

Testimony for H.R.2004  
Geothermal Production Expansion Act of 2013  
House Subcommittee on Energy & Mineral Resources July 29, 2014

Testimony submitted by Scott Nichols, Manager of Permitting & Lands  
on behalf of  
U.S. Geothermal Inc.

Mr. Chairman and members of the Subcommittee, my name is Scott Nichols and I am here today representing U.S. Geothermal Inc. U.S. Geothermal is a publicly traded company that explores for, develops, builds and operates utility scale geothermal power plants. We are a member of the board of directors of the Geothermal Energy Association, a trade association composed of U.S. companies who support the expanded use of geothermal energy and who are developing geothermal resources worldwide for electrical power generation and direct-heat uses. The membership of the Geothermal Energy Association includes large utilities and Independent Power Producers like U.S. Geothermal, equipment suppliers, drilling companies, technical and financial service providers. These companies are primarily focused on the exploration, development and generation of clean, base load electricity from our country's geothermal resource base.

Mr. Chairman and members of the Subcommittee, my name is Scott Nichols and I am here today representing U.S. Geothermal Inc. U.S. Geothermal is a publicly traded company that explores for, develops, builds and operates utility scale geothermal power plants. We are a member of the board of directors of the Geothermal Energy Association, a trade association composed of U.S. companies who support the expanded use of geothermal energy and who are developing geothermal resources worldwide for electrical power generation and direct-heat uses. The membership of the Geothermal Energy Association includes large utilities and Independent Power Producers, equipment suppliers, drilling companies, technical and financial service providers, in addition to developers like U.S. Geothermal. These companies are primarily focused on the exploration, development and generation of clean, base load electricity from our country's geothermal resource base.

U.S. Geothermal and the Geothermal Energy Association strongly support House Bill 2004, the Geothermal Production Expansion Act of 2013. Very simply, H.R. 2004 allows a developer that has taken the high risk of exploration and invested significant

capital in the discovery of a commercial geothermal resource, the ability to add up to 640 acres of adjoining, lands administered by the Federal government lands so that exploration and development of the geothermal resource can advance without exposing the project to the high cost of delay and speculative bidding. H.R.2004 is an important, small policy adjustment to the geothermal leasing process that will promote the development of mixed ownership properties, help accelerate the development of our geothermal resources, create new jobs, and could potentially generate \$800,000 in additional revenue for the United States treasury in the first year.

The geothermal provisions in the Energy Policy Act of 2005 were intended to support and increase the production of geothermal energy in the United States. One provision mandated a change from an open leasing system to an auction based system. These changes were implemented with the first auction of geothermal leases in 2007. Many geothermal resources in the United States are located on mixed ownership lands. The potential for speculative leasing and exorbitant lease costs associated with the federal land reduces interest in developing the adjacent private or state parcels. The unintended consequence of the lease auction rules developed under EPACT 2005 is that some geothermal prospects are not being leased or evaluated for development because developers cannot secure the resource.

There is no specific provision in the statute that allowed for an exception to address the circumstances of intermixed private and Federal lands. We often see private surface with Federal minerals, Federal surface with private minerals, and a complete “checkerboard” of private and Federal land across the West. H.R. 2004 will correct that oversight. Fragmented ownership adds significant time and cost to a geothermal development, can reduce overall power generation from a geothermal resource, and in some instances may stop development altogether.

Under the current leasing provisions, the BLM is allowed to issue non-competitive leases under three specific circumstances; leases to mining claim holders that have a valid operating plan, direct use leases, and leases on parcels that do not sell at a competitive auction.

H.R.2004 would create a fourth category of non-competitive lease whereby the BLM would have the authority to issue a non-competitive geothermal lease for 640 acres or less of federal lands that adjoin a legitimate, confirmed commercial geothermal

discovery, but only if those federal lands are not already leased or nominated for lease under the auction system. The applicant must also demonstrate conclusively that the commercial geothermal discovery or reservoir extends on to the adjoining federal lands. This bill provides a very specific, focused requirement for a geothermal developer to qualify for this proposed non-competitive lease.

The new category or condition is the same provision provided to mining claimants because it allows a developer that already has a mineral discovery and has invested a significant amount of capital to secure an adjacent parcel of interest.

This change would provide the following benefits:

- Developers that have invested substantial capital and made high risk investments would be allowed to secure a documented discovery.
- Development of the geothermal resource would accelerate the creation of jobs.
- The financing capabilities of geothermal projects would increase.
- All non-competitive leaseholders would be required to pay a fair market average “bonus” fee and thereby increase the short term fees paid to the federal government.
- Increased development will provide higher revenue to the federal government with the payment of production royalties over decades.
- More efficient and optimal development of a geothermal resource since it allows a developer to bring the resource in to a single land package. Fragmented ownership adds significant time and cost to a geothermal development, can reduce overall power generation from a geothermal resource, and in some instances may stop development altogether.

We believe that it is appropriate for all leases issued under all of the non-competitive categories to pay a filing or bonus fee set at the fair market value per acre as determined by the Secretary of Interior. If a fair market value isn't determined by the Secretary, then a fee equal to four times the median price paid at auction during the preceding year or \$50 per acre is due. This fee is fair, provides increased revenues and recipients of non-competitive leases should be required to pay for the privilege of being granted a non-competitive lease.

While the early years of geothermal leasing caused much excitement and some speculators paid extremely high bonus bid amounts for tracts of land, experienced developers know that there is an economic limit to the amount of capital that can be

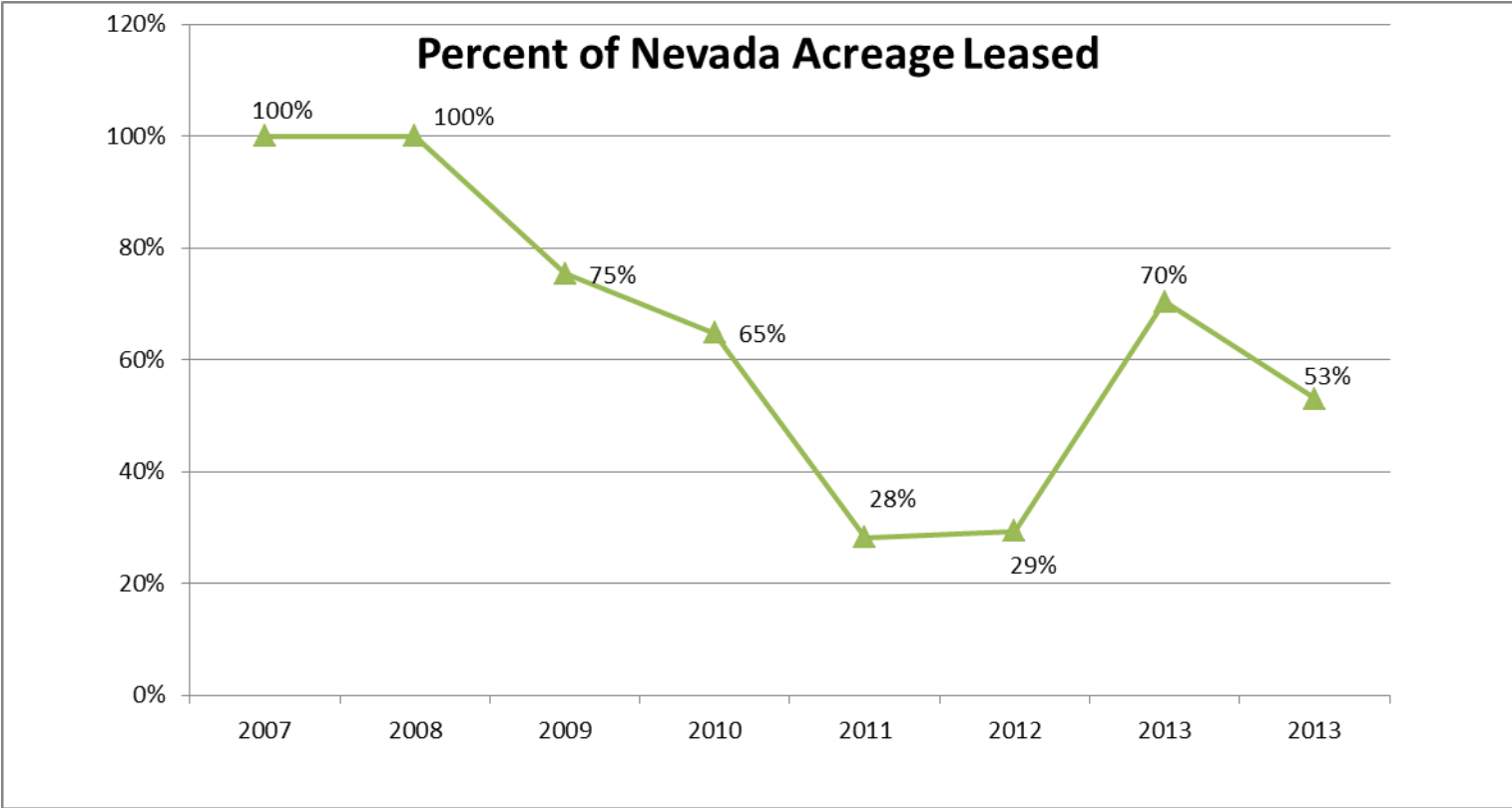
recovered when you are selling electricity into a regulated market. Geothermal development is not comparable economically to oil and gas.

H.R.2004 has been carefully vetted over the past 3 years, and is narrowly focused to provide a specific remedy for intermixed lands, so that when a commercial geothermal resource has been identified, it can be developed in a timely, cost effective manner. The United States leads the world in clean, base load power generation from geothermal resources, and we would like to see us retain that preeminent position.

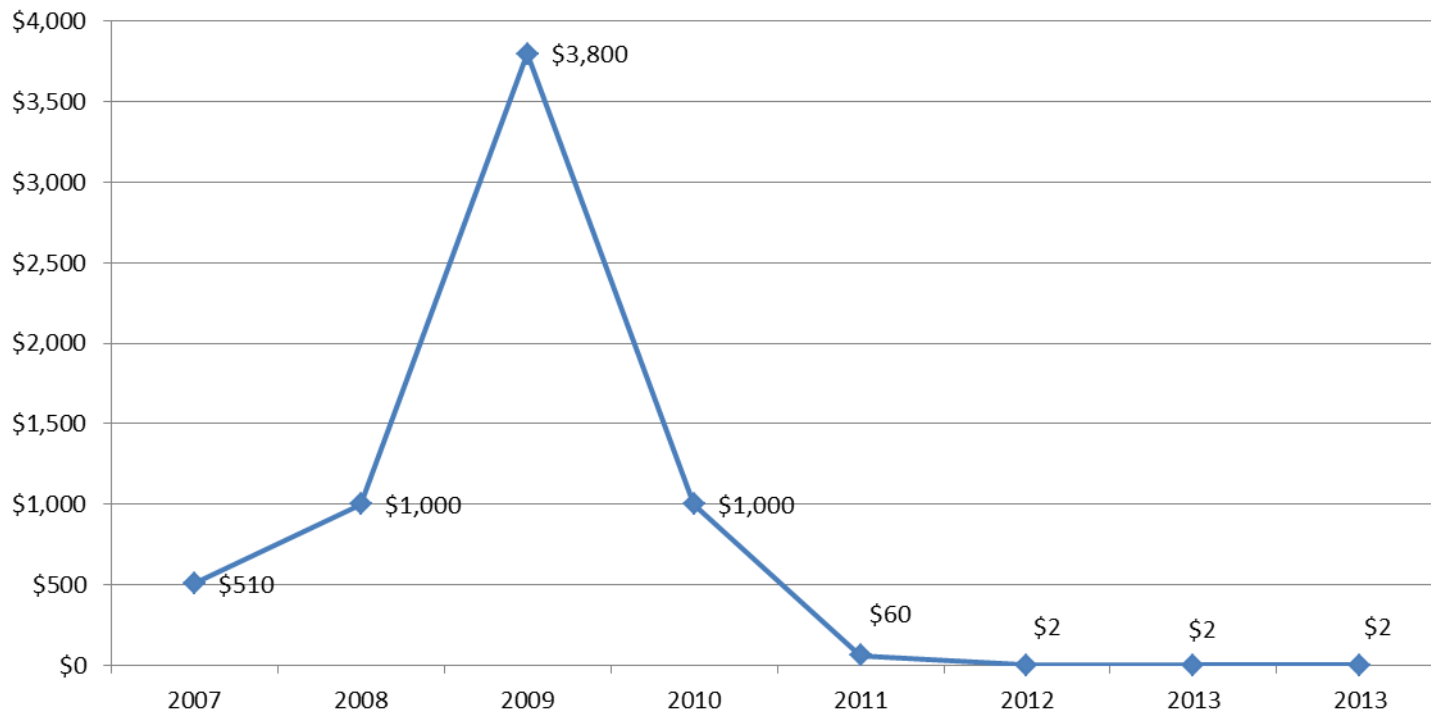
Thank you for considering our comments on this important issue to the geothermal industry. I am happy to respond to any questions.

History of Competitive Geothermal Lease Auctions in Nevada  
under the  
Energy Policy Act of 2005

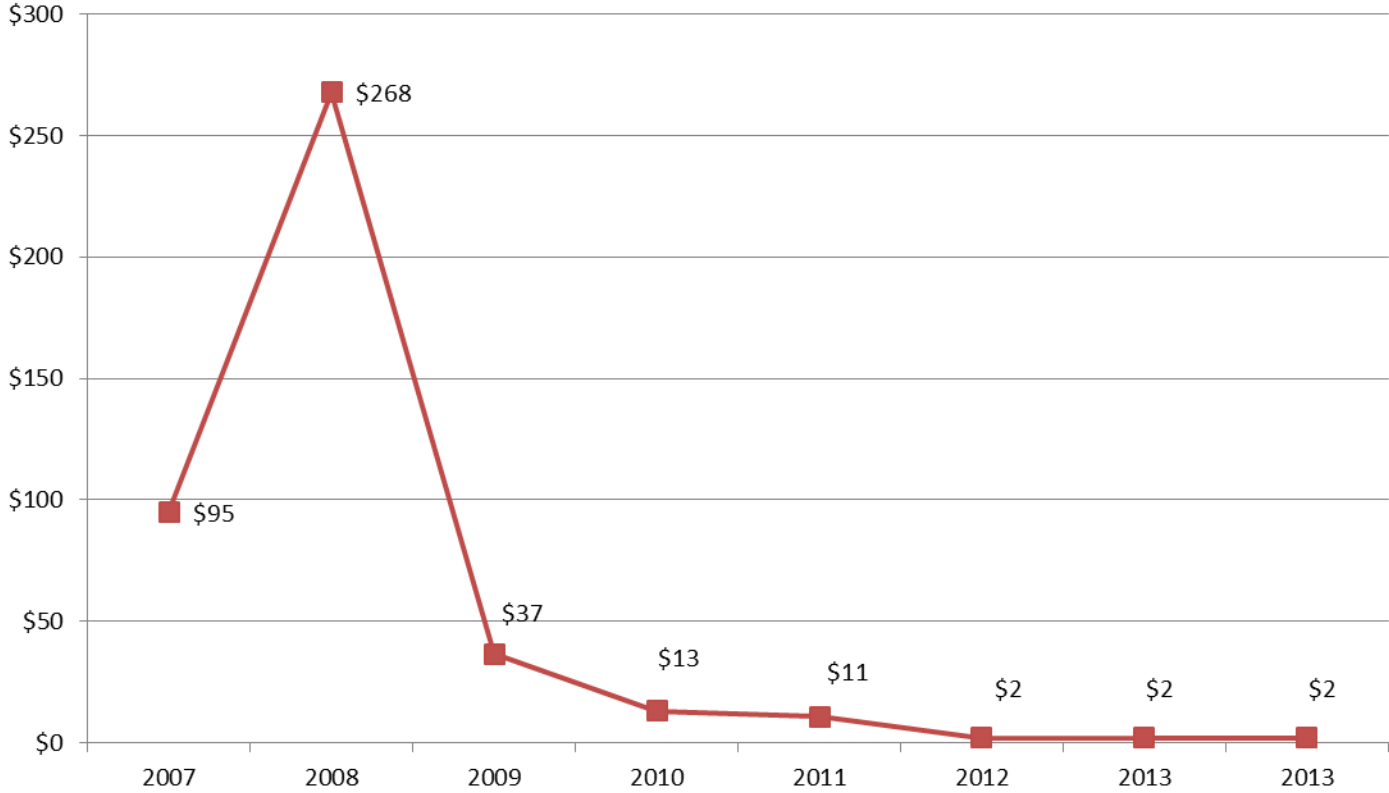
| <b>Comparison and Trend of Nevada Geothermal Lease Sales</b> |              |              |             |             |             |             |                |                |
|--|--------------|--------------|-------------|-------------|-------------|-------------|----------------|----------------|
|  | <b>2007</b>  | <b>2008</b>  | <b>2009</b> | <b>2010</b> | <b>2011</b> | <b>2012</b> | <b>2013(1)</b> | <b>2013(2)</b> |
| <b>High Bid/Acre</b>   | \$510        | \$1,000      | \$3,800     | \$1,000     | \$60        | \$2         | \$2            | \$2            |
| <b>Average Value /Acre</b>                                   | \$95         | \$268        | \$37        | \$13        | \$11        | \$2         | \$2            | \$2            |
| <b>Acres Offered</b>   | 122,849      | 105,312      | 323,223     | 328,020     | 151,119     | 94,829      | 10,024         | 6,260          |
| <b>Acres Sold</b>  | 122,849      | 105,312      | 243,727     | 212,370     | 42,627      | 27,834      | 7,056          | 3,317          |
| <b>Percent of Acres Sold</b>                                 | 100%         | 100%         | 75%         | 65%         | 28%         | 29%         | 70%            | 53%            |
| <b>Sale Revenue</b>  | \$11,669,821 | \$28,207,806 | \$8,909,445 | \$2,762,292 | \$456,353   | \$112,540   | \$28,982       | \$13,888       |



### Nevada High Bid (\$/acre)

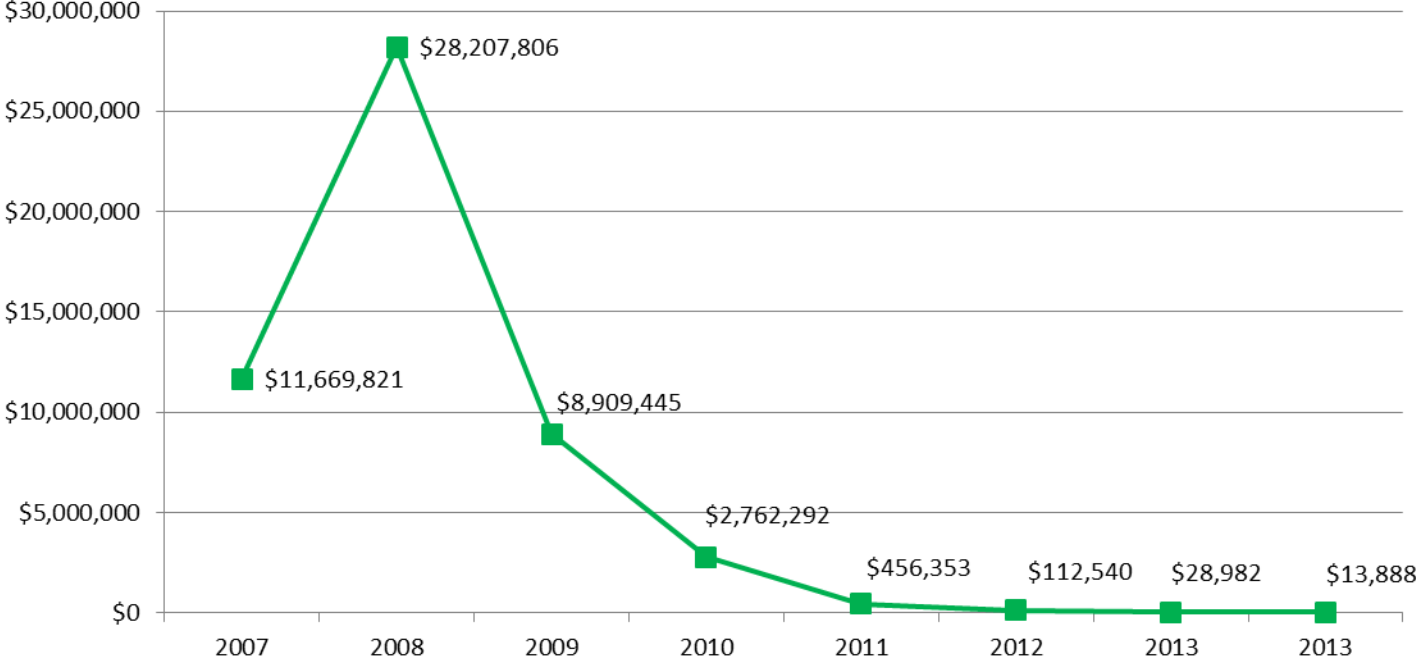


### Average Nevada Bid (\$/acre)





# Total Nevada Sale Revenue



Testimony for H.R.1363  
Exploring for Geothermal Energy on Federal Lands Act  
House Subcommittee on Energy & Mineral Resources  
July 29, 2014  
Submitted by Scott Nichols, Manager of Permitting & Lands  
For  
U.S. Geothermal Inc.

Mr. Chairman and members of the Subcommittee, my name is Scott Nichols and I am here today representing U.S. Geothermal Inc. U.S. Geothermal is a publicly traded company that explores for, develops, builds and operates utility scale geothermal power plants. We are a member of the board of directors of the Geothermal Energy Association, a trade association composed of U.S. companies who support the expanded use of geothermal energy and who are developing geothermal resources worldwide for electrical power generation and direct-heat uses. The membership of the Geothermal Energy Association includes large utilities and Independent Power Producers like U.S. Geothermal, equipment suppliers, drilling companies, technical and financial service providers. These companies are primarily focused on the exploration, development and generation of clean, base load electricity from our country's geothermal resource base.

U.S. Geothermal supports House Bill 1363, Exploring for Geothermal Energy on Federal Lands Act. This bill establishes a new Categorical Exclusion for land disturbances related to geothermal exploration. This new categorical exclusion is a necessary and long overdue response to the geothermal industry's need for efficient and streamlined regulatory expectations.

Your favorable action on this bill is necessary because of the BLM's rigid approach and interpretation of the CEQ regulations and BLM management's inability to respond to industry needs under the current regulations.

Compelling evidence and justification for a geothermal exclusion is found within the:

- CEQ Regulations 40 CFR 1500.5(k)
- Department of Interior's Federal Regulations 43CFR §3201.11,
- EPA Act of 2005
- BLM's NEPA Handbook H-1790-1, and
- Department of Energy's federal regulations.

40 CFR 1500.5(k) directs the BLM to use categorical exclusions to define categories of actions which do not individually or cumulatively have a significant effect on the human environment and which are therefore exempt from requirements to prepare an environmental impact statement. The BLM has failed to take action and proactively implement geothermal categorical exclusions that would reduce paperwork and allow a focused use of staff resources. Geothermal development is currently subjected to multiple and repetitive NEPA analyses that begin prior to leasing and continue throughout power plant operations. Multiple analyses and public review of drilling and maintenance work, within an area designated for geothermal development, is unnecessary and not consistent with stated purpose of the National Environmental Policy Act and the CEQ guidelines.

The Department of Interior's regulations, 43CFR §3201.11 state that the BLM will not issue leases for Lands where the Secretary has determined that issuing the lease would cause unnecessary or undue degradation of public lands and resources. The decision to issue a geothermal lease has been subjected to public review. Issuance of a geothermal lease, by default, is the BLM's determination that the area is suitable for geothermal development and will not cause undue or unnecessary degradation.

Section 390 of the Energy Policy Act of 2005 established five CXs that apply only to oil and gas exploration and development. One CX allows individual surface disturbances of less than five acres as long as the total surface disturbance on the lease does not exceed 150 acres of surface disturbance on a lease as long as any prior NEPA document was prepared. A second CX allows drilling from locations at which drilling was conducted within the past five years. Categorical Exclusions for geothermal exploration and infill drilling should be similar to those for the oil and gas industry.

The Department of Energy ("DOE") recognizes and understands the types of activities required for geothermal exploration and operations. To streamline regulatory reviews, DOE established Exclusions B3.1(c) for site characterization and monitoring B3.1(d) that allows aquifer and underground reservoir response testing and B3.7 for new infill exploratory and experimental wells for brine or geothermal fluid among other resources. The BLM should implement the same Categorical Exclusions as the Department of Energy.

BLM allows significant surface impacts under CX's for other resource exploration programs and oversees the use of current CX's across these different programs.

Specifically in mineral exploration, the department's published CX's allow trenching and digging without acreage limitations, disposal of up to 50,000 cubic yards of mineral material and disturbing up to 5 acres. Additional CXs allow construction of temporary work camps and up to ½ mile of new temporary road construction. The Department's locatable mineral regulations also provide a total exemption from NEPA and allow a claimant to conduct mining operations and exploration drilling on up to 5 acres (25% of a 20 acre claim) by filing a Plan of Operation only ten (10) days prior to beginning operations. The BLM should be directed to apply CXs across programs based on commensurate surface disturbance, not the causative activity.

At a time, when the United States is working diligently toward energy independence and trying to maximize renewable base load energy, the geothermal industry is unnecessarily subjected to more onerous federal review, unnecessary delays and the resulting higher costs than other resource developments with more significant land and resource impacts.

H.R.1363 is a first step to create a much needed Categorical Exclusion that allows geothermal drilling to proceed in a timely manner and that meets specified criteria which will help level the playing field for the geothermal industry. The proposed Categorical Exclusion is more limited than those provided for other resources and establishes, by congressional action, what the BLM should be implementing under their administrative authority and the CEQ regulations.

Thank you for considering our comments on this important issue to the geothermal industry. I am happy to respond to any questions.