

City of Scottsbluff, Nebraska

Monday, July 16, 2018

Regular Meeting

Item Reports3

Council to discuss and consider approval of a contract with Trihydro Corporation to complete Step 1-Site Assessment/Investigation for the siting of a municipal solid waste facility with the City of Gering.

Staff Contact: Nathan Johnson, City Manager



**TRIHYDRO CORPORATION – CITIES OF SCOTTSBLUFF AND GERING, NEBRASKA
ENGINEERING AND CONSULTING SERVICES – GENERAL BASIC AGREEMENT
WORK ORDER**

Work Order No.: 18-134WO-E

Date: July 10, 2018

Job No.: 54Q-001-001

Location of Project: Gering, Nebraska

Contract No.: Engineering and Consulting Services General Basic Agreement between Trihydro Corporation and Cities of Scottsbluff and Gering, Nebraska, 18-017BA-E.

Services to be Performed: Trihydro will provide technical landfill services for the City of Scottsbluff and City of Gering. Work to be performed in accordance with the Statement of Qualifications and Technical Proposal dated February 06, 2018. Trihydro will receive a written Notice to Proceed from the Cities of Gering and Scottsbluff, Nebraska prior to commencing work on each step of the project. Trihydro is only authorized to commence Step 1 at this time, according to the Schedule below. The parties agree to proceed, past Step 1, by individual steps, one at a time. Proceeding to additional steps must be agreed to by the parties in writing.

Schedule - Commencement Date: July 30, 2018

Completion Date: January 2, 2019 (Step 1 Exhibit "C" only)

Trihydro's Project Manager: Marjorie E. Bedessem

Client's Project Manager: Brendan C. Lilley

Attachments: A. Statement of Qualifications and Technical Proposal dated February 06, 2018
 B. Cost Estimate and Schedule of Charges
 C. Summary of Broad Cost Areas

Other Information: Subject work will be billed according to the Engineering and Consulting Services – General Basic Agreement between Trihydro Corporation and the Cities of Scottsbluff and Gering, Nebraska, dated July _____, 2018. Costs shall be on a time and materials basis not to exceed \$264,512.00, for Step 1, without prior written authorization from the Cities of Scottsbluff and Gering, Nebraska.

This WORK ORDER is made and entered into pursuant to that certain ENGINEERING AND CONSULTING SERVICES – GENERAL BASIC AGREEMENT, by and between TRIHYDRO CORPORATION and CITIES OF SCOTTSBLUFF AND GERING, NEBRASKA, 18-017BA-E, dated July _____, 2018, the terms, conditions, and provisions whereof are hereby incorporated herein and made a part hereof.

Facsimile/Email signatures will be accepted to execute this Work Order.

TRIHYDRO CORPORATION

BY: Deby L. Forry
Deby L. Forry, Esq.,

Title: Sr. Vice President of Risk Management

CITY OF SCOTTSBLUFF, NEBRASKA

BY: _____

Title: _____

CITY OF GERING, NEBRASKA

BY: _____

Title: _____



ATTACHMENT A

**STATEMENT OF QUALIFICATIONS AND TECHNICAL PROPOSAL
DATED FEBRUARY 06, 2018**



Statement of Qualifications and Technical Proposal

Tuesday, February 6, 2018

Siting, Development, Permitting, & Design of a New Landfill Facility for the Cities of Scottsbluff and Gering, Nebraska

Ms. Kathleen J. Welfl
City Clerk
City of Gering, Nebraska
1025 P Street
Gering, NE 69341

Trihydro Corporation | 1252 Commerce Drive | Laramie, WY 82070 | p. 307/745.7474 | f. 307/745.7729 | trihydro.com

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February 6, 2018

Ms. Kathleen J. Welfl
City Clerk
City of Gering, Nebraska
1025 P Street
Gering, NE 693410

Ms. Welfl,

Trihydro Corporation (Trihydro) is pleased to submit our Statement of Qualifications (SOQ) to provide technical landfill services for the City of Scottsbluff and City of Gering Landfill (Cities). Our project team's goal is to provide technical expertise and regulatory knowledge to address the unique challenges posed by this complex and high-profile project.

Trihydro recognizes the multi-faceted nature of this project, and has therefore partnered with five strategically chosen firms to provide the best possible overall team:

1. **Baker and Associates** (Baker) of Scottsbluff, Nebraska
2. **Steamboat Technical Services** (Steamboat) and **Peak Geotechnical Solutions** (PeakGeo) of Sheridan, and Glenrock, Wyoming respectively
3. **Metcalf Archeology** (Metcalf) of Lakewood, Colorado
4. **Contour Consulting Engineers** (CCE) of Evergreen, Colorado

Members of our team previously met with the City of Gering engineering department and the landfill operator, and understand the landfill located in the City of Gering at 200531 W U Street will reach capacity in the next few years. The current landfill accepts solid waste from the City of Scottsbluff, City of Gering, Terrytown, and several other surrounding Cities. Over the past several years, the Cities have been actively searching for a new landfill location, and have identified two potential different areas south of the City of Morrill near Bald Peak. We are also aware that some residents from Morrill have expressed opposition to this location. Once a site is selected, we are committed to securing a permit from the Nebraska Department of Environmental Quality (NDEQ) by February 1, 2019.

We are confident our project team is ideally situated in terms of experience, capability and geography to successfully manage and implement this project for the Cities. Trihydro and our combined project team have successfully constructed multiple landfills and worked on hundreds of solid waste sites with conditions similar to those in the Nebraska Panhandle during our 33-year history. We are prepared to leverage this expertise and our experience working with the local, State, and Federal solid waste regulations to successfully complete the Cities' landfill siting, permitting, and design project.

The key advantages offered by our team include:

- **Technical Landfill Expertise.** Our team is a multi-disciplinary, fully-integrated project team composed of a diverse staff of landfill experts who have completed similar projects across the country. This includes project team members that have worked within industry, held landfill planning board and regulatory positions, and former solid waste program regulators. Our landfill experience includes design, construction, subsurface investigations, remediation and monitoring programs; solid waste permitting and



development; engineered containment and final cover systems design/construction; landfill gas systems design/construction; technical plan and specification preparation; construction oversight; and monitoring of systems performance. With our team's multidimensional experience, we can begin with the end in mind, hit the ground running, and anticipate challenges.

- **Public Outreach.** We understand that siting and building a landfill may create perceived impact to local property owners. Trihydro advocates and has experience creating a proactive public outreach program to facilitate project execution and successful outcomes. We also recognize the importance of building trust and developing working relationships with the public. Our team is ready to support the Cities in communicating the project importance, and how protecting public health and the environment will be essential to the project's success. Trihydro's public outreach specialists are experienced presenters capable of effectively communicating and working with community groups, which will be beneficial in gaining public acceptance.
- **Regulatory Expertise.** Our project team personnel have extensive historic and recent experience working with EPA Region 7 and the Nebraska Department of Environmental Quality (NDEQ). We maintain collaborative relationships and credibility with regulators and permitting agencies. In addition, we have extensive "hands-on" experience working with local governments. Our regulatory expertise will facilitate a comprehensive and mutual approach to permitting and regulation.
- **Efficient Decisions.** Our team will advance the project by communicating appropriate information so that project decisions can be made efficiently. Staffing the project with a team that has the right leadership; technical resources; experience with similar work scopes; and understanding of typical project risks and how to respond to them are all fundamental factors in successful and efficient decision making.
- **Wholistic Project Approach.** We understand that there is no "magic bullet" or "one-size-fits-all" solution to every site. If selected, we will recommend an optimal project approaches to address the full scope of work, and will also include cost-savings ideas and suggestions to increase value. We recognize that the Cities will ultimately decide how the tasks are completed, and we believe one of our responsibilities will be to provide realistic, end-game-oriented options for consideration. We will work closely with the Cities personnel to carefully consider the complex priorities associated with the project, including: cost, time to complete activities, technical applicability, regulatory acceptance, possible human health exposure, and overall net sustainability.
- **Unwavering Ethics.** Trihydro brings a strong code of professional ethics to its projects, and can be counted on to "do the right thing." Trihydro exemplifies this commitment in our day-to-day interactions with clients, stakeholders, regulatory personnel, and the public. We will bring this same level of ethical commitment to project work performed for the Cities, which will further enhance the trust of the public and garner project acceptance.

As a national team with industry-recognized technical expertise in siting, permitting, and constructing landfills from start to finish, Trihydro possesses strong qualifications to support the unique challenges and complexities associated with the new solid waste facility. Additionally, we have and the experience and local presence to anticipate potential issues, develop solutions, and serve as an advocate for the Cities' during implementation of the landfill project.

We look forward to working with you on the Siting, Development, Permitting, & Design of a New Landfill Facility. Please do not hesitate to contact us at (307) 745-7474 if we can provide additional information or answer any questions.

Marjorie Bedessem, P.E., Ph.D.



Project Manager

1.0 Executive Summary

Firm Information	Trihydro Corporation 1252 Commerce Drive Laramie, WY 82070 307-745-7474 www.trihydro.com
Date Established	1984
Type of Entity	Corporation
Nebraska Certificate of Authority Number	CA0157
Nebraska Certificate of Authority Expiration Date	February 3, 2018; Renewal Submitted January 26, 2018
Proposed Project Manager Information	Marge Bedessem, P.E., Ph.D. Senior Civil Engineer Professional Engineer #5373 (WY)

Trihydro has assembled a “best in class” team to provide service for the Cities of Gering and Scottsbluff Landfill project. Our project team and partners (Baker and Associates, Steamboat Technical Services, PeakGeo, Metcalf Archeology, and Contour Consulting Engineers) are a strong alliance of industry experts that have worked together on similar projects. Each of the team’s partners bring a specific skill set to address project needs, and are deemed instrumental in completing this project in a technically practical and economical manner:

1. Trihydro brings extensive landfill siting, design, permitting, regulatory, monitoring, public communication and outreach, ecological, and remediation expertise to this project. We also have a strong reputation for managing large and complex projects and teams, thus making us a clear choice for serving as the project lead.
2. Baker provides engineering, surveying, and has direct local experience within the Gering and Scottsbluff communities. Baker brings local knowledge and understanding of the public dynamics, local geology, and culture challenges that may be encountered during siting and construction.
3. Steamboat/PeakGeo, are solid waste professionals specializing in design and construction of landfills across the nation. Their proven approach provides quality, cost-effective, practical, and responsive services that will keep this project on-track and on-budget. Each has worked with a variety of municipalities and are ready to begin work immediately upon contract award.
4. Metcalf is very familiar with the western landscape, and will identify cultural and archeological challenges that may be encountered during siting. Metcalf has experience working closely with regulatory agencies and the Bureau of Indian Affairs (BIA); which is expected to be a concern in this project.
5. Contour Consulting Engineers (CCE) is a geotechnical firm specializing in seismic evaluations. We anticipate this will be a significant component of the proposed siting activities, and therefore added CCE to the project team. Their knowledge of the western geology will also assist in providing the Cities with the most technically sound designs.

Our proposed project team is well-suited to efficiently execute the required services for the landfill project, while also providing the local knowledge and experience necessary to meet the long-term needs of the Cities and other project stakeholders. Our overall approach is combining local connection to the Gering and Scottsbluff communities with solid technical expertise in siting, design, and construction of landfills, and an in-depth understanding of NDEQ solid waste regulations. Additionally, the team’s diverse staff provides a “best value” contracting opportunity for the Cities. We are committed to supporting the Cities efforts in completing this project in an economical, safe, reliable, and technically-sound manner with a “community-first” approach in mind.

The best executed projects are those that clearly identify and articulate “success” during the very first stages of the effort. Each of our projects begins with the end in mind, and we would approach this opportunity with the same. Our team is proficient working on projects funded from municipal sources, and understand the critical need to thoroughly document and report progress and expenditures for the Cities of Gering and Scottsbluff.

Our team compared the Cities' project description and scope of work to similar projects we have executed. The following summarizes specific areas we identified that are critical to overall project success, and why. We will work with the Cities to refine these items and directly address the Cities' needs.

- **Public and Stakeholder Communications** - The proposed landfill is clearly a high-profile site with a variety of stakeholders and interested parties. We understand that the local community is increasingly active in discussions about the proposed location of the landfill. A proactive and open communications program with the surrounding communities and stakeholders can't ensure success, but it can certainly optimize the overall chance for it. Our team understands these needs, and can help coordinate and structure a campaign that will advocate for the Cities' and accomplish this goal.
- **Effective project management** - A project is only as successful as the team that executes it. A mismanaged project not only results in potential budgetary overruns, but also sets the stage for subcontractor difficulties, delays, and a breakdown of the project team's cohesion. Our approach to project management and implementation is to function as an extension of the Cities staff. Trihydro anticipates working closely with the Cities to effectively and efficiently manage the project and spend the public funds responsibly.
- **Implementation of an Effective Quality Management System** - No project of this scope and magnitude goes without challenges or difficulties. The ability of our project team to respond quickly and correctly to these challenges sets us apart from our competitors. We have a well-documented Quality Management System (QMS) that serves as a guidance to manage changes, as well as insure integrity of data, reports, and critical project documents.
- **Health and Safety** - A safe project equates to a well-run project. Projects exhibiting frequent health and safety issues generally have additional significant and underlying problems that destroy success at its core. Our team's approach on health and safety begins with the simple principle that each employee and team member deserves to go home safely each evening when the day's work is completed. Maintaining a safe work environment is a primary concern of Trihydro's management, and our company's philosophy is that all incidents are preventable.

2.0 Project Understanding

Our Project Team understands that the Gering Landfill will reach capacity in the next few years, and that Gering and Scottsbluff joined together a few years ago to locate a new potential landfill site. Specifically, the Cities are considering purchase of land in Sections 14 and 15, Township 22N, Range 57 West, on the south side of Bald Peak. Preliminary work under this Project requires formal evaluation of site suitability with respect to NDEQ and Scotts Bluff County requirements. The proposed land is currently zoned for agricultural use.

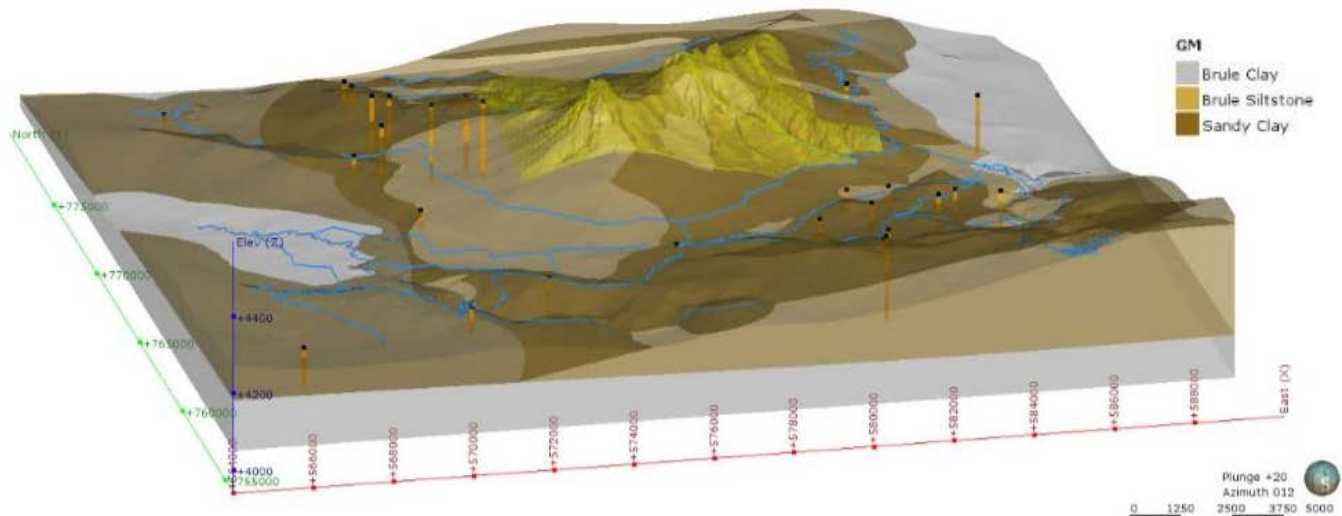
A number of sites previously considered have been located approximately 5 to 6 miles south of the Village of Morrill in the Bald Peak area. As stated earlier, the focus on these potential sites has already given rise to local community concerns from residents in the Village of Morrill and from the Gering-Fort Laramie Irrigation District. These concerns ultimately resulted in some of the sites being dismissed from further consideration.

The territory surrounding Bald Peak is predominantly agricultural land that is irrigated by natural waterways and laterals to local producers. Irrigation ditches almost fully encircle the base of Bald Peak. We have taken the initiative to prepare a preliminary conceptual site model based upon existing information, and the CSM is summarized on Figure 2.2.



Based on a preliminary conceptual model compiled using data from local well logs and the United States Geological Survey, our team believes that subsurface geology surrounding Bald Peak consists of unconsolidated alluvial deposits, including sandy clays and possibly sand, silt, and minor gravel. The underlying bedrock appears to include siltstones and claystones of the Brule Formation. Groundwater wells registered within approximately one mile of the proposed landfill site include domestic, livestock, observation, and monitoring wells. Records indicate these wells are approximately 30 to 200 feet deep, and appear to be tapping water from siltstones or claystones within the Brule Formation. No apparent siting conflicts associated with the Scotts Bluff County requirement that the landfill not be in the Scotts Bluff County Wellhead Protection Areas were initially identified. Our experience suggests the Bald Peak Area may have cultural and historical significance to both Native American's and archeologists. Hence the inclusion of Metcalf on our team to assess these possibilities. Our team has a proven track record of successfully working with the BIA and tribes on similar projects.

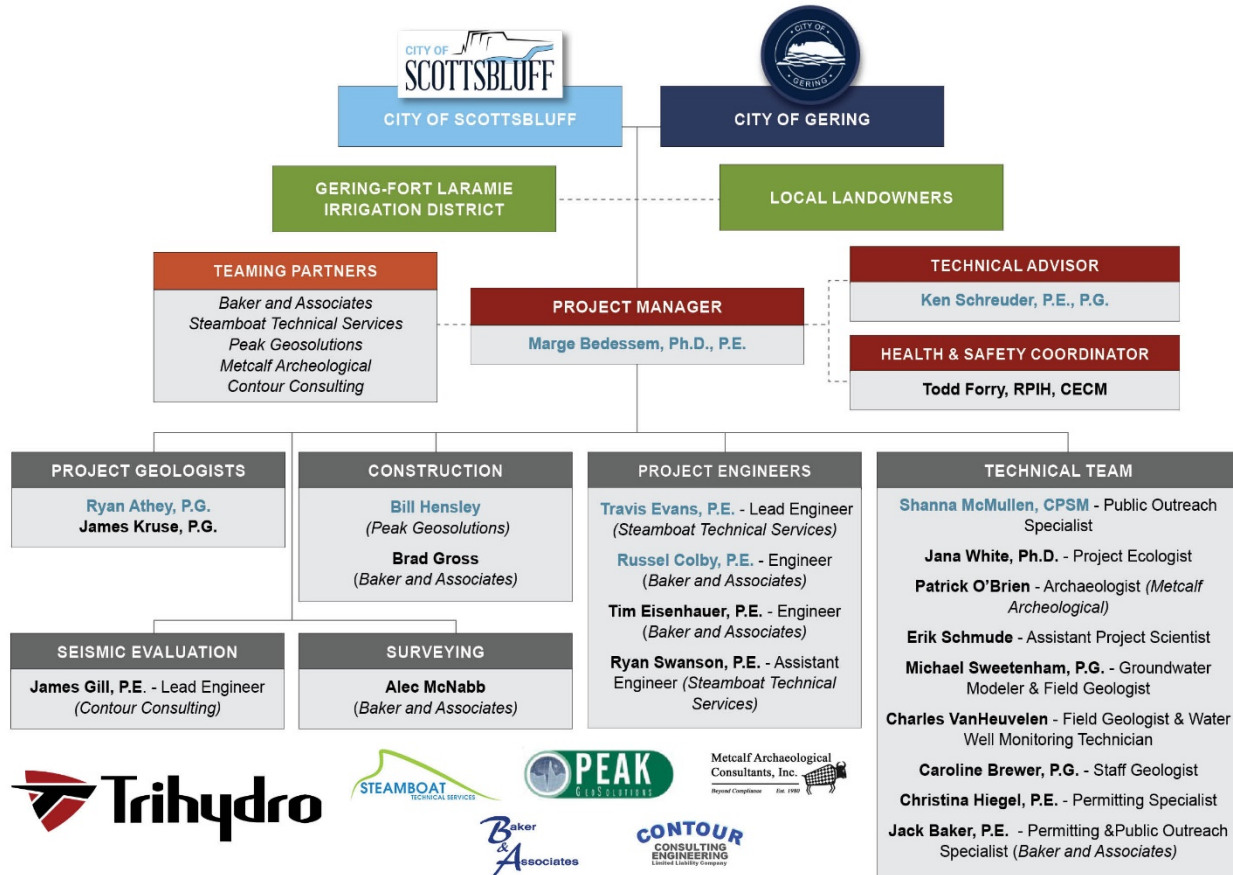
Figure 2-2: Conceptual model of the proposed landfill site on Bald Peak showing the proposed property footprint (pale yellow), subsurface geology and the location and depth of local water wells.



The Cities are proposing to construct a lined municipal solid waste (MSW) landfill with an adjacent construction and demolition disposal site (C&D). The complex would include related structures, access roads, and engineered containment system (ECS). The facility is to be designed for a 50-year life capacity. Our proposal addresses each of these objectives, and includes a ***proven and economical, phased approach we have used at over 200 landfills, nationwide***. The proposed approach has saved our clients millions of dollars over the past years, and resulted in list of satisfied clients (including municipalities) that continue to utilize our services.

3.0 Project Team

A brief description of the experience and abilities of key personnel is provided below, and includes an organizational chart of our proposed project team. Personnel resumes are provided in Attachment A. Trihydro can commit these individuals and the necessary technical support staff to perform the requested services for the Cities.



3.1 KEY PERSONNEL

Marge Bedessem, Ph.D., P.E., Trihydro; Project Manager, Senior Engineer – (Laramie, Wyoming)

Dr. Bedessem will be the Project Manager and Regulatory Advisor for the project. As Project Manager, Dr. Bedessem will serve as the primary contact for all project-related activities, the principal author of project status reports, and will maintain overall control of the project budget. In addition, she will be responsible for overall strategy, technical guidance, and ensuring a high-degree of quality are incorporated in to all facets of assessment, design, and construction. She has more than 30 years of civil and environmental engineering experience in the regulatory, academic, and consulting fields. Dr. Bedessem joined Trihydro after 7 years as a University of Wyoming Civil Engineering faculty member teaching both undergraduate and graduate courses, including: integrated solid waste management, environmental chemistry, and environmental biotechnology. Dr. Bedessem worked with the WDEQ/SHWD to support graduate research using statistical analyses to evaluate Wyoming landfill characteristics contributing to groundwater impacts, which was one of the precursors to development of the landfill remediation program. Dr. Bedessem continues to work on landfill design, permitting and groundwater monitoring and assessment projects across the country.

Relevant Project Experience

Project Manager, Senior Engineer: Laramie Landfill Design, Permitting, & Oversight, City of Laramie, Completed 2015. *See also Section 5.1.*

Project Manager, Senior Engineer: Happy Jack Landfill Environmental Monitoring, Planning, and Permit Modification, Ongoing.

Project Manager, Senior Engineer: Integrated Solid Waste Management Plan and Full-Cost Accounting, Southeaster Wyoming Planning Area, Completed 2008. Project included large public outreach component, including a website, brochures, small group presentations, public meetings, press releases, local news coverage, public notices, and three rounds of public comment.

Ken Schreuder, P.E., P.G., Trihydro; Project Director, Technical & Regulatory Advisor – (Lander, Wyoming)

Mr. Schreuder serves as Trihydro's Team Leader for Industrial Facilities and oversees the company's Solid and Hazardous Waste Team. Mr. Schreuder's role for this project will be the Project Director and he will serve as a technical advisor. He has over 30 years of experience in both technical and regulatory roles relative to all aspects of RCRA solid and hazardous waste management. Mr. Schreuder has an in-depth knowledge of regulatory monitoring requirements, as well as experience with the required field, laboratory, and statistical procedures. Mr. Schreuder manages a variety of waste management projects at public, private, and industrial facilities. These projects include siting, characterization of hydrogeologic regimes, design of engineered containment systems, design and permitting of water balance final cover systems, development of construction quality assurance and quality control programs, groundwater and landfill gas monitoring, statistical analysis of groundwater data, evaluation and implementation of corrective action systems for landfill gas and groundwater impacts, closure certification, and post-closure care and termination. He has also successfully designed and permitted three water balance final cover systems for municipal solid waste landfills.

Relevant Project Experience

Senior Engineer/Geologist & Permitting Coordinator: New Commercial Landfill Planning, Design & Permitting, Confidential Client, Completed 2016. *See also Section 5.2.*

Project Director & Project Manager: Sand Draw Landfill Lifetime Operating Permit and Water Balance Cover, Fremont County Solid Waste Disposal District (FCSWDD), Ongoing.

Project Manager: Operational Efficiency Evaluation, FCSWDD, Completed 2014. Project included evaluation of existing facilities (4 landfills, 2 bale stations, and 12 transfer stations), evaluation of alternatives, and implementation of the preferred alternatives.

Russel Colby, P.E., Senior Civil Engineer with Baker & Associates – (Scottsbluff, Nebraska)

Mr. Colby has 35 years of experience and currently serves as a senior project manager and civil project engineer for construction projects covering all phases of work for municipal public works projects. This includes planning studies, field investigations, project design and construction management. His role on this project will include managing the geotechnical investigations, completing land surveys, providing local and community knowledge, attending public meetings, and assisting with construction oversight. Mr. Colby has considerable experience with solid waste projects in Western Nebraska and Eastern Wyoming including integrated management plans, landfill design, baler facilities, permitting, and site assessments.

Relevant Project Experience

Senior Engineer: City of Kimball & D Landfill Permitting, Kimball, NE, 2015

Senior Engineer: TDS Environmental Solid Waste Landfill Design, Torrington Disposal Service, 1991, 2000, 2011

Senior Engineer: City of Alliance Solid Waste Baler Facility & Permitting, 1996, 2007, 2013

Travis Evans, P.E., Principal Engineer, Steamboat Technical Services & Remediation – (Sheridan, Wyoming)

Mr. Evans has 19 years of experience as a reclamation foreman and professional engineer. Over the last five years, Mr. Evans has led the permitting, design, construction, and CQA services related to permitting greenfield landfills, transfer stations, landfill closures, and the expansion of existing landfills. Trihydro has teamed with Mr. Evans several times and his role on the proposed project will be to assist with project management (budget/schedule), lead the landfill design, attend meetings (as needed), and approve professional engineering drawings and field changes. His clients

include publicly held solid waste companies, municipalities, and solid waste districts throughout Wyoming and Montana. He has worked on the Teton County Waste Relocation Project; Grasslands Environmental Industrial Landfill permitting; Happy Jack Landfill Expansion; Casper Regional Landfill projects; High Country Joint Powers Board Landfill Closure and Convenience Center; Lincoln County #2 Landfill Expansion; City of Sheridan Cell 9 CQA; Upper Platte River Solid Waste District Landfill Closure; City of Rawlins Landfill Closure; and miscellaneous engineering services for the Billings Regional Landfill.

Relevant Project Experience

Project Manager: Happy Jack Landfill Expansion, City of Cheyenne, Ongoing. *See also Section 5.3.*
 Project Manager: Grasslands Environmental Industrial Landfill Siting, Permitting, and Design, Grasslands Environmental, Bill, Wyoming, Completed 2014. *See also Section 5.4.*
 Certifying Engineer: Casper Regional Landfill, City of Casper, Completed 2016. *See also Section 5.5.*

Ryan Athey, P.G., Trihydro; Project Geologist/Field Lead – (Laramie, Wyoming)

Mr. Athey has nearly 16 years of experience with environmental and geological investigations. Mr. Athey will coordinate and direct field activities, including site assessment planning, drill crew management, lithologic sampling, and evaluation of the shallow subsurface geology/hydrogeology and impacts. His project experience includes well siting studies, aquifer testing, well design and specifications, well installation, soil and groundwater quality monitoring, and modeling groundwater and capture zones. He has experience with a variety of drilling methods, including: air rotary, mud rotary, hollow-stem auger, direct-push, and sonic drilling activities. He has overseen drilling activities at multiple facilities and brings a strong background conducting subsurface investigations for complicated site assessments. He has served as Project Manager for over 10 site-specific investigation projects related to aquifer protection.

Relevant Project Experience

Project Geologist: Norwood River Storage, Level II Study, Wyoming Water Development Commission, completed 2016. Geologic & Hydrogeologic characterization of the proposed site of the dam embankment and reservoir.
 Project Geologist: Cole Tank Relocation, City of Sundance, Wyoming, Completed 2014. Characterization of site for municipal water storage tank.
 Project Geologist: Laramie Third Street PCE Project, Wyoming Department of Environmental Quality (WDEQ), Completed 2016. Characterization of contamination across six sites.

Bill Hensley, QA/QC Specialist with Peak GeoSolutions, Inc. – (Glenrock, Wyoming)

Mr. Hensley has over 20 years construction management, construction materials testing, geosynthetics testing, and construction quality assurance experience. He has been a member of the construction management or CQA team on over 60 geotechnical construction projects totaling over \$300 million. His role on the project will be preparation of construction contract documents, on-site construction management, contract administration, and development and management of construction quality assurance programs. Prior to entering the field of technical consulting, Mr. Hensley was employed in the heavy construction industry in a variety of fields including, electrical utilities distribution (underground), traffic control systems, geosynthetics installation, general mechanical and earthworks construction, and concrete dam construction.

Relevant Project Experience

QA/QC Specialist: Casper Regional Landfill, City of Casper, Completed 2016. *See also Section 5.5.*
 QA/QC Specialist: Grasslands Environmental Industrial Landfill Siting, Permitting, and Design, Grasslands Environmental, Bill, Wyoming, Completed 2014. *See also Section 5.4.*
 QA/QC Specialist: Laramie Landfill MSW Landfill Expansion, City of Laramie. *See also Section 5.1.*

Shanna McMullen, Trihydro; Public Outreach Specialist – (Laramie, Wyoming)

Ms. McMullen has over 20 years of experience in public relations, community outreach, marketing, and business development. Ms. McMullen will lead the community relations and support efforts as required by the Cities. She possesses a broad range of experience, including coordinating, tracking, distributing, designing, and producing public relations and outreach materials. She also possesses a broad range of corporate branding expertise across print, web, and multi-media platforms. Ms. McMullen has assisted in the design and implementation of a number of public

education and outreach campaigns for both technically complex and publicly-sensitive environmental projects. This experience includes designing and coordinating public outreach and collateral material, including: fact sheets, newsletters, PowerPoint presentations, press releases, media packages, and promotional materials. Ms. McMullen has also designed, developed, and maintained multiple project management websites for state agencies and industrial clients.

Relevant Project Experience
Marketing Manager, Laramie Landfill Expansion, City of Laramie, WY, Completed 2015. See also Section 5.1. Developed web graphics and public educational materials.
Marketing Manager, Integrated Solid Waste Management Planning, Wyoming, 2008.
Marketing Manager, Confidential, Wyoming, Montana, and Illinois, Current. Designed and coordinated collateral materials for highly controversial closed refineries.

3.2 PROJECT PARTNERS AND SELECTION RATIONALE

3.2.1 BAKER & ASSOCIATES

With headquarters in Scottsbluff, Nebraska, Baker brings direct, relevant, local experience, and geotechnical, surveying, and landfill construction expertise to the team. Baker is an engineering, architecture, and surveying firm established in 1977, with outstanding local presence and regulatory knowledge. They have regional experience with design and construction of several regional landfills, as well as experience with dozens of other solid waste facilities in the region. Among others, Baker has provided services for solid waste facility siting and evaluation, design, permitting, construction, economic analysis, master planning, landfill closures, feasibility studies, and transfer and baler facilities. Baker's role is anticipated to extend from beginning to end, with involvement in site assessment & investigation, Permit Application Development, and Final Design and Construction.

3.2.2 STEAMBOAT TECHNICAL SERVICES, LLC AND PEAK GEOSOLUTIONS

In Trihydro and Steamboat/PeakGeo successfully collaborated on over 100 previous landfill projects, with construction of over 55-million square-feet of geosynthetics and composite lined containments cells, leachate ponds, and other surface impoundments. Steamboat/PeakGeo were specifically added to the project team for their expertise in construction of quality landfills. Steamboat's forte is quality solid waste infrastructure siting, planning, permitting, and design; PeakGeo is an experienced construction management company. Both firms have an extensive client base in the solid waste and wastewater containment industries.

3.2.3 CONTOUR CONSULTING ENGINEERING

Contour Consulting Engineering (CCE) of Kittredge, Colorado specializes in the evaluation and design of complex geotechnical projects throughout the country, and has worked closely with Trihydro on engineered containment systems and pond designs. Trihydro will utilize CCE to perform slope stability analysis and seismic deformation evaluations at the proposed project site.

3.2.4 METCALF ARCHAEOLOGICAL CONSULTANTS, INC.

Metcalf is a cultural resource management firm with more than 30 years of experience providing archaeological services in the Rocky Mountains, Eastern Great Basin, and Central and Northern Great Plains. Metcalf conducts all phases of the cultural resource compliance process, including file searches, inventory, testing, mitigation, construction monitoring, laboratory analysis and artifact curation, report production, and tribal consultation. Trihydro will utilize Metcalf to conduct the archaeological survey of the proposed landfill site.

4.0 Technical Approach and Experience

Our project team has worked on landfill projects across the country, and specifically in Nebraska, Wyoming, Montana, Colorado, Texas, Arizona, New Mexico, Washington, Oregon, Missouri, and California. We have worked with landfills, balefills, transfer stations, compost facilities, and recycling facilities, and have provided expert environmental consulting for hundreds of landfill clients in the municipal and private sectors. Our current clients include the largest hazardous waste landfill operators, and one of the largest solid-waste collection, transfer, recycling companies in the United States. Because of our depth, resources, and expertise, we are able to absorb large projects and bring sound project solutions that are backed by proven results.

4.1 TECHNICAL APPROACH

As previously described, we will work with the Cities' project stakeholders to establish concise parameters and metrics to define overall project success. We understand the multiple elements involved, including the importance of positive public involvement, and will create an overall project success plan. Our approach is organized such that it can be executed in logical steps and terminated or redirected if a fatal flaw is identified in the process. Our general approach is based on the RFP, knowledge from previous landfill projects, and the State and local regulatory requirements.

1. STEP 1 - Site Assessment/Investigation

If the currently selected site will be used to construct the landfill or if another landfill site is chosen, our project manager and engineers will work with the Cities to ensure that the landfill location meets the requirements for a solid waste landfill as defined by the regulatory bodies [RCRA Subtitle D and Nebraska Administrative Code (NAC) Title 132]. In general, our approach is to:

- Thoroughly understand the types of waste that may be disposed of in the landfill so that the design can account for those wastes (currently MSW and C&D).
- Define and understand the population (amount of businesses and residents) that the landfill will service
- Assess and understand the geology and hydrogeological conditions at and adjacent to the site.
- Evaluate and ultimately design for varying weather conditions (wind, snow, etc.) that may affect the type of liner and cover materials that can be placed on the landfill.
- Work with the Cities to determine the optimal type of equipment that may be used at the landfill (i.e. what exists as the current landfill) and what the operational constraints of the new landfill will be.
- Solicit and understand concerns of the adjacent land owners and regulatory agencies.
- Understand the irrigation district management of surface water in the area, and prepare a design protective of adjacent irrigation canals and the crops serviced by those canals.

In addition, we will provide support for the Cities in working with the public to address citizen concerns. We will be prepared to use our in-house public relations officers to develop understandable materials, and participate in public meetings where landfill siting, design, and operations are openly discussed.

Task	Task Description	Approach
1	Preliminary Geotechnical Investigations	The team will conduct a desktop siting analysis, utilizing available GIS data, along with the team's local knowledge of the site conditions. Our experience in the area suggests the proposed site may likely be suitable from a geotechnical perspective; however, the proposed activities will serve to confirm this. Our first step is to develop a site model using local zoning and land use, distance restrictions, threatened and endangered species, groundwater resources, and surface water resources. In addition, we will utilize the Soil Conservation Service Soil Survey reports, where available, to determine the engineering properties of the soils. The desktop analysis will determine if the site is suitable for a solid waste and construction and demolition landfill prior to conducting a comprehensive subsurface investigation. In the event the target site is not suitable, the project team will conduct an additional desktop analysis to identify other candidate sites.

2	Site Survey	A site survey will be conducted by a Nebraska Licensed Land Surveyor, experienced in performing land surveys. The survey will include a detailed description of the land area to define the boundaries of Cell 1, infrastructure, drainage, monitoring wells and other components that will be critical to the final design. We may also utilize an unmanned Aerial Vehicle (UAV) to survey the site. Trihydro presently has this capability and has successfully used it at other sites in the area and has an FAA exemption in place to legally provide this service to our clients. With the UAV survey, we can collect significant aerial data to supplement, enhance, or replace existing data collection and inspection processes. Collecting data from the air not only provides a new visual perspective, it allows for quicker, safer, and more cost-effective data acquisition. When surveying and mapping the landfill, areas of potential expansion, buffer areas to limit disturbances to residents and neighbors, and visual aesthetics will be considered and discussed with the Cities.
3	Geotechnical Work	If the proposed site passes screening criteria outlined in Task 1 above, onsite geotechnical evaluations will be performed to confirm the preliminary findings and provide initial parameters needed for the facility design. In addition to evaluating the potential impacts to surface and ground water resources in detail, the location standards will be further addressed to demonstrate the site is in compliance with local and NDEQ regulations. Upon completion of the site investigation, available information regarding the site soils, depth to groundwater, and bearing capacities will be evaluated to determine if suitable soils are present on site for use as a soil liner for both the landfill cell ($k=1 \times 10^{-7}$ cm/s) and final cover ($k=1 \times 10^{-5}$ cm/s). In the event site soils are not suitable, other options such as utilizing GCL in lieu of a compacted soil liner for the landfill cell will be evaluated as well as utilizing an alternative final cover system such as a flexible membrane liner with 2' of protective cover soils. We anticipate installing approximately 8 groundwater wells and quarterly groundwater sampling for one-year. In addition, we assume 12 soil borings up to 50 feet will be installed.
4	Surface Drainage Analysis	Evaluate lifecycle surface drainage patterns of 1) the existing site, 2) the site during construction and operations, and 3) the site upon closure. The surface drainage analysis will identify engineering controls needed to route storm water around the landfill site, preventing potential impacts to surface water quality. Surface water controls will be designed in a manner to minimize the volume of runoff which will contact waste, thus requiring treatment as leachate. Runoff, coming in contact with waste, will be detained within the lined landfill cell and treated as leachate.
5	Archaeological Survey and Threatened and Endangered Species	Experienced team members from Trihydro and Metcalf understand the Nebraska Panhandle area is occupied with several areas of historical significance and active ecology. If determined necessary, the team is prepared to conduct a threatened and endangered species survey (T&E), conduct a background search on critical habitat, map vegetative types, and determine the presence of listed species, including flora and fauna. Since cultural resource density in the area is moderate to high, we estimate approximately 250 acres of surface inventory, project management, files search and pre-field preparation, fieldwork, and reporting will be needed. The work will be conducted in the early spring to allow for suitable visibility.
6	Seismic Impact Zones	Contour staff will conduct seismic Impact zone analyses in accordance with RCRA Subtitle D (258.14) and will include static slope stability and seismic slope stability.
7	Preliminary Conceptual Design	Upon completing Tasks 1 through 6 above, a preliminary conceptual design and overall cost estimate preparation will commence. The preliminary site design will identify locations of maintenance/office buildings, scales, access roads, monitoring wells, storm water ponds, leachate evaporation ponds, fire lanes, and fences. In addition to identifying the location of the ancillary facilities, the preliminary design will also be utilized to identify a landfill layout allowing the lowest project life cycle costs, providing the most efficient operations, and providing optimum environmental protection based on information gathered during previous tasks. Our team will also identify soils from the proposed cell excavation(s) which may be suitable for use as the compacted soil barrier and/or as a final cover barrier layer. The team will optimize the excavated soils to minimize the need to

		utilize borrow sources for daily, intermediate, and final cover as well as soils suitable for liner material.
8	Preliminary Cost Estimate	Proposed project costs will be developed in tandem with conceptual design milestones. Developed costs will align with the selected conceptual design at the selected site. The team's experience with numerous landfill facilities in the western United States provides us with a large database of reference project costs which will result in high reliability and accuracy in the final estimate. The local team partner (Baker), has extensive experience in the region and will incorporate their local construction cost experience into the overall construction cost estimate. Other project costs related to permitting will also be refined, reflecting any additional funding necessary for further permitting and design activities as well as construction.
9	Preliminary Schedule using MS Project with Gantt Chart	Our team will use SharePoint system to provide up-to-date schedule changes on a Gantt chart. This chart will be shared with all team members and the Cities. A preliminary schedule Gantt chart has been prepared and is shown in Step 4.
10	Meetings	We anticipate one project kick-off meeting and a minimum of one community meeting will be required to answer questions or provide progress updates to the community, and other stakeholders, and to obtain siting approvals (Laws 1991, LB 813, § 2). We anticipate six monthly progress meetings will be held via conference call during the Site Assessment/Investigation activities. We will also be available as needed to help publish the siting approvals in the Star Herald (if needed). Our approach will be to use both our local teaming partner as a main point of contact and Trihydro's public relations specialists. We have found using concise and easy to understand figures and conceptual images provide an avenue for all stakeholders to remain informed.

2. STEP 2 - Permit Application Development

As part of the permit application development, our team will verify that the site meets the locational standards, including right-of-way, airport proximity, flood-plains, wetlands, unstable areas, fault area, and seismic impact zone areas. These requirements are outlined in Nebraska Administrative Code (NDEQ), Title 132, Chapters 2 and 3, RCRA, Title 40, Subtitle D and in the RFP. In addition, the team will verify that the proposed landfill will not affect human or ecological health, waters of the state, or other concerns identified as part of the permitting process.

Our Nebraska registered engineers will prepare a permit application in accordance with the Nebraska Administrative Code (NDEQ), Title 132, Chapter 2, Section 006. The permit application will minimally include: a summary of the proposed landfill activities and operations; the owner name, address, location, legal description of the facility; a detailed site map and design drawings/document; appropriate signatures; operational plans; closure and post-closure plans; financial assurance; and other additional documentation, as requested. We recommend collaborating frequently with NDEQ to address potential concerns prior to submitting the permit, thereby minimizing comments and potential major design changes.

Task	Task Description	Approach
1	Permit Drawings	Permit drawings will be completed using the most current computer aided drafting (CADD) and geographical information system (GIS) software. We will provide drawings that are not only in accordance with the NDEQ Title 132 requirements and RCRA Subtitle D, but also allow flexibility for refinement during the preparation of construction level bid drawings. At a minimum, permit drawings will include proposed location and cell grading, topographic maps, surface drainage, groundwater monitoring locations, surface water run-off design and collection, distance to groundwater, floodplains, geology, wetlands, seismic impact zones, leachate generations, operational traffic patterns, pollution control plans, surrounding conditions, fill/borrow areas, concealment plans, etc. (NAC Title 132, Chapter 3).

2	Modeling and Analysis	Our environmental modeling and analyses experts will support the engineering design report component of the permit application. We intend to use HELP (Hydrologic Evaluation of Landfill Performance) modeling to design the liner and leachate collection system. In addition, we may use Slope Stability Analysis; Drainage Layer Design; Leachate management and removal system design and calculations; Liner leak detection system; Foundation strength/settlement calculations; Pipe crushing calculations; Surface water run on/runoff analysis; and, RUSLE (Revised Universal Soil Loss Equation) Erosion calculations, as needed. Our statisticians are well-versed in the statistical evaluations required as part of RCRA Part D and will propose an approach that will comply with the requirements for multiple comparison procedures.
3	Groundwater and Gas Monitoring Plans	Our team will establish baseline groundwater quality using monitoring requirements outlined in RCRA Subpart D part 239 and NDEQ. Groundwater and gas wells will be placed in a manner to monitor upgradient and downgradient conditions. Work plans for these activities will be reviewed with NDEQ prior to starting work. Wells will be installed in accordance with NDEQ water well requirements and statutes (NAC Title 178, Chapter 12). We anticipate installing approximately 8 (each) groundwater and gas monitoring wells. Wells will be analyzed for the constituents outlined in the RCRA Subtitle D Appendices I and II, monitor methane, and air as specified in Section 110 of the Clean Air Act and as specified in NAC Title 132 Chapter 3 (methane gas below 25% lower explosive limit (LEL)).
4	Closure Plan	A Closure Plan will be prepared in accordance with NAC Title 132 and RCRA requirements. The Plan will include a proposed final cover design, surface water control structures, seeding/mulching, gas venting, and project management and construction. The plan will include methods to measure and determine the active landfill accumulated waste based on annual accumulation estimates and processes for public comment. In addition, we will work with the Cities to establish financial assurance in accordance with the NDEQ requirements accounting for inflation and able to be easily updated on an annual basis. Lastly, any pollution prevention systems designs (groundwater, leachate, landfill gas, etc.) will be discussed in the closure plan.
5	Operations Plan	The Operating Plan provides the landfill operator with the necessary information to operate the landfill in a manner protective of human health and the environment, and that will allow for operational flexibility. The Plan will address the requirements of Chapter 3, Section 4 of Title 132 – Integrated Solid Waste Management Regulations of the Nebraska Administrative Code. In addition, the Plan will include processes to control noise and odors, litter, disease, air, dust control, storage capacity, and contingency plans. We would include a future development plan, a contingency plan, and an operation and maintenance plan.
6	Assemble Permit Application Documents	We will employ Trihydro's printing and document production capabilities, and will compile the permit documents in a way that can be either accessed electronically or printed hard copy. Hard copies will be bound in accordance with NDEQ's preference and the NAC Title 132 requirements. Our approach will be to use sustainable printing methods and options and provide portions of the permit electronically, as possible. As required, 5 copies of the permit will be submitted to NDEQ.
7	Public Hearings	Our team will work with the Cities to publish legal notices in the Star Herald and complete the required public hearings. We estimate that one hearing will be completed after siting approval and an additional paper notification will be submitted following the hearing (Laws 1991, LB 813 § 6).
8	Meetings	We anticipate that at least two meetings with the engineering staff and/or community to answer questions about the permitting process. Six monthly progress meetings will be held via conference call during Step 2. Again, our approach will be to use both our local teaming partner as a main point of contact and our public relations specialists.

3. STEP 3 - Final Design and Construction

Our team has learned that integrating the design team with our CQA/CM team tends to be the most cost-effective organization during Final Design and Construction. This results in a design that 1) minimizes construction costs from

the outset, 2) will be constructible by local earthworks contractors, and 3) will be flexible enough to adjust during construction when value-added design changes are identified. The design will include the pertinent aspects of the first phase of landfill construction, including: site grading; cell grading; liner system details; leachate collection system layout and details; storm water controls; and buildings, scales, access roads, and utilities.

As part of the design process, we will prepare contract documents, including: bidding requirements, contract forms, contract conditions, and the technical specifications needed to solicit construction proposals. We anticipate utilizing practices and formatting established by the Engineers' Joint Contract Documents Committee (EJCDC) and the Construction Specifications Institute (CSI) in preparation of contract documents. Contract documents will also be prepared in accordance with NDEQ, Scotts Bluff County, and the Cities' required formats. If requested, the project team is capable of providing other construction management tasks that are routinely executed or managed, including contractor selection, bid evaluations, engineering estimates, construction scheduling, materials procurement, submittal control, as-built record maintenance, progress payment applications, measurement and payment computations, project meetings, and contract closeout.

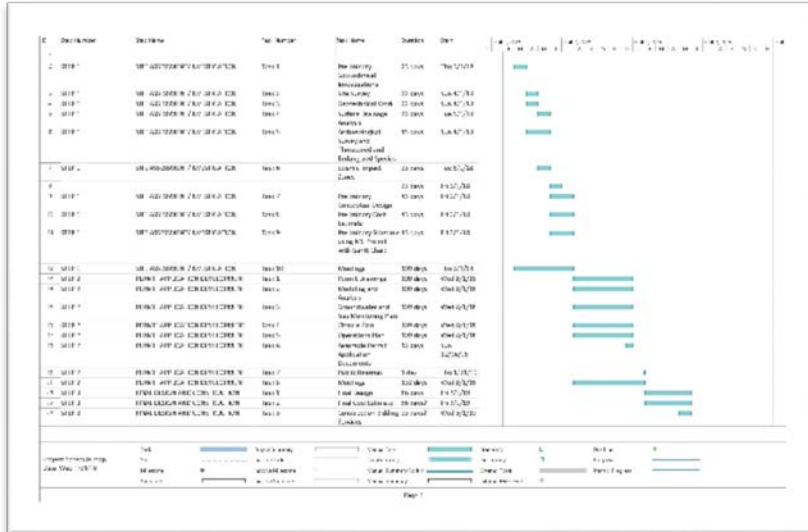
Our proposed construction support services for the Cities of Gering and Scottsbluff landfill include product verification testing (e.g., liner materials), construction monitoring, construction verification testing, and project documentation. Our construction programs conform to the previously referenced QMS, and utilize leading edge and recognized tools/technology for the construction industry. We will rely heavily on PeakGeo's construction program, which has received recognition from the State of Oregon's Department of Environmental Quality as an organized and comprehensive program.

Task	Task Description	Approach
1	Final Design	Our team will prepare and provide construction drawings containing sufficient detail and information to solicit bids for construction, and to perform construct activities. At a minimum, construction drawings will include the project limits, landfill boundary lines, existing conditions, proposed final grading contours, details for the liner system, leachate collection system, and surface water structures. In addition, the team will assemble a Project Manual for the work. The team will meet requirements of NDEQ, Scotts Bluff County, and the Cities for design and construction and assist the Cities in communication and coordination in meeting said requirements for design and construction. The team will provide the Project Manual to the Cities for official comment at approximately the 90% Design Phase. The team will affix our Nebraska Professional Engineer Seal (dated and signed) to the front cover of the Project Manual in accordance with Nebraska State Registration Statutes.
2	Final Cost Estimate	The team will provide an engineering cost estimate for the construction of the project at the 100% Design that will be provided to the Cities. We anticipate it will be generally comparable to the engineering cost estimate previously provided by our team but will be updated with final quantities from the final design.
3	Construction Bidding Services	It is anticipated the project will be bid in three contracts – earthworks, geosynthetics procurement, and geosynthetics installation - with earthworks being the primary component. Our team has successfully utilized this approach on numerous landfill expansion and closure projects. The proposed approach allows for smaller, local, contractors to bid on the earthworks project, while eliminating markup on the geosynthetics materials and installation contractor. The team will arrange for and conduct a pre-bid conference ten (10) days prior to the bid opening. The team will prepare meeting minutes and distribute them to the Cities. We typically do not provide minutes to the plan holders, but rather, ask them to submit formal questions so that the phrasing of specific questions and answers is not confused during the meeting minute preparation. We will use preferred bidding and contract documents from the Cities, or can provide these standard documents and tailor them to the project.

		<p>A submittal control log will be established. The submittal control log is in MS Excel format and will list all submittals required by the technical specifications. The submittal control log will be utilized by project manager and construction manager in tracking submittals and can be issued to the Earthwork Contractor and Geosynthetics Installer on request. The RPR will maintain the submittal control log in coordination with the Earthwork Contractor and Geosynthetics Installer during construction. The submittal control log documents; 1) submittal numbers, 2) referenced specification sections, 3) submittal descriptions, 4) received dates, 5) reviewer, 6) submittal review status/action taken determinations and 7) return dates.</p> <p>The team will prepare any Addenda necessary to the Bidding Documents and distribute to the plan holders at least 5 (five) days prior to bid opening. This schedule may require that the pre-bid conference be held a few days earlier than indicated above, to provide adequate time for formal comment and response at least seven (7) days before bid opening.</p> <p>The team will assist the Cities in opening, tabulating and evaluating bids. This will include making sure that all bids meet the requirements of bid documents and, after a thorough review, providing a written opinion to the Cities stating a recommendation for awarding the bid.</p>
4	Construction Inspection Services	<p>In general, the team will implement the on-site CQA program as described in the CQA Plan and Contract documents. Our CQA program will include product verification testing, construction monitoring, construction verification testing, administration of project meetings as related to CQA, and project documentation. In addition, a pre-construction meeting will be held with the Contractor, Cities, Design Engineer, Certifying Engineer and CQA staff to establish the role, authority, and responsibilities of each organization and individual involved in the project and prepare an organizational chart for the project to clearly indicate lines of responsibility and communication.</p> <p>During construction, the Project Manager/RPR will prepare a Daily Summary Report summarizing the construction activities, CQA verification procedures, CQA testing, and QC testing completed during the day. The Daily Summary Reports will be submitted to the Cities, engineer, and NDEQ representative.</p> <p>The certifying engineer will certify to the Cities and NDEQ that landfill construction is in compliance with the contract documents and the design intent. Specific responsibilities of the certifying engineer include; 1) Current Registration as a professional engineer in the state of Nebraska; 2) verification that all CQA procedures are correctly and completely implemented by the CQA Organization; 3) review all CQA documentation for accuracy and completeness; 4) review as-built survey information provided by contractor(s) to verify soil cover thickness requirements have been met prior to placement of subsequent layers; and 5) assist with preparation of the final certification report. CQA certifying engineer will provide stamped certification based on a series of a site visits (minimum of 1 site visit each month during construction), weekly review of Summary reports and CQA documentation, weekly project status review with RPR and editing/review of the final certification report.</p>

4. STEP 4 - Project Schedule

We estimate that the project will take approximately 2 years from siting to finalizing construction. We are familiar MS Project and will use our in-house software systems and communication systems to document and communicate schedule changes. A preliminary project schedule is included below. This schedule will be updated as final design dates and deadlines are agreed upon with the Cities.



5.0 Technical Experience

As previously mentioned in the introductory sections of this proposal, the project team represents what Trihydro believes is a “best-in-class” coalition of service providers capable of executing the scope of work in the RFP. The proposed team has a well-established working history, and is ready to leverage these capabilities in support of the Cities of Gering and Scottsbluff, and other project stakeholders. Some specifics of these capabilities are summarized below.

5.1 SITING CAPABILITIES

Our team has a variety of skills that are highly valuable when completing project siting. Our specialists include hydrologists, geologist, hydrogeologists, engineers, statisticians, chemists, toxicologist, ecologists, archeologists, surveyors, and local experts. Our diverse team has significant experience completing siting for projects just like the Cities’ new Landfill Facility. In addition, with a bench strength of over 450 people, we have the right experience at the right time, no matter what we encounter during the project progress. Some of our specialized skill sets that will be used during siting include:

Geotechnical Investigations: Our team has over 30 years of experience in the design and management of subsurface investigations in complex and highly variable hydrogeologic environments. Our drilling experience includes site investigations, geotechnical investigations, and site characterization at hundreds of sites across the country. Trihydro has experience with direct-push, auger, air-rotary, ODEX, and roto-sonic drilling technologies, and understands the importance of selecting the appropriate technology based not only on subsurface hydrogeologic conditions, but also on the task objectives. The volume and complexity of hydrogeologic and laboratory data can be difficult to review and understand. To overcome this challenge, our hydrogeologists and chemists also use a variety of 2- and 3-dimensional tools to help our clients, regulators, and stakeholders’ visual large amounts of data and complex hydrogeologic conditions. These tools will be valuable throughout the Cities project.

Surveying: Our survey professionals have experience completing projects for similar site development and municipal clients. Our licensed professional land surveyors provide a full suite of surveying services, including: legal boundary surveys, topographic surveying, planimetric surveying, construction surveys, construction staking and layout, staking of transmission lines and pipelines, and road and site-development surveys. Additionally, we are a FAA-licensed unmanned aerial vehicle operator, and can provide a complex array of aerial imagery, aerial design surveys, and construction-progression surveys and documentation.

Public Outreach: We understand that constructing an industrial facility within a community can result in a variety of challenges from a public outreach and communication perspective. Trihydro has managed and worked on numerous multidisciplinary/multifaceted projects, requiring close communication and coordination with many diverse stakeholders. Our local presence and established relationships can assist with project coordination and communication. In addition, we have communication and graphic design professionals that can assist with development of multi-media (websites, brochures, etc.) to assist with public outreach, if necessary.

Ecological and Archeological: Our National Environmental Policy Act (NEPA) and Ecological Services Team includes biologists with extensive experience conducting ecological site assessments for projects of similar scope and scale including mining, transmission line, oil and gas field, and water development projects. We specialize in assisting our clients with compliance with regulations such as the NEPA, Endangered Species Act (ESA), Clean Water Act (CWA), and Migratory Bird Treaty Act (MBTA) through close coordination with local, state, and federal agencies to identify the best solutions to address issues with sensitive ecological resources. A few examples of our team’s capabilities include threatened and endangered species surveys and habitat assessments, vegetation and noxious weed surveys, pre- and post-construction biological monitoring, ecological restoration, wetland delineation, CWA Section 404 permitting, and NEPA impact assessment.

Our archeological team has experience working with federal, state, tribal, and local government agencies. They can provide guidance towards identification and preservation of cultural properties, regional geoarchaeological assessments, paleoenvironmental modeling, absolute dating of geologic strata, analysis of sediments’ ability to hold cultural materials in situ, and analysis of human-site relationships.

5.2 PERMITTING & DESIGN CAPABILITIES

Our team has worked on various permitting projects for landfill facilities. Furthermore, our team has worked on numerous projects that have required managing multiple stakeholders and keeping a sharp focus on the “big picture” as well as critical issues. We are familiar with the permitting process for landfill facilities and have experience with preparation of all the steps required as part of the permitting process and have experience with the NAR Title 132 and RCRA Subtitle D permit regulations.

5.2.1 PERMIT DEVELOPMENT

Our team has extensive design experience ranging from preparing site grading plans to designing water and wastewater systems. Our team provides site designs for a variety of large industrial and local municipal waste management facilities. Each site brings unique challenges to site grading, environmental impacts, engineered lining systems, stormwater management, and permitting requirements, all while meeting the overall site development goals. We are prepared to assist with the development of the site engineering and design that will be required as part of the site planning, permitting, and construction process.

5.2.2 PERMIT REVIEW PROCESS

Our permitting process has built-in measures to facilitate the timely turnaround of regulatory permitting projects, starting with keeping the lines of communication open between planning parties. Our team knows how to submit a complete permit application and is equally able to address any concerns identified by NDEQ. With a project this large, permit application revisions are inevitable, but we have an admirable success record and anticipate providing no less to the Cities.

5.2.3 FINAL DESIGN / TECHNICAL SPECIFICATIONS

Our team is accustomed to preparing final design documents and technical specifications. In addition, we think it is important that design documents are reviewed by construction professionals to understand constructability and any major components that would cause additional work or budget to employ. Our team includes a group of individuals that have built hundreds of landfills and know what the major design considerations should be.

5.3 CONSTRUCTION OVERSIGHT SERVICES

Our team has completed over 100 landfill projects over the past 12-years, encompassing over 55-million square-feet of composite lined systems. Our oversight contractor, PeakGeo, is a premier provider of comprehensive construction support services for lined containment facilities in the Western United States including landfills, lagoons, and heap leach pads. In addition, PeakGeo offers a variety of valuable on-site tests that allow our project team to efficiently move forward on the project. These include:

Soils Testing – Our project team member, PeakGeo, owns several portable soils laboratories. Depending on the testing requirements of individual projects, PeakGeo routinely mobilizes and sets up on-site soils laboratories capable of performing standard soils testing. In fact, PeakGeo staff members were the first to move and perform hydraulic conductivity testing of soil-barrier layers on-site during construction. If needed, specialized testing such as internal and interface shear strength will be sub-contracted to qualified and accredited testing laboratories.

Seam Analysis - More and more engineers are specifying end-of-seam sampling and testing in lieu of the traditional destructive seam sampling at 500-foot intervals. For 20 years, PeakGeo has been performing seam analysis (peel adhesion and bonded-seam strength testing) on projects sites during geosynthetics installations.

Geoelectrical Liner Integrity and Leak Location Surveys - Increasingly, regulators and design engineers are specifying liner integrity surveys as the final stage of liner CQA for landfills, leachate ponds, heap leach pads, and other primary and secondary lined containment facilities. Peak utilizes the new Smart 3G leak detection equipment developed by TRI Environmental of Austin, Texas, and has pursued the industry leading LIS Certification program developed by Dr. Ian Peggs at I-CORP. Geoelectrical leak detection can be utilized in two different scenarios. Liner Integrity Surveys (LIS) are performed on new geomembrane liners as the final stage of CQA and Leak Location

Surveys (LLS) are commonly performed on in-service geomembrane liners to detect and repair known or suspected leaks or to certify those liners as leak-free.

5.4 ADDITIONAL TECHNICAL SERVICES

Leachate and Landfill Gas Containment Fate and Transport

Trihydro offers proven expertise in solving complex hydrogeologic and remediation problems. We recognize that evaluating leachate and landfill gas contaminant fate and transport must begin with a clear understanding of the hydrologic system and overall project objectives to produce meaningful results. Trihydro's philosophy is that all assessment and modeling efforts, whether simple analytic projects or complex numerical models, must begin with a solid understanding of site conditions and available data sets. Trihydro integrates the latest database and mapping capabilities to ensure that all modeling problems have a solid conceptual development. We then utilize our assessment and modeling skills to assist our clients with evaluation of complex vadose zone and groundwater flow regimes related to leachate monitoring and contaminant fate and transport.

Groundwater Data Management and Statistical Analysis: Much of Trihydro's project work includes management and analysis of groundwater gauging and analytical data. Environmental data is expensive to collect and used to make important decisions, so we have developed multiple systems that allow us to efficiently, accurately, and reliably manage the data:

- Electronically compile the large volume of data we receive
- Validate the precision, accuracy, validity, and usability of the data provided by the laboratory
- Conduct a variety of statistical analyses
- Present the data and our analysis in a variety of formats

Efficiently and reliably managing large amounts of laboratory data is a challenging job. Trihydro manages our client's data using our own Project Direct® data management system. This system allows us to efficiently store, manage, and disseminate historical and current data for multiple purposes and formats, including sample planning, reporting, data validation, charting, and statistical analysis. Project Direct® also has a web-based interface, which allows us to provide and control 24/7 access to data by clients, regulators, and potential stakeholders.

5.5 PROJECT EXAMPLES

The proposed project team has successfully completed numerous projects with requirements similar to those outlined in the landfill RFP from the Cities. We encourage you to reach out to any of the points of contact listed as references for the project examples included in this section. Some of the clients may be listed as confidential; however, Trihydro can work with the Cities' to facilitate a conversation, if needed. Additional project examples and references are available upon request.

Project Name	Project Owner	Characterization/ Siting	Permitting	Technical Design	Construction Oversight	Scheduling	Public Outreach	Regulatory Support
Laramie Landfill	City of Laramie	X	X	X	X	X	X	X
Commercial Landfill	Confidential	X	X	X		X	X	X
Happy Jack Landfill	City of Cheyenne	X	X	X	X	X	X	X
Casper Landfill	City of Casper	X		X	X	X		X
Grasslands Industrial Landfill	Grasslands Environmental	X	X	X	X	X	X	X
TDS Landfill	Torrington Disposal Service	X	X	X	X	X		X
Larimer County Landfill	Larimer County	X		X		X		X

5.5.1 LARAMIE LANDFILL DESIGN, PERMITTING, AND CONSTRUCTION OVERSIGHT

Client & Point of Contact: City of Laramie, Mr. Brooks Webb, Solid Waste Manager

Phone & Email: 307-721-5309; bwebb@cityoflaramie.org

Location: Operating Municipal Solid Waste Landfill, Laramie, WY

Years of Service for Specific Project: 2012-2014

Construction Costs: \$6.6 Million

Trihydro provided hydrogeologic and engineering services to design, permit, and construct a new, 15-acre lined municipal solid waste landfill cell, including a leachate management system, new paved entrance with a computerized truck scale, recycling/baling warehouse facility, and new utility infrastructure. The following are the major services provided:

- Short- and long-term facility development plans.
- Rate study and waste shed expansion permitting.
- Groundwater and geotechnical site suitability investigation for Stage II of the permitted facility for facility expansion.
- Planning, design, and major modification permitting for an engineered containment system (ECS) lined MSW landfill cell including a leachate management system.
- Planning, design, and minor modification permitting of new entrance, computerized truck scale, baler/recycling facility, and yard waste composting facilities.
- Planning, design and permitting/licensing for new utility infrastructure to the baling facility. Included new potable water, sewer/septic, power, and roadway.
- Bidding services and contractor selection.
- Construction quality assurance for cell construction and liner installation.
- Construction observation, documentation and management.
- Public outreach services including the development and maintenance of a public project information and weekly update website www.newlaramielandfill.com.



5.5.2 COMMERCIAL LANDFILL: PLANNING, DESIGN, & PERMITTING

Client & Point of Contact: Confidential

Location: North-Central Texas

Years of Service for Specific Project: 2014-2015

Trihydro was contracted to provide turn-key site investigation, planning, design, and permitting services for a new commercial landfill in West Texas. The purpose of the 217-acre facility is to manage non-hazardous semi-solid and solid wastes generated in conjunction with the exploration and production of oil and gas.

The site investigation work included a series of 100-foot deep borings and geotechnical testing to evaluate and characterize site hydrogeology and establish a groundwater monitoring network. Planning and design activities provided approximately 11 million cubic yards of disposal capacity in double-lined cells with leachate collection and leak detection systems. Alternative design configurations were provided for the sub-base of the secondary liner system to provide flexibility and cost savings during construction. The design and construction of the facility was planned to occur in two phases to reduce the amount of financial assurance required. **Typical permitting schedules for similar sites can require up to six months or more. Trihydro completed the initial site investigation, design, and permit application services within nine weeks to accommodate the client's project schedule.**

5.5.3 HAPPY JACK LANDFILL EXPANSION: SITE CHARACTERIZATION, DESIGN, PERMITTING, AND OVERSIGHT

Client & Point of Contact: City of Cheyenne, Mr. Matthew Theriault, Public Works Engineer

Phone & Email: (307) 637-6279; mtheriault@cheyennecity.org

Location: Operating Municipal Solid Waste Landfill, Cheyenne, WY

Years of Service for Specific Project: 2013-Current

A team led by Steamboat Technical Services was contracted by the City of Cheyenne to provide comprehensive siting, alternative evaluation, site characterization, and permitting for the expansion of the Happy Jack Landfill west of Cheyenne, WY. Work also included subsurface investigation, public meetings, permit-level engineering design & calculations, and preparation of the environmental monitoring plan, closure & post-closure plans, and CQA plan.



Due to the proposed expansion area's proximity to existing homes and water wells, the project team prepared a variance application which was submitted to the Wyoming Department of Environmental Quality (WDEQ).

Prior to approval of the variance, several public meetings were held with surrounding landowners as well as a formal variance hearing where the design team provided testimony supporting the variance application and demonstrating the location and design of the proposed expansion would be protective of human health and environment. The City was granted a variance from WDEQ in November 2015, and the project team proceeded with the preparation of a lifetime permit application. The project team has worked closely with WDEQ staff throughout the project to ensure a complete permit application and timely regulatory review. Currently the lifetime permit application is undergoing technical review, with an anticipated approval date sometime in 2018. Upon permit issuance, the project team will also provide contract document preparation, bid support, construction management, CQA, and serve as certifying engineer during construction of the first phase of the expansion.

5.5.4 INDUSTRIAL LANDFILL SITING, PERMITTING, AND DESIGN

Client & Point of Contact: Grasslands Environmental, Mr. Clint Courson, Environmental Scientist

Phone & Email: (478) 743-7175; ccourson@hhnt.com

Location: Bill, Wyoming

Years of Service for Specific Project: 2013-2014

Construction Costs: \$5.4 Million

Steamboat/PeakGeo was contracted by Grasslands Environmental to provide comprehensive permitting and design activities for a new greenfield industrial landfill near Bill, WY. SWPW, along with numerous subconsultants, was responsible for conducting a siting analysis, subsurface investigation and site characterization, and preparing permit documents, including permit-level engineering design drawings as well as construction drawings and technical specifications for the construction of an 8-acre cell. Key components included the liner system, which consisted of a 2-foot compacted soil liner and 60-mil HDPE liner. SWPW also provided construction details for the leachate collection system, leachate conveyance system, storage tanks, and secondary containment. Our team also prepared operations plan, environmental monitoring plan, closure/post closure plan and cost estimates, and CQA Plan. PeakGeo completed the CQA report and certification surveys as the Design Engineer of Record.

Project work commenced in November 2013, with the permit application submitted to WDEQ in April 2014. Our team worked closely with WDEQ Staff during the early phases of the project to ensure a complete permit application and timely regulatory review. The operating permit for the project was issued in April 2015, and construction commenced in June 2015.

The project also received the Wyoming Engineering Society's Presidential Project Award Honorable Mention in 2015.

5.5.5 CQA, ENGINEERING DESIGN, AND ENVIRONMENTAL MONITORING, LEAK LOCATION SURVEYS, AND SURVEYING

Client & Point of Contact: City of Casper, Mr. Alex Sveda, Associate Engineer

Phone & Email: (307) 235-8341; asveda@casperwy.gov

Location: Casper Bafefill and Casper Regional Landfill, Casper, Wyoming

Years of Service: Intermittent between 2007 and 2016

Construction Costs: >18.2 Million; Individual project costs provided below

PeakGeo has been contracted by the City of Casper to provide many services related to solid waste management:

- Casper Bafefill Closure (\$4.4 Million): Construction management, construction quality assurance and design support for the closure of the 104 acre Casper Bafefill. The project design included extensive site grading, embankment, foundation/gas collection layer, 30-mil PVC geomembrane, drainage layer, vegetative support layer, passive gas collection system, erosion control, drainage structures and revegetation. Utilizing the geoelectric technology, Peak Geo also conducted a leak location survey and detected over 100 leaks in the PVC liner. Extensive cost savings (>33%) were achieved for this project by managing three separate contracts for procurement, installation and earthworks and identifying an on-site borrow location using on-site soil sampling and analysis.
- Bafefill, Active Gas System (\$4.0 Million): construction oversight, construction management and CQA services for the construction of the active gas system in the closed bafefill. The project included drilling of 45 wells into the waste mass as well as an additional 25 shallow perimeter wells; well completion; lateral and header piping with valving; condensate sumps; and an enclosed flare and blower station. Identification and resolution of issue regarding porous cover soils. Interim operation and maintenance, including flare operation, gas composition monitoring, and wellfield balancing.
- Landfill Cells 1 and 2, Phase I (2007, \$1.7 Million); Landfill Cells 1 and 2, Phase II (2012, 3.5 Million); Landfill Cells 3 and 4 (2015, 4.0 Million): CQA and contract administration services for development of Phase I, Cells 1 and 2 (8.6-acre); Phase II, Cells 1 and 2 (14-acre); and Phase II Cells 3 and 4 (16.5-acre. PeakGeo provided daily construction oversight, extensive on-site soils testing, geoelectric leak location surveying, and assistance with final construction certification report. Elements of construction included excavation, embankment, subgrade preparation, geosynthetic clay liner, 60-mil HDPE geomembrane, and geocomposite & soil drainage layer(s). During construction of Phase II, Cells 1 and 2, PeakGeo identified an opportunity to revise the embankment specification which reduced the project cost by over \$300,000.
- Landfill Biosolids Ponds 1 and 2: Identified an opportunity to construct and line the biosolids containment/evaporation ponds using left over PVC from the bafefill closure project instead of the claymax product specified in the biosolids design, resulting in a significant savings to the City.
- Landfill Biosolids Pad and C&D Cell (0.6 Million): Construction of a 35-acre construction and demolition (C&D) landfill cell and the 10 acre+ biosolids composting pads. Construction included excavation, embankment, erosion control and site drainage. Identification and implementation of new design to double the capacity of the C&D cell; adjustment to design and construction schedule to take advantage of very favorable unit price for excavation – value-added funds were used to excavate cells 3 and 4, resulting in tremendous savings.

5.5.6 LANDFILL PERMITTING & DESIGN, AND BALER FACILITY CONSTRUCTION

Client & Point of Contact: Torrington Disposal Service (TDS), Mr. Kurt Sittner, Operations Manager

Phone & Email: (307) 532-7515; ksittner@tdswy.com

Location: TDS Landfill, Torrington, WY

Years of Service: Intermittent between 2010 and 2018

Baker & Associates has been contracted by TDS to provide many services related to solid waste management:

- MSW Baler Facility: Planning, design, permitting, and construction observation and testing for a nearly 12,000 square foot baler facility capable of bailing up to 50 tons of MSW per day. Plans included a methane gas cut-off trench to prevent gas migration to on-site structures.
- ECS Liner System, Cell 7A): Planning, design, permitting, and construction observation and testing services for over 200,000 square feet of ECS liner improvement and leachate collection system.
- Lifetime Permit Renewal: In process of completing permit, with anticipated acquisition by July, 2018.

5.5.7 LARIMER COUNTY LANDFILL, HYDROGEOLOGIC AND CORRECTIVE MEASURES EVALUATION, FORT COLLINS, CO

Client & Point of Contact: Larimer County, Colorado, Mr. Steve Harem, Environmental Specialist

Phone & Email: 970-498-5762; sharem@larimer.org

Location: Operating MSW Landfill, Fort Collins, Colorado

Years of Service for Specific Project: 2017-Current

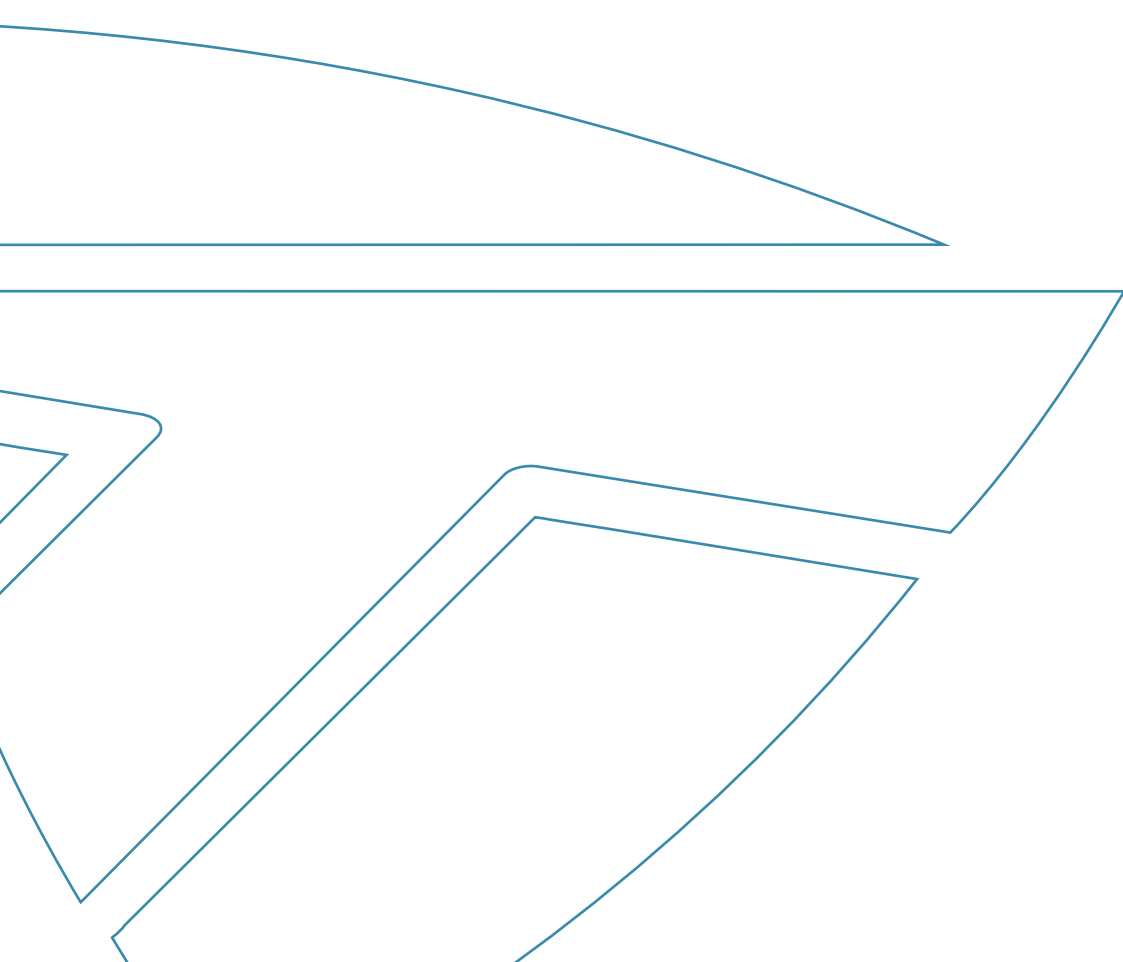
In early 2017, Trihydro was awarded a contract to evaluate the current complex hydrogeologic conditions, review the current groundwater monitoring well network, and conduct a corrective measures assessment to determine the best remediation approach for this site. The site location is a municipal solid waste (MSW) landfill located southwest of Fort Collins, Colorado. The landfill, has a footprint of 180 acres, and is situated in the north half of a 650-acre site. The south half of the site serves as a borrow area for cover soils. The landfill has been in operation since 1963 and does not have a bottom liner or leachate collection system. Numerous environmental studies of the landfill have been completed; the most comprehensive characterization of site geology and hydrology was completed by a previous consultant in 1984. Trihydro used the Hydro-Search report to guide our understanding of the site geology/hydrogeology. Cross sections, boring logs, and well construction as-builts contained in the report were used by Trihydro to prepare a preliminary three-dimensional (3-D) model of the site. The purpose of the 3-D model construction was to look for potential data gaps in the monitoring well network and determine optimum locations for potential new monitoring wells.



Trihydro is completing the two major tasks for this project. The first task was a detailed evaluation of the site geology, hydrology, and existing monitoring well network. This formed the basis for the Site Conceptual Model and Work Plan that proposed additional data collection, including hydraulic conductivity testing, installation of additional monitoring wells, coordination with property owners as needed, and preparation of a Supplemental Site Conceptual Model report documenting the results of site investigation. The second task will use the results of Task 1 to prepare an Assessment of Corrective Measures that addresses groundwater contamination.

Appendix A

Resumes





Dr. Bedessem has more than 29 years of civil/environmental engineering experience in the regulatory, academic and consulting fields.

Marjorie E. Bedessem, Ph.D., P.E., Project Manager

Dr. Bedessem has more than 29 years of civil/environmental engineering experience in the regulatory, academic, and consulting fields. She joined Trihydro after seven years as a University of Wyoming Civil Engineering faculty member teaching and conducting research. Dr. Bedessem specializes in solid and hazardous waste management including leachate and gas management, integrated solid waste management (ISWM) planning, as well as groundwater quality, wastewater treatment and design. She has taught a week long international project course for four consecutive years at an academic institution in Nordhausen, Germany which focuses on solid waste materials handling and recycling.

One of Dr. Bedessem's research projects in the solid waste arena has been presented internationally but has had a local scope involving the statistical analyses of contributing factors leading to groundwater contamination from Wyoming municipal landfills. She also keeps abreast of current issues in solid waste management in Wyoming through her current appointment as chair of the State of Wyoming's Water and Waste Advisory Board.

Before venturing into academe, Dr. Bedessem provided engineering and environmental consulting services to the Wyoming Department of Environmental Quality (WDEQ), petroleum refineries, chemical facilities and federal agencies. She has experience preparing design plans, specifications, and permit documents for disposal facilities, groundwater investigations and feasibility studies for groundwater remediation. Dr. Bedessem provided solid waste management training courses for Wyoming landfill operators and provided regulatory development services to WDEQ to initiate Wyoming's hazardous waste rules. She has facilitated stakeholder groups for statewide projects and prepared numerous engineering reports, regulatory permit applications, and federal/state grant proposals.

Dr. Bedessem also previously worked as District Manager for WDEQ Solid and Hazardous Waste Division gaining considerable familiarity with Wyoming landfills as well as significant technical, regulatory and data management expertise over a five year period. She has vast experience throughout her career interacting with the public and presenting work at both public meetings and professional technical forums. She is chair of ASCE's Environmental and Water Resources Institute Environmental Council.

Selected Project Experience

- Development of initial State of Wyoming hazardous waste regulations and management of Wyoming's first statewide hazardous waste survey.
- Principal Investigator for the "Statistical Analysis of Wyoming Landfill Characteristics Contributing to Ground Water Impacts"
- Project Manager for the SE Wyoming ISWM Plan; Laramie Landfill Engineered Containment System/Baler Design; Happy Jack Landfill Expansion Options Evaluation

Expertise

- Familiarity with international approaches to solid waste handling, recycling technologies and disposal alternatives
- Presentation skills and experience with planning and facilitating groups to achieve consensus and project completion

Education

- University of Michigan-Ann Arbor: BS/1978/Biological Sciences
- University of Maine-Orono: BS/1981/Civil Engineering
- University of Wyoming: PhD/1998/Civil Engineering with specialization in Environmental Engineering

Registration

- Professional Engineer: #5373, Wyoming



Mr. Schreuder has over 30 years of experience and an in-depth understanding of the technical, regulatory, operational, and corrective action issues associated with all types of solid waste management facilities.

Ken Schreuder, P.E., P.G., Technical/Regulatory Advisor

Mr. Schreuder is a licensed professional engineer and geologist. He currently serves as Trihydro's Team Leader for Industrial Facilities. He has over 30 years of experience in both technical and regulatory roles relative to all aspects of waste management, including design, construction, closure, and remediation.

His experience includes evaluating and addressing a diverse range of environmental problems associated with solid, hazardous, and radioactive wastes, landfills, underground storage tanks, oil and gas production and transmission facilities, mines, and petroleum refineries. Mr. Schreuder has managed projects for local, state, and federal agencies, as well as commercial and industrial clients. The scope of services associated with these projects has included site investigation, characterization, assessment, feasibility, planning, design, permitting, monitoring, remediation, closure, and post-closure activities.

As a previous Wyoming Department of Environmental Quality (WDEQ) program manager, Mr. Schreuder is well acquainted with both State and Federal statutory and regulatory requirements and processes. He has been an expert witness and provided guidance to clients on a variety of regulatory matters.

In addition to his technical and regulatory experience, Mr. Schreuder has designed and successfully implemented a number of public education and outreach campaigns for both technically complex and publicly-sensitive environmental projects.

Selected Project Experience

- Project Manager responsible for the design, permitting and construction of numerous municipal, construction/demolition, and industrial landfills and transfer/treatment/storage facilities.

- Project Director for the characterization and remediation of structures, soils, and groundwater impacted by landfill gas, heavy metals, chlorinated solvents, and petroleum products.
- Program Manager for the WDEQ Solid and Hazardous Waste Division responsible for engineering and hydrogeologic reviews; development of rules, guidelines, and policies; grant and contract administration; and strategic planning and reporting.

Expertise

- State and Federal regulatory agency coordination, jurisdiction, and compliance
- Integrated waste management system optimization
- Soil, geology, and groundwater investigations
- Landfill gas modeling, monitoring, remediation, and EPA CAA Title V Program
- Landfill liner, leachate management, and final cover design and construction, including evapotranspiration (a.k.a. water balance) and synthetic turf systems
- Environmental sampling, laboratory analysis, and statistics

Education

- Hope College: B.S./1983/Geology
- South Dakota School of Mines and Technology: M.S./1986/Geological Engineering

Registrations

- Professional Engineer: #6213, Wyoming
- Professional Geologist: #49, Wyoming



Mr. Athey's experience includes project work in groundwater quality monitoring, and soil sampling, hydrogeologic investigations and well siting studies, well design and specifications, well installation and abandonment, hydrogeologic risk assessment, and geologic mapping.

Ryan D. Athey, P.G., Geologist

Mr. Athey is a Nebraska-registered Professional Geologist. He has project experience in soil and groundwater quality monitoring, well specifications and installation, well site geology, water supply evaluations, water rights assessment, aquifer testing, and hydrogeologic risk assessment. His field duties have included oversight of well installation, geologic mapping, soil sampling, soil vapor monitoring, and groundwater monitoring. He has experience with various Federal, State and Local agencies including Bureau of Land Management (BLM), Environmental Protection Agency (EPA), Wyoming Department of Environmental Quality (WDEQ), Wyoming Water Development Commission (WWDC), Montana Department of Environmental Quality (MDEQ), Albany County (WY), City of Laramie, Cheyenne (WY) Board of Public Utilities (BOPU), and City of Sundance (WY).

Selected Project Experience

- Geologist responsible for drilling oversight and monitoring well installation at the municipal landfill in Laramie, Wyoming.
- Geologist responsible for drilling oversight and well installation for a subsurface investigation related to PCE contamination in Laramie, Wyoming for the WDEQ Vapor Remediation Program (VRP).
- Geologist responsible for conducting a subsurface investigation of a former industrial property in Laramie, Wyoming for the WDEQ VRP.
- Geologist responsible for drilling oversight and well installation at the Carbon County, Lyman/Mountain View, Rock Springs 2, and Albany County 2 WDEQ Storage Tank Program (STP) projects.
- Project Manager responsible for conducting a hydrogeologic investigation and well siting study and test drilling program for a municipal water supply well project for the Cheyenne Board of Public Utilities, Cheyenne Belvoir Ranch.

- Project Manager responsible for siting, designing, and testing water supply well for limestone plant in Albany County.
- Project Manager responsible for conducting site specific investigations of commercial development sites near an aquifer recharge zone in southeast Wyoming.
- Project Manager responsible for conducting a hydrogeologic investigation for a water supply project in Albany County, Wyoming.
- Project Manager responsible for conducting an assessment of the vulnerability of an aquifer recharge zone near a transportation corridor in southeast Wyoming.
- Geologist responsible for designing and installing a water supply well for dust abatement and stock watering in Carbon County, Wyoming.
- Geologist responsible for conducting a hydrogeologic investigation and well siting study, design and specifications, and installation for a large-yielding industrial water supply well.

Expertise

- Well design, installation, and abandonment
- Groundwater quality assessment, monitoring, and remediation
- Soil quality assessment, monitoring, and remediation
- Hydrogeologic risk assessment

Education

- University of Wyoming:
B.S./2000/Geology

Registrations

- Professional Geologist
G-0413, Nebraska
- Professional Geologist
#3578, Wyoming



Ms. McMullen has over 20 years of experience in public relations, community outreach, marketing, and business development. She has assisted in the design and implementation of a number of public education and outreach campaigns for both technically complex and publicly-sensitive environmental projects.

Shanna McMullen, CPSM, Marketing Manager

Ms. McMullen has over 20 years of experience in public relations, community outreach, marketing, and business development. She possesses a broad range of experience, including coordinating, tracking, distributing, designing, and producing public relations and outreach materials. She also possesses a broad range of corporate branding expertise across print, web, and multi-media platforms.

Ms. McMullen has assisted in the design and implementation of a number of public education and outreach campaigns for both technically complex and publicly-sensitive environmental projects. This experience includes designing and coordinating public outreach and collateral material including but limited to fact sheets, newsletters, PowerPoint presentations, press releases, media packages, and promotional materials. Ms. McMullen has also designed, developed, and maintained multiple project management websites for state agencies and industrial clients.

In addition to her project responsibilities, her administrative responsibilities at Trihydro include facilitating the development of proposals, including establishing, maintaining and managing the proposal preparation processes; managing and coordinating statement of qualifications and presentations; develop and maintain company and project websites; manage and produce technical marketing documents; and implement marketing and market communications strategy.

Selected Project Experience

- Developed web graphics and public educational materials for the design and construction of a new sanitary landfill in Laramie, Wyoming.
- Produced public outreach collateral material including flyers, press releases, public website, and posters for various Integrated Solid Waste Planning Projects throughout Wyoming.
- Developed the web-based graphics for the Platte River Basin Plan Water Atlas, an on-line educational tool that describes the water resources of Wyoming's Platte River Basin,

for the Wyoming Water Development Commission Nowood River Storage/ Watershed Level II Feasibility Study, Wyoming. Assisted in designing and disseminating brochures, press releases, and public meeting notifications and announcements. She also led the social media components of the project.

- Developed and disseminated printed education materials including posters, brochures, and press releases for a green procurement initiative at F.E. Warren Air Force Base.
- Completed graphic design and layout of informational fact sheets developed to educate project stakeholders on project activities and progress for a former petroleum refinery remediation and redevelopment project in Ohio.
- Designed and coordinated collateral materials for three highly controversial closed refineries located in Wyoming, Montana, and Illinois.
- Designed, developed, and maintain project management websites to inform and distribute project information to clients and subcontractors.

Expertise

- Conceptual design and implementation
- Public relations and community outreach plan development and implementation
- Website design and development

Education

- University of Wyoming:
B.A./1995/Communication
- Western Wyoming Community College:
A.A./1993/ Journalism

Registrations

- Certified Professional Services Marketer



Mr. Kruse's project experience includes drill crew management, soil and groundwater quality monitoring, well installation, well site geology, aquifer testing, and groundwater modeling.

James Kruse, P.G., Geologist

Mr. Kruse's project experience includes drill crew management; soil and groundwater quality monitoring; well installation and abandonment; well site geology; aquifer testing; and construction oversight. He also has experience with various State of Wyoming projects including serving as a field geologist for a Wyoming Abandoned Mine Lands (AML) statewide inventory of abandoned hazardous mine features; aquifer testing on large yielding water supply test wells; research and data evaluation for the Wyoming Source Water Assessment and Protection Program (SWAPP) program; and assisting the site geology for a Wyoming Department of Environmental Quality (WDEQ) Storage Tank Program (STP) subsurface investigation project. Mr. Kruse's field duties have included management of drilling contractors, construction oversight, oversight of well installation and completion, soil sampling, soil vapor monitoring, and groundwater monitoring.

Selected Project Experience

- Geologist, responsible for drill crew management, well installation, oversight for removal of lead and hydrocarbon impacted soils, construction oversight during property reconstruction, soil and groundwater sampling, reporting, access coordination and agreements with landowners during remedial investigations at a former refinery in northern Montana.
- Geologist responsible for drill crew management and well installation for remedial investigations at F.E. Warren Air Force Base in Cheyenne, Wyoming.
- Geologist responsible for drill crew management, well installation, and well site geology for the WDEQ STP Glenrock / Douglas subsurface investigation project.
- Geologist responsible for assisting in the delineation of source water areas and conducting a susceptibility analysis of the areas to contamination for the WDEQ SWAPP

project.

- Geologist responsible for drill crew management and well installation for groundwater remediation and monitoring systems at the Pantex Plant near Amarillo, Texas.
- Field Geologist responsible for drill crew management, well installation, and aquifer testing for large diameter and deep water supply wells for the Wyoming Water Development Commission (WWDC) North Platte Groundwater Assessment Project.
- Field Geologist for installation of a hydrologic barrier system at an active refinery located in south central Wyoming.
- Field Geologist for a Wyoming Abandoned Mine Lands project responsible for searching for and identifying abandoned hazardous mine features, marking locations with a GPS unit, and recording hazardous features data and information.

Expertise

- Well installation, development, abandonment, and site geology
- Groundwater and soil quality assessment and monitoring
- Aquifer testing on large yielding water supply test wells
- Low-flow groundwater sampling
- Bail down testing
- Development of site geologic cross-sections
- Modeling groundwater and capture zones

Education

- University of Wyoming:
B.A./2002/Geology

Registrations

Registered Professional Geologist:
#G-0412, Nebraska
#PG-3724, Wyoming

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Dr. White has over 17 years of experience in the design and implementation of ecological and natural resource projects, particularly in support of landscape development. Her expertise is western rangeland ecology, management, and restoration.

Jana White, PhD., Project Director

Dr. White is a Senior Ecologist with more than 17 years of experience in the environmental services field. Her expertise includes design, implementation, and assessment of ecology and natural resource projects. She is facile in permitting and compliance associated with the Clean Water Act, Endangered Species Act, and National Environmental Act (NEPA), amongst other state and federal regulations.

Dr. White's professional career combines applied ecological research and environmental problem solving and permitting in the private and government sectors. She has worked in many areas of natural resource management, including range/habitat management planning; wetland delineation, restoration, and mitigation; ecological risk assessment; reclamation and habitat restoration, and invasive species management. She has led and/or contributed to numerous wetland and rangeland restoration projects. In addition, she has experience in habitat enhancement projects as mitigation for development.

Dr. White currently leads Trihydro's NEPA and Ecological Services Team. She is a strong technical writer and has published numerous articles in peer reviewed journals, including *Nature*, *Global Change Biology*, and *Ecology*. She is equally effective in straightforward environmental permitting and creatively approaching "outside-of-the-box" ecological and environmental issues in site development processes.

Selected Project Experience

- Lead Ecologist for several landfill pre-development vegetation surveys, cell closure/capping design surveys, and seed mix development in Wyoming.
- Project Manager and Lead Ecologist for natural resource evaluations in support of oil and gas development and permitting in the western U.S.
- Project Manager for wetlands impact permitting and mitigation planning/implementation for numerous projects in the mid- and western U.S.

- Senior Ecologist for vegetation surveys to support bond release at five mines.
- Lead Ecologist for multi-site rangeland habitat research investigations in New Mexico, Kansas, and Colorado.
- Lead Ecologist for a cheatgrass management research project investigating chemical and biological control agents.
- Technical reviewer for greater than 8 NEPA EAs, PEAs, and ARMPs.

Expertise

- Botanical surveys, T&E plant species surveys, and habitat evaluations
- Wetland delineations and wetland restoration design
- Sagebrush habitat restoration project design, implementation, and monitoring
- Technical oversight and ecological support to diverse NEPA projects
- Ecological risk assessment
- Invasive species and noxious weed impact assessments, management, and monitoring
- Quality assurance/quality control
- Project management
- Collaborative conservation

Education

- Colorado State University, PhD Ecology, 2008
- Arizona State University, MS Plant Biology 2003
- Washington & Lee University, BS Biology & Geology 1999
- 2009 Ecosystem CO₂ and H₂O Flux Course, Colorado Mountain Research Station, Boulder, CO
- Certified Ecologist, 2012

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Mr. Schmude has over five years of experience as a wildlife biologist. His expertise is concentrated in NEPA, biological assessments, field surveys, data collection, environmental planning, and program management.

Erik Schmude, Lead Biologist

Mr. Schmude is an assistant project scientist with over five years of experience as a wildlife biologist in the Western states. He is experienced conducting field surveys for a variety of wildlife species and vegetation/habitat. His expertise includes an additional five years in data collection, as well as program management and environmental planning, National Environmental Policy Act (NEPA), and Endangered Species Act (ESA).

Selected Project Experience

- Wildlife Biologist/Staff Scientist responsible for conducting impact assessment. Authored/contributed to wildlife, special status species, vegetation, noxious weeds, and water resource sections of NEPA documents including 4 Environmental Impact Statements (EISs), more than 15 Environmental Assessments (EAs), and multiple Biological Assessments (BAs), Biological Evaluations (Bes), and technical reports for U.S. Forest Service (USFS), Bureau of Land Management (BLM), and other agencies in support projects across the western U.S.
- Lead Field Biologist for wildlife surveys, inventory, and monitoring in southwestern Wyoming.
- Biological Monitor for the Sabal Trail Pipeline Project in southwest Georgia, responsible for scheduling and coordinating monitoring activities and conducting daily biological clearance along the right-of-way.
- Team Lead for delineation and documentation of streams and wetlands for pipeline project in West Virginia, Ohio, and Pennsylvania.
- Staff Scientist for complex field studies and wildlife surveys responsible for planning, design, and execution of multiple aerial and ground projects. Contributed to proposals, prepared estimates for budgets, and worked on logistics. Provided direction to other biological resource team members, GIS analysts, and

administrative staff in order to conduct complex data analyses and produce defensible environmental assessments.

- Survey Technician for Mexican Spotted Owl (MSO) nightly surveys in Colorado's Front Range.
- Biological Monitor for natural resources including desert tortoise and other wildlife species for the Devers to Palo Verde 2 and the Eldorado to Ivanpah Transmission Line Projects.
- Field Biologist responsible for conducting daily/nightly survey for Northern Spotted Owl (NSO) along the Oregon Coast for Oregon Department of Forestry lands.
- Environmental Technician responsible for overseeing various sub-surface investigation/remediation projects. Sampled groundwater, surface water and soil for contaminated sites; supervised technicians; operated and maintained an oil refinery and oil terminal pump; and treated system and other equipment.

Expertise

- NEPA
- ESA
- Biological surveys and assessments
- GIS analysis
- Wetland delineations

Education

- Texas A&M University: M.W.S./2017/Wildlife Science
- Oregon State University: B.S./2012/Fisheries and Wildlife Science
- California State University: B.A./2009/American Studies



Mr. Sweetenham develops conceptual and computational models of geologic, hydrogeologic, and geochemical processes. His diverse skill set includes field work and data collection; technical expertise in geology, hydrology and geochemistry; and specialized experience with mapping, modeling, and visualization software.

Michael Sweetenham, P.G. Geologist/3D Modeler

Mr. Sweetenham is a geologist, hydrogeologist, and modeler providing field and technical support for environmental investigations and assessments.

Mr. Sweetenham has a wide array of skills that combine the critical thinking ability and technical expertise of a hydrogeologist with the computational skills of a modeler. These skills make him highly effective at interpreting geology and hydrogeology for use in developing conceptual site models, three-dimensional visualizations, and groundwater models, which can be used to draw conclusions, make predictions, and guide management decisions for complex sites. Mr. Sweetenham also has a background in geochemistry and contaminant transport that enables him to evaluate how changing environmental, geologic, and hydrogeologic conditions will impact natural processes. He is able to write programming and processing codes using Visual Basic and Fortran for efficient data management.

Prior to joining Trihydro, Mr. Sweetenham researched precipitation-induced seepage into tunnels bored through fractured rock in collaboration with the Colorado School of Mines Center for Underground Construction and Tunneling.

Selected Project Experience

- Log and sample soil and rock cores and cuttings; and install, develop, survey, gauge, sample, and abandon monitoring wells.
- Conduct, analyze, and interpret various aquifer tests.
- Develop three-dimensional geologic and conceptual site models using Leapfrog visualization software.
- Design site investigations at complex sites.
- Develop spreadsheet models of contaminant transport in complex unsaturated and saturated geologic media.

- Simulate migration of organic and inorganic constituents from soil and leachate to groundwater in variably saturated media.
- Implement and optimize solar-powered, unmanned in situ bioremediation (ISB) at a former landfill in northeast Nebraska, manned ISB at a site in Denton, Texas, and in situ chemical oxidation (ISCO) in Oregon.
- Install, pilot test, and run full-scale soil vapor extraction (SVE) systems for a variety of petroleum and chlorinated hydrocarbons.
- Assess Corrective Measures at a landfill in northeast Nebraska and implement Remedial Alternatives.
- Coordinate and negotiate with landowners to access monitoring wells and residential wells beyond a former landfill property boundary.
- Develop and communicate work plans, conceptual models, and reports.

Expertise

- Geologic investigations and mapping
- Site characterization and remediation
- Aqueous and environmental geochemistry
- Groundwater modeling
- Surface water-groundwater interactions
- Spatial data analysis and map production with ESRI, ArcGIS, and Leapfrog

Certifications

- WY Professional Geologist PG-4041
- Licensed Nebraska Water Well Monitoring Technician #79728

Education

- Colorado School of Mines:
M.S./2013/Hydrology
- University of Colorado at Boulder:
B.A./2009/Geology

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Mr. VanHeuvelen has over 11 years of project experience including site management and remediation for federal, state and industrial clients.

Charles VanHeuvelen, Associate Project Geologist

Mr. VanHeuvelen has over eleven years of project experience working on large and small scale remediation projects for federal, state and industrial clients. Mr. VanHeuvelen has extensive experience supervising, operating and overseeing in-situ remediation projects. The past seven years have been assisting as an operator and site superintendent during in-situ injections of bio-amendment to treat chlorinated solvents.

Selected Project Experience

- Site superintendent responsible for performing and optimizing in-situ bio-amendment injections into permanent injection wells at a former landfill in Northeastern Nebraska. Assist field activities including well drilling oversight, groundwater monitoring, well gauging and air sparging.
- Site superintendent responsible for performing and optimizing in-situ bio-amendment injections into an array of permanent barrier injection wells at the Pantex Plant. Assist with field activities including the inoculation of injection wells with bioaugmentation culture at pre-determined injection volumes simultaneously monitoring and quality assurance/ quality control (QA/QC) water quality parameters. Site management duties also include daily coordination with the client, strict project site security and health and safety.
- Oversight management of an air-rotary casing hammer (ARCH) drill crew installing two perched aquifer monitoring wells and lithologic logging of the cuttings.
- Oversight management of direct push injection crew for the Wyoming Department of Environmental Quality at 7 Leaky Underground Storage Tank Sites (LUST). Management duties included health and safety, site preparation/ grid system layout, and communication with facility management.
- Site superintendent for remediation projects at

Formerly Used Defense Sites (FUDS); Former Offutt Atlas D Missile Silo Site 2, Arlington NE and Lincoln Atlas F Missile Silo Site 1, Lincoln NE.

Expertise

- On-site management and oversight.
- In-situ enhanced bio-remediation injections.
- Bio-augmentation with *dehalococcoides* culture.
- Pumping tests including; step draw down and constant rate testing.
- Site safety management
- Well logging, installation, and abandonment. Familiar with the following drilling methods; hollow stem auger, roto-sonic, air and mud rotary, air-rotary casing hammer, direct push, membrane interface probe, hydraulic profiling tool.

Education

- Montana State University: B.S./2002/ Earth Science/Geology

License

- Wyoming Professional Geologist, PG - 4037
- Nebraska Water Well Monitoring Technician, #79630



Ms. Brewer has over nine years of experience as a geologist, geochemist, and compliance and regulatory professional in the environmental and academic fields.

Caroline Brewer, M.S., P.G. Solid Waste Geologist

Ms. Brewer has over nine years of experience as a geologist, geochemist, and compliance and regulatory professional in the environmental and academic fields. Her current environmental focus is project management, field event coordination, technical reporting, data management, and data evaluation for solid waste sites.

Her experience includes groundwater investigation, groundwater quality monitoring and reporting, surface and groundwater assessment, integrated solid waste management and cost assessment, non-traditional Phase I Environmental Site Assessment (ESA), field oversight of drilling for coal exploration, and Wyoming Pollutant Discharge Elimination System (WYPDES) water quality mitigation, reporting, and violation resolution.

She also has experience with hydrothermal experimentation and low temperature geochemical modeling of fluid-rock interactions, with emphasis on implications for natural systems (e.g., ore formation, hydrothermal alteration) and engineered systems (e.g., enhanced geothermal systems, carbon sequestration). She has exposure to traditional and non-traditional, stable and radiogenic isotopes, including methods to date geologically recent (0.5-100,000 years) hydrothermal deposits using the ^{238}U - and ^{232}Th -decay series.

Selected Project Experience

- Project Manager or Assistant Project Management and Field Geologist responsible for groundwater investigations at a number of landfills assisted under the Landfill Remediation Program with the Wyoming Department of Environmental Quality (WDEQ), Solid & Hazardous Waste Division (SHWD) including sites in Cheyenne, Wheatland, Baggs, Kemmerer, Cokeville, and Thayne.

- Field event coordination and reporting for routine environmental monitoring events for municipal and industrial landfills at sixteen sites across Wyoming.
- Assistant Project Manager responsible for integrated solid waste management planning and cost assessment for Wyoming solid waste disposal and diversion facilities.
- Environmental Compliance Professional responsible for managing water quality mitigation and reporting efforts for coal bed methane and conventional oil & gas discharge in Wyoming. Related projects include implementation and/or reporting of passive and active treatment systems for constituents such as barium, arsenic, radium, sodium, iron, pH, and fluoride.
- Management of a 10-person team responsible for WYPDES/NPDES compliance reporting and mitigation.

Expertise

- Technical reporting for regulatory agencies and scientific publication; related data management and evaluation
- Familiarity with solid waste disposal and transfer facilities in over half of all Wyoming counties.
- Field geology
- Written and spoken Spanish

Education

- University of Wyoming:
Ph.D. Candidate/2010/Geology & Geophysics
M.S./2004/Geology & Geophysics
- University of North Carolina at Chapel Hill:
B.S./2000/Geological Sciences
B.A./2000/Spanish

Registration

- Professional Geologist: Wyoming #3732



Ms. Hiegel's primary responsibilities include providing technical support and expertise for projects in data defensibility, data quality, and leading data quality efforts (quality assurance plans, sampling plans and data validation) for use in compliance monitoring, risk assessments, closures, and numerous other applications.

Christina M. Hiegel, P.E., Data Validation Coordinator

Ms. Hiegel has over 14 years of experience in the environmental industry. Her primary responsibilities include providing technical support for projects in data defensibility, data quality, and leading data quality efforts (quality assurance plans, sampling plans, and data validation/evaluation) for use in compliance monitoring, risk assessments, closures, and numerous other applications. Additionally, she is involved in conducting Remedy Evaluations and Risk Evaluation for closed refinery sites and is responsible for completing and conducting Use Control Areas. She is also responsible for research and compliance support for permitting requirements, deed restrictions, zoning, Brownfields, and risk-based corrective action. Ms. Hiegel has worked on remediation projects involving soil vapor extraction, multi-phase vapor extraction, and monitored natural attenuation. Additionally, she has worked on a number of large site risk assessments under the Wyoming Voluntary Remediation Program (VRP) and has been involved in collaboration with state agencies.

Ms. Hiegel is proficient in laboratory data validation and has been involved in developing and maintaining the corporate Quality Assurance and Quality Control standards and procedures for overall data quality for sites. She also has organized and developed the company technical group for data quality issues and teaching of others in EPA Methods and data validation applications. She is proficient in her understanding of EPA Risk Assessment Guidance for Superfund (RAGS) and the EPA National Functional Guidelines for Organic and Inorganic Data. She has performed EPA Tiered data validation and state specific validation in support of risk assessments and has prepared quality assurance plans, risk assessment reports, remedy reports, and other milestone reports in the risk-based corrective action process. She is proficient in quality assurance plans and guidelines including the Uniform Federal Policy and Department of Defense requirements.

Selected Project Experience

- Project Engineer responsible for completion of a remedy evaluation for a former chemical

treatment area and landfarm at a former oil refinery.

- Data Validation and Risk Assessment support for an Ecological and Human Health Risk Assessment Work Plan and report, sampling plan, GIS evaluation, and background evaluation at a former petroleum refinery under the VRP Process.
- Preparation of a Quality Assurance Project Plan and Data Management plan for a closure project under strict state guidance.
- Preparation of Use Control Area documentation and public notices for a large petroleum refinery and a large former petroleum refinery under the VRP Process.
- Data Validation Chemist responsible for preparation of Tier II data validations for a site evaluation, Tier III data validations, Quality Assurance Plans, Data Management Plans, Sampling and Analyses Plans, and laboratory coordination for several private and federal sites.

Expertise

- Data validation of laboratory reports
- Quality Assurance and Quality Control plans, quality management plans, and Data Management Plan, communication, and documentation
- Sampling analysis plans and background data assessment
- Risk-based standard calculation and comparison and Risk assessment
- Use Control Area reports
- Public records research, deed search, and coordination and documentation of institutional controls
- Remedial Action Plans and remedy agreements

Education

- University of Wyoming:
B.S./2001/Architectural Engineering

Registrations

- National Environmental Laboratory Accreditation Member and Chair
- Professional Engineer – Wyoming #12087

Resume

Russel Colby, P.E.
Senior Civil Engineer



Experience

Years of Experience: 35

Education

B.S. Civil Engineering
University of Wyoming
1982

Registration

Professional Engineer
Nebraska: E-6649
Wyoming: 5565

Certified Nuclear Density
Gauge Operator

Certified Monitoring Well
Supervisor
Nebraska: 79155

Contact

Russel Colby, P.E.
Baker & Associates, Inc.
120 East 16th Street
Scottsbluff, NE 69361
russel.colby@
baker-eng.com
308-632-3123

Qualifications

Russel serves as a senior project manager and civil project engineer for construction projects covering all phases of work for municipal public works projects. This includes planning studies, field investigations, project design and construction management. Russel has considerable experience with solid waste projects in Western Nebraska and Eastern Wyoming including integrated management plans, landfill design, baler facilities, permitting, and site assessments.

Project Experience

- Southeastern Wyoming Integrated Solid Waste Management Plan (2009)
- City of Kimball C&D Landfill Permitting (2015)
- City of Alliance Solid Waste Baler Facility & Permitting (1996, 2007, 2013)
- Town of Lusk Solid Waste Planning (2011)
- City of Sidney Solid Waste Landfill Design (2003)
- Goshen County Integrated Solid Waste Management Plan (2009)
- Southeast Wyoming Regional Solid Waste Management Plan - 2 County Area (1994)
- Northwest Nebraska Regional Solid Waste Management Plan - 4 County Area (1992)
- TDS Environmental Solid Waste Landfill Design (1991, 2000, 2011)
- City of Alliance Solid Waste Landfill Design (1995)
- Solid Waste Agency of Northwest Nebraska (SWANN) Solid Waste Landfill Design (1993)
- Town of Lusk Solid Waste Landfill Permitting - Operating & Closure (2011)
- City of Alliance Solid Waste and C&D Landfill Permitting (1995, 2006, 2011)
- City of Torrington Solid Waste Landfill Permitting (1995, 2006)
- TDS Environmental Solid Waste Landfill Permitting (2000, 2005)
- City of Sidney Solid Waste and C&D Landfill Permitting (1999, 2000)
- Solid Waste Agency of Northwest Nebraska (SWANN) Solid Waste and C&D Landfill Permitting (1993, 1996)
- Town of Lusk Transfer Station Permitting (2012)
- Solid Waste Agency of Northwest Nebraska (SWANN) Solid Waste Baler Facility Re-permitting (1993, 2005, 2009)
- TDS Environmental Solid Waste Baler Facility Permitting & Construction (2006, 2009)
- City of Torrington Solid Waste Baler Re-permitting (2000)
- City of Alliance Solid Waste Baler Facility Permitting & Construction (1996, 2000)
- City of Sidney Solid Waste Baler Facility Permitting & Construction (1996)
- Phase I Site Assessments (10+ facilities)

Resume

Brad Gross

Engineering Technician



Experience

Years of Experience: 26

Education

A.A.S., Mid-Plains
Community College,
1992

Registration

Certified Water Well
Monitoring Technician,
Nebraska: 79358

ACI Certified Field
Technician and
Laboratory Testing
Technician

Certified Nuclear Density
Gauge Operator and
Radiation Safety
Officer

Contact

Brad Gross
Baker & Associates, Inc.
120 East 16th Street
Scottsbluff, NE 69361
bgross@baker-eng.com
308-632-3123

Qualifications

Brad serves as an engineering and survey technician and project manager, covering duties in various phases of a project from design to construction, including drafting, design, materials testing, and site observation. Brad is also certified as the Radiation Safety Officer for the company, overseeing the Radioactive Materials license required by the State of Nebraska as well as the Nuclear Density Gauges used for soil compaction. Brad is also in charge of the groundwater sampling department and the concrete testing laboratory.

Industry Experience

Municipal Street Construction

Drafting and design, construction
testing and management

Water, Sewer and Wastewater Systems

Drafting and design of collection
systems, lagoon construction

Solid Waste / Environmental

Drafting and design regarding
landfill permits, sampling and
statistical analysis of groundwater
monitoring wells

Survey

Drafting of plats and corner records,
point calculations, field crew
assistant

Project Experience

- TDS Landfill Permitting and Construction – Torrington, Wyoming
- Torrington Landfill Permitting and Construction – Torrington, Wyoming
- Alliance Landfill Permitting and Construction – Alliance, Nebraska
- Sidney Landfill Permitting and Construction – Sidney, Nebraska
- Lusk Landfill Permitting and Construction – Lusk, Wyoming
- Clean Harbors Monofill Cell – Kimball, Nebraska
- Groundwater Monitoring (various landfills, wastewater pivots and remediation sites in Nebraska and Wyoming) – Since 2002
- Forrest Street – Sidney, NE (Design Survey, Point Calculations)
- Dollar General Stores – Various locations in Nebraska (Wood River, Crawford, Clay Center, Scottsbluff, Franklin, Trenton) and in Colorado (Julesburg, Haxtun) – ALTA / Design Survey, Platting.
- Avenue 'B' Construction: Beltline to Overland – Scottsbluff, NE
- Lusk South Commercial Subdivision (Design/Construction of Water, Sanitary Sewer and Street Improvements) – Lusk, WY (2009)
- BNSF Double Track Construction – Bayard and Morrill, NE
- Monument Valley Pathways Construction – Scottsbluff, NE
- Chappell Wastewater Improvements - Chappell, NE
- Madrid Wastewater Improvements – Madrid, NE

Resume

Jack Baker, P.E.
Civil Engineer



Experience

Years of Experience: 18

Education

B.S. Civil Engineering
University of Nebraska -
Lincoln, 1999

Registration

Professional Engineer
Nebraska: E-11371
Wyoming: 10315
Colorado: 43428
Utah: 5050352

Contact

Jack Baker, P.E.
Baker & Associates, Inc.
120 East 16th Street
Scottsbluff, NE 69361
jack@baker-eng.com
308-632-3123

Qualifications

Jack, the President of Baker & Associates, is in charge of overall operations for the firm. He is a Civil Engineer with extensive experience in site planning and design. He oversees the operations of the entire firm and helps to coordinate and review projects to assure quality control and on time delivery. Jack also serves on the Nebraska Board of Directors for ACEC and is active in AWWA and the Water Environment Federation (WEF).

Industry Experience

Municipal Water Systems

Master Planning
Supply Wells & Well Fields
Storage Facilities
Booster Stations/PRV's
Hydraulic Modeling
Treatment & Distribution
User Rates

Site Development

Platting, Zoning
Grading, Utilities

Stormwater Improvements

SWPPP, Collection, Detention

Solid Waste / Environmental

Integrated Management Plans
Landfill & Transfer Stations
User Rates

Wastewater Systems

Wastewater Facility Planning
Treatment System Design
Collection System Design

Project Experience

- Southeastern Wyoming Integrated Solid Waste Management Plan (2009)
- City of Kimball C&D Landfill Permitting (2015)
- City of Alliance Solid Waste Baler Facility & Permitting (2007, 2013)
- Town of Lusk Solid Waste Planning (2011)
- City of Sidney Solid Waste Landfill Design (2003)
- TDS Environmental Solid Waste Landfill Design (2011)
- City of Alliance Solid Waste and C&D Landfill Permitting (2006, 2011)
- City of Torrington Solid Waste Landfill Permitting (2006)
- TDS Environmental Solid Waste Landfill Permitting (2005)
- Solid Waste Agency of Northwest Nebraska (SWANN) Solid Waste Baler Facility Re-permitting (2005, 2009)
- TDS Environmental Solid Waste Baler Facility Permitting & Construction (2006, 2009)

Resume

Tim Eisenhauer, P.E.

Civil Engineer



Experience

Years of Experience: 25

Education

B.S. Civil Engineering
University of Wyoming,
1992

Registration

Professional Engineer
Wyoming: 8168

Certified as Nuclear
Density Gauge Operator

Certified ACI Level I
Testing Technician

Contact

Tim Eisenhauer, P.E.
Baker & Associates, Inc.
1401 East M Street
Torrington, WY 82240
time@baker-eng.com
Office: 307-532-5211
Cell: 307-630-6413

Qualifications

Tim is a project manager with 25 years of progressive experience in transportation, drainage, sanitary, water, land development and site design. Tim has worked on numerous public works projects both in design and in the field as well as design and project management work associated with private development projects. Tim's primary focus is centered around municipal potable water systems, sanitary sewer collection and treatment systems, and solid waste management and permitting.

Industry Experience

Municipal Water Systems

Master Planning
Supply Wells & Well Fields
Storage Facilities
Booster Stations/PRV's
Hydraulic Modeling
Treatment & Distribution
User Rates

Stormwater Improvements

SWPPP, Collection, Detention

Solid Waste / Environmental

Integrated Management Plans
Landfill Permitting
Transfer Stations
User Rates

Site Development

Platting, Zoning
Grade Studies, Grading, Utilities
Residential Development

Wastewater Systems

Wastewater Facility Planning
Treatment System Design
Collection System Design

Project Experience

- Southeastern Wyoming Integrated Solid Waste Management Plan (2009)
- TDS MSW and C&D Landfill Permitting and Support (2005-Present)
- TDS Baler Building Design and Construction (2009-2010)
- TDS PCS-3 Design Major Amendment (2013)
- TDS ECS MSW Cell 7 Design Major Amendment & Cell 7A ECS Liner Construction (2012-2014)
- TDS Groundwater Network Work Plan (2008)
- TDS Landfill Engineering Support & Cell Development (1994-1998)
- TDS Environmental Solid Waste Landfill Permitting (1994)
- Town of LaGrange Groundwater Network Plan (2008)
- Town of LaGrange Landfill Closure Report (2011 - 2012)
- City of Torrington Solid Waste Landfill Permitting (1995, 2006)
- Town of Pine Haven, Wyoming Level II Water Study (2013)
- Town of Fort Laramie Water Tank - Fort Laramie, WY
- 20th & M Street Improvements (WYDOT) - Torrington, WY
- Phase III Water System Improvements for City of Torrington.

Resume

Alec McNabb Survey Party Chief



Experience

Years of Experience: 16

2014-Present
Survey Party Chief
Baker & Associates, Inc.

2004-2014
Survey Party Chief
Harris Kocher & Smith

2001-2004
Journey Level Surveyor
Kirkham & Michael

Education

Land Surveying / Civil
Engineering Technology
Associate of Applied
Science Degree,
Southeast Community
College, 2001

Contact

Alec McNabb
Baker & Associates, Inc.
120 East 16th Street
Scottsbluff, NE 69361
amcnabb@baker-eng.com
308-632-3123

Qualifications

Alec serves as our survey party chief. Alec performs ALTA surveys, preliminary design surveys, construction staking, topo surveys, boundary surveys, improvement survey plats, utility as-built surveys, and housing services. In the field he utilizes Trimble GPS, Trimble digital level, and Trimble robotic total station. Computation and preparation for utility point staking is completed using AutoCAD Civil 3D.

Industry Experience

Survey Control Setup
Design Surveys
Topographical Surveys
Construction Staking
Leveling
Transmission Line Layout
ALTA Surveys
FEMA Flood Certifications
Residential Lot Surveys
Boundary Surveys

Project Experience

- TDS Landfill - Torrington, WY (Layout and As-built Surveys)
- Allied Waste Landfill - Denver, CO (Design and As-built Surveys)
- Scottsbluff High School - Scottsbluff, NE (Design and Construction Staking)
- Elite Health Center - Scottsbluff, NE (Construction Staking)
- Wildcat Hills Nature Center - Gering, NE (Construction Staking)
- Western Sugar Wastewater Facilities Improvements, Scottsbluff, NE
- Interstate 80 - Big Springs, NE (10 miles of construction staking)
- Interstate 80 - Sidney, NE (Construction Staking of new crossovers & ramps)
- DR COG- Thornton, CO (R.O.W. project for 10 miles of trail through the City)
- Chappell Wastewater Plant - Chappell, NE (Design & Construction Staking)
- Dollar General Stores - NE and CO (ALTA Surveys and Design Topo's)
- Forrest Street - Sidney, NE (Construction Staking)
- 84th & Grant - Thornton, CO (Design and Boundary Survey)

Travis Evans, PE
Professional Engineer

Professional Summary

Mr. Evans began his career with a eight month internship at ARCO's Black Thunder Mine and a summer internship at ASARCO's Ray Mine. Upon graduation from Montana Tech in May 1999, Travis was employed as a reclamation foreman for Western States Reclamation where he was responsible for the reclamation of various highway and pipeline projects utilizing traditional and innovative reclamation practices. Since Travis was seeking PE licensure, he then was employed at Arch Coal's Black Thunder Mine as a engineering technician. Responsibilities included providing surveying support for pit, drill and blast, and reclamation activities utilizing GPS and conventional survey instruments. Seeking to further his engineering experience, Travis was employed by EnTech, Inc. as a design engineer. Project experience included design of various highway projects for WYDOT, as wells construction administration and design of various water system and street reconstruction projects. Upon obtaining his PE license in 2006, Travis had the opportunity to work for ARCADIS in Buffalo, Wyoming. Travis's primary focus at ARCADIS included the permitting, design, preparation of engineered cost estimates for numerous SW-3 and SW-4 impoundments for produced water disposal. He prepared numerous designs for engineered roadways for CBM Plan of Developments. While at ARCADIS, he had the opportunity to become a certified project manager through ARCADIS's project management training program. The experience he gained while employed at ARCADIS led to an opportunity to work for Three Way Inc, a oil and gas construction company. His experience was varied, as he provided survey support to construction operations, prepared construction cost estimates, provided design and project management of produced water facility construction, and survey support for the civil construction activities of Chevron's Casper Wind Farm.

In 2008, it became apparent to Three Way ownership that their engineering capabilities were creating conflicts with existing EPC clients, which led to the formation of ECS Engineers. Travis, along with Three Way and another partner, founded ECS Engineers. Initially, ECS supported Three Way by providing project management and estimating services through 2009 while also providing construction surveying services to contractors as well as the design of geosynthetic lined produced water facilities. While providing construction surveying services on the Casper Balefill Closure project, Travis developed a strong working relationship with Peak Geosolutions, which led to the formation of Solid Waste Professionals of Wyoming, LLC. Over the last five years, Travis' has led the permitting, design, construction, CQA services related to permitting greenfield landfills, transfer stations, landfill closures, and the expansion of existing landfills. His clients include publicly held solid waste companies, municipalities, and solid waste districts throughout Wyoming and Montana. Examples of solid waste projects includes the permitting of the Grasslands Environmental Industrial Landfill; Happy Jack Landfill Expansion; various projects for the Casper Regional Landfill; High Country Joint Powers Board Landfill Closure and Convenience Center; Lincoln County #2 Landfill Expansion; Teton County Waste Relocation Project; City of Sheridan Cell 9 CQA; Upper Platte River Solid Waste District Landfill Closure; City of Rawlins Landfill Closure; and miscellaneous engineering services for the Billings Regional Landfill.

Professional Experience

- Principal, Steamboat Technical Solutions, LLC, Sheridan, WY (2017-present)
- Principal, Environmental & Civil Solutions, LLC, Sheridan, WY (2008-2017)
- Principal, Solid Waste Professionals of Wyoming, LLC, Sheridan, WY (2009-present)
- Project Manager, Three Way Inc., Buffalo, WY (2007-2008)
- Project Engineer, ARCADIS, Buffalo, WY (2006-2007)
- Resident Project Representative & Design Engineer, EnTech Inc., Sheridan, WY (2001-2006)
- Engineering Technician, Arch Coal's Black Thunder Mine, Wright, WY (1999-2001)
- Reclamation Foreman, Western States Reclamation, Fredrick, CO (1999)

EDUCATION

- BS, Environmental Engineering, Minor Business Administration, Montana Tech

CERTIFICATIONS

- Professional Engineer - WY License No. PE 10867
- Professional Engineer - MT License No. 19173
- Professional Engineer - ND License No. PE-6576
- Professional Engineer - CO License No. PE-42952
- Professional Engineer - NE E-16327

COMMUNITY SERVICE

- Sheridan County Chamber of Commerce – Board of Directors (President)
- Wyoming Solid Waste & Recycling Association – Board of Directors

Relevant Experience

■ Happy Jack Landfill Expansion, Cheyenne, WY

Mr. Evans currently serves as the project manager for the City of Cheyenne's Happy Jack Landfill Expansion project. He oversaw the preparation of a variance application and lifetime permit application for the 40 acre expansion of the Happy Jack Landfill. Through the variance process, the project team determined the expansion of the landfill will save the City of Cheyenne over 100 million dollars over 30 years versus hauling waste to Ault, CO. Currently, he is coordinating the response to technical review comments, and in the future will over see the preparation of construction documents and serve as the certifying engineer for the construction of the first cell of the expansion.

■ Grasslands Environmental Industrial Landfill, Bill, WY

Mr. Evans served as the project manager for the Grasslands Environmental Industrial Landfill project. He coordinated with nine specialized subconsultants and contractors during the permitting of the greenfield development project to address Chapter 3 of the Wyoming Department of Environmental Quality's Solid Waste Rules and Regulations. He successfully managed a multi-disciplinary team to meet the Owner's project schedule, which resulted in the issuance of a permit in 18 months from the start of permitting activities. Key tasks included conducting a siting analysis, preparation of operations plan, engineering design report, environmental monitoring plan, site investigation, closure/post-closure plan and cost estimates, coordinating wildlife and wetlands studies, cultural resource inventory, and CQA Plan. He successfully negotiated financial a financial assurance mechanism which was acceptable to both the owner and WDEQ.

■ Grassland Environmental Industrial Landfill – Phase 1A Construction, Bill, WY

Upon receipt of the Operating Permit for the Landfill, Mr. Evans provided managed the preparation of the Phase 1A construction documents. Tasks included preparation of grading plans for the access road, 7.8 acre Phase 1A Cell, stormwater ponds, leachate collection system (including storage tanks and secondary containment). The liner system includes a 60-mil geomembrane over a 2' compacted soil liner. He also was responsible for preparing the construction specifications and contract documents. During construction, he served as the engineer of record and provided submittal review and clarification services and coordinated with the CQA Organization to ensure the construction of the landfill met the design intent.

■ Casper Regional Landfill, Casper, WY

Mr. Evans has been involved in numerous projects, in various capacities, at the Casper Regional Landfill. He served as the certifying engineer for the Cell 1 & 2 Expansion Project, Cell 3 & 4 Expansion Project, and C&D Cell Construction Projects. The Cell 1&2 and Cell 3&4 Expansion projects involved the installation of over 1.3 million square feet of HDPE/GCL liner system.

■ Crow Buttes Pond #4 Liner Installation, Crawford, NE

Mr. Evans served as project manager and engineer of record for the project, which involved the installation of a new double liner and leak detection system in Pond #4 at the Cameco Resources Crow Buttes facility near Crawford, Nebraska. Duties included the preparation of a design report, project manual, CQA manual, and construction drawings which met the requirements of the Nuclear Regulatory Commission. He oversaw the bidding and served as certifying engineer for the installation of the 250,000-square foot double liner system.

■ Lincoln County Landfill Expansion, Kemmerer, WY

Mr. Evans served as project manager and certifying engineer for the expansion of the Lincoln County Kemmerer #2 Landfill. He oversaw the preparation of earthworks and geosynthetics bid packages, construction of the landfill cells, and leachate collection system.

EXPERIENCE

Bill Hensley is co-founder of Peak Engineering Technologies and currently serves as the firm's chief financial officer, in addition to providing on-site CQA, construction management and field laboratory services. His responsibilities include preparation of construction contract documents, on-site construction management, contract administration, and development and management of construction quality assurance programs. He has over 20 years construction management, construction materials testing, geosynthetics testing, and construction quality assurance experience. Prior to establishing Peak, Bill Hensley was with EMCON Northwest, a Seattle area environmental engineering firm, in the construction management services division of the engineering department. Bill Hensley has been a member of the construction management or construction quality assurance team on over 60 geotechnical construction projects totaling over \$300 million worth of construction.

Prior to entering the field of technical consulting, Mr. Hensley was employed in the heavy construction industry in a variety of fields including, electrical utilities distribution (underground), traffic control systems, geosynthetics installation, general mechanical and earthworks construction, and concrete dam construction. Former employers include Western States Construction Company, Nilex Corporation and Shelby Electric Company.

CQA/Construction Management project experience includes:

- CQA Officer for eleven separate 20 to 28-acre solid waste landfill composite liner systems in Roosevelt, Washington in 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007 and 2008. Implemented the on-site construction quality assurance program, managing and supervising engineers and engineering technicians during construction. Assisted the Owner with contract administration, provided on-site construction materials testing, construction monitoring, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil composite liner system, and leachate collection system.
- CQA Officer for a 9-acre solid waste landfill composite liner system in Calaveras County, California. Implemented the on-site construction quality assurance program. Assisted the Owner with contract administration, coordinated construction materials testing, performed construction monitoring, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil composite liner system, and leachate collection system.
- CQA Officer for two 7-acre solid waste landfill composite liner system in Hillsboro, Oregon in 2003 and 2004. Implemented the on-site construction quality assurance programs, administered construction contract, provided on-site construction materials testing, construction monitoring, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil composite liner system, leachate collection system, drainage control structures, and site access roads.
- CQA Officer for three 8-acre solid waste landfill composite liner systems in Missoula, Montana. Implemented the on-site construction quality assurance program. Assisted the Owner with contract administration, provided on-site construction materials testing, construction monitoring, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil composite liner system, and leachate collection system.

- CQA Officer and Construction Manager for a 7-acre solid waste landfill composite liner system in The Dalles, Oregon. Implemented the on-site construction quality assurance program, administered construction contract, provided on-site construction materials testing, construction monitoring, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil composite liner system, leachate collection system, drainage control structures, and site access roads.
- CQA Officer for a 20-acre solid waste landfill composite liner system in Arlington, Oregon. Implemented the on-site construction quality assurance program, administered construction contract, provided on-site construction materials testing, construction monitoring, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil composite liner system, leachate collection system, drainage control structures, and site access roads.
- CQA Officer for two 18-acre solid waste landfill composite liner systems in Phoenix, Arizona. Implemented the on-site construction quality assurance program, managing and supervising engineers and engineering technicians during construction. Assisted the Owner with contract administration, provided on-site construction materials testing, construction monitoring, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil composite liner system, and leachate collection system.
- CQA Officer for a 12-acre solid waste landfill composite liner system in Scottsdale, Arizona. Implemented the on-site construction quality assurance program, managing and supervising engineers and engineering technicians during construction. Assisted the Owner with contract administration, provided on-site construction materials testing, construction monitoring, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil composite liner system, leachate collection system, drainage control structures, and site access roads.
- Construction Manager and CQA Officer for a 35-acre gold mine reclamation project in Whitefish, Montana. Provided on-site contract administration and implemented the on-site construction quality assurance program. Provided on-site construction materials testing and construction monitoring. Project included excavation, embankment and grading operations, construction of drainage control structures, and vegetation planting.
- Geosynthetics Inspector and Laboratory Manager for a 19-acre gold heap leach pad expansion in Zortman, Montana. Provided on site construction quality assurance, geomembrane conformance testing, and geomembrane seam analysis. Project included construction of a soil liner, leachate collection system, and installation of a PVC geomembrane.
- CQA Officer for an 18-acre solid waste landfill composite liner system in The Dalles, Oregon. Implemented the on-site construction quality assurance program, managing and supervising engineers and engineering technicians during construction. Assisted the Owner with contract administration, provided on-site construction materials testing, construction monitoring, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil composite liner system, leachate collection system, drainage control structures, and site access roads.

- Geosynthetics Inspector and Laboratory Manager for a 1-acre pregnant solution pond and a 5-acre stormwater control pond at a gold mine in Zortman, Montana. Provided geomembrane installation evaluation, on site construction quality assurance, geomembrane conformance testing, and geomembrane seam analysis. Project included removal of existing HDPE geomembrane installation and re-installation of a CSPE geomembrane.
- Geosynthetics Inspector for a 9-acre waste water lagoon composite liner system in Spokane, Washington. Provided geosynthetics installation monitoring and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics clay liner system and installation a HDPE geomembrane.
- Geosynthetics Inspector for waste water treatment and storage impoundment's in Sela, Washington. Provided on-site geomembrane seam analysis and installation monitoring. Assisted in the preparation of the final geomembrane installation certification report at the completion of the project. Project included construction of a soil liner, and installation of PVC and HDPE geomembranes.
- Geosynthetics CQA Monitor for a 9-acre solid waste landfill composite liner system in Cowlitz County, Washington. Provided on-site soils testing, construction monitoring, geosynthetics installation monitoring, and coordinated geosynthetics laboratory testing. Assisted in the preparation of the final certification report at the completion of the project. Project included construction of a geosynthetics and soil composite liner system, leachate collection system, drainage control structures, and site access roads.
- Lead CQA Monitor for a 36-acre landfill closure in Cowlitz County, Washington. Assisted the Owner with contract administration, provided on-site construction materials testing, construction monitoring, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil cover system, landfill gas collection and flare system, drainage control structures, and site access roads.
- Lead CQA Monitor for a 55-acre landfill closure in King County, Washington. Provided construction monitoring for all earthwork operations, landfill gas systems, and geosynthetics installations. Project included construction of a geosynthetics and soil cover system, leachate collection system, landfill gas collection and flare system, drainage control structures, and site access roads.
- Lead CQA Monitor for a 9-acre solid waste landfill composite liner system in Cowlitz County, Washington. Provided on-site soils testing, construction monitoring, and coordinated geosynthetics laboratory testing. Assisted with the preparation of the final certification report at the completion of the project. Project included construction of a geosynthetics and soil composite liner system, leachate collection system, drainage control structures, and site access roads.
- Lead CQA Monitor for a 20-acre landfill closure in Vancouver, Washington. Provided construction materials testing, Construction monitoring for all earthwork operations, landfill gas systems, geosynthetics installations, and coordinated geosynthetics laboratory testing. Project included construction of a geosynthetics and soil cover system, leachate collection system, gas collection and flare system, drainage control structures, and site access roads.

EDUCATION

B.S. w/Honors 1986 University of Wyoming, Laramie, Wyoming

Certifications

National Institute for Certifications in Engineering Technologies (NICET)

Geotechnical Engineering Technology – Construction

Geotechnical Engineering Technology-Laboratory

Geosynthetics Inspector – GCL,HDPE, VLDPE, PVC, CSPE, and Geotextiles

Occupational Safety and Health Administration (OSHA)

Hazardous Materials Safety

MSHA

Geosynthetics Institute (Drexel University)

GRI-GSI Certified Soils Inspector

GRI-GSI Certified Geosynthetics Inspector

TRI/I-CORP

Geoelectrical Liner Integrity Surveys



ATTACHMENT B
COST ESTIMATE AND SCHEDULE OF CHARGES

**COST SUMMARY, SITING, DEVELOPMENT, PERMITTING, & DESIGN
NEW LANDFILL FACILITY, CITIES OF SCOTTSBLUFF AND GERI, NEBRASKA**



COST ESTIMATE SUMMARY		PROJECT TOTAL
STEP 1 - SITE ASSESSMENT/INVESTIGATION		
1	TASK 1 - Preliminary Geotechnical Investigations	\$11,500
2	TASK 2 - Site Survey	\$16,910
3	TASK 3 - Geotechnical Work	\$85,954
4	TASK 4 - Surface Drainage Analysis	\$12,046
5	TASK 5 - Archaeological Survey and Threatened and Endangered Species	\$59,735
6	TASK 6 - Seismic Impact Zones	\$6,350
7	TASK 7 - Preliminary Conceptual Design	\$32,403
8	TASK 8 - Preliminary Cost Estimate	\$5,437
9	TASK 9 - Preliminary Schedule using MS Project with Gantt Chart	\$2,898
10	TASK 10 - Meetings	\$31,280
STEP 1 - SITE ASSESSMENT/INVESTIGATION SUBTOTAL		\$264,512

**COST SUMMARY, SITING, DEVELOPMENT, PERMITTING, & DESIGN
NEW LANDFILL FACILITY, CITIES OF SCOTTSBLUFF AND GERIING, NEBRASKA**



COST ESTIMATE SUMMARY		PROJECT TOTAL
STEP 2 - PERMIT APPLICATION DEVELOPMENT		
1	TASK 1 - Permit Drawings	\$18,776
2	TASK 2 - Modeling and Analysis	\$17,240
3	TASK 3 - Groundwater and Gas Monitoring Plans	\$23,522
4	TASK 4 - Closure Plan	\$20,873
5	TASK 5 - Operations Plan	\$28,294
6	TASK 6 - Assemble Permit Application Documents	\$21,925
7	TASK 7 - Public Hearings	\$23,973
8	TASK 8 - Meetings	\$31,693
STEP 2 - PERMIT APPLICATION DEVELOPMENT SUBTOTAL		\$186,296

**COST SUMMARY, SITING, DEVELOPMENT, PERMITTING, & DESIGN
NEW LANDFILL FACILITY, CITIES OF SCOTTSBLUFF AND GERING, NEBRASKA**



COST ESTIMATE SUMMARY		PROJECT TOTAL
STEP 3 - FINAL DESIGN AND CONSTRUCTION		
1	TASK 1 - Final Design	\$95,536
2	TASK 2 - Final Cost Estimate	\$2,987
3	TASK 3 - Construction Bidding Services	\$9,862
4	TASK 4 - Construction Inspection Services	\$316,610
<u>STEP 3 - FINAL DESIGN AND CONSTRUCTION SUBTOTAL</u>		\$424,996
STEP 4 - PROJECT SCHEDULE		
1	TASK 1 - Project Schedule	\$2,469
<u>STEP 4 - PROJECT SCHEDULE SUBTOTAL</u>		\$2,469
Total		\$878,272



Activity		Schedule of Charges	Hourly Rate or Charge	Hours or Unit Estimate	Subtotal
1.	TASK 1 - Preliminary Geotechnical Investigations - Perform investigations and studies to determine whether the site selected meets all Federal, State, and Local permitting requirements - Assist the City in locating a suitable site if the initial site selected does not meeting permitting requirements <u>Assumptions:</u> - The proposed site is found suitable for the landfill - Local permitting requirements will include NDEQ and Scotts Bluff County for a new Municipal Solid Waste (MSW) and Construction and Demolition (C&D) site - Reference Soil Conservation Service Soil Survey Reports, where available - Collection of soil engineering samples will be used to determine soil characteristics - Field activities will utilize local personnel (Baker) for any necessary work - Coordinate with Baker to perform necessary investigations	Technical Specialist 1	\$190	4	\$760
		Professional Level 11	\$173	0	\$0
		Professional Level 10	\$163	0	\$0
		Professional Level 9	\$153	0	\$0
		Professional Level 8	\$141	0	\$0
		Professional Level 7	\$130	20	\$2,600
		Professional Level 6	\$118	10	\$1,180
		Professional Level 5	\$110	20	\$2,200
		Professional Level 4	\$95	0	\$0
		Professional Level 3	\$84	16	\$1,344
		Technician Level 3	\$68	0	\$0
		Administrative 2	\$58	2	\$116
		Labor			\$8,200
		Equipment	Cost	0	\$0
		Travel	Cost	0	\$0
		Per Diem	\$0	0	\$0
		Miscellaneous	Cost	0	\$0
		Expenses			\$0
		Baker	Cost	1	\$3,300
		Subcontractors			\$3,300
		Task 1. Subtotal			\$11,500



Activity		Schedule of Charges	Hourly Rate or Charge	Hours or Unit Estimate	Subtotal
2.	TASK 2 - Site Survey - Conduct surveys of the site to obtain a base map and detailed topographic maps <u>Assumptions:</u> - Survey will be completed by a Nebraska Licensed Land Surveyor - Surveying work will include using GPS - The maps will meet NDEQ mapping requirements - Mapping shall include survey control with all monumentation and reference points - Contours will have an accuracy of ±0.4 feet - The survey will be tied to the Nebraska State Plane Coordination System - The survey and design information will be prepared for the City in dwg format - Surveys will be conducted by Baker - Optional: unmanned Aerial Vehicle (UAV) to collect aerial data	Technical Specialist 1	\$190	1	\$190
		Professional Level 11	\$173	0	\$0
		Professional Level 10	\$163	0	\$0
		Professional Level 9	\$153	0	\$0
		Professional Level 8	\$141	0	\$0
		Professional Level 7	\$130	0	\$0
		Professional Level 6	\$118	0	\$0
		Professional Level 5	\$110	2	\$220
		Professional Level 4	\$95	0	\$0
		Professional Level 3	\$84	0	\$0
		Technician Level 3	\$68	0	\$0
		Administrative 2	\$58	0	\$0
		Labor			\$410
		Equipment	Cost	0	\$0
		Travel	Cost	0	\$0
		Per Diem	\$0	0	\$0
		Miscellaneous	Cost	0	\$0
		Expenses			\$0
		Baker	Cost	1	\$16,500
		Subcontractors			\$16,500
		Task 2. Subtotal			\$16,910



Activity		Schedule of Charges	Hourly Rate or Charge	Hours or Unit Estimate	Subtotal
3.	TASK 3 - Geotechnical Work - Perform investigations to determine the characteristics of the site - Determine the hydrogeological setting - Review the characterization of the vadose zone (if applicable) - Prepare documentation meeting NDEQ locational and design permitting criteria to operate the site - Provide a liner and cover alternative analysis - Install wells and borings - Conduct quarterly groundwater monitoring - Work with Baker, Peak, and Steamboat Technical Services to perform geotechnical investigations and liner and cover alternative analysis <u>Assumptions:</u> - Conduct all studies to meet the NDEQ permitting requirements - Establish a complete data base for the landfill design - Geologists is Nebraska certified - Install 8 monitoring wells and 12 borings to approximately 50 feet. - One year of quarterly groundwater monitoring for 8 wells, 2 QA/QC samples/event; analysis for baseline and detection parameters	Technical Specialist 1	\$190	1	\$190
		Professional Level 11	\$173	0	\$0
		Professional Level 10	\$163	0	\$0
		Professional Level 9	\$153	0	\$0
		Professional Level 8	\$141	4	\$564
		Professional Level 7	\$130	0	\$0
		Professional Level 6	\$118	16	\$1,888
		Professional Level 5	\$110	32	\$3,520
		Professional Level 4	\$95	0	\$0
		Professional Level 3	\$84	42	\$3,528
		Technician Level 3	\$68	2	\$136
		Administrative 2	\$58	2	\$116
		Labor			\$9,942
		Equipment	Cost	4	\$1,800
		Travel	Cost	2	\$2,800
		Per Diem	\$40	4	\$160
		Miscellaneous	Cost	0	\$0
		Expenses			\$4,760
		Steamboat	Cost	1	\$12,231
		Laboratory	\$307	40	\$12,280
		Driller	Cost	1	\$46,741
		Subcontractors			\$71,252
		Task 3. Subtotal			\$85,954



Activity		Schedule of Charges	Hourly Rate or Charge	Hours or Unit Estimate	Subtotal
4.	TASK 4 - Surface Drainage Analysis - Evaluate drainage conditions for the landfill site and access roads <u>Assumptions:</u> - Evaluate both existing and final conditions - Meet and/or exceed all NDEQ requirements with the analysis - Steamboat Technical Services to perform the surface drainage analysis	Technical Specialist 1	\$190	1	\$190
		Professional Level 11	\$173	0	\$0
		Professional Level 10	\$163	0	\$0
		Professional Level 9	\$153	0	\$0
		Professional Level 8	\$141	0	\$0
		Professional Level 7	\$130	0	\$0
		Professional Level 6	\$118	0	\$0
		Professional Level 5	\$110	2	\$220
		Professional Level 4	\$95	0	\$0
		Professional Level 3	\$84	0	\$0
		Technician Level 3	\$68	0	\$0
		Administrative 2	\$58	0	\$0
		Labor			\$410
		Equipment	Cost	0	\$0
		Travel	Cost	0	\$0
		Per Diem	\$0	0	\$0
		Miscellaneous	Cost	0	\$0
		Expenses			\$0
		Steamboat	Cost	1	\$11,636
		Subcontractors			\$11,636
		Task 4. Subtotal			\$12,046



Activity		Schedule of Charges	Hourly Rate or Charge	Hours or Unit Estimate	Subtotal
5.	TASK 5 - Archaeological Survey and Threatened and Endangered Species - Perform an environmental review to meet permitting requirements - Conduct a Class III cultural resources inventory by Metcalf - Provide a threatened and endangered species survey of the proposed site - Conduct an initial background search on state and federally listed species and critical habitats that may occur in Scotts Bluff County - Provide a pedestrian survey to map vegetative types - Determine the presence or absence of critical habitat suitable for listed species - Verify the presence or absence of any listed flora or fauna <u>Assumptions:</u> - Conduct a surface inventory of 250 acres - 6 days of fieldwork with a crew of three archaeologists from Metcalf - Ground surface visibility will be sufficient to preclude the use of subsurface probing as a discovery method - Does not include any costs to cover crop damage - 2 Trihydro biologists, 2 trips, 6 days field work - T&E species surveys to include swift fox, raptors/eagles, migratory birds, incidental species - 1 raptor nest survey event and 1 bird survey event - Swift fox surveys = remote camera trapping and habitat assessment - No T&E plants occur in the area. Vegetation survey limited to vegetation type/habitat mapping and incidental NE Tier 1 plant observations - T&E/vegetation surveys to occur in area approximately 640 acres - No impacts therefore no survey/habitat assessment for river otter	Technical Specialist 1	\$190	4	\$760
		Professional Level 11	\$173	0	\$0
		Professional Level 10	\$163	0	\$0
		Professional Level 9	\$153	0	\$0
		Professional Level 8	\$141	6	\$846
		Professional Level 7	\$130	0	\$0
		Professional Level 6	\$118	0	\$0
		Professional Level 5	\$110	150	\$16,500
		Professional Level 4	\$95	14	\$1,330
		Professional Level 3	\$84	52	\$4,368
		Technician Level 3	\$68	0	\$0
		Administrative 2	\$58	6	\$348
		Labor			\$24,152
		Equipment	Cost	1	\$1,940
		Travel	Cost	1	\$2,384
		Per Diem	\$45	10	\$450
		Miscellaneous	Cost	0	\$0
		Expenses			\$4,774
		Metcalf	Cost	1	\$30,809
		Subcontractors			\$30,809
		Task 5. Subtotal			\$59,735



Activity		Schedule of Charges	Hourly Rate or Charge	Hours or Unit Estimate	Subtotal
6.	TASK 6 - Seismic Impact Zones - Perform seismic documentation per Title 132, Chapter 3, <u>002.09</u> to meet NDEQ requirements Assumptions: - Analyses will be conducted in accordance with RCRA Subtitle D (258.14) - Contour Consulting Engineering, LLC will be used for the seismic survey	Technical Specialist 1	\$190	1	\$190
		Professional Level 11	\$173	0	\$0
		Professional Level 10	\$163	0	\$0
		Professional Level 9	\$153	0	\$0
		Professional Level 8	\$141	0	\$0
		Professional Level 7	\$130	0	\$0
		Professional Level 6	\$118	0	\$0
		Professional Level 5	\$110	2	\$220
		Professional Level 4	\$95	0	\$0
		Professional Level 3	\$84	0	\$0
		Technician Level 3	\$68	0	\$0
		Administrative 2	\$58	0	\$0
		Labor			\$410
		Equipment	Cost	0	\$0
		Travel	Cost	0	\$0
		Per Diem	\$0	0	\$0
		Miscellaneous	Cost	0	\$0
		Expenses			\$0
		Contour	Cost	1	\$5,940
		Subcontractors			\$5,940
		Task 6. Subtotal			\$6,350



Activity		Schedule of Charges	Hourly Rate or Charge	Hours or Unit Estimate	Subtotal
7.	TASK 7 - Preliminary Conceptual Design - Prepare a preliminary design for the site - Identify parameters of the site and requirements for the facility design <u>Assumptions:</u> - Design will include identifying building locations, fence lines, cell geometry, storm water channels, borrow sources, utilities, access roads, liner requirements, and all other ancillary facilities - Develop the designs with a minimum landfill design of 75 years - Trihydro will utilize their public relations specialist and graphic designers to edit and review a pictorial design - Peak Geosolutions will be brought in to analyze liner requirements	Technical Specialist 1	\$190	16	\$3,040
		Professional Level 11	\$173	0	\$0
		Professional Level 10	\$163	0	\$0
		Professional Level 9	\$153	0	\$0
		Professional Level 8	\$141	4	\$564
		Professional Level 7	\$130	0	\$0
		Professional Level 6	\$118	0	\$0
		Professional Level 5	\$110	100	\$11,000
		Professional Level 4	\$95	0	\$0
		Professional Level 3	\$84	0	\$0
		Technician Level 3	\$68	25	\$1,700
		Administrative 2	\$58	2	\$116
		Labor			\$16,420
		Equipment	Cost	1	\$200
		Travel	Cost	0	\$0
		Per Diem	\$0	0	\$0
		Miscellaneous	Cost	0	\$0
		Expenses			\$200
		Steamboat	Cost	0	\$15,783
		Subcontractors			\$15,783
		Task 7. Subtotal			\$32,403



Activity		Schedule of Charges	Hourly Rate or Charge	Hours or Unit Estimate	Subtotal
8.	TASK 8 - Preliminary Cost Estimate - Prepare a preliminary cost estimate -Develop a takeoff sheet to identify all items necessary to perform the surveying, siting, hydrogeological studies, permitting, and design/layout of cells. - Provide the design and permitting approval process of Cell 1 from Task 7 <u>Assumptions:</u> - Will determine the most local subcontractors for reduced travel time for cost estimate - Steamboat Technical Services to provide preliminary cost estimate	Technical Specialist 1	\$190	1	\$190
		Professional Level 11	\$173	0	\$0
		Professional Level 10	\$163	0	\$0
		Professional Level 9	\$153	0	\$0
		Professional Level 8	\$141	0	\$0
		Professional Level 7	\$130	0	\$0
		Professional Level 6	\$118	0	\$0
		Professional Level 5	\$110	2	\$220
		Professional Level 4	\$95	0	\$0
		Professional Level 3	\$84	0	\$0
		Technician Level 3	\$68	0	\$0
		Administrative 2	\$58	0	\$0
		Labor			\$410
		Equipment	Cost	0	\$0
		Travel	Cost	0	\$0
		Per Diem	\$0	0	\$0
		Miscellaneous	Cost	0	\$0
		Expenses			\$0
		Baker	Cost	1	\$2,200
		Steamboat	Cost	1	\$2,827
		Subcontractors			\$5,027
		Task 8. Subtotal			\$5,437



Activity		Schedule of Charges	Hourly Rate or Charge	Hours or Unit Estimate	Subtotal
9.	TASK 9 - Preliminary Schedule using MS Project with Gantt Chart - Prepare a preliminary schedule using MS Project with Gantt Chart - Include all activities required to obtain approvals through initial landfill site selection, surveying, mapping, hydrogeological studies, installation of required monitoring wells, testing, reports, meetings, and other pertinent elements required for the new landfill. <u>Assumptions:</u> - SharePoint type system to be used to provide up-to-date schedule changes on a Gantt Chart - Schedule will include all testing activities and design timeline to obtain approval/construction acceptance for Cell 1	Technical Specialist 1	\$190	2	\$380
		Professional Level 11	\$173	0	\$0
		Professional Level 10	\$163	0	\$0
		Professional Level 9	\$153	0	\$0
		Professional Level 8	\$141	2	\$282
		Professional Level 7	\$130	0	\$0
		Professional Level 6	\$118	0	\$0
		Professional Level 5	\$110	12	\$1,320
		Professional Level 4	\$95	0	\$0
		Professional Level 3	\$84	0	\$0
		Technician Level 3	\$68	1	\$68
		Administrative 2	\$58	1	\$58
		Labor			\$2,108
		Equipment	Cost	0	\$0
		Travel	Cost	0	\$0
		Per Diem	\$0	0	\$0
		Miscellaneous	Cost	0	\$0
		Expenses			\$0
		Steamboat	Cost	1	\$790
		Subcontractors			\$790
		Task 9. Subtotal			\$2,898



Activity		Schedule of Charges	Hourly Rate or Charge	Hours or Unit Estimate	Subtotal
10.	TASK 10 - Meetings - Meet with the Owner, Community, and others as necessary throughout the project - Address any concerns and issues that may have arisen during Step 1 <u>Assumptions:</u> - 2 on-site project meetings, 6 monthly conference calls, 1 public hearing with Steamboat Technical Services	Technical Specialist 1	\$190	40	\$7,600
		Professional Level 11	\$173	0	\$0
		Professional Level 10	\$163	0	\$0
		Professional Level 9	\$153	0	\$0
		Professional Level 8	\$141	45	\$6,345
		Professional Level 7	\$130	0	\$0
		Professional Level 6	\$118	0	\$0
		Professional Level 5	\$110	12	\$1,320
		Professional Level 4	\$95	0	\$0
		Professional Level 3	\$84	0	\$0
		Technician Level 3	\$68	0	\$0
		Administrative 2	\$58	0	\$0
		Labor			\$15,265
		Equipment	Cost	0	\$0
		Travel	Cost	3	\$580
		Per Diem	\$45	3	\$135
		Miscellaneous	Cost	3	\$100
		Expenses			\$815
		Baker	Cost	1	\$4,400
		Steamboat	Cost	1	\$10,800
		Subcontractors			\$15,200
		Task 10. Subtotal			\$31,280

TRIHYDRO STANDARD SCHEDULE OF CHARGES

JANUARY 1, 2018 - DECEMBER 31, 2018 ^{2, 3, 4}

<u>PERSONNEL</u>	<u>UNIT RATE^{1, 7}</u>
Senior Principal -----	220.00/hour
Principal -----	200.00/hour
Project Principal -----	180.00/hour
Technical Specialist 4 -----	240.00/hour
Technical Specialist 3 -----	220.00/hour
Technical Specialist 2 -----	205.00/hour
Technical Specialist 1 -----	190.00/hour
Professional Level 12 -----	180.00/hour
Professional Level 11 -----	173.00/hour
Professional Level 10 -----	163.00/hour
Professional Level 9 -----	153.00/hour
Professional Level 8 -----	141.00/hour
Professional Level 7 -----	130.00/hour
Professional Level 6 -----	118.00/hour
Professional Level 5 -----	110.00/hour
Professional Level 4 -----	95.00/hour
Professional Level 3 -----	84.00/hour
Professional Level 2 -----	67.00/hour
Professional Level 1 -----	54.00/hour
Technician Level 8 -----	115.00/hour
Technician Level 7 -----	105.00/hour
Technician Level 6 -----	96.00/hour
Technician Level 5 -----	88.00/hour
Technician Level 4 -----	78.00/hour
Technician Level 3 -----	68.00/hour
Technician Level 2 -----	58.00/hour
Technician Level 1 -----	48.00/hour
Administrative 4 -----	72.00/hour
Administrative 3 -----	68.00/hour
Administrative 2 -----	58.00/hour
Administrative 1 -----	48.00/hour
<u>EXPENSES</u>	
Subcontracts (Labor, Equipment and Services) -----	Cost + 10%
Shipping (i.e. Documents, Equipment, Supplies) -----	Cost
<u>TRAVEL EXPENSES</u>	
Meal Per Diem ⁶ -----	\$45/day/person
Airline Tickets -----	Cost
Hotel/Motel -----	Cost
Rental Vehicle -----	Cost
<u>FIELD EXPENSES AND EQUIPMENT</u>	
Consumable Field Supplies -----	Cost + 10%
Rental Equipment -----	Cost + 10%
Purchased Equipment -----	Cost + 10%
Company Field Instruments, Equipment, Vehicles, etc. -----	See Field Charge Sheet
Consumable Field Supplies and PPE -----	See Field Charge Sheet
Company Vehicles (daily) ⁵ -----	\$86/day min or 54.5 cents/mile
Company Vehicles (monthly) -----	Cost + fuel cost

1. The above charges include fringe benefits, overhead and profit. No multiplier is used for billing.
2. An annual escalation rate less than or equal to 5% will be applied to these rates for multi-year projects and contracts.
3. Payment of invoices shall be due within thirty days; delinquent amounts due shall accrue a late charge of 1 1/2% per month from date of invoice.
4. The rates in this Schedule of Charges are subject to change on December 31, 2018.
5. Minimum charge of \$86/day. Daily mileage exceeding 157 miles is charged at the current IRS rate per mile. Mileage rates are subject to change throughout the year.
6. Any International travel meal per diem will be at cost.
7. Expert testimony services, including but not limited to review and preparation of documents, preparation for and time spent in depositions, and preparation for and time spent during arbitration or trial testimony, as well as related research and evaluation, shall be charged at 1.5 times the individual's billing level.



ATTACHMENT C
SUMMARY OF BROAD COST AREAS

**Siting, Development, Permitting & Design of a New Landfill Facility for the Cities of Scottsbluff
and Gering, Nebraska**

Attachment C

Summary of Broad Cost Areas (4)

<u>Cost Area</u>	<u>Budget</u>
STEP 1 - Site Assessment/Investigation	\$264,512
STEP 2 - Permit Application Development	\$186,296
STEP 3 - Final Design and Construction	\$424,996
STEP 4 - Project Schedule	\$ 2,469
Project Total	\$878,272



TRIHYDRO CORPORATION – CITIES OF SCOTTSBLUFF AND GERING, NEBRASKA GENERAL BASIC AGREEMENT- ENGINEERING AND CONSULTING SERVICES

THIS Agreement is made and entered into on _____ day of July 2018, by and between the CITY OF SCOTTSBLUFF, NEBRASKA with an address of 2525 Circle Drive, Scottsbluff, NE 69361 and the CITY OF GERING, NEBRASKA, with an address of 1025 P Street, Gering NE 69341 [jointly referred to herein as "CLIENT"] and TRIHYDRO CORPORATION, a Wyoming corporation, whose address is, 1252 Commerce Drive, Laramie, WY 82070 ["TRIHYDRO"].

WHEREAS, TRIHYDRO is engaged in the business of providing engineering, surveying, and consulting services and CLIENT may require such services from time to time;

NOW, THEREFORE, in consideration of the terms, provisions, and Agreements set forth herein, the parties agree as follows:

ARTICLE 1. SERVICES AND WORK CHANGE ORDERS.

1.01 Scope of Work. TRIHYDRO shall provide the services and perform the Work authorized by CLIENT and accepted by TRIHYDRO ["the Work"] as set forth in the Scope of Work in a Work Order [in the form attached hereto as ATTACHMENT A ("Work Order"), or equivalent form (i.e. purchase order, notice to proceed or authorization).

1.02 Work Change Orders. All services or Work, other than as specifically set forth in the Work Order, shall be mutually agreed upon and shall be set forth in a Work Change Order [in the form attached hereto as ATTACHMENT B ("Work Change Order"), signed by CLIENT and TRIHYDRO. The Work Order and each Work Change Order shall be accompanied by a Schedule of Charges and shall include the following:

- (a) Location at which the Work or Work Change Order Work is to be performed;
- (b) Specific scope and description of the Work or Work Change Order to be performed, including plans and specifications where appropriate;
- (c) Trihydro Project Manager and CLIENT's authorized representative responsible for project;
- (d) Schedule for commencement and completion of the Work or the Work Change Order; and
- (e) Identifiable health and safety considerations.

ARTICLE 2. CHARGES AND BILLING.

2.01 Schedule of Charges. CLIENT shall pay TRIHYDRO in accordance with the written Schedule of Charges accompanying the Work Order and/or each Work Change Order.

2.02 Invoices. TRIHYDRO shall invoice CLIENT monthly for Work performed under the Work Order and/or each Work Change Order. CLIENT shall timely review such invoices and shall notify TRIHYDRO within fifteen (15) days of any disputed amounts. All undisputed amounts shall be paid no later than sixty (60) days after receipt of the invoice unless otherwise authorized in a Work Order.



ARTICLE 3. TERMS OF AGREEMENT AND TERMINATION.

3.01 Severability of Terms. Every part, provision, or term of the Engineering and Consulting Services Agreement is severable from every other part, provision, or term. A finding that any part or provision is invalid, void, or unenforceable shall not affect the remaining parts and provisions.

3.02 Integrated Agreement. The terms and conditions set forth in the foregoing Engineering and Consulting Services Agreement, sometimes collectively referred to as the "Agreement", constitute the entire understanding of the parties relative to services provided by TRIHYDRO to CLIENT, and supersede and completely integrate any and all prior Agreements between the parties, whether oral or in writing.

3.03 Incorporated in Work Orders. The Agreement and these terms and conditions shall be incorporated in the Work Order and/or the Work Change Order and authorizations, and shall govern each such order unless expressly excluded in writing therefrom.

3.04 Survival of Terms. The terms and conditions of the Agreement as applied to the Work Order or a Work Change Order shall survive termination or expiration of the Agreement and shall continue to govern completion of the Work Order or any Work Change Orders signed by the parties.

3.05 Non-performance. Should TRIHYDRO fail, neglect, or refuse to perform any of the Work or any Work Change Order; or should TRIHYDRO become insolvent; or, if at any time the Work should be unreasonably delayed; or if the conditions of this Agreement or a Work Change Order should be willfully violated, or performed carelessly, or in bad faith; then CLIENT may notify TRIHYDRO in writing, and if the faults complained of are not corrected to the satisfaction of CLIENT within ten (10) days from the delivery of the notice, then TRIHYDRO shall discontinue all or part of the Work under this Agreement or discontinue the Work of its subcontractors and CLIENT shall have full right to immediately purchase and hire materials, tools, labor, and machinery or otherwise contract for completion of the Work and to recover from TRIHYDRO damages therefore.

3.06 Termination. Either party may terminate this Agreement at any time and without cause upon thirty (30) days prior written notice to the other.

ARTICLE 4. RECORDS.

4.01 Retention. TRIHYDRO shall maintain true and correct records in connection with each material cost and each cost reimbursable service performed and all transactions related thereto, and shall retain all such records for three years after the end of the calendar year in which the last service was performed. CLIENT at its expense, from time to time up to three (3) years after the last services were performed, may inspect and audit all records of TRIHYDRO in connection with all costs and expenses invoiced for material cost and cost reimbursable services. Client may obtain any records needed from Trihydro within this three year period. Trihydro shall not unreasonably withhold its consent. No inspection or audit shall delay or defer the obligation of



CLIENT to make payment on undisputed invoices. At the end of three (3) years, CLIENT and TRIHYDRO shall make arrangements for the transfer of said records to CLIENT. TRIHYDRO shall have the right to copy such portions of said records as it shall deem necessary to retain and shall have the right thereafter to request copies of such transferred records. TRIHYDRO is an environmentally conscious firm that maintains and stores its documents electronically, rather than in hard copy.

4.02 Ownership of Work Product. Work Product shall not include customizations of, derivatives of, or enhancements to TRIHYDRO-owned or TRIHYDRO-provided software, such as but not limited to Project Direct, that may be provided as an application for CLIENT's use. Any pre-existing software, previously belonging to TRIHYDRO or lawfully acquired by TRIHYDRO in a manner independent of this Agreement, which is used by TRIHYDRO in the course of the Work hereunder, or which may be provided by TRIHYDRO to CLIENT and which is indicated to be the property of TRIHYDRO by copyright notice or otherwise shall remain the property of TRIHYDRO. Except as provided above with regard to TRIHYDRO-owned software, CLIENT shall own all work product and other deliverables provided to CLIENT pursuant to any Work Order, unless otherwise mutually agreed in a specific Work Order.

ARTICLE 5. TIME FOR PERFORMANCE, EXTENSIONS, AND DELAYS.

5.01 Timely Performance. TRIHYDRO shall commence and complete the Work and/or the Work Order and/or the Work Change Order in accordance with the schedule set forth in the Work Order or any Work Change Order and shall, at all times, proceed diligently with said Work to completion.

5.02 Suspension of Work. CLIENT reserves the right to suspend the whole or any part of the Work under any Work Order or any Work Change Order at any time. If all of the projected Work contemplated in a Work Order or a Work Change Order is terminated or abandoned by CLIENT, CLIENT shall pay TRIHYDRO for the Work performed in conformity with specifications, and in accordance with the Schedule of Charges.

5.03 Delays. If TRIHYDRO is obstructed or delayed in the prosecution or completion of the Work by reason of the unusual action of the elements, or by reason of the abandonment of the Work by the employees in a general strike, or by reason of war, civil disorder, fire or other casualty, strikes or embargoes, or shortage of transportation facilities, or by reason of any cause beyond the reasonable control of TRIHYDRO or CLIENT, TRIHYDRO and its agents, representatives, and subcontractors shall have no claim for damages for any such cause or delay and CLIENT, its agents, CLIENT's, representatives, and subcontractors shall have no claim for damages. In any such event, TRIHYDRO shall be entitled to such extension of time for the completion of the Work as CLIENT may approve as being just and proper; provided, however, that such claim for extension of time shall be made by TRIHYDRO to CLIENT within one (1) week from the time when cause for delay occurs, on a Work Order or a Work Change Order.

ARTICLE 6. PERFORMANCE OF SERVICES AND COMMUNICATION OF RESULTS.

6.01 Standard. TRIHYDRO shall perform the Work in a professional manner consistent with that level of care and skill ordinarily exercised by members of the profession currently



practicing in the same locality under similar conditions and information. No other representation, express or implied, and no warranty or guarantee is included or intended herein, or in any report, document or otherwise.

6.02 Plans and Specifications. The specifications and plans in the Work Order, or attached to a Work Change Order, are intended to be explanatory of each other, but should any discrepancies appear or any misunderstanding arise as to the meaning of anything contained in either, the plans and specifications shall be construed to require and include all labor and material and equipment necessary and proper for the Work contemplated, so that Work may be completed according to the true intent and purpose of the plans and specifications.

6.03 Results. Results of TRIHYDRO Work and analyses shall be communicated to CLIENT in writing as required in the Work Order, except that TRIHYDRO may give results orally or in electronic form in advance of any written results unless otherwise directed by CLIENT. Such oral or electronic communications of results in advance of the final written results are tentative only and are subject to change by TRIHYDRO before the final completion report is sent to and accepted by CLIENT.

ARTICLE 7. MATERIAL, EQUIPMENT, PREMISES AND WORK.

7.01 Material, Equipment, Utilities. TRIHYDRO shall, unless otherwise agreed, provide and pay for all materials, labor, tools, equipment, light, power, transportation, water and other facilities necessary for the execution and completion of the Work.

7.02 Payments to Suppliers. TRIHYDRO shall pay all materials suppliers and subcontractors for Work performed under the Work Order and any Work Change Order within seven (7) days from receipt of payment from CLIENT. TRIHYDRO agrees to furnish CLIENT with names of any and all suppliers or contractors used by TRIHYDRO in performing the Work, and shall furnish CLIENT satisfactory evidence of settlement including lien waivers for any and all materials supplied to TRIHYDRO under the Work Order or any Work Change Order when all outstanding invoices have been paid by CLIENT.

7.03 Permits, Licenses, and Certificates. Unless otherwise agreed, TRIHYDRO shall secure applicable permits, licenses, and certificates in connection with the performance of the Work, and pay all municipal inspection or other fees pertaining thereto.

ARTICLE 8. TRIHYDRO'S EMPLOYEES.

8.01 Compliance with Laws and Regulations. TRIHYDRO agrees to comply with applicable federal and state enactments with reference to employer's liability, unemployment security, Worker's compensation, Worker's insurance, environmental laws and regulations, and occupational safety and health laws in effect in the jurisdiction in which the Work is performed. All Work performed pursuant to this Agreement or any Work Order or Work Change Order shall be performed by TRIHYDRO as an independent contractor and under no circumstances will TRIHYDRO or its employees be considered employees or agents of CLIENT.

8.02 Unemployment Compensation. TRIHYDRO will register as an employer wherever required under applicable state Unemployment Compensation Laws, and, in the performance of the



Work, TRIHYDRO will comply with the requirements of such laws and will pay and save and hold CLIENT harmless from and on account of all taxes under such unemployment compensation laws applicable to performance of the Work, whether with reference to employees of TRIHYDRO or to others, and that it will furnish CLIENT evidence of its registration under such unemployment compensation laws and will promptly report to CLIENT from time to time the number of employees employed by TRIHYDRO or by its subcontractors in the performance of the Work.

ARTICLE 9. INSURANCE AND INDEMNIFICATION.

9.01 Insurance. TRIHYDRO agrees to carry adequate insurance protection against loss, damage, injury and liability, including claims for personal injury or death, property damage, and damage to the Work resulting from operations under this Agreement and any Work Order or any Work Change Order; coverage shall be not less than \$2,000,000.00. In addition, TRIHYDRO shall carry professional liability (errors and omissions) insurance coverage with minimum limits of \$5,000,000.00 per claim and \$5,000,000.00 aggregate; and an umbrella liability of \$10,000,000 (umbrella liability covers general liability, auto liability and workers compensation and employer's liability). CLIENT shall be an additional insured under the insurance policies carried by TRIHYDRO hereunder, and shall upon request by CLIENT, be given copies of said insurance policies naming CLIENT as additional insured.

9.02 Limitation of Liability. Notwithstanding any other provisions hereof, TRIHYDRO's liability for damages arising from or related to the Work shall be limited to the amount of applicable insurance provided in this Article.

9.03 Certificates. Documentary evidence of insurance, showing CLIENT as additional insured, required by this Agreement shall be furnished to CLIENT by TRIHYDRO before commencing Work hereunder. The insurance policies hereunder shall provide that notices by the insurer to the insured be given simultaneously to CLIENT.

9.04 Indemnification.

a. TRIHYDRO agrees, to the extent permitted by law, to indemnify, defend, and hold CLIENT harmless from damage, liability or cost (including reasonable attorneys' fees and costs of defense) to the extent caused by TRIHYDRO, its employees, agents or subcontractors' negligent acts, errors or omissions in the performance of professional services arising from a Work Order or Work Change Order subject to this Agreement.

b. CLIENT agrees, to the extent permitted by law, to indemnify, defend, and hold TRIHYDRO harmless from damage, liability or cost (including reasonable attorneys' fees and costs of defense) to the extent caused by CLIENT, its employees, CLIENT's, agents, or subcontractors' negligent acts, errors or omissions in the performance of professional services arising from a Work Order or Work Change Order subject to this Agreement.

c. Neither party to this Agreement is obligated to indemnify the other party in any manner whatsoever for the other parties' negligence.



ARTICLE 10. GENERAL PROVISIONS.

10.01 Successors and Assigns. This Agreement shall inure to and be binding upon the legal representatives and successors and assigns of the parties hereto. Neither party shall assign, transfer or convey this Agreement or the Work Order or any Work Change Order, or any right, title, or interest, therein or any power to execute the same, to any person, company or corporation without the prior written consent of the other.

10.02 Confidentiality. TRIHYDRO agrees not to use confidential information disclosed to it by CLIENT for its own use, or for any purpose except to carry out services outlined in this Agreement. TRIHYDRO will not disclose the confidential information to third parties or to its employees, agents or representatives, except those who need the information to carry out the services provided in the Agreement, or unless required by law or such information becomes publicly available by a party other than TRIHYDRO, its employees, agents or representatives. TRIHYDRO agrees to notify CLIENT in writing of any misuse or misappropriation of confidential information that may come to its attention.

10.03 Independent Contractor. All Work performed pursuant to this Agreement or any Work Order or any Work Change Order shall be performed by TRIHYDRO as an independent contractor and under no circumstances will TRIHYDRO or its employees be considered employees or agents of CLIENT. CLIENT shall have no voice in the selection, discharge, supervision, or control of TRIHYDRO's employees, representatives, or subcontractors. Except to the extent that a particular method is specified in any plans or specifications hereunder or in the Work Order or any Work Change Order, CLIENT shall not have the right to direct or control TRIHYDRO in the method of performance or the means of accomplishing the desired result.

10.04 Modification. All amendments, changes, and modifications to this Agreement shall be made in writing by Work Change Order, and approved and executed with the same formality as this Agreement

10.05 Governing Law. This Agreement and all Work shall be governed by and interpreted in accordance with the laws of the State of Nebraska.

10.06 No Solicitation of Personnel. During the term of this Agreement and for a period of six (6) months after its termination, neither party will solicit any employee of the other without the prior written consent of the other party. However, neither party will be restricted from employing employees who make unsolicited applications in response to a general advertisement.

{THIS SPACE INTENTIONALLY LEFT BLANK}



ARTICLE 11. PROJECT MANAGER / AUTHORIZED REPRESENTATIVE

11.01 Project Manager. TRIHYDRO shall designate a Project Manager. The Project Manager shall be the primary contact between TRIHYDRO and CLIENT, although TRIHYDRO's Project Manager may designate an acting Project Manager in his/her absence, as well as field coordinators and inspectors. The Trihydro Project Manager will be designated in the respective Work Orders for each request.

11.02 Authorized Representatives. The parties hereby designate the following Authorized Representatives, who may be changed only by written notice to the other party:

TRIHYDRO CORPORATION

Jack Bedessem or Deby L. Forry, Esq.
Trihydro Corporation
1252 Commerce Drive
Laramie, WY 82070

CITY OF SCOTTSBLUFF, NEBRASKA

Randy Meininger
City of Scottsbluff
2525 Circle Drive
Scottsbluff, NE

CITY OF GERING, NEBRASKA

Tony Kaufman
City of Gering
1025 P Street
Gering, NE 69341

IN WITNESS WHEREOF, the parties hereto have signed this Basic Agreement as of the day and year first above written. Facsimile/email signatures will be accepted to execute this Agreement.

TRIHYDRO CORPORATION

By: 

Its: Sr. Vice President of Risk Management

CITY OF SCOTTSBLUFF, NEBRASKA

By: _____

Its: _____

CITY OF GERING, NEBRASKA

By: _____

Its: _____

ATTACHMENT A
TRIHYDRO CORPORATION – CITIES OF SCOTTSBLUFF AND GERING, NEBRASKA
GENERAL BASIC AGREEMENT- ENGINEERING AND CONSULTING SERVICES
EXAMPLE WORK ORDER

Work Order No.: _____ Date: _____

_Job No.: _____

Location of Project:

Owner and Contract No.: _____

Services to be Performed: _____

Schedule -- Commencement Date: _____

Completion Date: _____

Attachments: _____ Schedule of Charges: _____

Plans and Specifications: _____

Health and Safety Considerations: _____

Other Information:

__This WORK ORDER is made and entered into pursuant to that certain Basic Agreement by and between the undersigned dated _____, the terms, conditions and provisions whereof are hereby incorporated herein and made a part hereof.

Facsimile signatures will be accepted to execute this Work Order.

Facsimile signatures will be accepted to execute this Work Order.

TRIHYDRO CORPORATION

CITY OF SCOTTSBLUFF, NEBRASKA

By: _____

By: _____

Its: Sr. Vice President of Risk Management

Its: _____

CITY OF GERING, NEBRASKA

By: _____

Its: _____

ATTACHMENT B
TRIHYDRO CORPORATION – CITIES OF SCOTTSBLUFF AND GERING, NEBRASKA
GENERAL BASIC AGREEMENT- ENGINEERING AND CONSULTING SERVICES
EXAMPLE WORK CHANGE ORDER

Work Order No.: _____ Date: _____

Job No.: _____

Change Order No.: _____

Location of Project: _____

Insured Name: _____

Owner and Contract No.:

Original Specification:

Change Order:

Attachments (if any): _____

Estimated Additional Cost (if any): _____

Facsimile signatures will be accepted to execute this Work Change Order.

TRIHYDRO CORPORATION

By: _____

Its: Sr. Vice President of Risk Management

CITY OF SCOTTSBLUFF, NEBRASKA

By: _____

Its: _____

CITY OF GERING, NEBRASKA

By: _____

Its: _____