TerraCOH
ADVANCED GEOTHERMAL ENERGIES

September 29, 2016

Karlene Fine
Industrial Commission
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

Re: Transmittal Letter for North Dakota Renewable Energy Grant

Dear Ms. Fine,

This letter is to forward to you our Grant Application titled **"Commercial Demonstration of Geothermal and Hybrid Electricity Generation using Produced Fluids at Existing Hydrocarbon Wellsite"**.

As part of this submittal, we are also requesting a "special round" for our application. The reason for the special round is that if we were to apply at the normal January date, we estimate that we would have to extend our schedule another six months at a cost of about $25K/month. This increased cost is a result of weather timing, and our power system availability. A six-month extension would increase the total project cost beyond the scope of the grant.

Further, our site partner is excited to begin and adhering to the scheduled start date will minimalize unforeseen obstacles that may occur with the six-month extension.

I also want to make a binding commitment in regard to our application.

As the Managing Partner of TerraCOH Development ND, LLC. (TerraCOH), and the CEO of TerraCOH, Inc., I commit for our entire organization that, if the grant is made to us, we will complete this project as described in the attached application.

Yours truly,

John P. Griffin
Managing Partner
TerraCOH Development ND, LLC.

Renewable Energy Program

North Dakota Industrial Commission

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Application

Project Title: Commercial Demonstration of Geothermal Electricity Generation using Produced Fluids at Existing Hydrocarbon Wellsites

Applicant: TerraCOH Development ND, LLC. (TerraCOH)

Principal Investigator: Dr. Jimmy B. Randolph

Date of Application: September 29, 2016

Amount of Request: $440,000

Total Amount of Proposed Project: $880,000

Duration of Project: 18 months

Point of Contact (POC): John Griffin

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POC Address: PO Box 82, Excelsior, MN 55331

ABSTRACT

Objective: The primary objective of this project is to examine and demonstrate the commercial viability of North Dakota's extensive moderate-temperature geothermal resources, specifically by employing TerraCOH's unique and proprietary geothermal power technology that uses CO_2 as the heat transfer fluid. TerraCOH and Mountain Divide, LLC, (Mountain Divide) have executed a Site Access and Service Agreement that will implement our intellectual property (CO_2 Plume Geothermal – CPG™) to extract currently-wasted heat energy from produced fluids at Mountain Divide's property in North Dakota. TerraCOH plans to also demonstrate that low-value field/natural gas can be integrated with produced geothermal heat, resulting in a hybrid power system that optimally uses all energy resources at a Mountain Divide's well while producing minimal emissions.

Expected Results:

- Result #1— Conversion of moderate temperature (i.e., 70-150 °C) geothermal heat, contained in produced fluids at an oilfield site, to power using TerraCOH's novel CPG technology. We expect to accomplish this without interrupting existing wellsite activities, while producing power at <$0.05 per kWh with zero emissions (i.e., geothermal alone, no supplemental heating with field gases).
- Result #2—Capture any available field gases and combust them in a boiler, in series with the geothermal power system, thereby using all energy sources in a single, efficient power system to maximize power production while minimizing emissions.
- Result #3—Develop a formula for taking oilfield wellsite parameters and accurately calculating the BTU's of otherwise wasted energy available from the well, the size and style of the ideal power system for the site, whether sufficient field gases are available to justify use of a hybrid system, and the well depletion rate. All data will be incorporated into a long-term economic analyses.
- Result #4—Update estimates of North Dakota's geothermal power potential and associated job growth.

Duration: It is expected that the project will last about 18 months from funding.

Total Project Cost: $880,000 in funding will be required to accomplish the objectives.

Participants: TerraCOH, Inc., University of Minnesota (UMN), Lawrence Livermore National Lab (LLNL), University of North Dakota (UND), NetPower, L&M Radiator, Wenck Associates, Inc., power system supplier (identified, discussions in process), Mountain Divide LLC (well site owner), Power Energy Group, LLC (power purchaser), EERC.

PROJECT DESCRIPTION

Objectives: The primary objective of this project is to examine and demonstrate the commercial viability of North Dakota's extensive moderate-temperature geothermal resources, specifically by employing TerraCOH's unique and proprietary geothermal power technology that uses CO_2 as the heat transfer fluid. Secondary objectives include:

- Implement a 10 to 50kW TerraCOH geothermal power system, which uses CO_2 as the heat transfer working fluid, at an operating North Dakota hydrocarbon well operated by Mountain Divide, and provide emission-free or low-emission power to Mountain Divide, at a competitive rate in coordination with their existing diesel generator micro grid.
- If possible, the current project will demonstrate a hybrid system – i.e., one that makes use of both geothermal energy and energy from otherwise wasted or low-value natural gas to produce very low cost and low emission electricity. Such a system would be unique to North Dakota and would serve as a test platform for making use of the massive, currently wasted or low-valued energy resources in North Dakota.
- Examine and demonstrate the economic and technical feasibility of mining otherwise wasted geothermal heat from existing gas and oil wells, and using that energy to produce baseload (with capability factor greater than 80%) electricity at a cost less than $.05/kW with zero carbon emissions.
- Develop a formulaic approach for determining the viability of operational oil and gas wells in North Dakota for implementation of TerraCOH's technology using publicly-available well fluid flow rates, temperatures, natural gas production rates, and power end-user availability. The resultant model will account for well geographic location as well as the geologic reservoir being utilized, and it will estimate how much power and emissions (in the case of a hybrid system) will be produced.
- Determine the extent, if at all (as anticipated), that a TerraCOH power system affects the operation of an existing oil and gas well.
- Calculate and provide an updated estimate of North Dakota's geothermal electric and geothermal/field gas hybrid power system electric potential given current oil/gas/co-produced water flows rates (using publicly available data). In addition, estimate potential for future growth in geothermal power in North Dakota if the resource is harnessed at higher rates, as well as the investment and infrastructure required to achieve such growth.
- Estimate potential for job growth in North Dakota from geothermal power development.

Company Overview: TerraCOH's mission is to produce environmentally-friendly, low-cost electrical power and provide energy storage using our proprietary CO_2 Plume Geothermal (CPG™) technology. We hold a broad portfolio of issued and pending patents – including 16 issued patents worldwide in key countries and three in the US – granting TerraCOH exclusive rights to below-ground use of non-water based working fluids for geothermal power production and energy storage.

TerraCOH's CPG™ technology is the next generation of geothermal, lowering both the capital and operating cost for electricity production and exponentially increasing the geographic extent for economically-viable geothermal power commercialization. This simultaneously allows power generators to lower their costs while meeting their customers' and regulators' demands for baseload (24/7), CO_2 emission-free power. TerraCOH's technology – CPG™ licensed from the UMN, Multi-Fluid Geo-Energy Systems optioned from LLNL, and additionally technology developed internally – will ultimately be

expanded beyond power production to include geologic energy storage using intellectual property and expertise that are held by the company. Moreover, TerraCOH's technology platform is ideally suited for implementation of hybrid geothermal-natural gas power systems, which use otherwise-wasted energy resources to provide ultra-low-cost, low emission power.

Methodology:

TerraCOH has executed a Site Access and Service Agreement with Mountain Divide, LLC. to install TerraCOH's power system on one of Mountain Divide's well sites. Please also note our letter of support from Mountain Divide LLC, located in Fortuna/Divide County, ND. TerraCOH has examined well data on Mountain Divide's wells and has had discussions with the Mountain Divide's Manager. From our analysis of the obtained well data and discussions with the Manager, these oil wells will be great candidates for our technology. Mountain Divide's wells have high water-to-oil ratios (up to 11:1), good produced fluid temperature of 220 °F, and many are presently powered by expensive, undesirable diesel generators.

Further, TerraCOH anticipates being able to design an economically-viable power production solution to match the unique characteristics of most well sites, particularly those in North Dakota, our early installations will be targeted to sites, like the Mountain Divide locations, with the same ideal conditions. Ideal well conditions include; produced fluid temperatures in excess of 90 °C, an on-site power consumer or local buyer (such as the Power Energy Group, a project partner), and high produced fluid flow rates. Initially we'll use publicly-available production data to narrow the set of wells to those with preferred characteristics.

TerraCOH and Mountain Divide will determine an appropriate size for the power system at the given site. For this project, we anticipate installing a 10 kW power system, which will serve to demonstrate cost-effective distributed and clean power production, but a larger system may be ordered if supported by the site and budget (i.e, if there is existing well-site infrastructure that can be repurposed).

Thereafter, TerraCOH will order the CO_2 power system from one of two suppliers with whom we have a relationship. Our supplier, together with partner NetPower, will be tasked with process engineering and design for the power system. NetPower specializes in design and installation of natural gas-based power systems that use CO_2 as the heat transfer fluid. Our power system supplier – together with partner L&M Radiator, a manufacturer of radiators and heat exchangers for the oil and gas and mining industries – can provide all required power system equipment.

Design requirements for the well site will be completed with project partner Wenck, which is an industrial and oilfield services provider with extensive operations in North Dakota. Wenck will also be employed to file any required permits as well as provide construction and electrical engineering services. The UND EERC, together with other consultants, will provide assistance with integration of the TerraCOH geothermal power system into the power grid, as needed.

TerraCOH's power system supplier and partners will install the CO_2 power system onsite, then we will proceed through a testing checklist, verifying system performance falls within design guidelines, testing all safety systems, and

confirming remote operational control before turning system up to full operational levels. Because the power system is both off-the-shelf, and thus thoroughly tested in non-geothermal environments, and closed cycle, with no heat transfer fluid directly exposed to production fluids or the environment, there is very low risk of performance or safety problems.

Finally, we will monitor the TerraCOH power system operation and performance for nine months, paying particular attention to power production efficiency, operation and maintenance requirements, and associated produced power costs. The nine-month test period will allow us to test the system through a variety of weather conditions. To determine long-term viability of hybrid geothermal-natural gas power systems, we are particularly interested in observing and testing system performance with natural variations in availability of said field gas at a given site. Project partner the Power Energy Group will examine system performance for immediate and/or future purchasing of power generated by TerraCOH.

Concurrent with power system testing and operation, we will compile data and complete estimates of geothermal and hybrid system power production potential in North Dakota. We will use publicly-available oil and gas well production data, together with geothermal heat flow maps available from Southern Methodist University and UND, to complete said estimates. The geothermal potential estimates will be updates of those completed by the UND in 2009-10 and will account for the massive growth of oil and gas development since that time. Geothermal and hybrid geothermal-gas estimates will be used to calculate job creation potential for North Dakota, using metrics from the US Department of Energy.

Anticipated Results:

As previously noted, because the TerraCOH power system platform has been tested in non-geothermal applications, even though such CO_2 power systems are quite new, we are confident that the geothermal incarnation will produce to design specifications. That is, we expect that a system designed to generate 10 kW will indeed provide that much power. However, we do anticipate some degree of maintenance for our system, beyond what is required in other waste heat-to-power settings, because we are pulling geothermal heat out of potentially complex oilfield produced fluid streams. For example, there is a potential for mineral scaling in the heat exchanger that transfers heat from the produced fluids to the TerraCOH closed loop power cycle. We are working with L&M Radiator to design heat exchangers that both minimize scaling and can be serviced in the field, minimizing the impact of this potential issue.

Ultimately, we expect to demonstrate that TerraCOH's technology can produce sub $.05/Kw electricity with an up-time (or capacity factor) of greater than 80%, with a zero carbon footprint if using geothermal heat exclusively, or lower-carbon emissions than standalone natural gas when using a combination of geothermal heat and field gases. This will prove commercial viability for wider-scale and large size projects, and our current, early-stage analyses indicate that this would permit at least 10,000 MW's of geothermal power systems to be put online in North Dakota. Consequently, North Dakota could become a regional leader in clean, renewable and low-emission, baseload (i.e., 24/7) power generation.

Facilities:

The facilities that will be required for the proposed project include an operating oilfield well site, which we have at the Mountain Divide site, at which will be installed a containerized (i.e., small shipping container) TerraCOH CO_2 geothermal hybrid power system.

TerraCOH's partners will provide access to computational facilities for system simulation and economic analyses (UMN and LLNL), power system testing (power system suppliers), heat exchanger design and testing (L&M Radiator), process design and engineering (NetPower), and wellsite design and electrical engineering (Wenck Engineering).

Resources:

TerraCOH, Inc. has internal resources related to project and business management, geophysical and mechanical engineering system design and numerical simulation, fundraising and accounting, and business and intellectual property legal affairs. Our partners at the UMN bring additional geophysical and power system design and modeling resources, together with applied economic modeling capabilities. Moreover, the UMN, as a technology licensing partner with TerraCOH, can provide access to private investors and strategic partners, as well as assisting in general business development. Similarly, LLNL, as a technology licensing partner, provides access to investors and strategic partners. Moreover, LLNL provides extensive computational resources that can be applied to geophysical modeling, as well as mapping of geothermal resource and associated economic potential. Our consultant at The Ohio State University, Dr. Jeffrey Beilicki, as an expert on electricity markets will assist with power sales and, together with consultant Timothy Bennington, design of utility interconnects. Our industrial collaborators also bring extensive experience and resources to the project (see partner descriptions).

Techniques to Be Used, Their Availability and Capability:

The novel CO_2-based power systems that TerraCOH will employ for the proposed project are quite new, having become commercially available for waste heat-to-power applications only within the last few years. However, they have been thoroughly tested and verified, thus the technical risk of installing them in a geothermal application is very low. In contrast, their potential in these applications, to which TerraCOH has exclusive rights, is very high, as they are less expensive and more efficient than alternative, legacy systems in this renewable energy application.

Numerical simulation and design of CO_2-based geothermal power systems has been ongoing at TerraCOH, the UMN, and LLNL for up to eight years, depending on the institution, and TerraCOH has access to the accumulated knowledge from this extensive effort. The design and numerical modeling work has progressed to the stage that the technology is ready for commercial deployment in geothermal applications.

Finally, legacy geothermal systems, which are sufficiently similar to the system in the proposed project to be sources of information, have been installed in moderate-temperature geothermal settings such as North Dakota for decades. Moreover, collaborator Dr. Will Gosnold at UND has a research grade, legacy style geothermal system in North Dakota; this

site will inform the design and operation of TerraCOH's commercial CPG™ power system – the first commercial geothermal system in North Dakota and the first CO_2-based geothermal system in the world.

Environmental and Economic Impacts while Project is Underway:

We anticipate no environmental impact to the site, and we expect that each site will have essentially no carbon emissions when operating on a geothermal resource alone and fewer carbon emissions per kW of produced power when operating as a hybrid geothermal-field gas facility than a standalone natural gas power station. Moreover, the environmental impacts of our hybrid facilities will be less than sites that simply flare any produced natural gas. Finally, we anticipate using air cooling for the power system, thus fresh water resources for cooling will not be required.

The majority of the proposed project money will be spent in North Dakota, and the project power system will be installed in the state, as well. Because of the vast potential for geothermal development in North Dakota, in the event that the proposed project is funded, TerraCOH, Inc. has formed a North Dakota subsidiary – TerraCOH Development ND, LLC -- to own and operate all power systems in the state. Moreover, all field service and maintenance functions will be performed by companies with a North Dakota presence.

Ultimate Technological and Economic Impacts:

TerraCOH's is a private early stage entity that is focused on deploying this technology both in ND and beyond. Our technology will enable North Dakota to leverage their oil and gas infrastructure and industry to produce zero or low-carbon electricity. This will also provide North Dakota with a technology that continues to use existing oil and gas infrastructure for the production of zero carbon electricity, even when the hydrocarbons are exhausted or economically not viable.

Geothermal energy is an inherently local resource, thus its widespread development using CPG™ – which has not been possible with existing technologies – provides clean, scalable, baseload or on-demand power where there are unmet needs. Development of resources in ND will benefit North Dakota, and power that exceeds local demands can be exported.

Job creation potential: Direct, indirect, and induced jobs created by geothermal power systems equals 6.2 job-years/MW, averaged over the lifespan of the power plant and accounting for all positions associated with the power system, including construction and operations (U.S. National Renewable Energy Lab report). This is almost eight times as many jobs per MW as coal power and almost 18 times as many as natural gas. Thus, large-scale implementation of CPG™ has the potential to drive massive job growth and economic development.

Market Analysis: Geothermal currently provides only 0.3% (~3,500 MW's) of U.S. power requirements, but as the lowest cost source of electricity and the only form of renewable power that is baseload yet could achieve major growth, its potential is massive, limited only by development of new technologies that decrease risk and cost. In existing hydrocarbon fields, TerraCOH analyses indicate that 10,000 MW of CPG/Multi-Fluid™ geothermal could be put online in North Dakota alone, representing less than 10% penetration into viable geologies and a 300% increase in installed geothermal power in

the US. Hybrid CPG™ systems that are supplemented with field gas would further increase installed low-emission power capacity while making use of otherwise wasted fuel. With expansion into saline aquifers and alternative hydrocarbon formations, 100,000 MW's could be put online in the US.

Data from the U.S. Energy Information Administration (EIA), 2015, indicates that the unsubsidized Levelized Cost of Electricity (LCOE) for legacy geothermal power is $0.047 per kWh, the lowest cost of any power technology, renewable or not. TerraCOH estimates that our CPG™ technology will, at scale, reduce the geothermal LCOE to ~$0.031 per kWh by using existing infrastructure (i.e., wells) in oilfield applications, reducing risks and development costs by up to 40% over legacy geothermal systems; using novel power systems that employ CO_2 as the heat transfer fluid, decreasing power facility cost by up to 30% over legacy systems; and/or by employing hybrid systems that take advantage of low- or no-cost field natural gas to increase total power production. At any given site, one or more of these opportunities will be present in TerraCOH installations, decreasing power generation costs well below the current state-of-the-art.

Environmental & Energy Impact: The TerraCOH geothermal power and energy storage solutions are projected to change the landscape for geothermal energy in several ways, including energy cost savings, increased overall power system efficiency and capacity factors, reduced greenhouse gas emissions from power production overall, reduced parasitic loads in geothermal power production, and increased regulatory and utility acceptance of baseload and on-demand geothermal power production and energy storage. TerraCOH systems, by decreasing project development risk, will increase market acceptance and tolerance of new geothermal implementations, helping utilities meet regulatory requirements for low- or no-emission power while providing stable energy supplies. Moreover, TerraCOH hybrid systems will aid oilfield operators in meeting regulatory requirements to eliminate emissions from flaring while simultaneously providing a valuable consumer for otherwise low-value natural gas.

As TerraCOH further develops our technology portfolio, we will be able to take CO_2 emissions from industrial emitters, the atmosphere, or natural sources and inject it into the subsurface to harness geothermal energy.

CPG™ requires minimal or no use of precious clean water resources. Any water requirements can be met using deep subsurface brines, which are not directly potable. In fact, CPG™ can be combined with desalinization – that is aided by parts of the CPG™ process – to provide both clean energy and water. The TerraCOH power system will employ air rather than water cooling, both to eliminate the need for access to fresh water and to simplify system design.

CPG™, both geothermal standalone and hybrid geothermal-natural gas systems, meet and surpass all government mandates for installation of clean power systems where they exist. Moreover, energy storage with TerraCOH's technology allows the expansion of other renewable power systems, thus permitting maximum use of all clean-energy resources.

Why the Project is Needed:

The power generation industry world-wide is under pressure from requirements to lower CO_2 emissions while simultaneously

meeting growing electricity demand. Existing emission-free options (wind and solar) have high capital and operating costs, yet these platforms can only deliver intermittent power. Legacy geothermal technologies deliver baseload energy at the lowest LCOE of any power technology, renewable or not, but existing systems are constrained geographically. To date, the limited number of economically viable geologic sites, high capital costs and risky drilling have increased pay-back timeframes, severely limiting legacy geothermal deployment. To grow the geothermal resource base, new approaches are needed.

TerraCOH's technology will enable an exponential increase in the geographic extent of economically viable geothermal power production through a combination of decreased drilling risk and, particularly in low-temperature geologic formations, increased power production efficiency. The latter is accomplished by taking advantage of the unique properties of CO_2 as a heat transfer fluid in geologic formations and power systems. The net result of will be superior financial returns for TerraCOH and partners, together with renewable, low or no CO_2 emission electricity.

Specific Problem Definition: Development of conventional geothermal power fields is inherently risky and requires high upfront capital. A challenge for TerraCOH as we commercialize our solution is to identify the lowest risk and cost initial installations of our technology portfolio at every stage of development, thereby offering a geothermal platform that the market will more readily support.

The TerraCOH team has spent several years conducting market research, completing extensive numerical modeling, and developing relationships with key partners in the industry and with suppliers. For the very first stages of commercial development, we have identified a system design that has low technical risk, using off-the-shelf equipment in a new application, and is very affordable. Under this design, TerraCOH will install a novel, high efficiency power system – that uses CO_2 as the working fluid – in an operational oilfield. The power system will use existing oilfield infrastructure and harness otherwise wasted geothermal heat from produced fluids, making use of sites with geothermal temperatures that are too low to be economical for conventional geothermal technologies.

However, being in the energy field, TerraCOH has to deal with an ever-changing marketplace – i.e., the energy landscape looks substantially different now than it did a year ago, with changes in energy and oil prices. TerraCOH has identified a market entry point that both fits our intellectual property space and meets the needs of the market – hybrid geothermal-fossil energy systems. Two hybrid-type systems exist in the US, but they have not achieved market penetration because of the lack of technological advancement of geothermal power systems.

North Dakota's recent success in expanding oil production has greatly benefited the State. TerraCOH offers a technology that can leverage this infra-structure, create additional high paying jobs, lower the flaring of natural gas, and sheltering North Dakota from the cyclical nature of the oil and gas industry. If or when these wells become unusable, they can continue to be used to help North Dakota and the world by generating low cost, zero carbon electricity. TerraCOH's CPG technology portfolio, together with recent advancements in CO_2 power systems and the expansion of oil and gas

development in North Dakota, have made the landscape ripe for new geothermal and hybrid power system development.

STANDARDS OF SUCCESS

Deliverables: The primary deliverable of the project will be a commercial-grade, 10 to 50 kW, CO_2 working fluid power system that is fueled by geothermal heat co-produced at an operating oilfield site. The power system may also make use of otherwise-wasted natural gas produced at said site, boosting total power production while generating very low emissions per kWh of power. The present project will be deemed successful if the proposed TerraCOH power system generates, or demonstrates that such a system can with minor modifications can generate, unsubsidized power at a LCOE that is cost competitive with non-renewable sources, i.e., at $0.05 per kWh or less. This LCOE target will be for a geothermal-only system (i.e., no supplement gas heating) and will be based on capital costs of the proposed system, projections of costs for second-generation systems, and operating and ancillary costs.

Secondary deliverables will include: 1) Updated estimates of the total geothermal energy potential of North Dakota energy resources, particularly co-produced fluids from oil and gas operations. This estimate will be coupled with estimates of the cost of developing said resources, based on the results of the primary deliverable, and compared against values for development of other energy resources using data from the US EIA. 2) Estimates of the job creation potential in North Dakota from full development of the state's geothermal resources.

Value to North Dakota: North Dakota could become the hub of renewable electricity production in the Midwest. Extensive geothermal resources are present in the state; however, legacy geothermal technology has not been able to harness them to any but the smallest degree because they are of relatively low temperature. TerraCOH's next-generation, proprietary CPG™ technology is ideally suited to the geothermal resources in North Dakota, with temperatures that tend to be between 70 °C and 150 °C. Additionally, as noted, TerraCOH's technology can harness the energy of otherwise flared natural gas, combining it with geothermal heat in hybrid power systems.

With implementation of TerraCOH's systems, North Dakota can also make long-term use of oilfield infrastructure (i.e., wells), long after it is no longer of value for oil production, creating a renewable electricity production legacy.

What parts of the public and private sector will use results, when and in what way: The electricity (i.e., utilities and power producers) and hydrocarbon industries will make primary use of the results of the proposed project. With successful demonstration, we anticipate that both industries will find value in contracting with TerraCOH for immediate implementation of additional CPG™ power systems.

In addition, public regulatory agencies may also find value in the results of this project, in particular, the ability to provide baseload, emission free or low emission power using local resources. CPG™ will help the state meet renewable energy and power plant emission requirements that already exist and are planned on the federal level, as well as helping the state

meet basic power requirements.

Potential for commercial use of project's results: The current project is distinguished from an existing research project in progress at UND, led by Dr. Will Gosnold, in that the current project is being undertaken by a private entity with the express goal of establishing a plan for commercial development of North Dakota's extensive geothermal resources.

Critically, the proposed project uses an innovative power system, one that makes use of the unique properties of CO_2 as a heat transfer fluid, vastly improving the economic feasibility and heat use efficiency of moderate temperature geothermal systems. This is particularly critical for North Dakota, where the geothermal resources are extensive but primarily below the utilization threshold for legacy technologies. With the successful demonstration of the proposed project, TerraCOH intends to rapidly expand our presence in North Dakota and vastly grow the generation of geothermal-based electricity in the state.

How project will enhance the education, research, development and marketing of North Dakota's renewable energy resources: Existing commercial geothermal projects are limited almost exclusively to the western and southern US. Thus, the successful demonstration of a *commercial* geothermal project in North Dakota will generate extensive press. TerraCOH, with our partners at the UMN and LLNL, will further facilitate marketing and press releases concerning the proposed CPG™ project, emphasizing the potential for massive geothermal development in North Dakota.

Beyond press release and interviews, results will be presented via academic and industry publications and conference. These include the Geothermal Resources Council annual conference, the Stanford University Geothermal Conference, and the Southern Methodist University annual geothermal conference. We may also present at the World Geothermal Conference. All of these conferences involve both presentations and journal publications, and the Principal Investigator has attended and/or prepared a publication for all of them.

How project will preserve existing jobs and create new ones: As previously noted, large-scale development of geothermal energy resources in North Dakota will help insulate the state from the cyclical nature of oil and gas development. The geothermal industry employs many of the same field services professionals as the oil and gas industries, thus when oil and gas are on the downturn, geothermal can provide job opportunities.

In addition, as previously noted, geothermal development creates far more jobs per MW of installed power than coal or natural gas, thus large scale geothermal use is inherently a job creator. Moreover, geothermal heat is fundamentally a local resource, one that cannot be exported like fossil fuels but must be used where it is produced -- geothermal development will create jobs in North Dakota. Finally, recent growth in the ND oil industry has increased the region's demand for power production. Consequently, the proposed geothermal systems will not eliminate existing jobs in the state's power industry but, rather, will create additional jobs as TerraCOH's renewable power systems help meet regional demand.

BACKGROUND/QUALIFICIATIONS

TerraCOH and its predecessor company raised over $1.3 million in private investment to advance the commercialization of our technologies from academic models to market-ready designs via extensive market research, numerical modeling, and development of new intellectual property. We have contracted with academic institutions and private entities to advance elements of the system design, resulting in a product that fits our intellectual property portfolio, minimizes technical risk by using off-the-shelf components in new ways, has low cost and has a rapid return on investment.

TerraCOH Staff: Dr. Jimmy B. Randolph, Principal Investigator. Dr. Randolph received a B.A. in physics and mathematics from St. Olaf College in 2006 and a Ph.D. with Prof. Saar in geophysics from the UMN, in 2011. As an active researcher Dr. Randolph, focuses on numerical modeling of geophysical fluid and heat transfer, applied to geothermal energy, geologic CO_2 sequestration, groundwater flow, and novel power systems. Dr. Randolph is also Chief Technical Officer, Chairman of the Board and Founder of TerraCOH. Prior to that he was at Heat Mining Company LLC, where he was Senior Scientist and Chief Technical Officer. At Heat Mining, he was responsible for new technology development; forming strategic partnerships for intellectual property acquisition, equipment manufacturing, project development, and financing; and advancing proprietary and acquired technology to a commercial product stage. He has numerous issued and pending patents in the fields of geothermal energy, CO_2-based power systems, and geologic energy storage.

John P. Griffin, CEO of TerraCOH and POC for the proposed project. John holds an undergraduate degree in Mechanical Engineering and an MBA from the UMN. John is an executive with 30+ years in leading companies and organizations to success. As CEO and General Manager, he has led and consistently grown organizations with zero to $200+ million in revenue. He has raised capital from various sources and completed partnerships in technology development, distribution, and other strategic areas. He has successfully completed M&A work as both a buyer and a seller. His board experience includes industry associations, along with private and public company boards. He has been in two companies that went public one as part of the management team and another while on the Board of Directors.

Steven W. Price, Project Management, Administration & Logistics. As a founder of TerraCOH Inc., Steve's has 20+ years of management experience, was a contract/lease advisor, and has an artistic eye with attention to detail. Steve came to TerraCOH from Heat Mining Company LLC, where he served as Operations Manager and was responsible for maintaining invoicing, researching materials, pricing and documentations, contacts and progression of on and off site activities.

John F. Dolan, Business Development, Legal Affairs and General Counsel. John has undergraduate degrees in marketing and chemistry (*with honors*), a juris doctorate from Hamline University School of Law, and is a registered patent attorney with the United States Patent and Trademark Office. John has extensive experience working as a business development executive and is able to assist in managing projects, both on-site and remotely.

Consultants: Timothy Bennington. Former Vice President of Power Generation at Alliant Energy and member of the

International Energy Association (IEA) board.

Donny Meadows. CEO of Envoy Resources, a Texas-based oil & gas operating and investment company.

Stephen O'Rourke. Managing Director of Heat Mining Company LLC and former President of Global Petroleum Exploration at BHP Billiton, the world's largest natural resource company.

Clay Parker. CEO of Sciogen, former President of the Chemical Management Division of BOC Edwards, CEO in residence at the Office for Technology Commercialization at the University of Minnesota.

Scientific and Technical Advisors: Dr. Martin Saar, University of MN. Co-inventor of the CPG™ technology and Professor at ETH (Swiss Federal Institute of Technology) in Zürich, Switzerland. Adjunct professor at the UMN, Twin Cities.

Dr. Thomas Buscheck, Lawrence Livermore National Lab. A civil and reservoir engineer and earth scientist, group leader of geochemical, hydrological, and environmental sciences in the Physical and Life Sciences Directorate at Lawrence Livermore National Laboratory. His research interests involve multiphase heat and mass flow in porous media, with application to geologic radioactive waste isolation, geologic CO_2 storage, geothermal energy, and energy storage.

Dr. Jeffrey Tester. World-renown geothermal energy expert. Professor of Sustainable Energy Systems in the School of Chemical and Biomolecular Engineering at Cornell University, Director of the Cornell Energy Institute, and a Fellow in the Atkinson Center for a Sustainable Future. Former Professor of Chemical Engineering at the Massachusetts Institute of Technology (MIT), Director of MIT's Energy Laboratory and MIT's School of Chemical Engineering Practice.

Dr. Jeffrey Beilick. Professor Beilicki is a mechanical engineer with an MBA and a Ph.D. in public policy. He holds a joint appointment with the Department of Civil, Environmental, and Geodetic Engineering and with the John Glenn College of Public Affairs at The Ohio State University. Prof. Bielicki, a specialist on electricity markets, runs the Energy Sustainability Research Laboratory and is an Associate Director of the Subsurface Energy Resources Center.

Other Project Partners and Collaborators: University of North Dakota: Dr. William Gosnold: Dr. Gosnold is a Professor of Geophysics in the Department of Geology and Geological Engineering, where he specializes in continental heat flow and geothermal energy, among other research interests. He also is the Principle Investigator on a US Department of Energy project entitled "Geothermal Energy Production from Coproduced Fluids from Oil and Gas Wells," which was a research project that studied implementation of a legacy geothermal system in North Dakota.

Mountain Divide, LLC: North Dakota oilfield operator with wells in Fortuna and Divide Counties.

EERC: The University of North Dakota Energy & Environmental Research Center will provide consulting services related to integration of renewable power systems onto the power grid.

Power Energy Group, LLC: Midstream/Upstream integrated O&G company focused primarily on the Williston Basin of North Dakota. The Power Energy Group is interested in purchasing power from TerraCOH's renewable energy systems.

Wenck: Founded over 30 years ago in Minneapolis, Wenck is now located in six states including North Dakota.

Wenck specializes in environmental compliance and permitting, engineering design, facilities and process engineering, water supply, wastewater treatment, construction, and emergency response and preparedness, amongst other capabilities.

NetPower: A young company that developed and is implementing CO_2 power system technology, currently applied to large scale natural gas power plant applications. NetPower specializes in process design and implementation, new technology development and testing, and power plant operations.

L&M Radiator: Founded nearly 60 years ago in Hibbing, MN, and now located internationally. L&M designs and manufacturers robust, field-serviceable radiators and heat exchangers for the oil and gas, mining, and similar industries.

MANAGEMENT

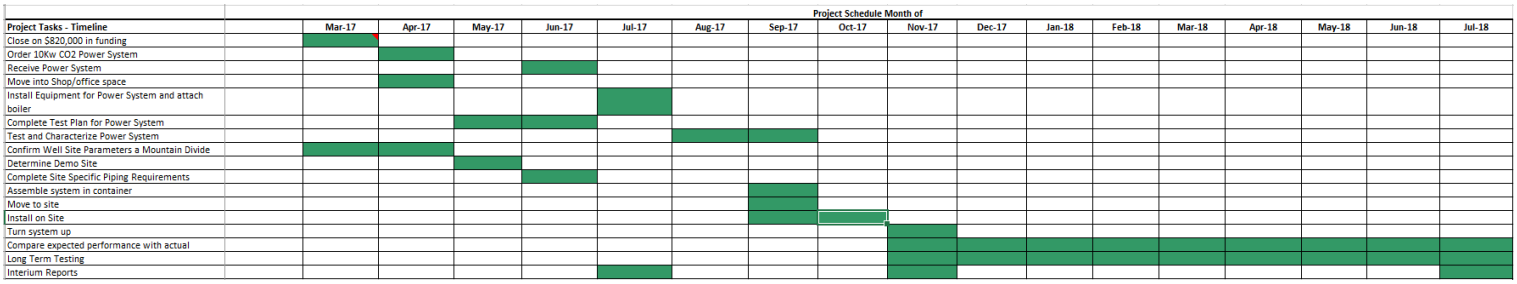
Steve Price will serve as Project Manager for this program, where he will take the general plan shown in this document and create a complete project plan using Microsoft Project (or equivalent). Each milestone in the present document will be broken down into specific tasks, and if required, additional milestones will be added as we proceed with the project.

This detailed project plan will include a list of all tasks required along with identifying those responsible for each task and dependencies of all tasks.

Steve will also chair a weekly meeting of the team to go over the project plan, both from the past week's progress, plus any changes and anticipated modifications to the plan based on the present circumstances.

Major Milestones and their schedules are shown below:

TIMETABLE



Important note: We have 17 months of budgeted activities, however we have allowed 18 months for the project duration, permitting some flexibility in locating an appropriate well site and completing associated negotiations.

See Appendix #1 for a larger view of the above table and See Appendix #2 for a more detailed budget spreadsheet.

BUDGET

Project Associated Expense	Expense Type	Amount	NDIC's Share	Applicant's Share (Cash)
John Griffin	Direct	$70,000	$35,000	$35,000
Jimmy Randolph	Direct	$70,000	$35,000	$35,000
Steve Price	Direct	$70,000	$35,000	$35,000
John Dolan	Direct	$18,000	$9,000	$9,0000
Equipment Installation Cost	Direct	$60,000	$30,000	$30,000
Equipment & Fees	Direct	$36,000	$18,000	$18,000
Site Piping, Heat Exchanger shipping cont	Direct	$37,000	$18,500	$18,500

Site Manager	Direct	$75,000	$37,500	$37,500
Power, Electrical Engineers	Direct	$56,000	$28,000	$28,000
Piping Consultant	Direct	$21,000	$10,500	$10,500
10 kW CO2 Power System and Boiler	Direct	$100,000	$50,000	$50,000
Travel Costs	Direct	$64,000	$32,000	$32,000
Tools/Test Equipment	Direct	$37,000	$18,500	$18,500
Contingency	Direct	$30,000	$15,000	$15,000
Indirect Costs	Indirect	$136,200	$68,100	$68,100

Budget Justification:

The applicant's cash share of costs will be provided by private funding sources, primarily private equity and angel investors. If less funding is available than requested, TerraCOH anticipates being able to make up the difference through private investments and in-kind contributions from partners such that the project objectives should not be delayed. Similarly, if costs of project tasks increase during the project period, TerraCOH does not anticipate requesting additional funds, rather, we will obtain any needed funds from private sources. To minimize the risk of funding shortfalls, a small contingency has been added to the budget, with the indirect costs and contingency totaling 19% of the total. Moreover, TerraCOH direct staff time has been limited to 41% in the budget, thought salaried staff may dedicate more time to the project as needed.

Salaries (Griffin, Randolph, Price & Dolan) **–** Employees will be working full time for ½ pay.

Equipment Installation Costs **–** Estimate, from discussions with the power system providers and oilfield consultants.

Equipment and Fees **–** Estimate for remote monitoring equipment and monthly fees to monitor well.

Site Manager **–** Estimate for full time Site Manager.

Power, Electrical Engineers **–** Estimate for consulting time to analyze and recommend the correct power system and heat exchangers. Services provided by power system supplier, Wenck, NetPower, and L&M.

Piping Consultant **–** Estimate for time spent consulting with our team and well owner to design and supervise the correct size, material and approach to integrating TerraCOH's power system at the well site. Services provided by Wenck.

10kW CO_2 Power System and Boiler **–** Estimate provided in January, 2016, to TerraCOH by system supplier.

Travel Costs **–** Frequent visits to the site and oil well partners will be required to insure a safe installation and the collection of date. This assumes travel by vehicle.

Contingency **– I**ncluded for un-anticipated expenses. Contingency plus indirect costs totals 25% of total project budget.

Indirect Costs **–** This is indirect costs with a rate of about 15%.

CONFIDENTIAL INFORMATION: There is no confidential information in this document.

PATENTS/RIGHTS TO TECHNICAL DATA: This does not apply to our proposal.

Appendices #1: Project Schedule with Interim Reports

		Project Schedule Month of																
Project Tasks - Timeline		**Mar-17**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Jul-18**
Close on $820,000 in funding																		
Order 10Kw CO2 Power System																		
Receive Power System																		
Move into Shop/office space																		
Install Equipment for Power System and attach boiler																		
Complete Test Plan for Power System																		
Test and Characterize Power System																		
Confirm Well Site Parameters a Mountain Divide																		
Determine Demo Site																		
Complete Site Specific Piping Requirements																		
Assemble system in container																		
Move to site																		
Install on Site																		
Turn system up																		
Compare expected performance with actual																		
Long Term Testing																		
Interium Reports																		

Appendices #2 Detailed Budget

		Project Budget																
USE OF FUNDS - $840K	**Direct Costs**	**Mar-17**	**Apr-17**	**May-17**	**Jun-17**	**Jul-17**	**Aug-17**	**Sep-17**	**Oct-17**	**Nov-17**	**Dec-17**	**Jan-18**	**Feb-18**	**Mar-18**	**Apr-18**	**May-18**	**Jun-18**	**Totals**
John Griffin	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 2,500	$ 2,500	$ 2,500	$ 2,500	**$ 70,000**
Jimmy Randolph	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 2,500	$ 2,500	$ 2,500	$ 2,500	**$ 70,000**
Steve Price	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 2,500	$ 2,500	$ 2,500	$ 2,500	**$ 70,000**
John Dolan	$ 5,000	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ -	$ -	$ -	$ -	**$ 18,000**
Equipment Installation Costs		$ -	$ -	$ -	$ -	$ 10,000	$ 10,000	$ 40,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ 60,000**
Equipment & Fees		$ -	$ -	$ 10,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	**$ 36,000**
Site Piping, Heat Exchanger, Shipping container		$	$	$ 5,000	$ 12,000	$ 15,000	$ 5,000	$ -	$	$	$	$	$	$	$	$	$	**$ 37,000**
Site Manager		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 7,500	$ 7,500	**$ 75,000**
Power Engineer		$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	**$ 56,000**
Piping Consultant			$ 5,000	$ 5,000	$ 5,000		$ 3,000	$ 3,000										**$ 21,000**
10KW CO2 Power System, Heat Exchanger and Boiler						$ 100,000												**$ 100,000**
Travel Costs			$ 6,000	$ 6,000	$ 6,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 3,500	$ 3,500	$ 3,500	$ 3,500	**$ 64,000**
Tools/Test Equipment			$ 15,000	$ 8,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000							**$ 37,000**
Contingency					$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ -							**$ 30,000**
Direct Cost Sub Total		**$ 20,500**	**$ 46,500**	**$ 54,500**	**$ 52,500**	**$ 158,500**	**$ 51,500**	**$ 76,500**	**$ 33,500**	**$ 43,500**	**$ 38,500**	**$ 36,500**	**$ 36,500**	**$ 25,000**	**$ 25,000**	**$ 22,500**	**$ 22,500**	**$ 744,000**
Payroll Costs at 15%		$ 2,475	$ 2,475	$ 2,475	$ 2,475	$ 2,475	$ 2,475	$ 2,475	$ 2,475	$ 2,475	$ 2,475	$ 2,475	$ 2,475	$ 1,125	$ 1,125	$ 1,125	$ 1,125	**$ 34,200**
Benefits		$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	$ 4,500	**$ 72,000**
Building Rent		$ -	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	**$ 30,000**
Indirect Cost Sub Total		**$ 6,975**	**$ 8,975**	**$ 8,975**	**$ 8,975**	**$ 8,975**	**$ 8,975**	**$ 8,975**	**$ 8,975**	**$ 8,975**	**$ 8,975**	**$ 8,975**	**$ 8,975**	**$ 7,625**	**$ 7,625**	**$ 7,625**	**$ 7,625**	**$ 136,200**
TOTALS:		$ 27,475	$ 55,475	$ 63,475	$ 61,475	$ 167,475	$ 60,475	$ 85,475	$ 42,475	$ 52,475	$ 47,475	$ 45,475	$ 45,475	$ 32,625	$ 32,625	$ 30,125	$ 30,125	**$ 880,200**
CUMMULATIVE TOTALS:		$ 27,475	$ 82,950	$ 146,425	$ 207,900	$ 375,375	$ 435,850	$ 521,325	$ 563,800	$ 616,275	$ 663,750	$ 709,225	$ 754,700	$ 787,325	$ 819,950	$ 850,075	$ 880,200	
EOM Cash		**$852,525**	**$797,050**	**$733,575**	**$672,100**	**$504,625**	**$444,150**	**$358,675**	**$316,200**	**$263,725**	**$216,250**	**$170,775**	**$125,300**	**$92,675**	**$60,050**	**$29,925**	($200)	
Indirect Cost Percentage		**25%**	**16%**	**14%**	**15%**	**5%**	**15%**	**11%**	**21%**	**17%**	**19%**	**20%**	**20%**	**23%**	**23%**	**25%**	**25%**	
Grant		**$880,000**																

TerraCOH
ADVANCED GEOTHERMAL ENERGIES

September 29, 2016

Karlene Fine
Industrial Commission
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

Re: Tax Statement

Dear Ms. Fine,

Since our initial grant application in May, we have established a Limited Liability Company (LLC) in North Dakota.

The name of the company is TerraCOH Development ND, LLC and it is 100% owned by TerraCOH, Inc.. We are sorry for the confusion verses our last application, but we are making a long-term commitment to North Dakota; thus our establishing of the North Dakota LLC. Our intent would be that the grant, if approved, our North Dakota based LLC will manage all funds and the project.

This letter is to attest that both TerraCOH, Inc. and TerraCOH Development ND, LLC do not owe any tax payments or other items to the State of North Dakota.

Yours truly,

John P. Griffin
CEO - TerraCOH, Inc.
Managing Partner - TerraCOH Development ND, LLC

TerraCOH
ADVANCED GEOTHERMAL ENERGIES

September 29, 2016

Karlene Fine
Industrial Commission
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

Re: Letters of Support for North Dakota Renewable Energy Grant

Dear Ms. Fine,

Following this note are four letters of support for our grant application.

I have also included the executed contract for the well site with Mountain Divide, LLC.

We may have additional letters of support during the grant evaluation process, and we will transmit them to you as we receive them.

Yours truly,

John P. Griffin
Managing Partner
TerraCOH Development ND, LLC.

Alvin Feist
946 ½ Summit Blvd.
Bismarck, ND 58504

June 6, 2016

Andrea Holl Pfennig
Program Administrator
North Dakota Department of Commerce
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

Re: Recommendation Letter for TerraCOH, Inc.

Dear Ms. Pfennig,

My name is Al Feist, and I live in North Dakota and I am a shareholder of TerraCOH, Inc., who recently applied for a Renewable Energy Program (REP) grant.

First – I wanted to give you a little of my background. I am a life-long resident of the State of North Dakota and have worked for employers here in Bismarck for approximately 39 years, including over 31 years with MDU Resources Group, Inc. During that time, I have served in a number of capacities, including several Vice President level positions within several subsidiaries of MDU Resources Group, Inc.

I am writing this letter to communicate to you and your team in the North Dakota Department of Commerce about how excited the TerraCOH team is to potentially establish North Dakota as the first demo site of the company's technology. This technology uses an existing gas or oil well to extract geothermal energy and then utilizes that heat to generate electricity.

The TerraCOH team has always thought that North Dakota would be the best place to start this project, but they had not been able to make the right connection points to make this happen.

As a shareholder and a proud resident of North Dakota, I believe the TerraCOH technology is a great fit for our state.

It allows our existing oil and gas industry to also generate emission-free, zero-carbon electricity for both use in state and to export to our neighbors. TerraCOH's technology will enable additional high-paying jobs in North Dakota and also provide cost reductions and/or additional revenues for the oil and gas industry during this cyclical period. The TerraCOH technology will also be able to utilize gases that are extracted during the oil drilling process to generate electricity, lessoning the level of flaring that has been a concern to date. Thus, we will more fully utilize the available resources in an environmentally friendly manner.

It would be exciting for all in the State of North Dakota to see North Dakota getting involved in the early stages to this renewable energy technology. I believe this would provide a great promotional

opportunity for the efforts being deployed in our state and I appreciate your consideration of this grant request.

Thank you for letting me share my recommendation in some of the ways TerraCOH's technology will help North Dakota. If you have any additional questions, please feel free to contact me at 701-426-8478. If you would prefer, you can email me at al.feist@mduresources.com.

Yours truly,

Al Feist

Al Feist

POWER ENERGY

August 30, 2016

Andrea Holl Pfennig
Program Administrator
North Dakota Department of Commerce
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

Re: Recommendation Letter for TerraCOH, Inc.

Dear Ms. Pfennig,
My name is William Jegen, I am President and Principal of Power Energy Group, LLC located in Austin Texas. I am writing this Letter of Recommendation for TerraCOH, Development ND, Llc., who recently applied for a Renewable Energy Program (REP) grant.

First – I wanted to give you a little of my company's background. Power Energy Group is a Midstream Upstream, integrated oil and gas company focused primarily on the Williston Basin of North Dakota.

The TerraCOH's CPG™ technology may allow us in the oil and gas industry to generate emission-free, zero-carbon electricity for use both in-state and to export to our neighbors. We have established oil and gas fields in North Dakota in Divide County. We are currently a buyer and seller of energy and have a high level of interest in TerraCoH's technology. In addition we are currently in negotiations to purchase an existing Oil field. The field is off the grid and we are interested in potentially purchasing energy from TerraCOH for our oil field operation. This would lower our existing costs of running diesel generators at each of our well sites and lower our expenses on recovering oil and gas products for sale.

It would be exciting for all in North Dakota to see the state get involved in the early stages of this renewable energy technology and be able to leverage our high-profile, oil and gas industry expertise to further job growth and renewable electricity development.

Thank you for letting me share my recommendation in some of the ways TerraCOH's technology will help North Dakota. If you have any additional questions, please feel free to contact me at 512-363-5232.

Yours truly,

William Jegen
President and CEO

1927 Lohmans Crossing Rd. Suite 103
Lakeway, TX 78734
P. 512-363-5550|C. 512-202-6250

UNIVERSITY OF NORTH DAKOTA

UND.edu

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Grand Forks, ND 58202-8358
Phone: 701.777.2811
Fax: 701.777.4449
engineering.UND.edu/geology-and-geological-engineering

June 6, 2016

Andrea Holl Pfennig
Program Administrator
North Dakota Department of Commerce
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

Dear Andrea Holl Pfenning,

This letter is in support of the proposal "Commercial Demonstration of Geothermal and Hybrid Electricity Generation using Produced Fluids at Existing Hydrocarbon Wellsite" from TerraCOH of Minneapolis, MN. I have conducted geothermal research in the mid-continent of North America since 1979 and have demonstrated the potential for geothermal power development in numerous publications and in an active demonstration plant in Bowman County, ND. The approach by TerraCOH to use CO2 as the mechanism of heat transport raises the bar in potential for geothermal power production. I highly recommend supporting this proposal.

William D. Gosnold, Jr. PhD
Chester Fritz Distinguished Professor
Harold Hamm School of Geology and Geological Engineering
81 Cornell, Stop 8358
University of North Dakota
Grand Forks, ND 58202
Tel. 701.777.2631 FAX 701.777.4449
e-mail will.gosnold@engr.und.edu

MOUNTAINVIEW
ENERGY LTD

August 18, 2016

Andrea Holl Pfennig
Program Administrator
North Dakota Department of Commerce
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840

Re: Recommendation Letter for TerraCOH, Inc.

Dear Ms. Pfennig,

My name is Patrick M. Montalban and I am the Manager of Mountain Divide, LLC. I am writing this Letter of Recommendation for TerraCOH, Inc., who is applying for a Renewable Energy Program (REP) grant in September of this year.

First – I wanted to provide a little of the company's background. Mountain Divide, LLC is a producer in the Fortuna/Divide County, North Dakota area, operating 11 Three Forks wells. We have talked to TerraCOH, Inc. about working together on their up-coming pilot site in North Dakota, assuming final site selection is within our service area

TerraCOH's CPG™ technology allows us in the oil and gas industry to generate emission-free, zero-carbon electricity for use both in-state and to export to our neighbors. TerraCOH's technology will enable additional high-paying jobs in North Dakota and act as a balance to the cyclical nature of the gas and oil industry. The TerraCOH advanced geothermal technology will also be able to utilize field gases that are extracted during oil production to generate electricity, lessening flaring and helping ensure that all resources are utilized.

It would be exciting for all in North Dakota to see the state get involved in the early stages of this renewable energy technology and be able to leverage our high-profile, oil and gas industry expertise to further job growth and renewable electricity development.

Thank you for letting me share my recommendation in some of the ways TerraCOH's technology will help North Dakota. If you have any additional questions, please feel free to contact me at 406-873-2235.

Yours truly,

MOUNTAIN DIVIDE, LLC

Patrick M. Montalban
Manager

(406) 873-2235 ◆ Fax (406) 873-2835 ◆ 33 First Avenue SW – PO Box 200 ◆ Cut Bank, MT 59427 ◆ Email: mvw@bresnan.net ◆ www.mountainviewenergy.com

SITE ACCESS AND SERVICES AGREEMENT
PERMISSION TO ENTER PROPERTY and INSTALL EQUIPMENT
NORTH DAKOTA GRANT PROGRAM

This Site Access and Services Agreement ("Agreement") is made on September 26, 2016 ("Effective Date") by and between Mountain Divide, LLC ("Owner"), and TerraCOH, Inc., a Nevada corporation ("TERRACOH") regarding the Owner's property located in the SE/4SE/4SE/4 of -Section 23-T161N-R101W, Divide County, North Dakota (namely the Reistad 23-14-1H well) ("Site"). TERRACOH requests permission to enter the Site for the exclusive purposes of installing and performing an ongoing study and demonstration of TERRACOH's Carbon Dioxide Geothermal Energy Production System ("Geothermal System").

1. Owner hereby gives permission to TERRACOH's agents or assigns (including, but not limited to, TERRACOH employees, authorized environmental consultants and/or contractors, and all other TERRACOH authorized agents (*collectively referred to herein as* "Authorized Parties"), to enter upon the Site to perform investigation and demonstration activities at the Site. This permission is effective immediately upon the execution of this Agreement by Owner and TERRACOH.

2. The permission granted by Owner under this Agreement is contemplated to be used for the following activities and services ("Services") that may be performed by TERRACOH and/or Authorized Parties:

a. Survey of site to document present conditions and present piping setup

b. Determined piping changes and Equipment installation for installation of TerraCOH Equipment

c. Installation of Equipment on Site for generation of electricity from existing site heat production generated in normal Site operations

d. Monitor of Equipment on Site for operational functioning, to insure there is little or no impact on existing well Site operations

e. Removal of Equipment at the completion of the testing period, which is to be jointly determined by the needs the Owner and TerraCOH.

3. Compensation. For allowing i) access to the Site, ii) performance of the study and demonstration of the Geothermal System on the Site, and iii) performance of the activities by Authorized Parties as identified in Section 2, Owner will receive the following compensation:

a) all electrical power produced by the Geothermal System on the Site at a price per kWh that is equal to the lesser of i) cost of production per kWh, or ii) five cents per kWh.

4. Upon completion of the study and demonstration activities of TERRACOH and with the prior approval of Owner, the Authorized Parties will remove the Geothermal System and restore the property as near as practicable to its condition immediately prior to the commencement of such activities.

5. Authorized Parties may enter the Site during normal business hours and may also make special arrangements to enter the Site at other times after receiving prior approval from the Owner.

6. Authorized Parties shall enter upon the Site at their own risk, and Owner shall not be held responsible or liable for injury, damage, or loss incurred by any Authorized Party arising out of or in connection with activities under this Agreement, except to the extent that any injury is caused due to the acts or omissions of Owner, any lessee of the Site, or any employee or agent of the Owner.

7. Staffing and Equipment. TERRACOH shall provide the services of any employees necessary to complete the Geothermal System and Services identified herein in a timely manner. TERRACOH shall supply the needed instrumentation, equipment, materials and supplies necessary to complete the Geothermal System and Services identified herein in a timely manner. Owner may be invoiced for any Power used and/or supplied to Owner that was not used for any other purpose by TERRACOH at the time of the request.

8. TERRACOH will supply to Owner all information derived from the installation of the Equipment at the Site and be responsible for the following:

a. Pay for all expenses associated with the installation of their Equipment and any ancillary equipment required for the operation of the Equipment
b. Work directly with the Owner or their representative to coordinate access to the Site along with construction timing
c. Contract with a North Dakota based certified service company, preferably familiar with the Site and is full insured and is approved by the Owner to do the work
d. Coordinate site access as necessary based on the needs of the Owner
e. Remote monitor the Equipment operation 24X7
f. Implement a design that allows the Owner to bypass the Equipment directly at the Site

9. Definition of Confidential Information. "Confidential Information" shall mean any and all of Client's business, technical, and financial information disclosed by TERRACOH to Owner, either directly or indirectly, including, but not limited to, any information that TERRACOH may prepare and provide to Owner as related to the Services and/or results of the Services. Confidential Information may include, by way of example, but without limitation, Materials, communications, products, specifications, formulae, equipment, business strategies, customer lists, know-how, data, processes, designs, methods, drawings, pricing information, inventions, ideas, and other information, or its potential use, that is owned by or in possession of TERRACOH, or developed, acquired or obtained for TERRACOH under this Agreement.

Confidential Information shall not include information that: (a) is in the public domain prior to disclosure; (b) is legally disclosed in confidence to Owner by a third party; (c) becomes part of the public domain, by publication or otherwise, through no unauthorized act or omission on the part of Onwer; or (d) is lawfully in Owner's possession prior to any disclosure by TERRACOH.

10. Non-disclosure and Non-use of Confidential Information. Owner shall not disclose the existence or characteristics of the Geothermal System, any of the Confidential Information, or any information developed by TERRACOH based on the Confidential Information or the testing or evaluation of the Geothermal System to any other third party, in whole or in part, directly or indirectly, unless authorized in advance in writing by TERRACOH or required by law or court order. If Owner is required by law or court order to disclose Confidential Information, Owner shall provide TERRACOH prompt written notice of such requirement so that an appropriate protective order or other relief may be sought. Owner agrees that it will not, without TERRACOH's prior agreement, disclose the fact, nature or results, directly or indirectly, in whole or in part, of (a) this Agreement, (b) the discussions held or to be held between the Parties hereto or (c) any testing or evaluation performed by TERRACOH under this Agreement. The obligations of non-disclosure and non-use imposed by this Agreement shall endure so long as the Confidential Information does not lawfully become part of the public domain.

11. Authorized Use and Ownership of Confidential Information. All results and reports provided pursuant to this Agreement shall be the property of TERRACOH and shall be deemed Confidential Information as set forth above.

Confidential Information and any information developed, acquired or obtained by TERRACOH and/or Owner based on the Confidential Information shall be used only in connection with the services provided herein. No other disclosure or use will be made of the Confidential Information by Owner or its employees, it being recognized that TERRACOH has reserved all rights to the Geothermal System and Confidential Information not expressly granted herein.

All documents containing Confidential Information provided by TERRACOH shall remain the property of TERRACOH, and all such documents, and copies thereof, shall be returned or destroyed upon the request of TERRACOH. Documents prepared by Owner using Confidential Information, or derived therefrom, shall be destroyed upon request of TERRACOH, confirmation of which shall be provided in writing.

12. Term and Termination. The term of this Agreement shall be for two (2) years, commencing on the Effective Date and ending on the two year anniversary of the Effective Date ("Initial Term"). The term may be extended in one year increments by the prior written approval of the parties.

13. TERRACOH hereby indemnifies and holds Owner harmless from any and all claims or causes of action arising out of or related to the acts or omissions of said Authorized Party in connection with the performance of activities under this Agreement, except to the extent that any injury is caused due to the acts or omissions of Owner, any lessee of the Site, or any employee or agent of Owner.

14. In exercising its access privileges, Authorized Parties will take reasonable steps not to interfere with the Owner's operations on the Site.

15. Authorized Parties will give notice to the Owner at least one (1) week in advance of the start of field activities and Services on the Site.

16. Owner ensures that Owner and any/all Site operators will give Authorized Parties access to the entire Site for the purposes set forth in this Agreement.

17. The Parties may terminate the Agreement at any time by mutual written agreement.

18. General Provisions.

In the event of a conflict between the terms of this Agreement and any Exhibits hereto, the terms of this Agreement shall control.

This Agreement shall be governed by and construed in accordance with the laws of the State of North Dakota, USA (notwithstanding conflict of laws) and the Parties hereby submit to non-exclusive jurisdiction and venue in the state and federal courts of North Dakota for purposes of interpretation, validity, and enforcement of the terms of this Agreement.

All notices to be provided hereunder shall be in writing and delivered and mailed by registered or certified mail, return receipt requested, to the Parties at the following addresses which may be modified by written notice to the other Party:

For Owner:	MOUNTAIN DIVIDE, LLC
With Copies to:	Attn: Patrick M. Montalban PO Box 200 Cut Bank, MT 59427
For TERRACOH:	TERRACOH, LLC Attn: John Griffin INSERT ADDRESS

This Agreement shall not be assigned by either Party without the prior written consent of other Party. This Agreement shall be binding upon and shall inure to the benefit of the Parties and their permitted successors and assigns.

Failure to enforce any provisions of this Agreement shall not constitute a waiver of any of the terms and conditions hereof. No amendment, modification, or waiver of the terms of this Agreement shall be binding unless placed in writing and duly executed by the Parties' authorized representatives.

In the event for any reason any provision or portion of this Agreement shall be found to be void or invalid, then such provision or portion shall be deemed to be

severable from the remaining provisions or portions of this Agreement, and shall not effect the validity of the remaining portions, which portions shall be given full effect as if the void or invalid provision or portion had not been included herein.

This Agreement sets forth the entire agreement and understanding between the Parties relating to the subject matter contained herein.

The Parties, through their authorized representatives, hereby agree to the terms and conditions of this Agreement.

MOUNTAIN DIVIDE, LLC	TERRACOH, INC.
By: _____	By: _____
Name: Patrick M. Montalban	Name: JOHN P. GRIFFIN
Title: Manager	Title: CEO
Date: 9/26/16	Date: 9/27/16