September 25, 2025

Heber Valley Special Service District
Attn: Mr. Jim Goodley, P.E. General Manager
PO Box 427
1000 East Main
Heber, UT 84049

Subject: **Proposal to Prepare Ground Water Discharge Permit Application**
Heber Valley Special Service District, Wasatch County, Utah
for Heber Valley Special Service District

Dear Jim:

Thank you for the opportunity to help the Heber Valley Special Service District (HVSSD) prepare a Utah Ground Water Discharge Permit application for the HVSSD wastewater treatment and disposal facility (facility) in Wasatch County, Utah. We prepared our proposal in response to your request in our meetings with representatives of the HVSSD and the State of Utah Division of Water Quality (UDWQ) on September 11 and 19, 2025.

BACKGROUND

We understand that the HVSSD has operated the facility in accordance with expired General Permit No. UTOP9002 (the existing permit). The facility includes an aerator mechanical treatment plant with a Rapid Infiltration Basin (RIB) for wastewater disposal. The RIB is permitted-by-rule under Utah Administrative Code (UAC) R317-6.6.2.A.1, to discharge treated wastewater into the ground and groundwater. The existing permit regulates the Lagoon, Land Disposal Area, and the RIB facilities. HVSSD indicated that they expect future discharges to increase. HVSSD has no ability to discharge to the Provo River due to Total Maximum Daily Load (TMDL) restrictions. The UDWQ letter of August 22, 2025 to HVSSD indicated they believe that a Ground Water Discharge Permit is necessary for the facility to establish anticipated effluent limits and discharges. The UDWQ regulates groundwater discharges under UAC R317-6.

The existing permit requires HVSSD to sample seven (7) existing monitor wells on a quarterly basis to assess groundwater to surface water interactions that could affect the water quality of the Provo River. Required monitoring parameters include total inorganic nitrogen (TIN), total phosphorus, total dissolved solids (TDS), field parameters (pH, specific conductance and temperature), and measurements of the depth to groundwater. Maps of groundwater elevations to date indicate that the flow direction is to the southwest.

Groundwater quality sampling suggests that TDS concentrations have increased in in some of the monitor wells to levels that are greater than the assumed background values. The existing permit indicates there are not concerns of impacts, but continued

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groundwater monitoring is required because of the proximity of the lagoon to the Provo River. UDWQ believes they need additional information to better characterize the hydrogeology of the facility including confirmation of the direction of groundwater flow (letter from John Mackey, August 22, 2025).

We understand that the HVSSD seeks to engage a hydrogeologic consulting firm to (1) characterize the hydrogeology of the facility, (2) evaluate data collected to date, (3) evaluate existing conditions, (4) provide recommendations to address data gaps, and (5) assist with the preparation of selected portions of a Ground Water Discharge Permit (the new permit) application related to hydrogeology and groundwater monitoring (Application Part C - Accompanying Reports and Plans, Sections 8 and 10).

SCOPE OF SERVICES

The existing monitor well network will be investigated in Phase I to evaluate the condition, construction, geology, and water quality distribution across the facility. Although the existing monitor wells lack protective wellhead completions and do not appear to be constructed to UAC R655-4-15 Monitor Well Construction Standards, additional data collected from these seven monitor wells will provide insight into background and mixing of groundwater types as well as likely future monitoring points for the permit. Phase I findings will inform us as to where additional monitor wells should be placed to provide a clearer understanding of the groundwater flow on and off the facility.

Additional monitoring points (surface and groundwater) will be established as part of Phase II to fill data gaps in groundwater flow directions and provide background and downgradient compliance monitoring locations.

We propose the following phased approach to help HVSSD address the concerns raised by the UDWQ and provide information for a Groundwater Discharge Permit Application:

- Phase I – Evaluate Existing Groundwater Monitoring System
- Phase II – Install New Monitor Wells and Update Background Conditions

PHASE I – EVALUATE EXISTING GROUNDWATER MONITORING SYSTEM

The purpose of Phase I is to evaluate the existing groundwater monitoring system and provide recommendations for Phase II. Phase I includes:

- **Task 1.1 - Gather Background Information** – We will review and evaluate background reports, including published reports and unpublished consultant reports and relevant United States Geological Survey (USGS), Utah Geologic Survey (UGS), and Division of Water Rights (DWRi) information. We will evaluate HVSSD well monitoring data to date and from other data available off-site sources in the vicinity of the facility to assess groundwater levels, flow directions, water quality, and hydrogeologic conditions. We will evaluate existing available Provo River flow data in the vicinity of the site.

- **Task 1.2 - Evaluate Existing Monitor Well System** – We will investigate the common ion distribution across the site by collecting one round of samples from the seven existing monitor wells, Provo River, and RIB waste stream. Groundwater samples will be collected from each monitor well by (1) measuring the depth to groundwater and the depth to the bottom of each monitor well, (2) bailing three casing volumes from each well, and (3) collecting samples after allowing each well to rest before, or in the case that a well is bailed dry, allowing the water level to recover (rise) to the original level before collecting the sample. Samples will be analyzed for the major common ions (sodium, potassium, calcium, magnesium, nitrate, bicarbonate, sulfate, chloride), orthophosphate, and TDS. We will deliver samples to Chemtech-Ford Laboratories (Chemtech) of Sandy, Utah under Chain of Custody (COC) within holding times. Chemtech will analyze the samples using Level II Quality Control (reporting blanks, matrix spikes, matrix spike duplicates). We will assess the results to determine mixing, groundwater flow direction, and gradient and compare it with previous results using 2025 elevation and coordinate survey data for the monitor wells.

- **Task 1.3 - Provide Draft Phase I Report –** We will summarize the findings of Phase I in a draft report that will (1) identify data gaps in the facility monitoring network, (2) help to make informed decisions regarding additional on-site investigations, (3) recommend locations and designs of new monitor wells, and (4)develop a work scope to complete additional groundwater and surface water investigations including siting of new monitor wells and determining locations of surface water monitor points. Our costs assume that the UDWQ will limit the Groundwater Quality Standard monitoring for background to the current permit parameters. We will develop a revised Phase II scope and estimated costs based on the findings and recommendations of the draft Phase I report.

PHASE 2 – INSTALL NEW MONITOR WELLS AND UPDATE BACKGROUND CONDITIONS

The purpose of Phase II is to implement recommendations from the Phase I Report, including the construction of new monitor wells and update of background conditions. Phase II will include input from the UDWQ, but based on our experience with UAC R317-6 requirements for background would include:

- **Task 2.1 - Select Final Locations of New Monitor Wells** – We will help HVSSD (1) select the final locations of up to five new monitor wells and (2) obtain the necessary approvals and start cards from the DWRi, also known as (aka) the State Engineer.

- **Task 2.2 - Prepare Monitoring Plan and Meet with UDWQ –** We will assess background and local groundwater and surface water conditions near the facility, assess the hydrologic characteristics of the aquifer and surface water flows and quality, develop a preliminary conceptual facility model, and present our plan to the UDWQ for the drilling, installation, testing, and sampling of up to five wells to monitor background and downgradient groundwater locations. Surface water flow monitoring on the Provo River, Spring Creek, Island Ditch, and site Lagoon elevation monitoring will help define the groundwater to surface water relationship and interaction.

- **Task 2.3 - Prepare Technical Specifications for Monitor Wells** - We will prepare a preliminary design and technical specification for the monitor wells that will meet the requirements of UAC R655-4-15, Monitor Well Drilling and Construction Requirements. Our technical specifications will include total depth, boring diameters, lithologic sample collection intervals, casing diameters and intervals, screen slot size and intervals, filter pack size and interval, grout seal requirements and interval, well construction methods, well development methods, pump test, or slug testing methods, produced water management requirements, and other relevant sections. Our technical specifications will include a measurement and payment section that will be incorporated into a bid package.

- **Task 2.4 - Prepare Compliance Monitoring Plan –** We will prepare a compliance monitoring plan which conforms to U.S. Environmental Protection Agency (EPA) Guidance for Quality Assurance Project Plans, EPA QA/G-5 (EPA/600/R-98/018, February 1998). Monitor well construction and groundwater sampling will conform where applicable to the Handbook of Suggested Practices for Design and Installation of Ground-Water Monitoring Wells (EPA/600/4-89/034, March 1991), Practical Guide for Groundwater Sampling EPA/600/2-85/104, (November 1985) and RCRA Groundwater Monitoring Technical Enforcement Guidance Document (1986).

- **Task 2.5 - Prepare Bid Package and Assist with Bidding -** We assume that the monitor well driller will be selected by and contracted to HVSSD. We will (1) identify qualified well driller(s), (2) obtain bids to drill, construct, develop, and test the new monitor wells, and (3) assemble a contract or agreement between HVSSD and the monitor well drilling contractor. We will incorporate HVSSD general terms and conditions into the form of agreement for the monitor well drilling contractor.

- **Task 2.6 - Provide Wellsite Services for Monitor Well Installation -** We will: (1) review submittals and monitor materials and methods used for conformance with the technical specifications, (2) describe the drill cuttings samples, (3) prepare a lithologic log based on our descriptions of the drill cutting samples and information provided by the well driller, (4) provide the driller with a final design of each monitor well, including total depth and screened intervals, (5) help plan and monitor any short-term specific capacity tests if required to estimate hydraulic conductivity, and (6) collect water quality samples for analysis of selected parameters. As part of our construction management services, we will review and provide recommendations for payment of drilling contractor's invoices and provide advice on drilling contractor-related issues. We assume that the wells can be drilled and developed within a 10-day period and depths will not exceed 25 feet below the static water level.

- **Task 2.7 - Conduct Slug Tests in Monitor Wells -** We will conduct slug tests of the monitor wells, using injection and or withdrawal methods and analyze the results using appropriate analytical methods and solutions and use the results to estimate hydrologic parameters for the shallow aquifer beneath the site.

- **Task 2.8 - Collect Eight Rounds of Water Quality Samples -** We will measure the depths to water and collect eight rounds of water quality samples on an approximate monthly basis from each of the newly installed monitor wells and deliver the samples to the laboratory for analysis of (1) orthophosphate as P, (2) ammonia, (3) TIN, and (4) common ions and TDS following accepted EPA methods for sampling and analysis. We will purge and monitor the pH, specific conductance, temperature, and turbidity of purge water until parameter stabilization is achieved and collect a sample from each well.

- **Task 2.9 - Prepare Background Groundwater Monitoring Report -** We will prepare a report to summarize the drilling, construction, and testing of the monitor wells. Our report will include copies of the geologic logs, aquifer test data, water quality data, and recommendations for equipping monitor wells for future sampling events. We will complete a statistical analysis of the results to estimate protection levels. We will prepare a draft groundwater report that can be used by the UDWQ to set groundwater compliance limits based on effluent concentrations. Our costs assume that the UDWQ will limit the Groundwater Quality Standard monitoring for background and compliance to the current permit parameters.

ASSUMPTIONS

We assume that HVSSD will provide:

- Payment to the laboratory for analytical work;
- Payment for permitting and monitor well drilling;
- Payment for survey services;
- New (2025) survey coordinates and elevations for wells and any surface water gauge locations (including lagoons);
- Geologic and construction logs for the existing monitor wells;
- Copies of monitor well sampling logs with field measurements;
- Copies of any hydrogeologic, geologic, geotechnical, or other relevant studies that may be available for the site and the Heber-Midway area;
- Digitized hardcopy reports and all existing data in the project database including updated water level and water quality data from the wells in digital spreadsheet format;
- Access to the sites and locked wells;
- Access to preferred areas to locate and drill new monitor wells; and

- Any other relevant information that will help us locate, permit, design, construct, test, and collect water quality samples from the monitor wells to assist with and complete our proposed scope of services.

TERMS AND CONDITIONS AND ESTIMATED FEE

We will perform our services on a time and expense (T&E) basis in accordance with the attached terms. Our estimated fee is as follows:

Phase I - Evaluate Existing Groundwater Monitoring System	**Estimated Fee**
Task 1.1 - Gather Background Information	$15,900
Task 1.2 - Evaluate Existing Monitor Well System	$11,500[a]
Task 1.3 - Prepare Draft Phase I Report	$18,900
Total Estimated Fee Phase I	**$46,300**

[a] *Laboratory Analytical Costs not included*

Phase II - Install New Monitor Wells and Update Background Conditions	**Estimated Fee**
Task 2.1 - Select Final Locations of Monitor Wells	$3,900
Task 2.2 - Prepare Monitoring Plan and Meet with UDWQ	$5,900
Task 2.3 - Prepare Technical Specifications for Monitor Wells	$7,500
Task 2.4 - Prepare Compliance Monitoring Plan	$7,900
Task 2.5 - Prepare Bid Package and Assist with Bidding	$5,900
Task 2.6 - Provide Wellsite Services for Monitor Well Installation	$23,900 [a]
Task 2.7 - Conduct Slug Tests in Monitor Wells	$8,000
Task 2.8 - Collect Eight Rounds of Water Quality Samples	$32,900[b]
Task 2.9 - Prepare Background Groundwater Monitoring Report -	$20,900
Total Estimated Fee Phase II	**$116,800**

[a] *Drilling Contractor costs not included*
[a] *Laboratory Analytical Costs not included*

This proposal is for Phase I of the project because a finalized Phase II scope and estimated cost will be based on the findings and recommendations of the draft Phase I report. Our fee for Phase I will not exceed **$46,300** without written authorization from Heber Valley Special Service District.

You may indicate your acceptance of our proposed scope of services, fees, terms and conditions and authorize us to proceed with the scope of services described herein with the signature of an authorized representative of Heber Valley Special Service District in the space provided on the signature page of this proposal.

Please return an executed copy of this proposal to authorize Loughlin Water to proceed.

SCHEDULE

Loughlin Water is prepared to initiate the proposed scope of services following our receipt of written authorization to proceed.

If you have any questions or need more information, please do not hesitate to call me at (435) 649-4005 (office).

Loughlin Water Associates, LLC

John S. Brown, P.G., L.P.I.
Senior Hydrogeologist

William D. Loughlin, P.G.
Manager, Principal Hydrogeologist

Heber Valley Special Service District agrees to the scope of services, fees, and terms and conditions described herein.

By: _____ Digitally signed by James Goodley Date: 2025.10.22 16:00:40-06'00'

Title: _____

Date: General Manager , 10/22/2025

Fees for Time and Expense, T&E, based work shall be billed according to the attached fee schedule.

TERMS AND CONDITIONS

Services. This Agreement is entered into between Client and Loughlin Water Associates, LLC ("Consultant") wherein Client engages Consultant to provide professional services ("Services").

Invoicing and Payment. Invoices will be submitted no less than monthly and will include the charges incurred during the preceding accounting period. Payment is due within thirty (30) days of the invoice date. Payments made after 30 days incur a late payment fee of 1.5 percent per month.

Fixed Fee Cost and Schedule. Consultant will work on a best-efforts basis to accomplish client's objectives within the cost and schedule estimates provided in the proposal. These estimates are based on Consultant's best judgment of requirements known at the time the proposal is prepared, requirements which can be influenced by changes in the work scope, client schedule demands, and other unforeseen circumstances. If the schedule or scope of services is expected to change, Consultant will notify the client with a change order request for the client's consideration.

Time-and-Expense Cost Estimate and Schedule. Consultant will work on a best-efforts basis to accomplish client's objectives within the cost and schedule estimates provided in the proposal. These estimates are based on Consultant's best judgment of requirements known at the time the proposal is prepared, requirements which can be influenced by changes in the work scope, client schedule demands, and other unforeseen circumstances. If schedule or costs are expected to exceed the proposed estimates, Consultant will notify the client before incurring additional costs on the client's behalf. In the situation where Consultant notifies the client in advance that the schedule or the costs are expected to exceed the proposed estimates, the client will have three options: 1) authorize additional funds so that Consultant can complete the work as currently defined; 2) redefine the scope of work to stay within the remaining funds; or 3) stop work at a specific expenditure level, with no further obligation or liability to either party except for payment for work performed.

Standard of Care. Consultant will strive to perform the Services in a manner consistent with that level of care and skill ordinarily exercised by members of the consultant's profession practicing in the same locality under similar circumstances at the time the services are performed. This Agreement creates no other representation, warranty or guarantee, express or implied.

Limitation of Liability. Consultant's potential liability to Client and others is grossly disproportionate to Consultant's fee due to the size, scope, and value of the Project. Therefore, unless Client and Consultant otherwise agree in writing in consideration for an increase in Consultant's fee, Client, including its directors, officers, partners, employees, agents, contractors and their respective assigns, agree to limit Consultant's liability (whether arising from contract, statutory violation or tort) to the greater of $10,000 or the amount of Consultant's fee. This limitation of liability shall apply to all phases of Services performed in connection with this Project, whether subsequent to or prior to the execution of this Agreement. In no event shall Consultant be liable for consequential, incidental or special damages.

Indemnification. Consultant and Client each agree to defend, indemnify and hold harmless the other from any claim, damage or liability for injury, loss, cost or expense, including, but not limited to reasonable attorney's fees in defending such matters and in enforcing the terms of this paragraph to the extent such claims or damages result directly or indirectly from the negligent actions or willful misconduct of each party. Neither party shall indemnify the other against liability of damages to the extent caused by the negligence or willful misconduct of the other.

Ownership of Documents. Services provided under this Agreement, including all reports, information, recommendations, or opinions ("Reports") prepared or issued by Consultant, are for the exclusive use and benefit of Client or its agents in connection with the project, are not intended to inform, guide or otherwise influence any other entities or persons with respect to any particular business transactions, and should not be relied upon by any entities or persons other than Client or its agents for any purpose other than the project. Client will not distribute or convey such Reports to any other persons or entities without Consultant's prior written consent which shall include a release of Consultant from liability and indemnification by the third party. Consultant's Reports, boring logs, maps, field data, drawings, test results and other work products are part of Consultant's professional services, do not constitute goods or products and are copyrighted works of Consultant. However, such copyright is not intended to limit the Client's use of its work product in connection with the project.

Site Access. Client shall secure the permission necessary to allow Consultant's personnel and equipment access to the project site at no cost to Consultant. Consultant will take reasonable precautions to minimize damage to the Site from its efforts. Consultant will retain responsibility for damage to owner's property to the extent damage occurs due to Consultant's negligence. Consultant and Client acknowledge that, in the performance of Services some damage may occur and is the responsibility of Client, or at Client's direction the damage may be corrected by Consultant and billed to Client at cost. However, damage which exceeds that normally to be expected, based on current industry standards, shall remain the responsibility of Consultant. Client shall be responsible for correctly designating the location of all property lines of the project site and all subsurface installations, such as pipes, tanks, cables, electrical lines, telephone lines and utilities within the project site, unless otherwise agreed in writing.

FEE SCHEDULE

LABOR BILLING RATES

Work performed on a time-and-expenses contract will be billed as follows, based on hourly rates:

Bill Loughlin, P.G., Principal Hydrogeologist: Manager: $240 per hour (field rate: $200 per hour)
John Brown, P.G., Senior Hydrogeologist: $205 per hour (field rate: $179 per hour)
George Condrat, P.G., Senior Geologist: $205 per hour (field rate: $179 per hour)
Matt Lindon, P.E., Hydrological Engineer: $205 per hour (field rate: $179 per hour)
Connor Smith, Staff Hydrogeologist: $150 per hour (field rate: $135 per hour)
Jolene Croasmun/Technical Assistant: $70/hour
Assistant Hydrogeologist/Technical Support Specialist: $95/hour
Hydrogeologic Intern: $65/hour

Field rate is applicable for field activities (site reconnaissance, drilling observations, pumping test observations, water sampling, geologic mapping, etc.) that are of a minimum of eight (8) hours per day for a single project.

The hourly rates shown above are fully loaded, including fringe benefits, overhead and fee. Hours billed to projects will include reasonable time for local travel. No more than eight (8) hours of travel will be charged per day. Overtime hours will be billed at the above rates. Time spent as expert witness under a judicial process will be charged at two (2) times the above rate.

OTHER DIRECT COSTS

Other direct costs on contracts incurred on behalf of the client as its agent or consultant will be billed at cost plus fifteen (15) percent.

INVOICING AND PAYMENT

Invoices will be submitted no less than monthly and will include the charges incurred during the preceding accounting period. Payment is due within thirty (30) days of the invoice date. Payments made after 30 days incur a late payment fee of 1.5 percent per month.

TIME-AND-EXPENSE COST ESTIMATE AND SCHEDULE

Loughlin Water Associates, LLC will work on a best-efforts basis to accomplish the client's objectives within the cost and schedule estimates provided in the proposal. These estimates are based on Loughlin Water Associates, LLC's best judgment of requirements known at the time the proposal is prepared, requirements which can be influenced by changes in the work scope, client schedule demands, and other unforeseen circumstances. If the schedule or costs are expected to exceed the proposed estimates, Loughlin Water Associates, LLC will notify the client before incurring additional costs on the client's behalf.

In the situation where Loughlin Water Associates, LLC notifies the client in advance that the schedule or the costs are expected to exceed the proposed estimates, the client will have three options: 1) authorize additional funds so that Loughlin Water Associates, LLC can complete the work as currently defined; 2) redefine the scope of work to stay within the remaining funds; or 3) stop work at a specific expenditure level, with no further obligation or liability to either party except for payment for work performed.