

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

LCB File No. R057-15

September 14, 2015

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

AUTHORITY: §§1, 2 and 4-7, NRS 534A.090; §§3 and 8, NRS 534A.080 and 534A.090.

A REGULATION relating to geothermal resources; requiring certain locations with geothermal resources to be surveyed by a professional land surveyor; revising the amount of annual fees required from the owner or operator of a geothermal resource or geothermal well; specifying the format for certain electronic logs; eliminating the requirement for an owner of a geothermal resource or operator of a producing domestic well to file certain reports with the Division of Minerals of the Commission on Mineral Resources; revising requirements for the abandonment of geothermal wells; revising the amount of fees required when submitting to the Division an application to engage in certain activities involving geothermal resources; 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. (NRS 534A.090)

Under existing law, the location of an individual geothermal well or the geothermal wells in a project area must be surveyed by a state water right surveyor. (NAC 534A.205) **Section 2** of this regulation changes that requirement so that such locations must be surveyed by a professional land surveyor.

Existing regulation requires the owner of a geothermal resource or the operator of a geothermal production well or geothermal injection well to submit to the Division of Minerals of the Commission an annual fee of \$475 for each well which produced or was used to dispose of fluids derived from geothermal resources into an underground reservoir during the previous year. (NAC 534A.214) **Section 3** of this regulation increases that fee to \$600 and provides that the fee must be paid only for industrial or commercial wells. The fee is not required for an industrial well if no power is generated at the well and any production by the well was only for the purpose of testing the well. **Section 3** also requires that the owner or operator of an observational well or a thermal gradient well must submit to the Division an annual fee of \$100 for each such well unless the well has been abandoned and plugged.

Section 4 of this regulation specifies the required format for copies of electronic logs that must be submitted to the Division by the operator of a geothermal well. (NAC 534A.350)

Section 5 of this regulation deletes provisions requiring annual filing with the Division of certain reports specifying the production and temperature of a geothermal resource or a producing domestic well, whether the geothermal resource or domestic well was in use during the preceding year and any other information required by the Division. (NAC 534A.410) **Section 1** of this regulation makes a conforming change.

Existing regulation specifies procedures that must be followed when a thermal gradient well or an observational well is abandoned. (NAC 534A.480) Under **section 6** of this regulation, those procedures will be required only for the abandonment of a thermal gradient well.

Existing regulation specifies procedures that must be followed when an injection well is abandoned. (NAC 534A.490) Under **section 7** of this regulation, those procedures also will be required for the abandonment of a production well or an observational well.

Existing regulation requires the owner or operator of a geothermal resource to pay a fee of either \$300 or \$100 when submitting to the Division an application to engage in various activities involving the well. (NAC 534A.540) **Section 8** of this regulation changes the fee for an application to abandon and plug a well from \$300 to \$100. **Section 8** also changes the fee for an application for any other proposed activity for which the Division conducts an extensive review from \$100 to \$300.

Section 1. NAC 534A.180 is hereby amended to read as follows:

534A.180 1. Only the provisions of NAC 534A.170 to 534A.690, inclusive, listed below apply to domestic geothermal wells:

- (a) NAC 534A.190;
- (b) NAC 534A.210;
- (c) NAC 534A.220;
- (d) Subsection 1 of NAC 534A.260;
- (e) Subsection 1 of NAC 534A.270;
- (f) NAC 534A.280;
- (g) NAC 534A.310;
- (h) Subsection 2 of NAC 534A.330;

(i) NAC 534A.340;

(j) ~~Subsection 2 of NAC 534A.410;~~

~~(k)~~ NAC 534A.470;

~~(l)~~ (k) NAC 534A.490 (except subsection 9);

~~(m)~~ (l) NAC 534A.500;

~~(n)~~ (m) Subsections 5 and 6 of NAC 534A.540;

~~(o)~~ (n) NAC 534A.550; and

~~(p)~~ (o) NAC 534A.590 to 534A.690, inclusive.

2. All provisions of NAC 534A.170 to 534A.690, inclusive, apply to commercial wells except:

(a) Paragraph (a) of subsection 1 of NAC 534A.200 (exemption applies to nonprofit organizations only);

(b) Subsections 2, 3 and 4 of NAC 534A.270;

(c) NAC 534A.300;

(d) NAC 534A.320; and

(e) Subsection 9 of NAC 534A.490.

3. Except as otherwise specifically provided in NAC 534A.170 to 534A.690, inclusive, all of the provisions apply to industrial wells.

Sec. 2. NAC 534A.205 is hereby amended to read as follows:

534A.205 1. Except as otherwise provided in subsection 3, the location of an individual geothermal well or the geothermal wells in a project area must be surveyed by a ~~state water right~~ *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. 3. NAC 534A.214 is hereby amended to read as follows:

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

1. The owner of the geothermal resource or the operator of ~~an~~ an industrial or commercial geothermal production well or geothermal injection well shall submit to the Division a fee of ~~\$475~~ \$600 for each well which produced or was used to dispose of fluids derived from geothermal resources into an underground reservoir 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 observational well shall submit to the Division a fee of \$100 for each such well unless the well has been abandoned and plugged.

Sec. 4. NAC 534A.350 is hereby amended to read as follows:

534A.350 1. The operator shall, within 60 days after the completion or cessation of drilling, file with the Division the electrical logs required to be kept. *The filing must include, without limitation, two printed copies, one digital copy and one copy in LASer (LAS) file format.*

2. The operator shall, within 60 days after the removal of the rig, file with the Division all required logs not already filed pursuant to subsection 1, the record of the core, the history of the well and the summary.

Sec. 5. NAC 534A.410 is hereby amended to read as follows:

534A.410 ~~111~~ The owner of a geothermal resource or the operator of a producing industrial or commercial well shall file, on a form provided by the Division, a monthly report of production and temperature on or before the last day of each month for the preceding month.

~~2. The owner of a geothermal resource or the operator of a producing domestic well shall file, on a form provided by the Division, a report of production and temperature on or before January 31 of the year immediately following the first full calendar year in which the geothermal resource or domestic well was in use. On or before January 31 of each year thereafter, the owner or operator shall file, on a form provided by the Division, a report which indicates whether the geothermal resource or domestic well was in use during the preceding year. The Division may require such additional information as the Administrator determines is necessary to carry out the provisions of chapter 534A of NRS.~~

Sec. 6. NAC 534A.480 is hereby amended to read as follows:

534A.480 For abandonment of a thermal gradient ~~for an observational~~ well, the following provisions apply:

1. If the well was drilled with air and no water was encountered, the hole must be backfilled with cuttings and a cement plug 50 feet long must be placed at the top of the well.

2. If the well was drilled with mud, the bore must be filled with mud, and a cement plug of 50 lineal feet must be placed at the top of the well.

3. The surface must be restored as near as practicable to its original condition.

Sec. 7. NAC 534A.490 is hereby amended to read as follows:

534A.490 For abandonment of a geothermal ~~for~~ *production*, injection *or observational* well, the following provisions apply:

1. Cement used to plug the well, except cement used for surface plugging, must be placed in the hole by pumping through drill pipe or tubing. The cement must consist of a mix which resists high temperatures.

2. Cement plugs must be placed in the uncased portion of wells to protect all subsurface resources. These plugs must extend a minimum of 100 lineal feet above the producing formations and 100 lineal feet below the producing formations or to the total depth drilled, whichever is less. Cement plugs must be placed to isolate formations and to protect the fluids in those formations from interzonal migration.

3. Where there is an open hole, a cement plug must be placed in the deepest casing string by:

(a) Placing a cement plug across the guide shoe extending a minimum of 100 lineal feet above and below the guide shoe, or to the total depth drilled, whichever is less; or

(b) Setting a cement retainer with effective control of back pressure approximately 100 lineal feet above the guide shoe, with at least 200 lineal feet of cement below, or to the total depth drilled, whichever is less, and 100 lineal feet of cement above the retainer.

4. If there is a loss of drilling fluids into the formation or such a loss is anticipated or if the well has been drilled with air or another gaseous substance, a permanent bridge plug must be set at the casing shoe and capped with a minimum of 200 lineal feet of cement.

5. A cement plug must be placed across perforations, extending 100 lineal feet below, or to the total depth drilled, whichever is less, and 100 lineal feet above the perforations. When a cement retainer is used to squeeze cement into or across the perforations, the retainer must be set a minimum of 100 lineal feet above the perforations. Where the casing contains perforations at or below debris or collapsed casing, which prevents cleaning, a cement retainer must be set at least 100 lineal feet above that point, and cement must be squeezed in the interval below the retainer.

6. The approval of the Administrator must be obtained before casing is cut and recovered. A cement plug must be placed in such a manner as to isolate all uncased intervals and guide shoes that are not protected by an inner string of casing. The plug must extend a minimum of 50 feet above and below any such interval or guide shoe.

7. All annular spaces extending to the surface must be plugged with cement.

8. The innermost string of casing which reaches ground level must be cemented to a minimum depth of 50 feet below the top of the casing.

9. The hardness and location of cement plugs placed across perforated intervals and at the top of uncased or open holes must be verified by setting down with tubing or drill pipe a minimum weight of 15,000 pounds on the plug or, if less than 15,000 pounds, the maximum weight of the available tubing or drill pipe string. If a cement retainer or bridge plug is used to set the bottom plug, a test is not required for that interval.

10. The surface must be restored as near as practicable to its original condition.

11. Any interval that is not filled with cement must be filled with good quality, heavy drilling fluids.

Sec. 8. 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 or 4 on Form 4 (Sundry Notices and Reports on Wells). 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 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;
- (e) ~~Abandoning and plugging a well;~~
- ~~(f)~~ Drilling in a direction which is not intended to be vertical, including directional drilling;
- ~~(g)~~ ~~(f)~~ Changing the construction of a hole or well, including:
 - (1) Placing a plug in the hole or well; and
 - (2) Recovering or altering the casing;

~~1(h)~~ (g) Conducting a major work over or cleaning of a well; and

~~1(i)~~ (h) Any other proposed activity for which the Division:

(1) *Conducts an extensive review;*

(2) Conducts a field inspection; or

~~1(2)~~ (3) Evaluates information or documentation regarding the construction of a hole or well.

4. The fee is \$100 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;

(e) Changing the location of a proposed well; and

(f) ~~Any other proposed activity for which the Division conducts an extensive review.~~

Abandoning and plugging a well.

5. 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. In the case of a domestic well, the owner of the geothermal resource or the operator shall:

(a) Not engage in an activity listed in paragraph (a) ~~1(j)~~ or (c) ~~1(e) or 1(f)~~ of subsection 3, subparagraph (1) of paragraph ~~1(g)~~ (f) of subsection 3 *or paragraph (f) of subsection 4* 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) ~~H~~ *or* (c) ~~for (e) or~~ *of subsection 3*, subparagraph (1) of paragraph ~~(g)~~ *(f)* of subsection 3 ~~H~~ *or paragraph (f) of subsection 4*. The owner or operator shall file the application on Form 4 (Sundry Notices and Reports on Wells) and is not required to pay a fee to file.

7. 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.