performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and recommendations will be based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

This proposal is valid for a period of 45 days from the date of this proposal, unless a longer period is specifically required by The Owner in which case that time frame will apply. This proposal was prepared specifically for The Owner and its designated representatives and may not be provided to others without Kleinfelder's express permission.

\* \* \*

We appreciate the opportunity to provide you with this proposal and look forward to working with you on this project. If you have any questions or wish to discuss, please contact us at 972.868.5900.

Sincerely,

**KLEINFELDER, INC.**

Texas Registered Engineering Firm F-16438



CP Nawal, PE  
Project Manager



Nirav Patel, PE  
Project Engineer