
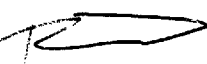


PUBLIC WORKS DEPARTMENT
MEMORANDUM #09-44

DATE: October 8, 2009
TO: Honorable Mayor Kathleen M. Novak and City Council Members
FROM: William A. Simmons, City Manager 
David Willett, P.E., Director of Public Works 
SUBJECT: CR-111, 09 – Standley Lake Pipeline Inspection

BACKGROUND:

The Standley Lake Pipeline is jointly operated by the Cities of Northglenn and Thornton through the Standley Lake Pipeline Joint Operating Committee (SLPJOC). The Standley Lake Pipeline is Northglenn's only raw water pipeline that transmits water from Standley Lake to the City of Northglenn Water Treatment Facility. The Standley Lake Pipeline is composed of a 48" prestressed concrete cylinder pipe, manufactured by Interpace Corporation. The Interpace prestressed concrete cylinder pipe brand has had a history of problems and failures. The Standley Lake Pipeline Inspection Project will provide nondestructive electromagnetic and visual inspection to identify, localize and quantify the presence of distressed pipe segments in the pipeline.

Performance of the electromagnetic and visual inspection requires shutdown of the existing pipeline as well as flow diversion of the raw water. In preparation for the inspection, SLPJOC contacted and received permission from both the City of Westminster and the Farmers' High Line Canal and Reservoir Company to divert raw water flows from the pipeline to the Farmers High Line Canal as a bypass while the Pipeline is offline. This is the standard operating procedure when flow diversion is necessary.

On August 20, 2009, SLPJOC accepted two (2) proposals for the Standley Lake Pipeline Inspection Project. The low bidder is Pure Technologies US Inc., with a bid of \$153,200.00. City staff contacted the submitted references and determined the Contractor's past performance at other municipalities on similar projects meets the City's standards. Results of the reference checks were positive and are on file at City Hall. Copies of the standard agreement are attached.

Under the conditions of the Standley Lake Pipeline Joint Operating Agreement, the City of Northglenn is the lead City for this project and therefore the contracting agency and project manager. In addition, the Standley Lake Pipeline Joint Operating Agreement states that all costs to maintain the pipeline shall be shared equally between the Cities. The funding transfer request will cover Northglenn's one half share of the total costs for the inspection.

BUDGET/TIME IMPLICATIONS:

The total cost of the project as proposed is \$153,200.00. The total cost with a 10% contingency is \$168,520.00. The total City of Northglenn cost of the project as proposed is \$76,600.00. The total City of Northglenn cost with the 10% contingency is \$84,260.00. If approved, adequate funding in the amount of \$145,000.00 is available from the Water and Wastewater Fund (Account No. 516.69263.000.3999.614.000) for the City of Northglenn's share of the Standley Lake Pipeline Inspection Project.

RECOMMENDATION:

Attached to this memorandum is a Consideration Resolution which, if approved would:

- 1) Authorize the Mayor as the lead contracting agency to execute the attached contract with Pure Technologies US Inc. in the amount of \$153,200.00, to provide inspection services in connection with the Standley Lake Pipeline;
- 2) Authorize the transfer of funds for the City of Northglenn's share of the Standley Lake Pipeline Inspection Project from the Water and Wastewater Fund to the Standley Lake Pipeline Joint Operating Escrow Account in the amount of \$76,600.00;

- 3) Authorize \$7,660.00 as the City of Northglenn's share of a 10% contingency and authorize the City Manager, on behalf of the City, to approve minor changes in the scope of work and execute relevant change orders up to the approved City of Northglenn expenditure limit of \$84,260.00.

Staff recommends approval of the proposed Resolution.

STAFF REFERENCE:

David H. Willett, P.E., Public Works Director
Mark Hofmeister, Civil Engineer I

dwillett@northglenn.org or (303) 450-8783
mhofmeister@northglenn.org, or (303) 450-8780.

SPONSORED BY: MAYOR NOVAK

COUNCILMAN'S RESOLUTION

RESOLUTION NO.

No. CR-111
Series of 2009

Series of 2009

A RESOLUTION APPROVING THE STANDLEY LAKE PIPELINE INSPECTION PROJECT AND AUTHORIZING THE NECESSARY CONTRACT AND EXPENDITURES TO ACCOMPLISH THE PROJECT

WHEREAS, the Cities of Northglenn and Thornton both own and operate water systems which include the storage of raw water in Standley Lake; and

WHEREAS, Northglenn and Thornton entered into a Joint Operating Agreement dated September 24, 1994 and agreed to share the cost of the operation, maintenance, repair and replacement of the Standley Lake Pipeline.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF NORTHGLENN, COLORADO, THAT:

Section 1. The City Council hereby approves the Standley Lake Pipeline Inspection Project (the "Project"), in an amount not to exceed \$168,520.00, and authorizes the following to accomplish the Project:

(a) The execution of a Professional Services Agreement between the City of Northglenn and Pure Technologies US, Inc. for the Project in the amount of \$153,200.00 with a ten percent (10%) contingency of \$15,320.00 for a total amount not to exceed \$168,520.00; and

(b) The transfer of funds for the City of Northglenn's share of the Project in the amount of \$76,600.00 from the Water and Wastewater Fund to the Standley Lake Pipeline Joint Operating Escrow Account; and

(c) The City of Northglenn's share of a ten percent (10%) contingency for the Project in the amount of \$7,660.00, and to authorize the City Manager, on behalf of the City, to approve minor changes in the scope of work and execute relevant change orders up to the approved City of Northglenn expenditure limit of \$84,260.00

DATED at Northglenn, Colorado, this ____ day of _____, 2009.

KATHLEEN M. NOVAK
Mayor

ATTEST:

JOHANNA SMALL, CMC
City Clerk

APPROVED AS TO FORM:

COREY Y. HOFFMANN
City Attorney

AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT is made and entered into this ____ day of _____, 2009, by and between the City of Northglenn, State of Colorado (hereinafter referred to as the "City") and Pure Technologies US Inc. (hereinafter referred to as "Consultant").

RECITALS:

A. The City requires professional services.

B. Consultant has held itself out to the City as having the requisite expertise and experience to perform the required work for the Project.

NOW, THEREFORE, it is hereby agreed for the consideration hereinafter set forth, that Consultant shall provide to the City, professional consulting services for the Project.

I. SCOPE OF SERVICES

Consultant shall furnish all labor and materials to perform the work and services required for the complete and prompt execution and performance of all duties, obligations, and responsibilities for the Project which are described or reasonably implied from **Exhibit A** which is attached hereto and incorporated herein by this reference.

II. THE CITY'S OBLIGATIONS/CONFIDENTIALITY

The City shall provide Consultant with reports and such other data as may be available to the City and reasonably required by Consultant to perform hereunder. No project information shall be disclosed by Consultant to third parties without prior written consent of the City or pursuant to a lawful court order directing such disclosure. All documents provided by the City to Consultant shall be returned to the City. Consultant is authorized by the City to retain copies of such data and materials at Consultant's expense.

III. OWNERSHIP OF WORK PRODUCT

The City acknowledges that the Consultant's work product is an instrument of professional service. Nevertheless, the products prepared under this Agreement shall become the property of the City upon completion of the work.

IV. COMPENSATION

A. In consideration for the completion of the services specified herein by Consultant, the City shall pay Consultant an amount not to exceed one Hundred fifty three thousand two hundred dollars (\$153,200.00). Payment shall be made in accordance with the schedule of charges in **Exhibit B** which is attached hereto and incorporated herein by this reference. Invoices will be itemized and include hourly breakdown for all personnel and other charges. The maximum fee specified herein shall include all fees and expenses incurred by Consultant in performing all services hereunder.

B. Consultant may submit monthly or periodic statements requesting payment. Such request shall be based upon the amount and value of the work and services performed by Consultant under this Agreement except as otherwise supplemented or accompanied by such supporting data as may be required by the City.

1. All invoices, including Consultant's verified payment request, shall be submitted by

Consultant to the City no later than the twenty-fourth (24th) day of each month for payment pursuant to the terms of this Agreement. In the event Consultant fails to submit any invoice on or before the twenty-fourth (24th) day of any given month, Consultant defers its right to payment pursuant to said late invoice until the twenty-fourth (24th) day of the following month.

2. Progress payments may be claimed on a monthly basis for reimbursable costs actually incurred to date as supported by detailed statements, including hourly breakdowns for all personnel and other charges. The amounts of all such monthly payments shall be paid within thirty (30) days after the timely receipt of invoice as provided by this Agreement.

C. The City has the right to ask for clarification on any Consultant invoice after receipt of the invoice by the City.

D. In the event payment for services rendered has not been made within forty-five (45) days from the receipt of the invoice for any uncontested billing, interest will accrue at the legal rate of interest. In the event payment has not been made within ninety (90) days from the receipt of the invoice for any uncontested billing, Consultant may, after giving seven (7) days written notice and without penalty or liability of any nature, suspend all work on all authorized services specified herein. In the event payment in full is not received within thirty (30) days of giving the seven (7) days written notice, Consultant may terminate this Agreement. Upon receipt of payment in full for services rendered, Consultant will continue with all authorized services.

E. Final payment shall be made within sixty (60) calendar days after all data and reports (which are suitable for reproduction and distribution by the City) required by this Agreement have been turned over to and approved by the City and upon receipt by the City of Consultant's certification that services required herein by Consultant have been fully completed in accordance with this Agreement and all data and reports for the Project.

V. COMMENCEMENT AND COMPLETION OF WORK

Within seven (7) days of receipt from the City of a Notice to Proceed, Consultant shall commence work on all its obligations as set forth in the Scope of Services or that portion of such obligations as is specified in said Notice. Except as may be changed in writing by the City, the Project shall be complete and Consultant shall furnish the City the specified deliverables as provided in Exhibit A.

VI. CHANGES IN SCOPE OF SERVICES

A change in the Scope of Services shall constitute any material change or amendment of services or work which is different from or additional to the Scope of Services specified in Section I of this Agreement. No such change, including any additional compensation, shall be effective, or paid unless authorized by written amendment executed by the City. If Consultant proceeds without such written authorization, then Consultant shall be deemed to have waived any claim for additional compensation, including a claim based on the theory of unjust enrichment, quantum merit or implied contract. Except as expressly provided herein, no agent, employee, or representative of the City shall have the authority to enter into any changes or modifications, either directly or implied by a course of action, relating to the terms and scope of this Agreement.

VII. PROFESSIONAL RESPONSIBILITY

A. Consultant hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and professional licenses in good

standing, required by law.

B. The work performed by Consultant shall be in accordance with generally accepted professional practices and the level of competency presently maintained by other practicing professional firms in the same or similar type of work in the applicable community.

C. Consultant shall be responsible for the professional quality, technical accuracy, timely completion, and the coordination of all designs, drawings, specifications, reports, and other services furnished by Consultant under this Agreement. Consultant shall, without additional compensation, correct or resolve any errors or deficiencies in his designs, drawings, specifications, reports, and other services, which fall below the standard of professional practice, and reimburse the City for construction costs caused by errors and omissions which fall below the standard of professional practice.

D. Approval by the City of drawings, designs, specifications, reports, and incidental work or materials furnished hereunder shall not in any way relieve Consultant of responsibility for technical adequacy of the work. Neither the City's review, approval or acceptance of, nor payment for, any of the services shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement, and Consultant shall be and remain liable in accordance with applicable performance of any of the services furnished under this Agreement.

E. The rights and remedies of the City provided for under this Agreement are in addition to any other rights and remedies provided by law.

VIII. ILLEGAL ALIENS

A. Certification. By entering into this Agreement, Consultant hereby certifies that, at the time of this certification, it does not knowingly employ or contract with an illegal alien who will perform work under the Agreement and that Consultant will participate in either the E-Verify Program administered by the United States Department of Homeland Security and Social Security Administration or the Department Program administered by the Colorado Department of Labor and Employment in order to confirm the employment eligibility of all employees who are newly hired for employment to perform work under the Agreement.

B. Prohibited Acts. Consultant shall not:

1. Knowingly employ or contract with an illegal alien to perform work under this Agreement; or

2. Enter into a contract with a subcontractor that fails to certify to Consultant that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this Agreement.

C. Verification.

1. Consultant has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement through participation in either the E-Verify Program or the Department Program.

2. Consultant shall not use the E-Verify Program or the Department Program procedures to undertake pre-employment screening of job applicants while this Agreement is being performed.

3. If Consultant obtains actual knowledge that a subcontractor performing work under this Agreement knowingly employs or contracts with an illegal alien who is performing work under the Agreement, Consultant shall:

a. Notify the subcontractor and the City within three (3) days that Consultant has actual knowledge that the subcontractor is employing or contracting with an illegal alien who is performing work under the Agreement; and

b. Terminate the subcontract with the subcontractor if within three (3) days of receiving the notice required pursuant to subparagraph (a) hereof, the subcontractor does not stop employing or contracting with the illegal alien who is performing work under the Agreement; except that Consultant shall not terminate the contract with the subcontractor if during such three (3) days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien who is performing work under the Agreement.

D. **Duty to Comply with Investigations.** Consultant shall comply with any reasonable request by the Colorado Department of Labor and Employment made in the course of an investigation conducted pursuant to C.R.S. § 8-17.5-102(5)(a) to ensure that Consultant is complying with the terms of this Agreement.

E. If Consultant does not currently employ any employees, Consultant shall sign the NO Employee Affidavit attached hereto.

F. If Consultant wishes to verify the lawful presence of newly hired employees who perform work under the Agreement via the Department Program, Consultant shall sign the Department Program Affidavit attached hereto.

IX. INDEMNIFICATION

Consultant agrees to indemnify and hold harmless the City, its officers, employees, and insurers, from and against all liability, claims, and demands, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, if such injury, loss, or damage is caused in whole or in part by, or is claimed to be caused in whole or in part by, the negligent act, omission, error, professional error, mistake, negligence, or other fault of Consultant, any subcontractor of Consultant, or any officer, employee, representative, or agent of Consultant or of any subcontractor of Consultant, or which arise out of any workmen's compensation claim of any employee of Consultant or of any employee of any subcontractor of Consultant. Consultant agrees to pay the City or reimburse the City for the defense costs incurred by the City in connection with, any such liability, claims, or demands. If it is determined by the final judgment of a court of any competent jurisdiction that such injury, loss, or damage was caused in whole or in part by the act, omission, or other fault of the Consultant, its officers, or its employees, the Consultant shall reimburse City for the portion of the judgment attributable to such act, omission, or other fault of the Consultant, its officers, or employees.

X. INSURANCE

A. Consultant agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Consultant pursuant to Section IX, above. Such insurance shall be in addition to any other insurance requirements imposed by this Agreement or by law. Consultant shall not be relieved of any liability, claims, demands,

or other obligations assumed pursuant to Section IX, above, by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

B. Consultant shall procure and maintain, and shall cause any subcontractor of Consultant to procure and maintain, the minimum insurance coverages listed below. Such coverages shall be procured and maintained with forms and insurers acceptable to the City. All coverages shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by Consultant pursuant to Section IX, above. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.

1. Workmen's compensation insurance to cover obligations imposed by applicable laws for any employee engaged in the performance of work under this Agreement, and Employer's Liability insurance with minimum limits of five hundred thousand dollars (\$500,000) each accident, one million dollars (\$1,000,000) disease - policy limit, and one million dollars (\$1,000,000) disease - each employee. Evidence of qualified self-insured status may be substituted for the workmen's compensation requirements of this paragraph.

2. Commercial general liability insurance with minimum combined single limits of six hundred thousand (\$600,000) each occurrence and one million dollars (\$1,000,000) general aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision.

3. Professional liability insurance with minimum limits of six hundred thousand dollars (\$600,000) each claim and one million dollars (\$1,000,000) general aggregate.

C. The policy required by paragraph 2. above shall be endorsed to include the City and the City's officers, employees, and consultants as additional insureds. Every policy required above shall be primary insurance, and any insurance carried by the City, its officers, its employees, or its consultants shall be excess and not contributory insurance to that provided by Consultant. No additional insured endorsement to the policy required by paragraph 1. above shall contain any exclusion for bodily injury or property damage arising from completed operations. Consultant shall be solely responsible for any deductible losses under any policy required above.

D. The certificate of insurance provided for the City shall be completed by Consultant's insurance agent as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be reviewed and approved by the City prior to commencement of the Agreement. No other form of certificate shall be used. If the City is named as an additional insured on any policy which does not allow for the automatic addition of additional insureds, the Consultant's insurance agent shall also provide a copy of all accompanying endorsements recognizing the City as an additional insured. The certificate shall identify this Agreement and shall provide that the coverages afforded under the policies shall not be cancelled, terminated or materially changed until at least thirty (30) days prior written notice has been given to the City. The completed certificate of insurance shall be sent to:

City of Northglenn
Attn: Mark Hofmeister
11701 Community Center Drive

E. Failure on the part of Consultant to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of agreement upon which the City may immediately terminate this Agreement, or at its discretion, the City may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the City shall be repaid by Consultant to the City upon demand, or the City may offset the cost of the premiums against any monies due to Consultant from the City.

F. The City reserves the right to request and receive a certified copy of any policy and any endorsement thereto.

G. The parties hereto understand and agree that the City, its officers, and its employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations (presently one hundred fifty thousand dollars (\$150,000) per person and six hundred thousand dollars (\$600,000) per occurrence) or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, Colo. Rev. Stat. §24-10-101 *et seq.*, Colo. Rev. Stat., as from time to time amended, or otherwise available to the City, its officers, or its employees.

XI. NON-ASSIGNABILITY

Neither this Agreement, nor any of the rights or obligations of the parties hereto, shall be assigned by either party without the written consent of the other.

XII. TERMINATION

This Agreement shall terminate at such time as the work in Section I is completed and the requirements of this Agreement are satisfied, or upon the City's providing Consultant with seven (7) days advance written notice, whichever occurs first. In the event the Agreement is terminated by the City's issuance of said written notice of intent to terminate, the City shall pay Consultant for all work previously authorized and completed prior to the date of termination. If, however, Consultant has substantially or materially breached the standards and terms of this Agreement, the City shall have any remedy or right of set-off available at law and equity. If the Agreement is terminated for any reason other than cause prior to completion of the Project, any use of documents by the City thereafter shall be at the City's sole risk, unless otherwise consented to by Consultant.

XIII. CONFLICT OF INTEREST

The Consultant shall disclose any personal or private interest related to property or business within the City. Upon disclosure of any such personal or private interest, the City shall determine if the interest constitutes a conflict of interest. If the City determines that a conflict of interest exists, the City may treat such conflict of interest as a default and terminate this Agreement.

XIV. VENUE

This Agreement shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in the County of Adams, State of Colorado.

XV. INDEPENDENT CONTRACTOR

Consultant is an independent contractor. Notwithstanding any provision appearing in this

Agreement, all personnel assigned by Consultant to perform work under the terms of this Agreement shall be, and remain at all times, employees or agents of Consultant for all purposes. Consultant shall make no representation that it is the employee of the City for any purposes.

XVI. NO WAIVER

Delays in enforcement or the waiver of any one or more defaults or breaches of this Agreement by the City shall not constitute a waiver of any of the other terms or obligation of this Agreement.

XVII. ENTIRE AGREEMENT

This Agreement and the attached Exhibits A and B is the entire Agreement between Consultant and the City, superseding all prior oral or written communications. None of the provisions of this Agreement may be amended, modified, or changed, except as specified herein.

XVIII. SUBJECT TO ANNUAL APPROPRIATION

Consistent with Article X, Section 20 of the Colorado Constitution, any financial obligations the City not to be performed during the current fiscal year are subject to annual appropriation, and thus any obligations of the City hereunder shall extend only to monies currently appropriated and shall not constitute a mandatory charge, requirement or liability in any ensuing fiscal conflicting provisions in the Agreement establishing any monetary obligation beyond the current fiscal year.

XIX. NOTICE

Any notice or communication between Consultant and the City which may be required, or which may be given, under the terms of this Agreement shall be in writing, and shall be deemed to have been sufficiently given when directly presented or sent pre-paid, first class United States Mail, addressed as follows:

The City: City of Northglenn
11701 Community Center Drive
Northglenn, Colorado 80233-8061

Consultant: Pure Technologies US Inc.
8920 Route 108, STE B
Columbia, MD 21045

IN WITNESS WHEREOF, the parties hereto each herewith subscribe the same in duplicate.

CITY OF NORTHGLENN, COLORADO

By: _____
Kathleen M. Novak Date

Mayor
Title

ATTEST:

Johanna Small, CMC Date
City Clerk

APPROVED AS TO FORM:

Corey Y. Hoffmann Date
City Attorney

CONSULTANT:

By: Michael S. Higgins, P.E.

MICHAEL S. HIGGINS, P.E.

Print Name

VICE PRESIDENT

Title

9/29/09

Date

ATTEST:

By:

Debra Holliday
Debra Holliday

Print Name

Marketing Director 09/29/09

Title

Date

City's Contract # _____

Name of City's Project Manager
Mark Hofmeister

Exhibit A “Scope of Services”

Review of As-Built Records

All available information on the design, manufacture, and installation of the pipe will be gathered and reviewed in detail by Pure Technologies. As-built drawings, design specifications, and lay schedules will be reviewed. Pure Technologies will notify the Cities in writing on any issues and concerns in regards to the inspection after reviewing the as-builts and prior to the inspection.

Electromagnetic Inspection

Pure Technologies' P-Wave® technology is a non-destructive means to test the condition of each section of PCCP and report the estimated number of wire breaks in the prestressing wire. Wire breaks occur in PCCP when the wire is corroded or subjected to hydrogen embrittlement. When multiple wire breaks occur at the same location in a section of PCCP, the pipe is significantly weakened and may experience a catastrophic failure.

Pure Technologies will access the pipe at existing manhole locations and a three man crew will traverse the pipeline with the inspection equipment. The inspection shall start at Station 6 + 72 and end at Station 341+53. The inspection shall exclude pipe between station 99+07 and station 150+84. (As stated in the RFP)

The inspection crews will perform the following tasks:

1. **Collect Electromagnetic Data:** One member of the inspection team will manually push electromagnetic inspection equipment through the pipeline and collect electromagnetic data. A project specific calibration will be performed by Pure.
2. **Visually Inspect Pipeline:** One member of the Inspection team will visually examine the pipeline to identify any cracks or other indications of distress. Information from the Visual Inspection may be useful during the data analysis phase of the electromagnetic inspection. Further, longitudinal cracks are usually observed in lined cylinder pipe with significant wire break damage. If these types of cracks are observed that will be brought immediately to the attention of the Cities which provides additional time to implement repair, if necessary, while the pipe is out of service for the inspection.
3. **Documentation:** during the inspection, data will be recorded on paper and through the use of a Dictaphone. The Dictaphone recording will be typed following the inspection and provided in the final report.

GPS Mapping of Above Ground Features

While the inspection crew is onsite, the team will utilize a handheld GPS device to obtain coordinates of all above ground structures of the pipe as stated in the RFP. Thirty features (including air release valves, access manholes, etc.) were assumed for the purpose of cost

estimation. A GIS shapefile or geodatabase will be provided to the city containing the mapped features with documentation included in the final report.

Confined Space Entry Support

Pure Technologies' inspection will meet all OSHA requirements for permit required confined spaces. Pure Technologies will prepare a confined space entry plan and entry permits for the internal inspection of the pipeline. In addition, Pure Technologies will provide top attendants and required safety equipment (i.e. gas monitors, tripods, winches, etc.) for entry into the pipeline.

Failure Risk Analysis and Engineering Evaluation

Pure Technologies has two national leading consulting engineering firms in the area of condition assessment, which will be called on to provide a failure risk analysis, engineering analysis, visual inspection and recommendations—Jason Consultants and Openaka. These firms have the capability to and significant experience in evaluating condition assessment data, make engineering recommendations, and design basic repairs for large diameter pipe.

Although each pipe section must be evaluated on a case-by-case basis, many problems are common when evaluating PCCP transmission main and the engineering approach is usually similar from project to project. The Pure Technologies team envisions the following engineering approach for each of these problems.

1. Cracking on Internal Surface of Pipeline

The importance of cracking of the interior surface of the pipe wall depends on the configuration and extent of cracking. An engineer with considerable experience evaluating these cracks should be called on to identify and evaluate the consequence of these cracks. Edward A. Padewski, III, P.E. has been evaluating this data for more than 15 years and will be used to evaluate the significance of all cracks identified in the subject pipelines.

2. Evaluating Wire Break Damage Data

The ultimate objective of the project is to evaluate the risk associated with each PCCP pipe section and implement strategies that will manage or mitigate risk to ensure the safe, continued operation of the subject mains. Electromagnetic inspection of PCCP will provide a list of pipe sections that have wire break damage and an estimate on the quantity of wire breaks. However, wire break damage is only one variable that affects the risk associated with a pipe section. Important variables that will be considered when evaluating risk include:

- A. Pipe section design: This includes the design parameters of the pipe like the wire pitch, core thickness, diameter, strength of materials and a variety of other design variables.
- B. Number of Broken Prestressing Wires: The number of broken wire wraps.

- C. Operating and transient pressures
- D. Height of earth cover with respect to original design
- E. Aboveground facilities near subject pipe section: If pipe is in a developed area, the consequence of failure is higher than if the pipe is situated in a field.
- F. Results of other inspection methods like leak detection and visual/sounding inspections.
- G. If wire breaks are contiguous or located in multiple wire break zones.

When evaluating how to safely renew or extend the life of a pipeline, all these variables will be considered to make sound engineering recommendations. In general, Pure Technologies has classified individual pipe sections classified in one of four categories: near incipient failure, moderate risk, minor risk, and no damage when deciding which pipe sections to repair.

3. *Structural Modeling*

An important tool to evaluate risk associated with a pipe section is to perform a detailed structural analysis. There are several forms of structural analysis that can be performed, but the most useful when evaluating the risk of wire break damage is finite element modeling. Jason Consultants, a national leader in condition assessment and finite element modeling of PCCP mains, will provide this capability. Jason Consultants have carried out over 500 structural analysis of PCCP pipe using their proprietary software based on the AWWA C304 design principles. In terms of rating the structural integrity of the PCCP pipe, the following severity ranking has been created.

- 1– Meets all serviceability limits
- 2– Microcracking limits exceeded but no visible cracks, elastic limits not exceeded
- 3 – Visual cracking limits exceeded, or excessive core compression but elastic limits not exceeded
- 4 – Elastic limits exceeded but strength limits not exceeded
- 5 – Strength limits are exceeded

Creation of GIS Shapefile or Geodatabase from Inspection Results

Utilizing as-built drawings and GPS mapping data points collected in the previous task, Pure Technologies will create a digital spatial projection in ArcGIS (The Cities projection for digital data is: NAD 1983, State Plane, Colorado North, Feet) of the inspected portion of the pipeline also containing inspection results within the file's attribute table. As-built drawings will be digitized in AutoCAD and imported into ESRI's ArcGIS software. The above ground features collected with a handheld GPS device in the previous task will then be imported into ArcGIS and used to refine the location of the digitized pipeline. The ArcGIS pipeline layer will be segmented into individual pipe segments with separate attribute table entries for each segment. The attribute table of the ArcGIS layer will, at minimum, include: pipe identification number, beginning/end stationing of each pipe segment, P-Wave wire break results, visual/sounding inspection results, failure risk

analysis results, and any associated photo ID/hyperlinks. The final deliverable will be an ArcGIS shapefile or geodatabase with the contents detailed above.

Reporting

The inspection data and failure risk analysis will be documented in a detailed engineering report, including engineering recommendations focused on safely managing the subject pipeline. The report will include detailed documentation on the following aspects:

1. Photographs and documentation of visual indications of distress.
2. Document failure risk analysis and provide discussion on how to manage pipe sections with damage.
3. List of all pipe sections in the pipeline providing length of pipe, other features (connections, air valves, etc.) and estimated number of wire breaks.
4. Provide detailed engineering recommendations on how to manage the pipeline. This would include recommending any necessary repairs, when reinspection of the pipeline should be performed, and any other strategies to ensure safe operation of the pipeline.
5. Report will be supplied in both electronic and hard copies (Four bound documents and two CD's)

Schedule

Internal inspection work: November 2 – 6, 2009 (5 working days)

Evaluate data, perform engineering evaluation and failure risk analysis, and provide the draft report to the Cities: 4 to 6 weeks

The Cities review of Draft report: 2 to 4 weeks

Provide Final Report: 2 to 4 weeks

Pure Technologies will meet with the Cities to present the draft report and discuss engineering recommendations and answer any questions, the Cities may have.

Exhibit B
“Cost of Services”

Review of Asbuilt Records	\$0 (na)
Electromagnetic Inspection	\$98,700
GPS Mapping of Aboveground Features	\$3,000
Confined Space Entry Support	\$19,800
Failure Risk Analysis and Engineering Evaluation	\$19,700
GIS	\$12,000
<hr/>	
Total Cost	\$153,200

PROSPECTIVE CONSULTANT'S CERTIFICATE REGARDING EMPLOYING OR CONTRACTING WITH AN ILLEGAL ALIEN

FROM: PURE TECHNOLOGIES US, INC.
(Prospective Consultant)

TO: City of Northglenn
PO Box 330061
11701 Community Center Drive
Northglenn, CO 80233

Project Name STANDLEY LAKE PIPELINE INSPECTION PROJECT

Bid Number 2009-25 Project No. _____

As a prospective Consultant for the above-identified bid, I (we) do hereby certify that, as of the date of this certification, I (we) do not knowingly employ or contract with an illegal alien who will perform work under the Agreement and that I (we) will confirm the employment eligibility of all employees who are newly hired for employment to perform work under the Agreement through participation in either the E-Verify Program administered by the United States Department of Homeland Security and Social Security Administration or the Department Program administered by the Colorado Department of Labor and Employment.

Executed this 29th day of SEPTEMBER, 2009.

Prospective Consultant PURE TECHNOLOGIES US, INC.

By: Mill Jagg

Title: VICE PRESIDENT

Finance Dept Use Only	
Initials	_____
Date	_____
PO #	_____