

# Volume I

## Technical Submission

GESA Project Consultant on a  
Guaranteed Energy Savings Project at:  
Department of Transportation District 8, PA

Project No. GESA 2019-1C  
Contract No. GESA 2019-1C

Date 09/11/2019

prepared for:



Becky Tomlinson, DGS Energy Office  
RFQ Coordinator  
Room 403 North Office Building  
401 North Street  
Harrisburg, PA 17120-0500  
retomlinso@pa.gov

prepared by:



Entech Engineering, Inc.  
201 Penn Street, Suite 300  
Reading, PA 19601  
1.800.825.1372 | [www.entecheng.com](http://www.entecheng.com)

Entech Submission: P-10039



September 11, 2019

Becky Tomlinson, RFQ Coordinator  
Room 403 North Office Building  
401 North Street  
Dept. of General Services  
401 North Street, Room 403  
Harrisburg, PA 17120

**Re: Response to Request for Qualifications for GESA Project Consultant on a  
Guaranteed Energy Savings Project at: Department of Transportation  
District 8, PA  
Project No: GESA 2019-1C  
Contract No: GESA 2019-1C  
Entech File P-10039**

Dear Ms. Tomlinson:

Entech has been helping its clients with their energy conservation efforts for more than 30 years. Our company was created during the energy crisis of the early 1980s to help facility managers reduce their energy costs. As we continue our work, we have grown into a full-service engineering and architecture firm with a staff of approximately 120 professionals dedicated to helping you make more informed decisions for your buildings and infrastructure assets. Today, our highly qualified energy auditing teams bring not only years of energy auditing experience, but also the expertise to combine energy conservation recommendations with deferred maintenance and capital renewal needs. Our engineering and architecture team's experience allows us to design energy projects, help secure grants for project funding, help manage the construction, assist with securing an Energy Savings Company (ESCO), or provide energy consulting throughout the ESCO process. Our design professionals are then able to take their energy expertise to help our customers implement selected energy measures and thus reduce energy costs.

We have been involved with the Pennsylvania Guaranteed Energy Savings Act (GES) program, since State Correctional Institute (SCI) Dallas, the first GES project under the Wolf Administration. We worked closely with Energy Systems Group (ESG) to develop the original scope of work presented for SCI Dallas. After ESG was selected, we assisted in the preparation of the investment grade audit, design of the boiler plant and wastewater treatment plant, and assisted in services during construction. More recently, we were selected for a GES project with The Efficiency Network at SCI Houtzdale.

For the proposed project, I will be serving as the energy team leader and Principal-in-Charge. As the leader of Entech's Utilities and Energy Group, I have led our energy team on many similar projects in Pennsylvania including energy projects at SCI Muncy, Harristown Development, Inc, SCI Dallas, SCI Houtzdale, and Susquehanna University. In New Jersey, in both the ESIP and P4P Programs, I led our team on energy projects for

Becky Tomlinson, RFQ Coordinator  
Department of General Services  
Entech Proposal P-10039  
September 11, 2019  
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South Woods State Prison, New Lisbon Developmental Center. Additionally, we are currently serving as the State's energy consultant for Hunterdon Developmental Center and the Edna Mahan Correctional Facility.

In addition to our energy team, Entech has an experienced design team of engineers and architects who will be used to complement the skill set of our energy team on the project. We expect our design and construction team to be most involved during the design document review, however, there may be other times that their experience is also needed. I will be using our design team throughout the project as needed to support the State.

We believe that our demonstrated energy experience and our design expertise will allow us to provide both leadership and experience to the State and look forward to this opportunity.

Entech acknowledges receipt of BULLETIN NO. 1 and BULLETIN NO. 2 on Project No. GESA 2019-1C – Request for Consulting Services for a Guaranteed Energy Savings Project at Department of Transportation, District 8, PA, Department of General Services, Energy & Resource Management, 401 North Street, Room 403 North Office, Harrisburg, Pennsylvania, 17120.

Sincerely,

A handwritten signature in blue ink, appearing to read "B. C. Haag".

Bryan C. Haag, P.E., LEED AP®  
Principal  
Entech Engineering, Inc.  
201 Penn Street, Suite 300  
Reading, PA 19601  
610-373-6667/800-825-1372  
Fax: 610-373-7537  
[BHaag@entecheng.com](mailto:BHaag@entecheng.com)

Entech PA Vendor # 129535

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- ▶ E. Qualifications (any additional relevant info)

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# 1

## Appendix A

### Energy Consultant Information Form



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/// Entech has been instrumental to ensure the successful execution and conclusions on a number of projects that are vital to the interests of the Commonwealth. Not only did the HVAC design for our headquarters clearly demonstrate an initiative to employ energy efficient and client responsive technologies to this facility, but the willingness to optimize and alter the completed design in response to your initiated concern with anticipated capacity deficiencies with the geothermal heat sink was admirable and indicative of a sincere, unselfish interest in ensuring a viable system for the State Police. ///

**Former Portfolio Manager, Bureau of Engineering and Architecture  
Pennsylvania Department of General Services | Harrisburg, PA**

## **APPENDIX A**

### **Energy Consultant Information Form**

**ENERGY CONSULTANT INFORMATION FORM**  
**(Complete in INK or TYPE only - DO NOT use pencil)**

DGS GESA-2019-1 Consultant

**LOCATION: Pennsylvania Department of Transportation, District 8, PA**

**COMPLETE ALL APPLICABLE AREAS**

<b>Pa. Vendor ID Number:</b> 129535 All GESA Consultants must be approved thru the DGS ITQ process: <a href="http://www.dgs.internet.state.pa.us/ITQ/Default.aspx">http://www.dgs.internet.state.pa.us/ITQ/Default.aspx</a>	
<b>ITQ CONTRACT NO.</b>	4400016426
<b>CONSULTANTS BUSINESS NAME:</b> Entech Engineering, Inc.	
<b>CONTACT AND TITLE OF PERSON:</b>	Bryan Haag, PE, LEED AP, Principal
<b>ADDRESS:</b>	201 Penn Street, Suite 300, Reading, PA 19601
<b>PHONE NUMBER:</b>	610.373.6667/800.825.1372
<b>E-MAIL ADDRESS:</b>	bhaag@entecheng.com

- A. List the number of full time personnel currently employed with the firm. Each person should be counted only once. Do not include Sub-Consultants. Discuss use of Sub-Consultants in Section "D" and "E", below.

	REGISTERED	PROF. DEGREE	CEM	OTHER	TOTAL
Architect	1	2			3
Civil/Structural Engineer	20	8			28
Mechanical Engineer	8	5	1		14
Electrical Engineer	1	2		3	6
Account Manager					0
Project Managers	5	10			15
Site Inspectors				7	7
Measurement & Verification					0
Other/Specialist	7	22	2	6	37

B. Submit as a separate page to this form, on one (1) page, identify no more than three (3) projects that best illustrate your firm's current qualifications to perform the review and construction services for this project. DO NOT list projects by consultants or by staff that will not be assigned to this project. Use the categories bulleted immediately below in describing identifying projects.

- Project Name
- Location
- General Description of work performed by Consultant on this project
- Gross Const. Cost
- Duties Preformed
- Fee
- Comments
- Contact References (include Email and Telephone No.)

C. Submit as a separate page to this form, on one (1) page, listing the Key Sub-Consultant(s) (if needed) who will be retained to assist in the consultant's process. Sub-Consultants Basic Service work in sum-total must be less than 50% of Total Basic Service Fees. Use the categories bulleted immediately below in listing Key Sub-Consultants. N/A -

- Name of Sub-Consultant
- Address
- Specialty/Discipline
- Number of Projects Worked together
- Value of Projects Worked Together

D. In the space provided below, indicate and list driving distances (in miles) from the office where the majority of the on-site personnel will be located to the project site. Use actual street addresses and Google or MapQuest to determine driving distance.

63 Miles

E. Submit as a separate page to this form, on one (1) page, provide any additional comments or description of relevant information supporting your selection for Consulting Services on this Project. Information specifically related to this project is preferred over boiler-plate or general marketing material. Why should your firm be selected for this assignment?

# projects

# PA GESA Program | Harrisburg, PA

## State Correctional Institutions

Energy Systems Group (ESG) was awarded a Guaranteed Energy Savings Act (GESA) contract for the Department of Corrections (DOC), **SCI-Dallas**. The project evaluated central utilities, wastewater treatment, lighting, and water conservation. We were employed by ESG to provide an investment-grade energy audit and associated Energy Conservation Measures (ECMs) for SCI-Dallas' central heating utility and wastewater treatment plants respectively. We identified 15 ECMs, of which seven were selected for full design and implementation, at a cost of \$11M, with annual energy savings of \$1.8M. We evaluated the 30 year life cycle costs of four primary heating options to calculate a net present value (NPV). New natural gas boilers were projected to provide \$1.8M in annual energy savings.

For SCI-Dallas' on-site 0.45MGD WWTP, we recommended and designed sludge process improvements to reduce the liquids in the sludge, thus reducing the cost of disposal. By increasing solids to 3%, the facility will realize 34% annual savings or \$83,000 in sludge disposal fees.

Recently, Entech was also selected as part of The Efficiency Network's team for the Guaranteed Energy Savings Project at **SCI Houtzdale**. The Department of General Services solicited quotes for the project to assist the DOC facility at SCI Houtzdale to become as energy efficient as possible through installation of energy and water conservation measures, upgrades, and implementation of optimal operations and maintenance procedures.

The Central Boiler Plant at SCI Houtzdale contains four (4) high pressure steam boilers, two of which are coal-fired with the option of fuel oil. SCI Houtzdale's DEP Air Quality Permit only allows the use of coal for 90 days each year. The boilers produce steam for heating, hot water, kitchen and laundry uses. As part of our submission, Entech evaluated several options to convert the central plant from coal to another fuel source. Entech is the lead design team for the investment grade audit as well as, lead design engineer for the project.

**Construction Cost:** \$34.9M \*    **Fee:** \$1,075,000\*    **Contact:** Douglas Hatcher  
717.787.4762

dhatcher@pa.gov

\*represents actual costs for SCI Dallas and estimated costs for SCI Houtzdale.

**State of New Jersey** | Bridgeton, Cumberland County, NJ

## 3rd Party Measurement and Verification

The State of New Jersey (NJ) retained DCO Energy (an ESCO) to develop an Energy Savings Plan and recommend Energy Conservation Measures (ECMs) to reduce energy usage, while simultaneously eliminating deferred maintenance on building systems for The Edna Mahan Correctional Facility (EMCF), a 1,000 inmate women's prison, and the Hunterdon Developmental Center (HDC), a 650-bed residential facility for adults with neurodevelopmental disorders. These adjacent facilities were part of a \$45M Energy Savings Improvement Project (ESIP), which is NJ's largest EISP project to date. We were selected by NJ to help verify the ECMs and savings, so they were confident in securing the loan for the project and proceeding with DCO Energy. We also served as an on-call advisor during design and construction and will execute the energy/savings measurement & verification (M&V) plan once all ECMs are constructed.

The Energy Savings Plan developed by DCO Energy named twenty four (24) ECMs including LED lighting replacements, decentralizing the EMCF CHP plant, and new steam and hot water boilers. Based on the recommended ECM's, the two facilities can expect to realize more than \$63M in energy savings over a 16 year period. Entech was tasked to verify the energy savings projects and estimates produced by the ESCO and engineer of record, review construction drawings, review the ESCO's measurement and verification (M&V) plan and execute the M&V Plan once construction is complete.

**Construction Cost:** \$45M **Fee:** \$424,000

**Contact:** William Golubinski  
609.292.5210

william.golubinski@treas.nj.gov

Harristown Development Company | Harrisburg, PA

Strawberry Square & 333 Market ESPC Owner's Representative

Entech was hired by Harristown Development Company to serve as the owner's representative for an Energy Savings Performance Contract (ESPC) project with Siemens. We worked closely with Siemens to develop Energy Conservation Measures (ECMs). Entech was responsible for the review of Siemens' ECMs, including the scope of work, energy savings estimates, and cost estimates.

We reviewed all of Siemens' submissions, including the contract and financial terms, and assisted Harristown Development Company in becoming more informed and more comfortable with the process. Entech was responsible for attending several meetings with the Harristown Development Company, Pennsylvania Department of General Services, and Siemens, and recommended that the Harristown Development enter into a contract with Siemens for the ESCO project. The scope of work included lighting upgrades, chiller replacement, controls upgrades, and VAV box upgrades. Over the 10-year life of the project, Harristown Development will realize \$19.2 million in guaranteed savings.

**Construction Cost:** \$20M **Fee:** \$15,000

**Contact:** Bradley Jones  
717-255-1401

brad-jones@harristown.net

# key sub-consultants

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Entech is not proposing any subconsultants for this project.

# relevant information

As outlined in the cover letter, Entech has extensive experience within the energy industry along with the following:

We've completed several projects in Pennsylvania, including teaming with Energy Systems Group to develop and design the first Guaranteed Energy Savings Project (GESPA) under the Wolf Administration for Pennsylvania's Department of General Services (DGS) at the State Correctional Institute (SCI) Dallas. In 2015, we completed a Combined Heat and Power Engineering Study and Feasibility Analysis at SCI Muncy which examined several options to provide heating, for the campus, over the next 25 years and are currently working with The Efficiency Network on the SCI Houtzdale GESA Project which is entering the IGA phase.

We worked with Harristown Development, Inc. at Strawberry Square and 333 Market Street in Harrisburg. Entech served as Harristown's representative and energy consultant on an energy savings company (ESCO) project with Siemens. As the energy consultant, Entech worked closely with Siemens to review the Investment Grade Audit, project energy savings, and prepare cost estimates and the contract. During post-retrofit measurement and verification (M&V), billing discrepancies with NRG, the steam utility, were discovered, and Entech is serving as Harristown's representative in negotiations with NRG.

Susquehanna University won an award from the Association of Energy Engineers for a project completed to remove the existing coal fired steam plant and install condensing boilers on campus. Entech served as the engineer of record and worked with the University to develop a utility master plan, which presented campus heating options, including annual energy use models for each option. Following the University's decision to decentralize, we provided design and oversaw the construction of the project, which included post-retrofit M&V to verify the savings estimated during the utility master plan. In their first year with the new distributed heating system (2014-15) they realized a \$422,000 (or 60%) annual heating cost reduction. The actual costs savings were within 1% of our heating master plan estimates.

In New Jersey, at the New Lisbon Developmental Center, we performed an energy audit, which recommended \$14 million in energy conservation measures (ECMs) and projected an annual savings of \$2.3 million. As part of this effort, we became a "P4P Partner" and oversaw the design and construction of the project, including the post-retrofit M&V necessary to apply for the rebates through the P4P program. New Lisbon reduced their energy 45% and was awarded \$2 million through the P4P program.

We also completed a pre-Energy Savings Improvement Program (ESIP) energy audit of New Jersey's South Woods State Prison. We created energy use models to determine how and where the energy is used by the campus. From the models, we estimated savings associated with the ECMs. We recommended approximately \$25 million in ECMs with an annual savings of \$3.4 million and a 7.2 year payback.

We are currently working with the State of New Jersey as their Energy Consultant on the largest ESIP projects, to date, at Hunterdon Developmental Center and Edna Mahan Correction Facility for Women.

In addition to the specific projects aforementioned, Entech has completed numerous energy audits of campuses and buildings totaling over 20 million square feet including, but not limited to, the Architect of the Capitol (Washington, DC House, Senate and Capitol), Dauphin County Technical School, Loyola University, Lafayette College, MedStar Health, and Parkland School District.

## Project Team Experience

Team Member	Title	Project Role	Entech Exp.	Total Exp.
Bryan Haag, PE, LEED	Principal	Principal in Charge	18	18
Russell Royds, PE	Senior Project Manager	Project Manager	1	30
Mark Feeg, PE	Senior Project Manager	Senior Mechanical Engineer	1	20
Michael Joppy, PE	Project Engineer	Mechanical Engineer	5	5
Mark Ray, CEM	Senior Mechanical Designer	Senior Mechanical Designer	37	37
Bradley Wertz	Energy Analyst	Engineering Technician	5	30
			<b>Total Years</b>	<b>67</b> <b>140</b>

# 2

## Appendix B

### Quote Signature Page



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“ The Entech staff was knowledgeable, experienced, professional, and always accessible. During their on-site visits, they adjusted their schedules as required to accommodate our varied campus activity calendars. ”

**Manager of Facilities**  
**Institute for Advanced Studies | Princeton, NJ**

## **APPENDIX B**

### **Quote Signature Page**

### **Quote Signature**

**Offeror's Representations and Authorizations.** Offeror by signing on the signature page and submitting its Quote understands, represents, acknowledges and certifies that:

1. All information provided by, and representations made by, the Offeror in the Quote are material and important and will be relied upon by the Issuing Office in awarding the contract(s). Any misstatement shall be treated as fraudulent concealment from the Issuing Office of the true facts relating to the submission of this Quote. A misrepresentation shall be punishable under 18 Pa. C.S. § 4904.
2. No attempt has been made or will be made to induce any firm or person to refrain from submitting a Quote on this contract, or to submit a Quote higher than this Quote, or to submit any intentionally high or noncompetitive Quote or other form of complementary Quote.
3. The Quote is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive Quote.
4. To the best knowledge of the person signing the Quote for the Offeror, the Offeror, its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency and have not in the last four (4) years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding or proposing on any public contract, except as disclosed by the Offeror in its Quote.
5. To the best of the knowledge of the person signing the Quote for the Offeror and except as otherwise disclosed by the Offeror in its Quote, the Offeror has no outstanding, delinquent obligations to the Commonwealth including, but not limited to, any state tax liability not being contested on appeal or other obligation of the Offeror that is owed to the Commonwealth.
6. The Offeror is not currently under suspension or debarment by the Commonwealth, or any other state, or the federal government. If the Offeror has received, within three years of the issuance of this RFQ, a Notice of Default from the Commonwealth, other state or the federal government, then the Offeror shall submit, as part of the Technical Submission, seven copies of a written explanation of why such Notice of Default was issued. This written explanation shall not exceed 1 sheet (2 pages) and shall not count towards the sheet and page limit established for the Technical Submission of the Quote.
7. The Offeror has not, under separate contract with the Issuing Office, made any recommendations to the Issuing Office concerning the need for the services described in the Quote or the specifications for the services described in the Quote.
8. Each Offeror, by submitting its Quote, authorizes all Commonwealth agencies to release to the Commonwealth information related to liabilities to the Commonwealth including, but not limited to, taxes, unemployment compensation, and workers' compensation liabilities.
9. Until the awarded DGS Energy Consultant receives a fully executed and approved written contract from the Issuing Office there is no legal and valid contract, in law or in equity, and the DGS Energy Consultant should not begin to perform.

10. The total energy savings projected in the final scope of work will be at least 95% of the savings projected in the Quote and that the project will be self-funded over the financial term of the project (maximum term of 20 years.)
11. Offeror agrees and certifies in accordance with the enclosed Commonwealth of Pennsylvania:
  - Nondiscrimination/Sexual Harassment Clause
  - Tax Liability Certification
  - Americans Disabilities Act
  - Contractor Integrity Provisions
  - Contractor Responsibility Provisions
  - Environmental Statement
  - Compliance with State and Federal Statutes, Rules and Regulations
  - Non-Collusion Affidavit

I am authorized to sign this Quote on behalf of the Offeror and I agree and state that Entech Engineering, Inc. (Name of Firm) understands and acknowledges that the above representations are material and important, and will be relied upon by the Department of General Services in awarding the contract(s) for which this Quote is submitted. I understand and my firm understands that any misstatement shall be treated as fraudulent concealment from the Department of General Services of the true facts relating to the submission of this Quote.



\_\_\_\_\_  
Signature

Bryan C. Haag, PE, LEED AP

Print Name Legibly

Principal

\_\_\_\_\_  
Title

# 3

## Appendix C Non-Collusion Affidavit



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“ Your expertise is extremely helpful in guiding us through many different issues that occur daily with various ongoing issues and concerns. ”

**Tunnel Team Design Manager  
Architect of the Capitol | Washington, DC**

## **APPENDIX C**

### **Non-Collusion Affidavit**

#### **INSTRUCTIONS FOR NONCOLLUSION AFFIDAVIT**

1. This Noncollusion Affidavit is material to any contract awarded pursuant to this Quote. According to §4507 of the Commonwealth Procurement Code, 62 Pa.C.S. §4507, governmental agencies may require Noncollusion Affidavits to be submitted with Quotes.
2. This Noncollusion Affidavit must be executed by the member, officer, or employee of the Offeror who makes the final decision on prices and the amount quoted in the Quote.
3. Bid rigging and other efforts to restrain competition, and the making of false sworn statements in connection with the submission of Quotes are unlawful and may be subject to criminal prosecution. The person who signs the affidavit should examine it carefully before signing and assure himself or herself that each statement is true and accurate, making diligent inquiry, as necessary, of all other persons employed by or associated with the Offeror with responsibilities for the preparation, approval or submission of the Quote.
4. In the case of a Quote submitted by a joint venture, each party to the venture must be identified in the Quote documents and an affidavit must be submitted separately on behalf of each party to the joint venture.
5. The term “complementary Quote” as used in the affidavit has the meaning commonly associated with that term in the Quote process, and includes the knowing submission of Quotes higher than the Quote of another firm, any intentionally high or noncompetitive Quote, and any other form of Quote submitted for the purpose of giving a false appearance of competition.
6. Failure to submit an affidavit with the Quote in compliance with these instructions may result in disqualification of the Quote.

## NONCOLLUSION AFFIDAVIT

GESA 2019-1C

Dept. of Transportation

DGS Project Number: District 8, PA

State of Pennsylvania:

County of Berks: s.s.

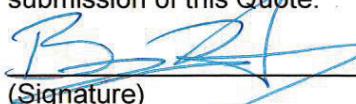
I state that I am the Principal (Title) of Entech Engineering, Inc. (Name of Firm) and that I am authorized to make this affidavit on behalf of my firm, and its owners, directors, and officers. I am the person responsible in my firm for the prices(s) and the amount of this Quote.

I state that:

1. The price(s) and amount of this Quote have been arrived at independently and without consultation, communication or agreement with any other contractor, Offeror, or potential Offeror.
2. Neither the price(s) nor the amount of this Quote, and neither the approximate price(s) nor approximate amount of this Quote, have been disclosed to any other firm or person who is a Offeror or potential Offeror, and they will not be disclosed before the Quote submission date.
3. No attempt has been made or will be made to induce any firm or person to refrain from proposing on this contract, or to submit a Quote higher than this Quote, or to submit any intentionally high or noncompetitive Quote or other form of complementary Quote.
4. The Quote of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive Quote.
5. Entech Engineering, Inc. (Name of Firm) its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency and have not in the last four years been convicted or found liable for any act prohibited by state or federal law in any jurisdiction, involving conspiracy or collusion with respect to proposing and/or bidding on any public contract, except as follows:

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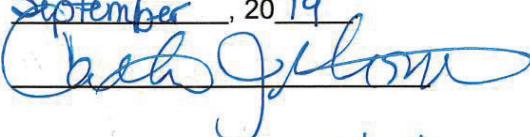
I state that Entech Engineering, Inc. (Name of Firm) understands and acknowledges that the above representations are material and important, and will be relied upon by the Department of General Services in awarding the contract(s) for which this Quote is submitted. I understand and my firm understands that any misstatement in this affidavit is and shall be treated as fraudulent concealment from the Department of General Services of the true facts relating to the submission of this Quote.

  
(Signature)

Bryan C. Haag, PE, LEED AP  
(Signatory's Printed Name)  
Notary Public  
Principal  
(Signatory's Title)

SWORN TO AND SUBSCRIBED  
BEFORE ME THIS 5<sup>th</sup> DAY OF

September, 20 19

  
(Signature)

My Commission Expires 7/16/22

