 <p>CITY OF ST. CHARLES ILLINOIS • 1834</p>	AGENDA ITEM EXECUTIVE SUMMARY		Agenda Item number: 5.E
	Title:	Recommendation to Approve a Resolution Authorizing a Service Agreement for Water Well Development	
	Presenter:	Tim Wilson	
Meeting: Government Services Committee		Date: February 26, 2024	
Proposed Cost: \$ 315,000		Budgeted Amount: \$315,000	Not Budgeted: <input type="checkbox"/>
TIF District: None			
<p>Executive Summary (if not budgeted, please explain):</p> <p>As a result of long-term City growth, drinking water well capacity was identified in the City Water Master Plan. Over the last several years the Public Works team has been working on these capacity projects. The first project was Well #7 & #13 combination which is expected to be completed in Spring 2024. The second project is the drilling of the deep well near Well # 8 site. Council approved the design portion project in November 2023. This capacity project is expected to be completed in 2025-2027.</p> <p>With the completion of the two approved projects and based projected developments, the City will still have a water deficiency of 500,000 gallons per day. In order to make up the difference in capacity a third project of drilling of additional shallow aquifer wells was identified. Unlike deep wells in the region shallow wells takes additional locating and test drilling. The City recently published an RFP for the drilling and test pump services. On January 8th the City only received one proposal from the firm of Layne Christensen Company.</p> <p>The proposal includes unit cost and hourly rates to help the City identify a shallow drinking water well location. Some of the services include hydrogeologic analysis (drilling small to identify native rock formations). Once a suitable site is found, they will drill a larger well so the City can test the aquifer capacity and water quality, providing a professional opinion on the well capacity and well screen designs.</p> <p>This type of work requires special equipment and expertise. Layne is one of the only firms in the area that provides this service. Over the last fifty years, Layne has drilled all of the City wells and has provided test drilling services. The proposed contract is for two years, and depending on budget approval the City is expected to spend about \$300,000 - 400,000 annually. Staff recommends to approve and award the unit rate contract to Layne Christensen.</p>			
Attachments (please list):			
*Layne Submittal			
<p>Recommendation/Suggested Action (briefly explain):</p> <p>Recommendation to Approve a Resolution Authorizing a Two-Year Service Agreement for Water Well Development to Layne Christenson Company based on the hourly and unit cost provided.</p>			



CONTRACTOR RESPONSE TO REQUEST FOR PROPOSAL

City of St. Charles, IL



Water Well Development Project
City of St. Charles, IL



January 8, 2024

January 8, 2024

City of St. Charles
2 East Main Street
St. Charles, IL 60174

Attn: Procurement Department

**Subj: Water Well Development Project
City of St. Charles, IL**



To Whom It May Concern:

Thank you for considering Layne Christensen Company for the above-mentioned project. Layne is excited to provide the City with the background and evidence to prove why Layne Christensen Company is the partner of choice for this most important project.

This proposal is based upon your request for proposal dated December 6, 2023. Layne has extensive experience drilling test borings for these types of projects. Layne has a proven track record of safely and successfully completing projects of this nature. Our proposal will demonstrate that we have the proper personnel, equipment, tooling, and experience to complete this program in a manner to meet your expectations.

Through our prior experience we hope that we have been able to prove to you that we are the team that you can trust. Through every step of the way, our group of industry-leading professionals will provide transparency and partnership so that your team will always feel that they are receiving the best cost, quality, schedule, and safety for your construction dollar. Through our project experience you can rest assured that our staff will always utilize the best practices of the industry to ensure a quality project is being delivered with a best value approach every step of the way.

The Layne Christensen Company team appreciates the opportunity to present this proposal to the Village of Cherry Valley. We look forward to further discussing the experience and value we can bring to your project.

Sincerely,

A handwritten signature in black ink that reads "Brian M. Snelten". The signature is written in a cursive style and is contained within a light gray rectangular box.

Brian Snelten
Area Manager, P.G.
Brian.Snelten@gcinc.com



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SECTION 01 GENERAL COMPANY INFORMATION AND EXPERIENCE

ABOUT LAYNE

Established in 1882, Layne offers a rich history of delivering safe, professional, and reliable water solutions throughout North America.

Layne began as a domestic water-well drilling company in South Dakota. From those humble roots Layne has evolved into a national water and minerals solutions provider serving both public and private sectors. In June 2018, Layne became a wholly owned subsidiary of Granite Construction, Inc. Layne is headquartered in the Woodlands, Texas and has 24 offices from upstate New York to Southern California.

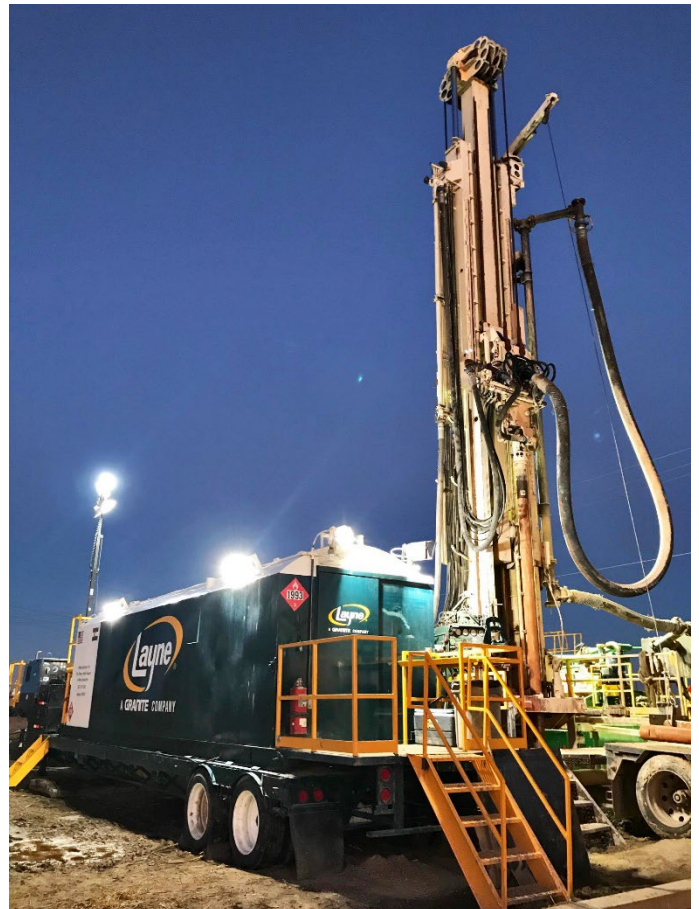
From water-well drilling to related infrastructure services, Layne is an expert at providing solutions to their clients for their water needs, with an enduring commitment to safety. Our specialties include water-well drilling, specialized drilling techniques, pump design and service, well rehabilitation, and water treatment. Layne offers comprehensive solutions for government agencies, commercial and municipal water suppliers, industrial, and agricultural clients. Layne teams identify and develop new water sources and deliver potable water to communities and facilities throughout North America.

Water users look to Layne when they are seeking a trusted partner that will consistently deliver projects safely, on time, on budget, and as promised. Layne’s full circle of water solutions provide clients a single point of accountability for even the most complex projects. With 142 years of experience, Layne has earned a reputation for minimizing risk while maximizing peace of mind through operational excellence and client satisfaction.

The water resources division is the national leader in water wells. Layne has drilled nearly 1,000 wells in the past 5 years alone, with a combined pumping capacity of 1 billion gallons per day. In Layne’s 130+ year history, we have successfully completed more than 50,000 water wells. As a trusted partner, our team provides capabilities to optimize our customers assets. Our team is largely

comprised of veteran employees providing exceptional service that renders success to each client by increasing production, improving efficiency, and reducing cost.

Layne is uniquely qualified to safely complete the work under this contact per expectations of the City of St. Charles, IL.



CORPORATE RESOURCES



Granite Construction Incorporated offers a national workforce of 7,200 and a combined revenue of \$3.4 billion annually. As an industry leader in the transportation, water resources and mineral exploration markets throughout North America, Granite provides infrastructure solutions for construction, program management, alternative procurement, and is a vertically integrated contractor with aggregate materials reserves throughout the U.S.

RECENT ACCOLADES:

- 2019, Named to World's Most Ethical Companies List for ten consecutive years
- 2018, Forbes Magazine, one of America's Best Mid-Size Employers
- 2018, Engineering News Record (ENR) Magazine Top 400 Contractors List - Ranked #24
- 2018, ENR Sourcebook, #1 Highways, #5 Mining, #6 Solar, #7 Bridges, #10 Dams/Reservoirs, #16 Airports, #17 Mass Transit/ Rail, #21 Power

SAFETY BY CHOICE

The protection of our employees, the public and the environment is at the core of everything we do. Safety is more than a business commitment—it's our moral obligation.

MARKETS

Granite specializes in complex infrastructure projects for transportation, industrial and specialty markets.

SERVICES

General Contracting, Construction Management, Design-Build, CMAR, CM/GC, Pavement Preservation, Disaster & Emergency Response, and Construction Materials Testing.

NATIONAL WORKFORCE

7,200 employees

HEADQUARTERS

Established in 1922, Corporate Headquarters located on 585 West Beach St., Watsonville, CA 95076. Phone (831)724-1011

STOCK MARKET/TRADING SYMBOL

New York Stock Exchange (NYSE: GVA) and is part of the S&P MidCap 400 Index, the MSCI KLD 400 Social Index and the Russell 2000 Index.

OFFICE LOCATIONS

Granite and its subsidiaries operate over 75 office locations throughout the United States, Canada, Mexico, and South

America.

EQUIPMENT FLEET

Granite's equipment fleet exceeds \$650 Million and includes more than 1,500 pieces of heavy equipment and 3,500 trucks, trailers, and vehicles.

CONSTRUCTION MATERIALS

Granite operates 50 aggregate facilities throughout the west, producing specialty aggregates, sand/gravel, and asphalt concrete.

ANNUAL REVENUE & BONDING CAPACITY

\$3.4 billion annual revenue

\$5 billion aggregate bonding capacity



LAYNE CORPORATE COMMITMENT TO THE CITY OF ST. CHARLES, IL

Layne’s senior management teams support the effort to secure and complete this project work. Senior management has provided its support in committing company-wide resources to successfully complete this project.



SECTION 02 STATEMENT OF WORK

TECHNICAL APPROACH

Phase I

Layne has partnered with INTERA Incorporated to assist with hydrogeologic analysis of the testing data collected by Layne during the field testing of the project. Layne and INTERA will meet with the City of St. Charles and their engineering firm to locate the testing location(s) prior to mobilization of field equipment. Upon agreement of all parties, Layne will move forward with conducting of the field operations.

Phase II

Layne will utilize dual wall reverse circulation (DWRC) drilling to drill a 5-inch borehole from surface to a depth of 200 feet below ground surface (bgs). During this phase of drilling, samples will be collected at 5-foot intervals and at formation changes. These samples will allow us to determine the grain size of the native formation and properly design a gravel pack and well screen to prevent fine-grained materials from entering the well and pumping system. The test hole will be airlifted with the drilling rods to guesstimate the approximate flow of water from the test hole. It should be noted that a max flow of 200 gallons per minute (GPM) is possible due to the size of the drill rod diameter. If Phase III is not selected while in the field, the borehole will be abandoned, and the drilling equipment demobilized from the Site.

Phase III

It is assumed based upon the project specifications that a monitoring well will be installed while the drilling rig is still onsite. The monitoring well will be installed utilizing "overshot" casing drilled to the extent of the bottom of the borehole and a 2-inch PVC screen and riser pipe be installed. The overshot casing will be pulled, and a bentonite seal placed from the top of the screen to the surface. The monitoring well will then be developed using the air from the rig to develop the screen as much as possible.

The samples will be submitted for grain analysis to determine the proper gradation of a filter pack and permanent screen design. Upon the completion of the grain analysis, INTERA will again work with Layne to determine the optimal design for a test well to be constructed at the site for a test well.

Phase IV

During Phase IV, Layne will remobilize to the project and install a 10-inch casing with a telescoped 8-inch screen. It is understood that the actual size/depths will be predetermined prior to mobilization. Layne will utilize DWRC drilling to advance a 16-inch borehole to the predetermined depth and install the 10"x8" casing/screen and utilize the drilling rig to airlift the well prior to demobilizing the drilling equipment prior to pump testing.

Next, Layne will install a test pump to develop and test the well. The test pump design will be determined by the team prior to installation to meet a predetermined flow rate and head requirement. While the specifications call for a 48-hour pump test, it has been recommended by INTERA to run a 72-hr test for an unconsolidated aquifer to fully stress the aquifer and pipe the test discharge far enough from the well as to not artificially recharge the aquifer during the testing.

Water level information will be collected from the monitoring well using an in-situ pressure transducer to collect information on a continual basis during the testing. Water level information inside the well will be either tested using an airline reading or another in-situ pressure transducer. Should the City choose to extend the pumping test length, Layne will bill for extra work based upon the submitted pricing.

Upon completion of the testing, a final report will be prepared to discuss the aquifer coefficient of transmissivity/storativity, well efficiency, apparent safe well yield and the radius of influence. This report will also include any final well design changes if needed including well and screen designs. This report will be discussed with the team upon review.

ASSUMPTIONS/EXECPTIONS

Layne has assumed the following in preparing this proposal:

- Layne will obtain J.U.I.L.E. one-call dig clearances for all drilling locations prior to mobilization.
- Layne is proposing a 10-hr per day, 5-day work week for the project during drilling operations.
- Any delays in site work not caused by Layne is subject to the hourly rate for stand by for equipment and personnel.
- Water for drilling will be made available to Layne within 500 feet of the drill site at no additional cost that can be utilized for drilling activities if needed.

- All drilling cuttings/development water can be discharged to the ground within 200 feet of the drilling location. Layne is not responsible for water run off in any direction at any location. Any offsite disposal will be subject to hourly rates for equipment and driver and disposal fees if disposal location changes.
- Any drilling beyond a depth of 200 ft bgs will incur a per foot charge, including additional pricing per foot for abandonment materials.
- Layne has assumed normal drilling conditions based with no lost circulation, caving formations or swelling clays or slow penetration rates below 20 feet per hour. Should Layne experience any of the above we will promptly notify the TAI of a differing site condition and any associated cost implications.
- **Layne is not responsible for water quality, quantity, or freedom of sand at any given depth or flow rate.**
- The bid is a complete package and cannot be modified without prior written authorization from Layne. Also, this is an estimate, and the final invoice will reflect actual quantities utilized in the field which are properly documented in accordance with Layne's attached Unit Price Schedule.
- A mutually agreeable subcontract agreement will be negotiated prior to mobilization.
- Layne has assumed no payment and/or performance bonds in this proposal.
- Layne is not responsible for any landscaping or restoration to surrounding areas as a result of our scope of work during project.

SECTION 03 PROPOSAL

Water Well Development ES2023-47

For Services Completed between awarded date to April 30, 2024

Item	Description	Quantity	Unit	Unit Cost	Total Price	Totals
Test Hole (200 feet)	Mobilization (To City, Not Per Site)	1	LS	\$38,500.00	\$ 38,500.00	
	Drill 5" Hole to Bed Rock	200	FT	\$ 35.00	\$ 7,000.00	
	Sieve Analysis	1	LS	\$ 1,500.00	\$ 1,500.00	
	Abandon	200	FT	\$ 16.00	\$ 3,200.00	
	Final Report (Per Site)	1	LS	\$12,000.00	\$ 12,000.00	
						\$ 62,200.00
Observation Well Conversion	Run Overshot to full depth	200	FT	\$ 45.00	\$ 9,000.00	
	Set 2" PVC to full Depth	200	FT	\$ 90.00	\$ 18,000.00	
	Develop Well with Rig	8	HR	\$ 850.00	\$ 6,800.00	
						\$ 33,800.00
Test Well (200')	Mobilization (To City, Not Per Site)	1	LS	\$45,000.00	\$ 45,000.00	
	Drill 16" to Full Depth	200	FT	\$ 100.00	\$ 20,000.00	
	Furnish and Install 8" Screen	20	FT	\$ 590.00	\$ 11,800.00	
	Furnish and Install 10" Casing	180	FT	\$ 145.00	\$ 26,100.00	
	Furnish and Installed Test Pump Including Generator	1	LS	\$37,200.00	\$ 37,200.00	
	Develop the Well for a Minimum of 24 Hours	24	HR	\$ 1,500.00	\$ 36,000.00	
	Perform 24 Well Pump Test to Waste	24	HR	\$ 1,650.00	\$ 39,600.00	
	Analysis and Final Report	1	LS	\$21,500.00	\$ 21,500.00	
						\$237,200.00

For Services Completed between May 1, 2024 to April 30, 2025

Item	Description	Quantity	Unit	Unit Cost	Total Price	Totals
Test Hole (200 feet)	Mobilization (To City, Not Per Site)	1	LS	\$42,350.00	\$ 42,350.00	
	Drill 5" Hole to Bed Rock	200	FT	\$ 39.00	\$ 7,800.00	
	Sieve Analysis	1	LS	\$ 1,650.00	\$ 1,650.00	
	Abandon	200	FT	\$ 18.00	\$ 3,600.00	
	Final Report (Per Site)	1	LS	\$13,200.00	\$ 13,200.00	
						\$ 68,600.00
Observation Well Conversion	Run Overshot to full depth	200	FT	\$ 50.00	\$ 10,000.00	
	Set 2" PVC to full Depth	200	FT	\$ 99.00	\$ 19,800.00	
	Develop Well with Rig	8	HR	\$ 935.00	\$ 7,480.00	
						\$ 37,280.00
Test Well (200')	Mobilization (To City, Not Per Site)	1	LS	\$49,500.00	\$ 49,500.00	
	Drill 16" to Full Depth	200	FT	\$ 110.00	\$ 22,000.00	
	Furnish and Install 8" Screen	20	FT	\$ 649.00	\$ 12,980.00	
	Furnish and Install 10" Casing	180	FT	\$ 160.00	\$ 28,800.00	
	Furnish and Installed Test Pump Including Generator	1	LS	\$40,920.00	\$ 40,920.00	
	Develop the Well for a Minimum of 24 Hours	24	HR	\$ 1,650.00	\$ 39,600.00	
	Perform 24 Well Pump Test to Waste	24	HR	\$ 1,815.00	\$ 43,560.00	
	Analysis and Final Report	1	LS	\$23,650.00	\$ 23,650.00	
						\$261,010.00

For Services Completed between May 1, 2025 to April 30, 2026

Item	Description	Quantity	Unit	Unit Cost	Total Price	Totals
Test Hole (200 feet)	Mobilization (To City, Not Per Site)	1	LS	\$46,585.00	\$ 46,585.00	
	Drill 5" Hole to Bed Rock	200	FT	\$ 43.00	\$ 8,600.00	
	Sieve Analysis	1	LS	\$ 1,815.00	\$ 1,815.00	
	Abandon	200	FT	\$ 20.00	\$ 4,000.00	
	Final Report (Per Site)	1	LS	\$14,520.00	\$ 14,520.00	
						\$ 75,520.00
Observation Well Conversion	Run Overshot to full depth	200	FT	\$ 55.00	\$ 11,000.00	
	Set 2" PVC to full Depth	200	FT	\$ 110.00	\$ 22,000.00	
	Develop Well with Rig	8	HR	\$ 1,030.00	\$ 8,240.00	
						\$ 41,240.00
Test Well (200')	Mobilization (To City, Not Per Site)	1	LS	\$54,450.00	\$ 54,450.00	
	Drill 16" to Full Depth	200	FT	\$ 121.00	\$ 24,200.00	
	Furnish and Install 8" Screen	20	FT	\$ 715.00	\$ 14,300.00	
	Furnish and Install 10" Casing	180	FT	\$ 176.00	\$ 31,680.00	
	Furnish and Installed Test Pump Including Generator	1	LS	\$45,012.00	\$ 45,012.00	
	Develop the Well for a Minimum of 24 Hours	24	HR	\$ 1,815.00	\$ 43,560.00	
	Perform 24 Well Pump Test to Waste	24	HR	\$ 2,000.00	\$ 48,000.00	
	Analysis and Final Report	1	LS	\$26,015.00	\$ 26,015.00	
						\$287,217.00

SECTION 04 STAFF RESOURCES AND QUALIFICATIONS

KEY PERSONNEL

The following personnel (as anticipated) will be committed to the safe, efficient, and effective completion of this project. One Illinois Licensed Professional Geologist will be involved in this project.

Name	Title	Years of Experience
Brian M. Snelten, P.G.	Area/Project Manager and Primary Contact	24
Jason Gray	Asst. Project Manager	4
Jeff Seeger	Aurora Drilling Supervisor	41
Jeff Hart	Layne Drilling Operations Manager (Denver, CO)	35
Bill Diehl	Aurora Pump Supervisor	24
Geoff Davis	Aurora Safety Professional	5
Jerri Burton	Northeast General Manager	40

LICENSES

Brian M. Snelten, P.G., has an Illinois Water Well Contractor and Pump Installation license. Additionally, Bill Diehl holds an Illinois Water Well Contractor license.

SUBCONTRACTORS

Layne will utilize INTERA Incorporated for hydrogeological analysis of the test pumping data and assisting with site planning for borehole/well locations. INTERA personnel have in-depth knowledge and experience with the unconsolidated aquifer in the St. Chares area having worked on similar studies in Crystal Lake, Algonquin, North Aurora and South Elgin, Illinois.



SCHEDULING

Current drilling schedule will allow Layne to mobilize to site to complete first scope of work prior to April 30, 2024. Future scheduling will be dependent on communication for planned drilling in the future.

Having successfully completed other similar projects, Layne is confident that we have the proper resources available to complete this project on time.

The foundation of Layne's project execution is open, honest, and daily communication. Our Operator, Project Manager, and Operations Manager communicate daily. Layne's field crews are provided with a detailed job letter that explains the entire scope of work, completion schedule, major material items deliveries, and the use of subcontractors required to successfully carry out the timely completion of our work.

Our operator will communicate daily with your field representative the status of the work and discuss critical path items that will need coordination between our two companies. Our project manager and field operations manager will communicate with your office project manager frequently to ensure project objectives are being completed as specified.

Our pre-mobilization activities will consist of the following:

- Project scheduling and material ordering will commence once the written contract for the project is executed.
- Utility locates will be initiated as required.
- Obtain any required work permits.
- Ensure field crews have proper training
- Ensure all field equipment has been inspected and readied for field work
- Project submittals will be provided as required. Provide SDS for all chemical products brought onto the site.
- Layne will develop the field performance plan, site-specific health and safety plan, quality

- assurance/quality control plan and activity hazard analysis.
- A pre-mobilization conference will be completed in advance of mobilization to confirm and verify project completion parameters.
- Following the pre-mobilization conference, Layne will mobilize our equipment, tooling, personnel, and materials to the job site.
- Once fieldwork begins, Layne will perform the following items:
 - Daily equipment inspections
 - Daily tailgate safety meetings before the beginning of each work shift
 - Daily communication with the on-site field representative
 - Daily field report completed and signed by the on-site field representative
 - Daily review of QA/QC compliance with all field efforts
 - Daily “look ahead” of upcoming work and complete pre-planning objectives
 - Our on-site field project manager will attend all meetings as required

There will be occasions when our plans and procedures will have to be modified to meet unanticipated conditions, weather conditions, or other unforeseen external factors. These changes will be documented and discussed with your firm as required.



SAFETY

Layne considers safety as our number one priority on this project.

Layne safety performance standards meet and often exceed compliance with federal, state, and local laws and regulations. As a result of this culture, Layne’s safety record has outpaced industry averages because we know that safer employees, contractors, and work environments result in more effective operations.

Layne believes that all accidents are preventable, so we continue to work towards the goal of 100% safe working hours. **Layne’s employee commitment to HSE is as stated below:**

- I will take ownership of safety for myself and those around me.
- I will respect the communities I work in and always be a role model for safe behavior.
- I will assess the risks involved in every task before I begin.
- I will properly inspect, maintain, and operate all vehicles, tools, and equipment.
- I will exercise STOP WORK where I perceive a situation to be unsafe or otherwise have concerns about safety.

At Layne, we have the following expectations of each other:

- We expect that every employee is committed to ZERO incident operations and performing work safely or not at all.
- We expect that employees will follow and hold your co-workers accountable for following all of our safety policies and wearing/using all of the required PPE.
- We expect that employees will report all incidents (injury, illness, property damage, environmental or vehicle) so that we can ensure that we do a thorough incident investigation and prevent reoccurrence.
- We expect that employees will not text and drive and use a hands-free device when talking on a cell phone.
- We expect that employees will do a JSA before each task (at a minimum once per shift for each task)
- We expect that employees will operate and maintain all vehicles, tools, and equipment as if it were your own
- We expect that if an employee sees something that does not look or feel right, they will say something.

To carry out a safe work environment, Layne will implement the following improvement cycle:

1) Plan: Plan the work so that all crew members are protected and know what needs to be done.

- Participate and follow the daily Take 5 plan
- Be active in protecting oneself, others, the public and the environment
- Participate in safety processes
- Stop and ask for guidance if you do not understand or have any doubts about a how to do something
- Set a plan in motion and stick to the plan
- Follow safe work practices

- Don't deviate from your supervisors Take 5 without approval and a new plan
 - Assess hazards continuously throughout the shift
- 2) **Check: Make sure the plan is the right plan**
- Conduct observations and planned inspections
 - Speak up when an unsafe act or condition is noticed
 - Don't walk by something that is wrong
- 3) **Adjust: Use the information you get from checking. Continue the same path or adjust the plan.**
- Employees notify your supervisor of unsafe work conditions that exist OR that you THINK might exist so the plan can be adjusted.
- Maintain good housekeeping and organization
 - Request training or guidance
 - Report Near Misses
 - Set a good example
- Evaluate the tasks recorded in the Take 5 and note any confusion or additional direction needed
 - Ask for feedback from the crew
 - Supervisors use your observations and inspections to improve the plan.

If required, Layne's HSE department can deliver in-house safety training to any team member requiring it that covers all phases of the health and safety field and it is compliant with the most up-to-date OSHA, MSHA, and DOT regulations.

On the job site, all Layne field employees will possess the necessary personal protective equipment and detailed, site-specific safety information that covers issues including confined space entry, blow out preventers, environmental health and safety plans, and on-site monitoring. Every Layne field employee has Stop Work Authority because every employee is responsible for safety.

Layne has a comprehensive, industry-leading health and safety program, which can be viewed at www.graniteconstruction.com/company/safety-choice. All Layne field employees have access to this data in the development and implementation of site-specific health and safety plans.

Our safety program is composed of, but not limited to, the following:

- Supervisor's Accident Prevention Manual
- Safety Practices Manual
- Hazard Communication Manual
- Fleet Manual
- Emergency Response Plans
- Site Specific Health and Safety Plan Auditing Forms
- Procedures Mentoring Program

All Layne field employees tasked with project execution have OSHA construction site training (forklifts, backhoes, manlifts, and cranes). Most of the Layne field employees have Red Cross First Aid and CPR training. As required, training compliance documentation can be provided prior to project mobilization.

Our standard personal protective equipment for each field employee is as follows: helmets per ANSI Z89.1-1997, safety glasses with side protection per ANSI Z87.1-1989, steel toed boots per ASTM F2413-11, high visibility vest or shirt per ANSI/ISEA 107-2010, hearing protection and appropriate work gloves. While working in a high dust environment, employees are required to wear dust masks. All company vehicles come equipped with a working-Class A/B/C fire extinguisher, first aid kits, and have current proof of insurance and vehicle registration.

Layne is committed to working diligently and safely on this project.

- ✓ A site-specific health and safety plan will be prepared and administered while on site.
- ✓ Layne will practice a behavioral-based safety program that utilizes a hazard identification risk assessment. Each work shift will begin with a tailgate safety meeting.
- ✓ The crew will review the expected field operations each day and determine what the potential risks are in performing that work. The crew will then review and implement safe work practices to eliminate and/or reduce the risk of a safety incident. All our crews are expected to work in the “green” (safe) zone and to not take any risks with respect to performing their work.
- ✓ All field employees and site visitors can stop work if they feel there is a safety risk associated with performing the work.



QUALITY CONTROL

Layne utilizes a large number of reporting measures to ensure quality assurance and quality control for our drilling and test pumping operations.

These reports would be utilized throughout the project. A typical summary of the items covered in our program would include the following: Non-DOT and DOT travel, rig up operations, review of well design, daily shift reports, daily safety inspections, tailgate meetings per working shift, drilling operations (mud properties, deviation survey, pipe tally, etc.), material inspections prior to installation, well installation (mud thinning operations, casing/screen/tremie tally, annular material installation (actual vs theoretical), etc.), well development (methodology/time spent per foot of screen, material recovered, water quality parameters and test pumping (water quality, sand content, etc.)). Copies of our reporting measures are provided to the Owner. Project specifications are reviewed prior to field work and any project specific items that are not covered in our normal QA/QC program are added to meet the needs of the project.



EQUIPMENT RESOURCES

Specification sheet for the Atlas Copco TH60 that will be used on this project is detailed on the following page.

Layne intends to mobilize the following equipment to the project site.

- Atlas Copco TH60 Drilling Unit
- Flatwater Fleet water truck and associated drill tooling
- Kemtron 500 Gallon trailer mounted mud cleaning system
- F-350 crew truck w/ trailer and support equipment

The equipment listed above will be dedicated to this project on a full-time basis and all the equipment is up to date with annual inspections and certifications.

Layne appreciates the opportunity to provide drilling/testing services for the City of St. Charles, IL on this project. If you have any questions or require any additional information, please do not hesitate to contact me. I can always be reached either in the office at 630.897.6941 or on my mobile at 630.809.2707.

Sincerely yours,

A handwritten signature in black ink that reads "Brian M. Snelten". The signature is written in a cursive style and is centered within a light gray rectangular box.

Brian M. Snelten, P.G.
Area Manager
Layne Christensen Company