

**SECOND REVISED PROPOSED REGULATION OF THE
COMMISSION ON MINERAL RESOURCES**

LCB File No. R093-25

September 22, 2026

EXPLANATION – Matter in *italics* is new; matter in brackets ~~[omitted material]~~ is material to be omitted.

AUTHORITY: §§ 1-21, 24, 30-32, 34 and 35, NRS 513.063 and 534A.090; §§ 22, 23, 36 and 37, NRS 513.063, 534A.070 and 534A.090; §§ 25-29 and 33, NRS 513.063, 534A.080 and 534A.090.

A REGULATION relating to geothermal resources; setting forth certain application requirements for a geothermal well that is planned to be stimulated; establishing certain requirements relating to testing water sources located within the area of review for a geothermal well that is planned to be stimulated; establishing requirements for monitoring seismic activity of a geothermal well that is planned to be stimulated; setting forth certain requirements relating to the location, installation and testing of certain parts and equipment for a geothermal well that is planned to be stimulated; setting forth certain requirements for an existing geothermal well to request permission to engage in stimulation; establishing certain duties and responsibilities of an operator of a geothermal well that is planned to be stimulated; authorizing the Administrator of the Division of Minerals of the Commission on Mineral Resources to issue certain orders relating to stimulated geothermal wells; revising certain requirements relating to an application for a permit to drill or operate certain geothermal wells; revising certain requirements relating to the location of certain geothermal wells; revising various fees relating to geothermal wells; establishing certain fees relating to stimulating a geothermal well; authorizing an operator of a geothermal well to submit an alternative plan to take cuttings and a split of any core under certain circumstances; revising requirements for disposing of fluids derived from geothermal resources; revising provisions governing the issuance of an order to plug a geothermal well; revising certain reporting requirements relating to geothermal wells; revising certain duties of the Administrator relating to geothermal wells; and providing other matters properly relating thereto.

Legislative Counsel's Digest:

Existing law authorizes the Commission on Mineral Resources to adopt regulations relating to geothermal resources, including requirements for the operation of geothermal wells. (NRS 534A.090) **Sections 2-4 and 6-9** of this regulation define certain terms relating to geothermal wells and stimulation. **Section 5** of this regulation applies the terms defined in **sections 6-9** to the provisions of **sections 5-18** of this regulation. **Section 19** of this regulation

applies the definitions in **sections 2-4** to the provisions of existing law relating to geothermal resources. **Section 10** provides that the provisions of **sections 5-18** apply to any injection or production well which the owner of the geothermal resource or the operator stimulates or plans to stimulate.

Existing regulations require the owner of the geothermal resource or the operator who wishes to drill or operate an individual geothermal well, geothermal wells in a project area or an injection well or injection wells in a project area to submit an application for a permit to the Division of Minerals of the Commission which includes certain information. (NAC 534A.190-534A.196) **Section 11** requires the owner of the geothermal resource or the operator to: (1) submit additional information to the Division with his or her application if he or she intends to stimulate an injection or production well; and (2) disclose or submit additional information to the Division under certain circumstances.

Section 12: (1) requires certain owners of geothermal resources or operators who plan to stimulate a geothermal well to, with certain exceptions, collect test samples of the available water sources located within the area of review and submit the results of the sampling to the Division; and (2) sets forth the requirements for conducting such testing. **Section 12** prohibits such an owner or operator from stimulating a geothermal well until he or she has complied with certain testing requirements.

Section 13 requires an owner of a geothermal resource or an operator to: (1) submit to the Division an Induced Seismicity Monitoring Plan which uses a traffic light monitoring system; (2) monitor seismic events in accordance with the approved Induced Seismicity Monitoring Plan; and (3) maintain certain seismic monitoring systems installed by the owner or operator. **Section 13** also: (1) authorizes an owner or operator to submit, 24 months after the termination of stimulation operations, a request to discontinue such monitoring and maintenance; and (2) provides for the modification of an Induced Seismicity Monitoring Plan under certain circumstances.

Section 14 requires an owner of a geothermal resource or an operator to also submit to the Division: (1) certain information relating to geology, seismic activity and seismic monitoring; (2) a model to forecast the seismicity in the area of review; and (3) evidence of certain agreements, if applicable.

Section 15 requires the owner of the geothermal resource or the operator to: (1) ensure that the surface location of the geothermal well meets certain requirements; (2) install the intermediate casing string in a certain manner; (3) conduct certain pressure testing of the intermediate casing string or surface casing string; and (4) install a flow meter on the geothermal well. **Section 15** also: (1) establishes a process for a failing result from such pressure testing; and (2) authorizes the owner or operator to request an exception from the location requirements.

Section 16 authorizes the owner of a geothermal resource or operator of a geothermal well that was drilled and spudded before the provisions of this regulation become effective to submit an application to the Division for permission to engage in stimulation which includes the results of a pressure test of the production casing string. **Section 16** also establishes a process for a failing result of such a pressure test.

Section 17 sets forth certain duties and responsibilities of an operator of a geothermal well relating to stimulation, including a requirement for an operator to monitor and record certain stimulation pressures. **Section 35** of this regulation requires any stimulation pressures recorded pursuant to **section 17** to be included in the daily drilling log required to be filed by an operator on each day of drilling. (NAC 534A.555)

Section 18: (1) requires the Administrator of the Division to issue an order to the owner of a geothermal resource or the operator to immediately reduce the pressure of injection or production or cease operation of a geothermal well under certain circumstances; and (2) requires the owner or operator, upon receiving such an order, to schedule a meeting with the Division.

Section 20 of this regulation revises the definition of the term “injection well” from any well used to dispose of fluids derived from geothermal resources into an underground reservoir to any well used to place fluids into a geothermal resource. **Sections 27 and 31** of this regulation make conforming changes to replace references to the disposal of fluids into the reservoir with the placement of fluids into the geothermal resource.

Section 21 of this regulation revises the provisions of existing regulations that apply to geothermal domestic wells.

Sections 22 and 23 of this regulation require an application for a permit to drill or operate an individual geothermal well or geothermal wells in a project area to include the locations of the top and bottom holes and well trace of the geothermal well or wells.

Existing regulations require the location of an individual geothermal well or the geothermal wells in a project area to be surveyed by a professional land surveyor who is licensed and a certified plat of the location to be filed with the Division. (NAC 534A.205) **Section 24** of this regulation: (1) instead requires the location to be certified by a professional land surveyor who is licensed; and (2) removes the requirement to file the certified plat.

Existing law requires the Commission to impose and collect a fee for examining and filing an application for a permit to drill or operate a geothermal well or to drill an exploratory well. (NRS 534A.080) Existing regulations require a person who files an application for a permit to drill or operate an individual geothermal well or geothermal wells in a project area to pay an application fee based on the type of well and, in the case of geothermal wells in a project area, whether it is the first or a subsequent well drilled. (NAC 534A.210, 534A.212) **Sections 25 and 26** of this regulation increase these fees. **Sections 25 and 26** also require a person who files an application for an individual geothermal well or geothermal wells in a project area that are planned to be stimulated to pay an additional fee to the Commission at the time the person files the application.

Existing regulations require the owner or operator of a thermal gradient or an observation well to pay an annual fee to the Division for each such well unless the well has been abandoned and plugged. (NAC 534A.214) **Section 27** increases this annual fee.

Existing regulations require the holder of a permit to drill or operate an individual geothermal well or geothermal wells in a project area, within 30 days after completing the construction of certain geothermal wells and removing the drill rig from the location of the well, to pay a fee to the Division based on the depth of the well and type of well. (NAC 534A.216) **Section 28** of this regulation: (1) requires the fee to be paid based upon the total measured depth of the well; (2) revises the categories of total measured depth by which the fee is set; and (3) increases the fees for each category.

Existing regulations require an operator to provide a bond for each geothermal well conditioned on the plugging of the well upon abandonment in accordance with existing regulations. (NAC 534A.250) **Section 29** of this regulation: (1) requires the owner of the geothermal resource or the operator to provide a bond of not less than \$50,000 for an individual geothermal well that is planned to be stimulated; and (2) authorizes the owner or operator to file a blanket bond of at least \$200,000 under certain circumstances to cover all geothermal wells in a project area that are planned to be stimulated.

Existing regulations require the operator to take two sets of cuttings at least every 30 feet and submit such cuttings to the Bureau of Mines and Geology of the State of Nevada within 30 days after the well is completed. (NAC 534A.310) **Section 30** of this regulation instead requires the operator to submit such cuttings within 90 days and authorizes an operator to submit to the Administrator an alternative plan for approval to take cuttings and a split of any core in a manner which deviates from such requirements.

Existing regulations authorize the Administrator to issue an order to the operator to show cause as to why a well should remain open if a well is inactive for 2 years or more and, if the Administrator finds that good cause has not been shown, to declare the well abandoned and order the well to be plugged. If the operator fails to respond and the well is not bonded by a federal agency, the Administrator may take steps to plug the well. The costs of plugging the well may be paid from a bond filed by the operator. (NAC 534A.465) **Section 32** of this regulation requires the Administrator to mail the owner or operator of a well plugged by the Division an invoice for any costs of plugging the well above the sum of the bond filed for the well.

Existing regulations require the owner of the geothermal resource or the operator to submit an application to the Division for permission to engage in certain activities relating to geothermal wells and pay a fee to file the application. (NAC 534A.540) **Section 33** of this regulation increases the application fee for certain activities. **Section 33** also requires the owner or operator to pay a fee to file an application for permission to engage in certain activities relating to stimulation of a geothermal well.

Existing regulations require the owner of the geothermal resource or the operator to file certain information with the Division within 30 days after the completion of the construction of a well and after the well is plugged. (NAC 534A.550) **Section 34** of this regulation revises certain information that must be filed with the Division.

Existing regulations require the Administrator to hold a public hearing on an application for a permit to drill or operate a geothermal well under certain circumstances. (NAC 534A.590) **Section 36** of this regulation also requires the Administrator to hold a public hearing on an order to reduce the pressure of injection or production or cease operation of a stimulated well under certain circumstances. **Section 37** of this regulation makes conforming changes to provide that the applicant or the owner of the geothermal resource or the operator may be a party to the hearing.

Section 1. Chapter 534A of NAC is hereby amended by adding thereto the provisions set forth as sections 2 to 18, inclusive, of this regulation.

Sec. 2. *“Project area” means the area in a geothermal field for which an owner of a geothermal well resource or operator applies to receive or has received a permit pursuant to NAC 534A.193 and includes, without limitation, if applicable, any area of review for any wells which are planned to be stimulated.*

Sec. 3. “Stimulation” means the process of pumping a fluid into or beneath the surface of the earth during the completion phase of a geothermal well at pressures exceeding the mechanical strength of the rock to induce fractures in the rock to promote or enhance the production or recovery of a geothermal resource.

Sec. 4. “Well trace” means a surface projection which depicts the subsurface path of a well bore and any lateral component of the well bore.

Sec. 5. As used in sections 5 to 18, inclusive, of this regulation, unless the context otherwise requires, the words and terms defined in sections 6 to 9, inclusive, of this regulation have the meanings ascribed to them in those sections.

Sec. 6. “Area of review” means:

1. The area of land located within a radius of 2 miles of a proposed geothermal well and any surface projection of any lateral component of the well bore that is proposed for stimulation; and

2. Any additional area of land required to be included by the Division or specified by an owner of a geothermal resource or an operator pursuant to subsection 3 of section 11 of this regulation.

Sec. 7. “Induced seismicity” means an earthquake or other seismic event caused by stimulating a geothermal well.

Sec. 8. “Magnitude” means a number that corresponds with the relative size of an earthquake based on:

- 1. For the moment magnitude scale, the seismic moment of the earthquake; or*
- 2. For the local magnitude scale, the maximum amplitude of seismic waves recorded on a seismograph.*

Sec. 9. *“Water source” means a water well or spring that is regulated by the Division of Water Resources of the State Department of Conservation and Natural Resources.*

Sec. 10. *Except as otherwise provided in section 16 of this regulation, the provisions of sections 5 to 18, inclusive, of this regulation:*

1. Apply to any injection or production well which the owner of the geothermal resource or the operator stimulates or plans to stimulate; and

2. Do not apply to geothermal domestic wells.

Sec. 11. *1. If a person plans to stimulate an injection or production well, his or her application for a permit submitted pursuant to NAC 534A.190, 534A.193 or 534A.196 must include, without limitation, the following information:*

(a) A map of the area of review showing the boundaries of the area of review, the location of each water source or perennial stream located within the area of review, the overall project area or lease holdings within the area of review, the location of all known wells in the area of review and all known land ownership and any assessor parcel numbers for such land within the area of review;

(b) A description of the location of each water source located within the area of review by public land survey, county assessor’s parcel number and the global positioning system coordinates which:

(1) Are either identified by latitude and longitude using decimal degrees or are identified using coordinates of the Universal Transverse Mercator system; and

(2) Specify for each coordinate whether the North American Datum of 1927, North American Datum of 1983 or World Geodetic System 1984 was used;

(c) The source and estimated volume of water required for the proposed stimulation of the well;

(d) The name of each person on file with the Division of Water Resources of the State Department of Conservation and Natural Resources who holds a permit, certificate or other right to appropriate water from any water source located within the area of review;

(e) The permit or certificate number of any appropriation of water identified pursuant to paragraph (d), including, without limitation, any appropriation from a water source from which the owner of the geothermal resource or the operator plans to draw samples pursuant to section 12 of this regulation;

(f) The well log number, well depth and diameter of the water well casing of any geothermal well located within the area of review;

(g) The static water level below the surface of the ground or the rate of flow of the water, if any;

(h) Publicly available maps and cross-sections of the area of review which describe the surface and subsurface geology of the area of review, including, without limitation, the location of any known or suspected faults;

(i) A plan for the management and placement of all fluids to be used in the proposed stimulation of the well; and

(j) An Induced Seismicity Monitoring Plan prepared pursuant to section 13 of this regulation.

2. If, at any time before or after submitting the information required by subsection 1, an owner of a geothermal resource or the operator discovers inconsistencies with respect to publicly available and proprietary hydrologic or geologic information within an area of review

that the owner or operator reasonably believes to be relevant with respect to potential contamination from stimulating a geothermal well, the owner or operator shall disclose the inconsistencies to the Division.

3. In addition to the area of land described in subsection 1 of section 6 of this act, the Division may require, or an owner of the geothermal resource or the operator may specify, that, based on population density, residential locations or water source locations or for other good cause as the Division or the owner or operator may deem reasonable, the area of review for a geothermal well include an additional area of land for which the owner or operator must provide the information required by this section or collect any additional data.

Sec. 12. *1. Except as otherwise provided in this subsection and subsections 5 and 7, if the owner of the geothermal resource or the operator has an application pending for a permit issued pursuant to NAC 445A.810 to 445A.925, inclusive, the owner or operator shall, until such a permit is issued, collect samples to test all available water sources located within the area of review and submit the test results from the sampling to the Division in accordance with the requirements of this section. Except as otherwise provided in subsection 2, if the number of water sources located in the area of review is more than six, the owner of the geothermal resource or the operator shall, in consultation with the Division, select six available water sources in the area of review for sampling based on:*

(a) The proximity of the available water sources to the proposed geothermal well, with a preference for the available water sources that are closest to the geothermal well.

(b) The orientation of the sampling locations relative to the geothermal well, with a preference for sampling locations from both down-gradient and up-gradient locations over

cross-gradient locations, to the extent that the direction of the flow of groundwater is known or can be reasonably inferred.

(c) The depth of the available water sources, with a preference for the deepest of the available water sources.

(d) The condition of the available water sources. The owner of the geothermal resource or the operator is not required to sample an available water source if the Administrator determines, upon receipt of evidence from the owner of the geothermal resource or the operator, that the available water source is improperly maintained or nonoperational or has physical characteristics which would prevent the safe collection of a representative sample or would require nonstandard sampling equipment.

(e) Whether the owner of the geothermal resource or the operator has constructed a temporary well or an observation well within the area of review for use as a water source to support the drilling or operation of the geothermal well. If the operator has constructed such a temporary or observation well, the temporary or observation well must be selected as an available water source for sampling.

2. If the Administrator finds that additional testing is warranted, the Administrator may require the owner of the geothermal resource or the operator to collect and test samples of additional available water sources.

3. Except as otherwise provided in subsections 4 and 5, for each available water source identified or selected pursuant to subsection 1, the owner of the geothermal resource or the operator shall collect:

(a) An initial sample during the 12-month period immediately preceding the commencement of stimulation to establish the background water quality of the water source.

(b) A first subsequent sample, which must be collected not earlier than 3 months and not later than 12 months after the commencement of stimulation. If a geothermal well that has been drilled produces geothermal fluids for a period of less than 6 months after the commencement of stimulation and the well is subsequently plugged and abandoned or the well is plugged and abandoned without having produced geothermal fluids after the commencement of stimulation, the owner of the geothermal resource or the operator shall collect the first subsequent sample at the time the well is plugged.

(c) Except as otherwise provided in this paragraph, a second subsequent sample, which must be collected not earlier than 18 months and not later than 24 months after the commencement of stimulation. If a geothermal well that has been drilled:

(1) Produces geothermal fluids for a period of less than 18 months after the commencement of stimulation and the well is subsequently plugged and abandoned, the owner of the geothermal resource or the operator shall collect the second subsequent sample at the time the well is plugged.

(2) Is plugged and abandoned without having produced geothermal fluids, the owner of the geothermal resource or the operator is not required to collect a second subsequent sample.

4. For the purposes of satisfying the requirements of paragraphs (a) and (b) of subsection 3, the owner of the geothermal resource or the operator may rely on the test results of a previous sample from an available water source if:

(a) The previous sample was collected and tested during the respective period prescribed for sampling pursuant to paragraph (a) or (b) of subsection 3;

(b) The procedure for collecting and testing the sample and the constituents for which the sample was tested are substantially similar to those required by this section; and

(c) The Administrator receives the test results not later than 30 days before the applicable deadline for collection of the sample set forth in paragraph (a) or (b) of subsection 3.

5. The owner of a geothermal resource consisting of more than one geothermal well or the operator of more than one geothermal well located within the same area of review may submit an alternative sampling plan to the Administrator for approval to collect samples from fewer locations than those required pursuant to subsection 1 if the Administrator determines the locations will accurately represent the background water quality of the water sources within the area of review of the geothermal wells and the alternative plan meets the requirements of subsection 3.

6. The testing of the samples collected pursuant to this section must comply with the following requirements:

(a) The testing must be conducted by a laboratory certified pursuant to NAC 445A.0552 to 445A.067, inclusive. Upon request, the owner of the geothermal resource or the operator shall provide his or her protocol for the collection and testing of samples to the Administrator.

(b) The test results of the initial and subsequent samples collected pursuant to this section must include, without limitation, the level of each constituent identified on the “Profile 1 Reporting Form,” published by the Division of Environmental Protection of the State Department of Conservation and Natural Resources, as that form existed on April 1, 2026, which is hereby adopted by reference. Each new version of the form shall be deemed approved by the Commission unless the form is disapproved by the Commission within 60 days after the date of publication. A copy of the most recent form may be obtained free of charge at any office of the Division.

(c) Except as otherwise provided in paragraph (d), the owner of the geothermal resource or the operator shall provide copies of the test results of each sample collected pursuant to this section to the Administrator and to the respective owner of the available water source not later than 30 days after the operator receives the test results from a laboratory. The Division shall, upon request, make the test results available to a member of the public for inspection at the office of the Division located in Carson City, Nevada.

(d) The owner of the geothermal resource or the operator shall notify the Administrator and the owner of an available water source in not more than 2 business days if the test results of a sample collected pursuant to this section indicate the presence of hydrocarbons or hydrogen sulfide in a concentration greater than the specified maximum contaminant level set forth in the primary and secondary standards for drinking water pursuant to NAC 445A.453 and 445A.455.

(e) If the owner of the geothermal resource or the operator is required to provide notification pursuant to paragraph (d), the owner of the geothermal resource or the operator shall also provide the Administrator and the owner of the available water source with:

- (1) A copy of the test results of the sample;*
- (2) A description of the location of the available water source by public land survey, county assessor's parcel number and the global positioning system coordinates in the manner set forth in paragraph (b) of subsection 1 of section 11 of this regulation; and*
- (3) Any field observations recorded by the owner of the geothermal resource, the operator or any other person involved in the collection of the sample during the collection of the sample.*

7. Before a geothermal well is drilled or spudded, the owner of the geothermal resource or the operator may request an exemption from the requirements of this section by submitting Form 4a (Sundry Notice and Report on Stimulated Geothermal Wells) with the Administrator. The Administrator may grant an exemption if the Administrator finds that:

(a) There are no available water sources located within the area of review.

(b) The only available water sources located within the area of review are unsuitable due to a reason specified in paragraph (d) of subsection 1. If the owner of the geothermal resource or the operator seeks an exemption on the grounds set forth in this paragraph, the owner or operator shall provide to the Administrator documentation of the conditions of each available water source which is deemed unsuitable.

(c) Each owner of an available water source located in the area of review that is suitable for sampling has refused to grant the owner of the geothermal resource or the operator access to the water source and additionally finds that the owner of the geothermal resource or the operator has made a reasonable and good faith effort to obtain the consent of the owner of the available water source to conduct sampling. If the owner of the geothermal resource or the operator seeks an exemption on the grounds set forth in this paragraph, the owner of the geothermal resource or the operator shall provide to the Administrator documentation of the efforts of the owner of the geothermal resource or the operator to obtain the consent of each owner of an available water source located in the area of review.

8. An owner of the geothermal resource described in subsection 1 or an operator described in subsection 1 shall not commence the stimulation of a geothermal well until the owner of the geothermal resource or the operator has complied with the requirements of subsections 1, 2 and 4 to 7, inclusive, and paragraph (a) of subsection 3, as applicable.

Sec. 13. 1. *Before the Division will approve an application for permission to engage in stimulation, the owner of the geothermal resource or the operator must, except as otherwise provided in this subsection, submit to the Division, for each geothermal well in the project area which the owner or operator plans to stimulate, an Induced Seismicity Monitoring Plan to monitor the induced seismicity resulting from any stimulation or injection activities on the reservoir or other natural resources located within the area of review. The owner of the geothermal resource or the operator of more than one geothermal well may submit an Induced Seismicity Monitoring Plan for all geothermal wells which are planned to be stimulated in a project area.*

2. *The Induced Seismicity Monitoring Plan must use the traffic light monitoring system to monitor induced seismicity and, based on the information provided pursuant to section 14 of this regulation, establish thresholds approved by the Division for the magnitude of a seismic event to provide amber and red light alerts based on such thresholds for any seismic event with an epicenter located within the area of review for the geothermal well, with each alert indicating that the Division has received notice of a seismic event from a reputable source, which may include, without limitation, the United States Geological Survey, the Nevada Seismological Laboratory at the University of Nevada, Reno, or a seismic monitoring system of the owner of the geothermal resource or the operator. Any thresholds established pursuant to this section must:*

(a) For a red light alert, include seismic activity in which damage to buildings or infrastructure is expected and which may require the reduction or suspension of stimulation or injection operations; and

(b) For an amber light alert, include seismic activity in which damage to buildings or infrastructure is unlikely and which may require additional monitoring or safety precautions rather than a reduction or suspension of stimulation or injection operations.

3. Based on the traffic light monitoring system required pursuant to subsection 2, the owner of the geothermal resource or the operator:

(a) In the event of an amber light alert during a period of time in which stimulation activities are not occurring for a seismic event with an epicenter located within the area of review for the geothermal well:

(1) Shall report the occurrence of the seismic event to the Division within 24 hours; and

(2) Except as otherwise provided in paragraph (b), may continue to operate the well in accordance with the terms of the permit and any other permission granted for the operation or may consult with the Division regarding the amber light alert and adjust the operation of the well by reducing the volume of fluids injected into the well.

(b) In the event of receiving a number of amber light alerts which exceed the levels of anticipated seismic activity identified in the Induced Seismicity Monitoring Plan for a seismic event located within the boundaries of the project area, shall:

(1) Immediately consult with the Division on measures to reduce the likelihood of any additional amber light alerts; and

(2) Submit Form 4a (Sundry Notice and Report on Stimulated Geothermal Wells) to the Division for approval with the proposed measures to reduce the likelihood of additional amber light alerts.

(c) In the event of a red light alert for a seismic event with an epicenter located within the area of review for the geothermal well, shall:

(1) Report the occurrence of the seismic event within 24 hours to:

(I) The Division;

(II) The emergency management office of the county in which the geothermal well is located; and

(III) Any person holding a permit to drill or operate a geothermal well or an oil or gas well located within a radius of 10 miles of the epicenter of the seismic event; and

(2) If the red light alert is suspected to be induced seismicity, immediately decrease the pressure of the fluids injected into the well with the goal of ending the injection of fluids into the well and consult with the Division to develop a plan for the future use of the well.

4. The owner of the geothermal resource or the operator shall:

(a) After commencing the stimulation of a geothermal well, monitor all seismic events in accordance with the Induced Seismicity Monitoring Plan and make available to the public on an Internet website maintained by the owner of the geothermal resource or the operator the depth and magnitude of all seismic events that exceed a magnitude of 2.5 that occur within the area of review for the geothermal well.

(b) Maintain all seismic monitoring systems within the area of review which are installed by the owner of the geothermal resource or the operator and identified in the Induced Seismicity Monitoring Plan pursuant to section 14 of this regulation. The owner or operator may not remove or replace such a seismic monitoring system unless he or she obtains the approval of the Administrator.

5. The owner of the geothermal resource or the operator may, 24 months after the termination of stimulation operations, submit to the Division a request to discontinue the monitoring required pursuant to subsection 4 on Form 4a (Sundry Notice and Report on

Stimulated Geothermal Wells). If a geothermal well for which monitoring has been discontinued pursuant to this subsection is restimulated, the provisions of subsection 4 apply to the owner of the geothermal resource or the operator, and the owner or operator must submit an additional request in accordance with the requirements of this subsection to discontinue the monitoring required by subsection 4.

6. If there is any discrepancy between the information obtained from the seismic monitoring systems described in paragraph (e) of subsection 1 of section 14 of this regulation and any seismic monitoring systems installed by the owner of the geothermal resource or the operator concerning the level of magnitude of a seismic event, the Division shall use the largest reading for the purposes of carrying out the provisions of this section.

7. An Induced Seismicity Monitoring Plan that has been approved by the Division may be modified if:

(a) The owner of the geothermal resource or the operator and the Administrator agree to any modification requested; and

(b) The owner of the geothermal resource or the operator submits a Form 4a (Sundry Notice and Report on Stimulated Geothermal Wells) to the Division which includes any modifications that have been agreed upon.

Sec. 14. *The owner of the geothermal resource or the operator shall include with the Induced Seismicity Monitoring Plan submitted pursuant to section 13 of this regulation:*

1. The following information:

(a) The conditions of the reservoir in the area of review;

(b) The geologic zones and formations and any other subsurface geological structures in the area of review;

- (c) The baseline seismic activity in the area of review and in any additional area determined by the Division to be necessary;*
- (d) The ranges for any seismic activity anticipated to occur within the project area, including any activity expected to meet the thresholds established for an amber light alert and red light alert;*
- (e) Any seismic monitoring systems that are active, available to the public and located within the area of review for the project area, including, without limitation, any seismic monitoring system listed on the Advanced National Seismic System published by the United States Geological Survey; and*
- (f) Any seismic monitoring systems which are owned by the owner of the geothermal resource or the operator or planned to be installed by the owner or operator and which have enough elements, sensitivity and aperture to capture the seismicity of a seismic event with a magnitude at least as small as 1.0 in the area of review.*

2. A model to forecast the seismicity in the area of review which must demonstrate that the seismic monitoring systems listed in paragraphs (e) and (f) of subsection 1 collect sufficiently accurate data to establish the baseline seismic activity, forecast seismic activity and identify any active faults that could be affected by stimulation or injection activities. The model and demonstration must, without limitation:

- (a) Include all seismic events within 50 miles of the project area captured by a seismic monitoring system identified in paragraph (e) or (f) of subsection 1 during the 5 years immediately preceding the date the plan is submitted;*
- (b) For the seismic events identified in paragraph (a), include the magnitude for each seismic event;*

(c) Estimate:

(1) The baseline hazard in the area of review from natural seismicity; and

(2) The potential hazard in the area of review from induced seismicity; and

(d) Create and characterize the risk of induced seismic events in the area of review.

3. Evidence of any agreements with the United States Geological Survey or a seismologic program at a local college or university for third-party monitoring.

4. Evidence of any agreements with a third party to make available to the public data captured by a seismic monitoring system.

Sec. 15. 1. *In addition to the requirements prescribed by NAC 534A.260 and 534A.270, the owner of the geothermal resource or the operator shall:*

(a) Except as otherwise provided in subsection 4, ensure that:

(1) The surface location of the geothermal well is at a lateral distance of not less than 300 feet away from any known perennial water source or existing water well; and

(2) The edge of the drilling pad is at a lateral distance of not less than 100 feet away from any known perennial water source or existing water well.

(b) For intermediate casing string installed directly below the surface casing in the geothermal well, install the intermediate casing string through the surface casing from the installed depth of the intermediate casing string to the surface of the ground.

(c) Before drilling out the casing shoe of the surface casing string or intermediate casing string, conduct a pressure test of the surface casing string or intermediate casing string in which the casing is pressurized, for a period of not less than 30 minutes, to 1,500 pounds or more per square inch gauge (psig) unless the Administrator approves an alternative pressure

which is sufficient to demonstrate the mechanical integrity of the casing for the design of the geothermal well and objectives for the construction of the geothermal well.

(d) Before commencing any activities that may subject a production casing string to elevated pressures, conduct a pressure test of the production casing string from the wellhead to a minimum of 200 feet above the true vertical depth of the top perforations of the casing in which the casing is pressurized, for a period of not less than 30 minutes, to the maximum level of surface pressure which the casing is anticipated to encounter during the proposed operation unless the Administrator approves an alternative pressure which is sufficient to demonstrate the mechanical integrity of the casing for the design of the geothermal well and objectives for construction.

(e) Install on the geothermal well a flow meter that is capable of monitoring the rate of flow of fluids injected into or produced from the well on a daily basis.

2. The owner of the geothermal resource or the operator shall:

(a) During any pressure test conducted pursuant to subsection 1, monitor any Bradenhead pressure.

(b) Submit to the Division within 48 hours after the conclusion of a pressure test conducted pursuant to subsection 1 the results of the pressure test.

3. If the results of a pressure test conducted pursuant to subsection 1 indicate:

(a) For a pressure test conducted on an intermediate casing string, a drop in pressure of 10 percent or more from the initial test pressure or a change by more than 5 percent of the Bradenhead pressure during the test; or

(b) For a test conducted on a surface casing string or a production casing string, a drop in pressure of 10 percent or more from the initial test pressure,

↳ the owner of the geothermal resource or the operator shall notify the Division of a failed pressure test and shall immediately cease operations at the geothermal well until the Administrator approves a remediation plan, the owner of the geothermal resource or the operator successfully implements the plan and the owner of the geothermal resource or the operator conducts a successful pressure test for the respective casing string.

4. The owner of the geothermal resource or the operator may submit a request to the Division for approval for an exception to the requirements set forth in paragraph (a) of subsection 1.

Sec. 16. 1. Notwithstanding any provision of sections 5 to 18, inclusive, of this regulation to the contrary, the owner of the geothermal resource or the operator of a geothermal well that was drilled and spudded before the effective date of this regulation may submit an application for permission to engage in stimulation of the geothermal well pursuant to NAC 534A.540. The application must include, without limitation:

(a) A cement evaluation log of the production casing string that has been conducted not less than 5 years immediately preceding the submission of the request;

(b) The results of a pressure test of the production casing string which meets the requirements set forth in paragraph (d) of subsection 1 of section 15 of this regulation; and

(c) Any other information required by the Division to stimulate a geothermal well pursuant to sections 5 to 18, inclusive, of this regulation.

2. If the results of a pressure test described in paragraph (b) of subsection 1 indicate a drop in pressure of 10 percent or more from the initial test pressure, the owner of the geothermal resource or the operator shall notify the Division of a failed pressure test and shall immediately cease operations at the geothermal well until the Administrator approves a

remediation plan, the owner of the geothermal resource or the operator successfully implements the plan and the owner of the geothermal resource or the operator conducts a successful pressure test for the production casing string.

3. Upon receipt of a request submitted pursuant to subsection 1, the Division shall evaluate the well design of each geothermal well which is the subject of the request and approve or disapprove the request.

Sec. 17. 1. An operator of a geothermal well shall:

(a) Not less than 14 days before the commencement of stimulation:

(1) Provide written notice of intent to stimulate the well to each owner of real property and any operator of an oil, gas or geothermal well located within the area of review of the geothermal well.

(2) Submit to the Division for approval an application for permission to engage in stimulation on Form 4a (Sundry Notice and Report on Stimulated Geothermal Wells) in accordance with the requirements of NAC 534A.540 and a report describing all specific aspects of the proposed stimulation. The report must identify each stage of the proposed stimulation, the total measured depth and true vertical depth below the surface of the ground for each stage, the duration of each stage, all intervals to be perforated in total measured depth and true vertical depth below the surface of the ground, the number and diameter of perforations per foot and the estimated hydraulic pressures to be used in the proposed stimulation.

(b) Maintain a record of the manner in which each owner of the geothermal resource and each operator were notified pursuant to subparagraph (1) of paragraph (a), including, without limitation, the method of notification.

(c) Before the commencement of stimulation of a geothermal well:

(1) Ensure that each chemical used in the process is identified on the Internet website maintained by the Division as a chemical which is approved by the Division for stimulation. Not less than 30 days before the commencement of stimulation, an operator may request, and the Division may approve, the use of a chemical that is not identified as an approved chemical if the operator submits the request to the Division on Form 4a (Sundry Notice and Report on Stimulated Geothermal Wells).

(2) Disclose to the Division each additive that the operator intends to use in the stimulation fluid, including, without limitation, any additive that may be protected as a trade secret. The operator shall include with the identity of each additive the trade name and vendor of the additive and a brief description of the intended use or function of the additive.

(d) Provide notice to the Division at least 48 hours in advance of the commencement of stimulation of the geothermal well.

2. The operator shall, during stimulation activities and for a period of 30 days after the termination of stimulation activities, ensure that the annulus of the geothermal well is accessible and monitor and record the annular space pressure and casing pressures for any geothermal well which is stimulated and any geothermal well within 300 feet of a geothermal well which is stimulated. The maximum hydraulic pressure to which a segment of casing is exposed must not exceed the burst-pressure rating of the casing, but the Division may require a lower maximum hydraulic pressure as the Division determines is necessary. The operator shall immediately stop the stimulation and notify the Division if any change in annular space pressure is observed. Not later than 90 days after the completion of the well, the operator shall

submit to the Division a final report documenting all recorded stimulation pressures for each stage of the stimulation.

3. The operator shall contain all liquids that are returned to the surface and discharged from the well bore at the conclusion of each stage of the stimulation operation. The operator shall contain the liquids in enclosed tanks or in the manner prescribed by the Division of Environmental Protection of the State Department of Conservation and Natural Resources pursuant to chapter 445A of NRS and chapter 445A of NAC.

4. The operator shall record all pressure and flow data recorded by the flow meter required by section 15 of this regulation and report such data to the Division on a monthly basis. The report must also include, without limitation, the average and maximum pressure rates of injection or production, as applicable, recorded at the geothermal well for the previous month and the use of any makeup water added to the geothermal well during the previous month. The operator shall maintain the records and reports required by this subsection for not less than 5 years and make the records and reports available to the Division upon request.

5. Except as otherwise provided in subsection 6 and not later than 30 days after the completion of the stimulation, the operator shall report, at a minimum, to the Internet website <https://www.fracfocus.org> for inclusion in FracFocus, or its successor registry:

(a) The name of the operator and the name and American Petroleum Institute number of the geothermal well;

(b) The date of stimulation, the county in which the well is located, any public land survey location information relevant to the location of the well and the global positioning system coordinates of the well;

(c) The true vertical depth of the well and the total volume of water used in the stimulation treatment of the well or, if the operator uses a base fluid other than water, the type and total volume of the base fluid used in the stimulation;

(d) The identity of each additive used in the stimulation fluid, including, without limitation, the trade name and vendor of the additive and a brief description of the intended use or function of the additive;

(e) The identity of each chemical intentionally added to the base fluid;

(f) The maximum concentration, measured in percent by mass, of each chemical intentionally added to the base fluid, if applicable; and

(g) The Chemical Abstracts Service Registry Number for each chemical intentionally added to the base fluid, if applicable.

6. The Division shall make available to the public for inspection any information, other than a trade secret or other proprietary information that is maintained confidentially pursuant to subsection 7, that is submitted by an operator pursuant to this section.

7. Proprietary information with respect to a trade secret does not constitute public information and is confidential. The disclosure of any proprietary information must be made in accordance with the requirements of this subsection and in a manner which preserves the status of the information as a trade secret. An operator may submit a request to the Division to protect from disclosure any information which, under generally accepted business practices, would be considered a trade secret or other confidential proprietary information of the business. The Administrator shall, after consulting with the operator, determine whether to protect the information from disclosure. If the Administrator determines to protect the information from disclosure, the protected information:

(a) Is confidential proprietary information of the operator;
(b) Is not a public record;
(c) Must be redacted by the Administrator from any report that is disclosed to the public;
and

(d) May only be disclosed or transmitted by the Division:
(1) To any officer, employee or authorized representative of this State or the United States:

(I) For the purposes of carrying out any duties pursuant to the provisions of this chapter or chapter 534A of NRS; or

(II) If the information is relevant in any judicial proceeding or adversary administrative proceeding under this chapter or chapter 534A of NRS or under the provisions of any federal law relating to geothermal wells or stimulation, and the information is admissible under the rules of evidence; or

(2) Upon receiving the consent of the operator.

8. As used in this section, “trade secret” has the meaning ascribed to it in NRS 600A.030.

Sec. 18. *1. The Administrator shall issue an order to the owner of a geothermal resource or the operator to immediately reduce the pressure of injection or production or cease operation of a geothermal well if the Administrator finds evidence that stimulation activities related to the geothermal well may pose an immediate danger to the health and safety of the public or may cause significant damage to property or the geothermal well receives a red light alert from a seismic event with an epicenter within the area review for the geothermal well.*

2. An order issued pursuant to subsection 1 must, without limitation:

(a) Be served personally upon or sent by certified mail to the last known mailing address of the owner of the geothermal resource or the operator; and

(b) Include the findings made pursuant to subsection 1.

3. Following receipt of an order issued pursuant to subsection 1, the owner of a geothermal resource or the operator shall:

(a) Schedule a meeting with the Division to be held in person at the office of the Division in Carson City, Nevada, or, if approved by the Division, by videoconference or other electronic means, which must be held not later than 30 days after receipt of the order, to discuss options to mitigate induced seismicity near the geothermal well;

(b) After scheduling the meeting pursuant to paragraph (a), confirm the meeting in writing with the Division; and

(c) Submit to the Division the data obtained in accordance with the Induced Seismicity Monitoring Plan pursuant to section 13 of this regulation for the 6 months immediately preceding the date the order was issued.

4. If, following the meeting, the owner of the geothermal resource or the operator and the Division enter into an agreement to mitigate induced seismicity near the geothermal well, the Division shall present the agreement to the Commission as a settlement of the order.

Sec. 19. NAC 534A.010 is hereby amended to read as follows:

534A.010 As used in this chapter, unless the context otherwise requires, the words and terms defined in NAC 534A.012 to 534A.085, inclusive, *and sections 2, 3 and 4 of this regulation*, have the meanings ascribed to them in those sections.

Sec. 20. NAC 534A.061 is hereby amended to read as follows:

534A.061 “Injection well” means any well used to ~~dispose of~~ *place* fluids ~~derived from geothermal resources~~ into ~~an underground reservoir~~ *a geothermal resource*.

Sec. 21. NAC 534A.180 is hereby amended to read as follows:

534A.180 1. Only the provisions of NAC 534A.170 to 534A.690, inclusive, *and sections 5 to 18, inclusive, of this regulation*, listed below apply to geothermal domestic wells:

- (a) NAC 534A.190;
- (b) NAC 534A.200;
- (c) NAC 534A.210;
- (d) NAC 534A.220;
- (e) Paragraphs (a) and (e) of subsection 1 of NAC 534A.260;
- (f) Subsections 1 and 2 of NAC 534A.270;
- (g) NAC 534A.280;
- (h) Subsection 3 of NAC 534A.330;
- (i) NAC 534A.420;
- (j) *NAC 534A.465*;
- (k)* NAC 534A.470;
- ~~[(k)]~~ *(l)* NAC 534A.490 (except subsection 9 of that section);
- ~~[(l)]~~ *(m)* NAC 534A.500;
- ~~[(m) NAC 534A.465;]~~
- (n) Subsections ~~[(5)]~~ *6, 7* and ~~[(6)]~~ *8* of NAC 534A.540;
- (o) NAC 534A.550;
- (p) NAC 534A.560; and
- (q) NAC 534A.590 to 534A.690, inclusive.

2. All provisions of NAC 534A.170 to 534A.690, inclusive, *and sections 5 to 18, inclusive, of this regulation*, apply to commercial wells except subsection 1 of NAC 534A.200.

3. Except as otherwise specifically provided in NAC 534A.170 to 534A.690, inclusive, *and sections 5 to 18, inclusive, of this regulation*, all of the provisions apply to industrial wells.

Sec. 22. NAC 534A.190 is hereby amended to read as follows:

534A.190 An application for a permit to drill or operate an individual geothermal well must be submitted to the Division on a form provided by the Administrator. Except as otherwise provided in NAC 534A.196, an application must:

1. Include a statement of the purpose and estimated depth , *locations of the top and bottom holes and well trace* of the well;
2. Include a description of the kind of casing, equipment for the prevention of a blowout and drilling rig which will be used;
3. Include the name of the owner of the land or designated lot on which the well will be located and the owner of the geothermal resource;
4. Include the name and address of the operator and drilling contractor;
5. Be accompanied by the bond required pursuant to NAC 534A.250;
6. Include a description of the location of the proposed well by the quarter-quarter section, section, township and range. For domestic and commercial wells a street address may be used, if available;
7. Include the global positioning coordinates of the location of the well which:
 - (a) Are identified by latitude and longitude using decimal degrees or coordinates of the Universal Transverse Mercator system; and
 - (b) Specify the datum used; and

8. Include the business identification number assigned to the operator by the Secretary of State.

Sec. 23. NAC 534A.193 is hereby amended to read as follows:

534A.193 An application for a permit to drill or operate geothermal wells in a project area must be submitted to the Division. Except as otherwise provided in NAC 534A.196, the application must:

1. Include a statement of the number, purpose and estimated depth , *locations of the top and bottom holes and well trace* of the proposed wells in the project area;
2. Include a description of the kind of casing, equipment for the prevention of a blowout and drilling rig which will be used;
3. Include the name of the owner of the land or designated lots on which the proposed wells will be located;
4. Include the name of the owner of the geothermal resource;
5. Include the name and address of the operator and drilling contractor;
6. Include a description and map of the project area by section, township and range; and
7. Be accompanied by the bond required by NAC 534A.250.

Sec. 24. NAC 534A.205 is hereby amended to read as follows:

534A.205 1. Except as otherwise provided in subsection ~~3~~ 2, the location of an individual geothermal well or the geothermal wells in a project area must be ~~surveyed~~ *certified* by a professional land surveyor who is licensed pursuant to chapter 625 of NRS.

2. ~~Except as otherwise provided in subsection 3, a certified plat of the location must be filed with the Division within 30 days after the completion of the construction of the well. The plat must:~~

- ~~—(a) Be of a standard size;~~
- ~~—(b) Show the location of any designated lots; and~~
- ~~—(c) Contain a description of the location of the proposed well:~~
 - ~~——(1) Within a 40-acre legal subdivision; or~~
 - ~~——(2) Which includes an accurate course and distance tied to an established corner of a section or quarter section and a full description of the corner to which the tie is made, together with all markings thereon.~~
- ~~—3.]~~ The provisions of this section do not apply to a thermal gradient well.

Sec. 25. NAC 534A.210 is hereby amended to read as follows:

534A.210 **1.** A person who files an application for a permit to drill or operate an individual geothermal well shall pay to the Commission a fee according to the following schedule:

INDUSTRIAL WELLS

Production Well.....	[\$500] \$1,000
Injection Well.....	[500] 1,000
Observation Well.....	[300] 600
Thermal Gradient Well.....	[100] 200

COMMERCIAL WELLS

Production Well.....	[200] 400
Injection Well.....	[200] 400

GEOTHERMAL DOMESTIC WELLS~~150~~ 100

2. In addition to any fee required pursuant to subsection 1, if a person files an application to drill or operate an individual geothermal well that is planned to be stimulated in accordance with sections 5 to 18, inclusive, of this regulation, the person shall pay to the Commission a fee of \$1,500 for the stimulation of the well.

Sec. 26. NAC 534A.212 is hereby amended to read as follows:

534A.212 1. Except as otherwise provided in subsection 2, a person who files an application for a permit to drill or operate geothermal wells in a project area shall pay to the Commission an application fee of ~~1500~~ \$1,000 and an additional fee per well according to the following schedule:

	First Well	Each Subsequent Well of the Same Type
Production Well	1500 \$1,000	300 \$600
Injection Well	500 1,000	300 600
Observation Well	300 600	150 400
Thermal Gradient Well	100 200	50 150

2. A person who files an application for a permit to drill or operate a thermal gradient well in a project area need not pay the application fee, but shall pay the applicable additional fees listed in subsection 1.

3. In addition to any fee required pursuant to subsection 1, if a person files an application for a permit to drill or operate geothermal wells in a project area that are planned to be stimulated in accordance with the provisions of sections 5 to 18, inclusive, of this regulation, the person shall pay to the Commission a fee of \$1,500 for the stimulation of the first geothermal well in the project area and \$900 for each subsequent geothermal well of the same type in the project area that is planned to be stimulated.

Sec. 27. NAC 534A.214 is hereby amended to read as follows:

534A.214 On or before January 31 of each year:

1. The owner of the geothermal resource or the operator of an industrial or commercial geothermal production well or geothermal injection well shall submit to the Division a fee of ~~[\$600]~~ **\$800** for each well which produced or was used to ~~dispose of~~ **place** fluids ~~derived from geothermal resources~~ into ~~an underground reservoir~~ **a geothermal resource** during the preceding calendar year. The provisions of this subsection do not apply to an industrial well which produced fluids during the preceding calendar year if no power was generated at the well and the production was only for the purpose of testing the well.

2. The owner or operator of a thermal gradient or an observation well shall submit to the Division a fee of ~~[\$100]~~ **\$200** for each such well unless the well has been abandoned and plugged.

Sec. 28. NAC 534A.216 is hereby amended to read as follows:

534A.216 Within 30 days after the completion of the construction of a geothermal well listed in this section and the removal of the drill rig from the location of the well, the person who holds a permit to drill or operate an individual geothermal well or a permit to drill or operate geothermal wells in a project area shall pay to the Division a fee based on the *total measured* depth of the well *in feet* according to the following schedule:

	300 to 1,000	1,001 to 5,000	{Over 5,000}	<i>Over 10,000</i>
	{Feet Deep}	{Feet Deep}	{Feet Deep}	<i>Total</i>
	<i>Total</i>	<i>Total</i>	<i>5,001 to</i>	<i>Measured</i>
	<i>Measured</i>	<i>Measured</i>	<i>10,000</i>	<i>Depth in Feet</i>
	<i>Depth in Feet</i>	<i>Depth in Feet</i>	<i>Total</i>	
			<i>Measured</i>	
			<i>Depth in Feet</i>	
INDUSTRIAL WELLS				
Production Well	{\$1,000}	{\$2,000}	{\$2,500}	<i>\$5,000</i>
	<i>\$1,500</i>	<i>\$3,000</i>	<i>\$3,750</i>	
Injection Well	{1,000} <i>1,500</i>	{2,000} <i>3,000</i>	{2,500} <i>3,750</i>	<i>5,000</i>
Observation Well	{300} <i>450</i>	{500} <i>750</i>	{2,500} <i>3,750</i>	<i>5,000</i>
COMMERCIAL WELL				
	{200} <i>400</i>	{200} <i>400</i>	{200} <i>400</i>	<i>N/A</i>

Sec. 29. NAC 534A.250 is hereby amended to read as follows:

534A.250 1. Except as otherwise provided in this section, the *owner of the geothermal resource or the* operator shall provide a sufficient bond in favor of the State of Nevada for each geothermal well, conditioned on the plugging of the well upon abandonment in accordance with NAC 534A.170 to 534A.690, inclusive ~~HH~~, *and sections 5 to 18, inclusive, of this regulation.*

The bond must be:

(a) In the sum of:

(1) For a thermal gradient well, not less than \$10,000; ~~and~~

(2) For a commercial or industrial well, not less than \$25,000 ~~HH~~; *and*

(3) For an individual geothermal well that is planned to be stimulated in accordance with the provisions of sections 5 to 18, inclusive, of this regulation, not less than \$50,000.

(b) Submitted with the application for a permit to drill or operate an individual geothermal well or an application for a permit to drill or operate geothermal wells in a project area.

2. ~~HH~~ *The owner of the geothermal resource or the* operator may file a blanket bond, in the sum of ~~HH~~:

(a) At least \$100,000, to cover all wells to be drilled or operated by the owner or operator in a project area for which the owner or operator has received a permit pursuant to NAC 534A.193 HH; or

(b) At least \$200,000, to cover all geothermal wells that are planned to be stimulated in accordance with the provisions of sections 5 to 18, inclusive, of this regulation in a project area for which the owner or operator has received a permit pursuant to NAC 534A.193 and submitted to the Division an application for permission to engage in stimulation on Form 4a (Sundry Notice and Report on Stimulated Geothermal Wells) pursuant to NAC 534A.540.

3. A bond must be:

- (a) In cash;
- (b) Issued by a surety authorized to do business in Nevada; or
- (c) In the form of a savings certificate or time certificate of deposit which is:
 - (1) Issued by a bank or savings and loan association operating in Nevada; and
 - (2) Payable to the State of Nevada.

4. ~~{Am}~~ *The owner of the geothermal resource or the* operator who has deposited a performance bond with the Federal Government for wells drilled on federal property shall submit evidence of that bond with the Division.

5. If ~~{am}~~ *the owner of the geothermal resource or the* operator transfers ownership of a well, the Division may review the bond filed pursuant to this section to determine whether the existing amount of the bond for the well is sufficient.

6. The bond required by this section must remain in effect until the well is properly abandoned, the surface is properly restored and the bond is formally released by the Division.

Sec. 30. NAC 534A.310 is hereby amended to read as follows:

534A.310 ~~{The}~~

1. Except as otherwise provided in subsection 2, the operator shall take two sets of cuttings at least every 30 feet. The cuttings and a split of any core must be:

~~{H-}~~ *(a)* Cleaned, dried, marked for location and depth and placed in envelopes; and

~~{Z-}~~ *(b)* Submitted to the Bureau of Mines and Geology of the State of Nevada within ~~{30}~~ 90 days after the well is completed.

2. If an operator drills more than one geothermal well within the same drill pad, the operator may submit an alternative plan to the Administrator for approval to take cuttings and a split of any core in a manner which deviates from the requirements of this section. The

Administrator may approve a request submitted pursuant to this subsection if he or she determines that the cuttings and split of any core submitted under the alternative plan will represent all the geothermal wells within the drill pad.

Sec. 31. NAC 534A.420 is hereby amended to read as follows:

534A.420 ~~{1.}~~ Unless the Administrator approves an alternative method of ~~{disposal,}~~ *placement*, all fluids ~~{derived from geothermal resources}~~ must be reinjected into the same ~~{reservoir}~~ *geothermal resource* from which the fluids were produced.

~~{2. For purposes of this section, “by-product” means any minerals which are found in solution or in association with geothermal resources and which because of quantity, quality or technical difficulties in extraction and production are of insufficient value to warrant extraction and production by themselves.}~~

Sec. 32. NAC 534A.465 is hereby amended to read as follows:

534A.465 1. If a well is inactive for 2 years or more, the Administrator may issue an order to the *owner of the geothermal resource or the* operator to show cause as to why the well should remain open and that such action is consistent with:

- (a) The policies specified in NRS 445A.305 and 445B.100;
- (b) The purposes of chapters 533 and 534 of NRS; and
- (c) The purposes specified in chapter 501 of NRS.

2. If the Administrator finds that good cause has not been shown, the Administrator may declare the well abandoned and order the well to be plugged.

3. The Administrator shall send written notice of the order to plug the well to the *owner of the geothermal resource or the* operator by registered or certified mail with return receipt requested.

4. If the *owner of the geothermal resource or the* operator fails to respond in writing within 45 days after the written notice is mailed pursuant to subsection 3 with a plan for plugging the well and:

(a) The well is bonded by a federal agency, the Administrator must notify the federal agency and coordinate with the federal agency to ensure that the well is plugged.

(b) The well is not bonded by a federal agency, the Administrator may, without further notice, take such steps necessary to plug the well. The costs of plugging the well, including labor and material, may be paid from the bond filed pursuant to NAC 534A.250. *The Administrator shall mail the owner of the geothermal resource or the operator an invoice for any costs of plugging the well which are not paid from the bond filed pursuant to NAC 534A.250, including, without limitation, the costs of labor and materials.* Any costs above the bond *set forth in the invoice which are not repaid to the Division* are a lien upon the land on which the well is located.

Sec. 33. NAC 534A.540 is hereby amended to read as follows:

534A.540 1. A person shall not engage in an activity listed in subsection 3 or 4 without the permission of the Division.

2. The owner of the geothermal resource or operator shall submit an application for permission to engage in an activity listed in subsection 3 , ~~4~~ *4 or 5* on Form 4 (Sundry Notices and Reports on Wells) ~~4~~ *or Form 4a (Sundry Notice and Report on Stimulated Geothermal Wells), as applicable.* Upon request, the Administrator may, as he or she deems appropriate in extraordinary circumstances, grant oral permission to engage in an activity listed in subsection 3 or 4. Oral permission to engage in an activity listed in subsection 3 or 4 does not relieve the

owner of the geothermal resource or operator of his or her obligation to submit an application pursuant to this section.

3. The fee is ~~¥\$300¥~~ *\$600* to file an application for permission to engage in any one of the following activities:

- (a) Increasing the depth of a well;
- (b) Testing of water shut-off;
- (c) Entering or opening a plugged well;
- (d) Shooting, acidizing or fracture treating ~~¥¥~~ *a geothermal well which is not planned to be stimulated;*
- (e) Drilling in a direction which is not intended to be vertical, including directional drilling;
- (f) Changing the construction of a well bore or well, including:
 - (1) Placing a plug in the well bore or well; and
 - (2) Recovering or altering the casing;
- (g) Conducting a major work over or cleaning of a well;
- (h) Making a minor modification to a permit that authorizes the stimulation of a geothermal well;* and
- ~~¥(h)¥~~ *(i)* Any other proposed activity for which the Division:

- (1) Conducts an extensive review;
- (2) Conducts a field inspection; or
- (3) Evaluates information or documentation regarding the construction of a well bore or well.

4. The fee is ~~¥\$100¥~~ *\$200* to file an application for permission to engage in any one of the following activities:

- (a) Extending a permit;
- (b) Changing the ownership of a well;
- (c) Changing the status of a well;
- (d) Changing the name of a well; *and*
- (e) Changing the location of a proposed well . ~~†~~ *and*

~~—(f) Abandoning and plugging a well.†~~

5. *In addition to any fee required by NAC 534A.210 or 534A.212, the fee is \$1,500 to file an application for permission to engage in any one of the following activities:*

(a) Stimulating a geothermal well, including, without limitation, a geothermal well that meets the requirements of section 16 of this regulation;

(b) Making a major modification to a permit that authorizes the stimulation of a geothermal well; and

(c) Restimulating a geothermal well which was previously issued a permit authorizing the stimulation of the well.

6. *The Division shall not collect a fee for an application for permission to abandon and plug a geothermal well submitted pursuant to NAC 534A.470.*

7. The owner of the geothermal resource or operator shall report to the Division any progress regarding or the completion of an activity for which permission was required pursuant to this section and any supplemental history of the well.

~~†6.†~~ 8. In the case of a geothermal domestic well, the owner of the geothermal resource or the operator shall:

(a) Not engage in an activity listed in paragraph (a) or (c) of subsection 3, subparagraph (1) of paragraph (f) of subsection 3 or ~~paragraph (f) of~~ subsection ~~44~~ 6 without the permission of the Division; and

(b) Submit to the Division an application for permission to engage in an activity listed in paragraph (a) or (c) of subsection 3, subparagraph (1) of paragraph (f) of subsection 3 or ~~paragraph (f) of~~ subsection ~~44~~ 6. The owner or operator shall file the application on Form 4 (Sundry Notices and Reports on Wells) *or Form 4a (Sundry Notice and Report on Stimulated Geothermal Wells)* and is not required to pay a fee to file.

~~47~~ 9. The Division may, as it deems appropriate, observe and release information which is not confidential regarding activities for which permission was required pursuant to this section.

Sec. 34. NAC 534A.550 is hereby amended to read as follows:

534A.550 1. Within 30 days after the completion of the construction of a well, the owner of the geothermal resource or the operator shall file with the Division:

(a) A report setting forth the manner in which the well was completed on a form designated by the Division;

(b) For a directionally drilled well, a directional survey ; ~~which must include, without limitation, a plat obtained by the method used to survey the well;~~

(c) A lithologic log, which must include the lithologic characteristics and depths of the formations, the depths and temperatures of water-bearing and steam-bearing strata and the temperatures, chemical compositions and other characteristics of fluids encountered during drilling; and

(d) The following well logs, if applicable:

Well Log Type	Industrial or Commercial Production Well	Industrial or Commercial Injection Well	Geothermal Domestic Well	Thermal Gradient Well
Gamma or similar log	Required	Required	Submit if run	Submit if run
Cement bond log	Submit if run	Submit if run	Submit if run	Submit if run
Temperature log	Required	Required	Required	Required
Other logs	Submit if run	Submit if run	Submit if run	Submit if run

2. Within 30 days after the well is plugged, the operator shall file with the Division a well plugging report on a form designated by the Division.

3. The ~~{survey and}~~ well logs filed pursuant to subsection 1 must include ~~{two paper copies, one}~~ *a clear and concise* digital copy *of all logs* and for any electric logs, one copy in LASer (LAS) file format ~~{}~~ *or other readily accessible format.*

4. The Division shall file one set of the well logs filed pursuant to subsection 1 with the Bureau of Mines and Geology of the State of Nevada.

Sec. 35. NAC 534A.555 is hereby amended to read as follows:

534A.555 The operator shall file with the Division:

1. On each day of drilling, a daily drilling log, which must include, without limitation, the results of any test of the equipment for the prevention of a blowout pursuant to NAC 534A.270 ~~{}~~ and *any stimulation pressures recorded pursuant to section 17 of this regulation.*

2. On or before the last day of each month, a monthly report for the preceding month on a form provided by the Division for any well that produces or injects for any part of the month and includes the following information, as applicable:

(a) For a production well, all geothermal production, sales, average temperatures and the consumptive use from commercial and industrial wells.

(b) For an injection well, the details of any well used to inject geothermal fluids into a reservoir, including, without limitation:

(1) The volume of geothermal fluid;

(2) If utilized, the volume of augmentation water; and

(3) The pressure and temperature of the injection fluid at the wellhead.

(c) For any non-reinjected fluid, the volume and temperature of any water that is not reinjected and the use of that fluid.

Sec. 36. NAC 534A.590 is hereby amended to read as follows:

534A.590 1. If the Administrator determines that a public hearing is necessary for a full understanding of an application for a permit to drill or operate a geothermal well, *an order to reduce the pressure of injection or production or cease operation of a geothermal well issued pursuant to section 18 of this regulation*, the rights involved with the application *or order* or to properly guard the public interest, the Administrator shall hold a hearing on the application ~~H~~ *or order*. The Administrator shall consult with the State Engineer to determine whether the hearing will be held jointly or separately.

2. The Administrator shall send notice of a hearing held pursuant to subsection 1 to the applicant ~~H~~ *or the owner of the geothermal resource or the operator, as applicable*, the State Engineer, the Administrator of the Division of Environmental Protection of the State Department

of Conservation and Natural Resources and all known parties at least 10 days before the date of the hearing. The notice of the hearing must include, without limitation, the subjects that will be addressed at the hearing.

3. ~~The applicant or any other~~ *Any* party to a hearing held pursuant to subsection 1 may request that additional issues be included by written motion filed with the Administrator at least 5 days before the date set for the hearing.

4. Upon the request of a party to a hearing held pursuant to subsection 1 and for good cause shown, the date of the hearing may be continued. A request for a continuance must be made at least 5 days before the date set for the hearing. Requests may be granted or denied at the discretion of the Administrator who may consult with the State Engineer on the issue.

5. The Administrator shall post a notice of a hearing held pursuant to subsection 1 on the Internet website of the Division and send notice of the hearing by electronic mail to any person who has requested notifications of such hearings at the time the notice of the hearing is issued.

Sec. 37. NAC 534A.630 is hereby amended to read as follows:

534A.630 1. A hearing held pursuant to NAC 534A.590 must be opened with a statement of the issues to be heard and by recognizing the parties to the hearing.

2. The applicant *or the owner of the geothermal resource or the operator, as applicable,* must be heard first at the hearing unless the Administrator finds good cause to hear from another party first.

3. Any party recognized by the Administrator must be heard in the order designated at the hearing.

4. A witness may be examined and cross-examined by not more than one representative of each party. The Administrator shall designate the order of the examination.

5. Before the close of the hearing:

(a) A party to the hearing is entitled to make closing arguments; and

(b) The Administrator may order or allow the presentation of briefs as determined by the Administrator after he or she consults with the parties.

6. After the hearing, the Administrator may issue a ruling in writing which sets forth a finding of facts and conclusions of law. A ruling of the Administrator pursuant to this section is a final decision for purposes of judicial review.