

**1300 Series**  
**Deep Geothermal Operations**

**1301. GENERAL PROVISIONS**

- a. Deep Geothermal Operators are subject to the provisions of Rules 201-204, 205.a.-c. (1), 205.c.(4), 206.a, 206.b.(1)-(2), 206.b.(5)-(6), 206.c-f, 207, 208, 209.a-b, 210-213, 216, 218, and 221-223.
- b. As to Rule 211 applications by Relevant Local Governments and Surface Owners, those provisions of Rule 1320.c. will apply.
- c. The provisions for Rule 215 apply to Local Governments in the context of Deep Geothermal Operations.
- d. Except for the requirement for consultation with tribal governments set forth in Rule 1304.k., these 1300 Series Rules do not apply to:
  - (1) Indian Lands; or
  - (2) The Southern Ute Indian Tribe or any tribally controlled entities conducting Deep Geothermal Operations on lands within the exterior boundaries of the Southern Ute Indian Reservation.
- e. Nothing in this 1300 Series is intended to establish the jurisdiction of either the Commission or the Southern Ute Indian Tribe over nontributary groundwater within the boundaries of the Southern Ute Indian Reservation as confirmed in Public Law No. 98-290, § 3.98 Stat. 201 (1984).

**1302. GENERAL REQUIREMENTS FOR APPROVAL, CHANGES TO OPERATIONS, AND FILING FEES FOR DEEP GEOTHERMAL OPERATIONS**

- a. **Approval.** All Deep Geothermal Operations governed by any regulation in this Series require written approval of the Director or Commission. The Director or Commission will approve Deep Geothermal Operations only if they protect and minimize adverse impacts to public health, safety, welfare, the environment, and wildlife resources, and avoid, minimize, and mitigate adverse impacts to Disproportionately Impacted Communities. Deep Geothermal Operators will obtain the approval of the Director or Commission through the procedures set forth in the Commission Rules. The Director or Commission may require any conditions of approval that are determined to be necessary and reasonable to protect and minimize adverse impacts to public health, safety, welfare, the environment, and wildlife resources, or avoid, minimize, and mitigate adverse impacts to Disproportionately Impacted Communities. When providing a Director's Recommendation for permit applications pursuant to this 1300 Series, the Director may add conditions of approval that are necessary and reasonable to protect public health, safety, and welfare, including the protection of the environment and wildlife resources.
- b. **Denial.** The Director or Commission may deny a permit application for Deep Geothermal Operations if it does not comply with the Commission's Rules or the Geothermal Act.
- c. **Changes to Approved Permits for Deep Geothermal Operations.**
  - (1) Operators will file any proposed change to an approved permit for Deep Geothermal Operations with the Director in writing through a Form 4, Sundry Notice. The Director will review and approve or deny the proposed change, unless the Director determines that the proposed change is significant and requires Commission approval.

- A. When submitting a Form 4 pursuant to this Rule 1302.c.(1) proposing changes to a Deep Geothermal Location, the Operator will provide notice and a copy of the Form 4 to the Relevant and Proximate Local Government within two business days of submitting the Form 4 to the Commission.
  - (2) The Operator will not begin work until the Director or Commission provides written approval.
  - (3) The Director or Commission will only approve changes that comply with the Geothermal Act and the Commission's Rules.
- d. **Filing Fees.** Operators will pay filing fees at the time of applying for a permit for Deep Geothermal Operations, a Form 2G, Location Assessment; a Form 2, Application for Permit-to-Drill; or a Geothermal Resource Unit (see Appendix III). Geothermal Science Wells will be exempt from paying the filing fee. When an Operator applies to Convert a Location or Wellbore, all fees applicable to a permit for Deep Geothermal Operations will be assessed when the Operator files the application.
- e. The Director or Commission may request any information necessary and reasonable to make a final determination of approval or denial on any permit application before the Commission. In such information requests, the Director or Commission will provide the reason(s) for the request and a reasonable timeframe for the applicant to provide the information.
- f. **Coordination with Local Governments and Federal Agencies.**
  - (1) **Purpose.** The Commission, Local Governments, and federal surface management agencies each have authority to require permits for the surface impacts of Deep Geothermal Operations. Recognizing that each permitting authority brings its own, unique expertise in reviewing a permit, the Commission supports creating coordinated, efficient processes among the permitting authorities.
  - (2) **Concurrent Permitting.** Where possible, the Commission prefers Operators to follow the concurrent permit review process described in Rule 303.a.(6). A. to allow each permitting authority to coordinate sharing its unique expertise and standards.
  - (3) **Sequential Permitting.** An Operator may pursue a permit from the federal government or a Relevant Local Government before or after applying for a permit for Deep Geothermal Operations pursuant to Rule 303.a.(6). B.

### 1303. LOCAL GOVERNMENTS

- a. Nothing in the Commission's Rules constrains the legal authority conferred to Local Governments by §§ 24-65.1-101 et seq., 29-20-104, 30-15-401, 37-90.5-106(2)(b)(I), C.R.S., or any other statute, to regulate surface Deep Geothermal Operations in a manner that is more protective or stricter than the Commission's Rules.
- b. **Local Government Siting Information.** With their permit application for Deep Geothermal Operations or Geothermal Resource Unit, Operators will submit to the Director certification that:
  - (1) The Relevant Local Government does not regulate the siting of Deep Geothermal Locations;
  - (2) The Relevant Local Government regulates the siting of Deep Geothermal Locations, and has denied the siting of the proposed Deep Geothermal Location;

- (3) The Relevant Local Government regulates the siting of Deep Geothermal Locations, and has approved the siting of the proposed Deep Geothermal Location; or
- (4) The Relevant Local Government regulates the siting of Deep Geothermal Locations, but has not made a decision on the siting of the proposed Deep Geothermal Location.

**c. Director's Review of Local Government Siting Information.**

- (1) For proposed Deep Geothermal Locations listed in Rule 1303.b.(1) and (4), the Director will conduct a siting review pursuant to the Commission's 1300 Series Rules.
- (2) For proposed Deep Geothermal Locations listed in Rule 1303.b.(2), ECMC will not approve the proposed Deep Geothermal Location without a hearing before the Commission, and the applicant will file an application for hearing pursuant to Rule 503.g.(10).
- (3) For proposed Deep Geothermal Locations listed in Rule 1303.b.(3), the Director will consider the Relevant Local Government's siting disposition, but still require a Form 2G to assess the proposed Deep Geothermal Location pursuant to these Rules.

- d.** With their permit application for Deep Geothermal Operations, Operators will state whether the proposed Deep Geothermal Location is subject to the requirements of § 24-65.1-108, C.R.S., because it is located in an area designated as one of state interest.

**e. Local Government Waiving Authority.**

- (1) At any time, a Local Government may, by providing written notice to the Director on a Form 29, Local Government Information, and any relevant Operators:
  - A.** Waive its right to receive notice under any or all of the Commission's Rules; or
  - B.** Certify that it chooses not to regulate the siting of Deep Geothermal Locations.
- (2) The Commission will maintain a list of Local Governments that have certified to the Director that they have chosen not to regulate the siting of Deep Geothermal Locations, or receive any category of notice otherwise required by the Commission's Rules. This list will be posted on the Commission's website.
- (3) A Local Government may withdraw a waiver or certification at any time by providing written notice to an Operator and the Director on a Form 29. Upon receiving such notice, the Director will immediately remove the Local Government from the Rule 1303.e.(2) list on the Commission's website.

- f. Local Government Consultation.** Prior to filing its permit application for Deep Geothermal Operations, the Deep Geothermal Operator will request a pre-application consultation between the Commission's planning and permitting staff and the Relevant and Proximate Local Government. The Director or Operator will promptly schedule a Formal Consultation Process meeting. Nothing in this Rule 1303.f precludes a Relevant or Proximate Local Government from providing comments on a permit application for Deep Geothermal Operations during the Rule 1305.d.(1) public comment period. Topics for Formal Consultation Process meeting will include, but not be limited to:

- (1) The location of access roads, Production Facilities, and Wells;

- (2) Necessary and reasonable measures to avoid, minimize, and mitigate adverse impacts to public health, safety, welfare, the environment, or wildlife resources;
- (3) Necessary and reasonable measures to avoid, minimize, and mitigate adverse impacts to Disproportionately Impacted Communities, and;
- (4) Any discussions the Relevant or Proximate Local Government had with its residents and any Conditions of Approval requested by the Local Government.

#### 1304. CONSULTATION

- a. Prior to filing its permit application for Deep Geothermal Operations, the Deep Geothermal Operator will request a pre-application consultation between the Commission's planning and permitting staff, those people or entities required to be consulted pursuant to Rules 1303 and 1304, and the Deep Geothermal Operator to discuss the siting, scope, and timing of the proposed Deep Geothermal Operations in addition to those topics specifically addressed in Rule 1304.b.- I.
- b. **Surface Owners.** The Operator and Director will consult in good faith with the Surface Owner or the Surface Owner's appointed agent about the location of all surface disturbances, and in preparation for Reclamation and abandonment. The Surface Owner or appointed agent may submit relevant comments to the Director about any permit application for Deep Geothermal Operations.
  - (1) **Information Provided by Operator.** When consulting with the Surface Owner or appointed agent, the Operator will furnish, in writing:
    - A. All the information required for a complete permit application for Deep Geothermal Operations;
    - B. The expected date of commencement of operations;
    - C. Topsoil management practices to be employed; and
    - D. The location of associated roads, Production Facilities, infrastructure, and any other areas to be used for Deep Geothermal Operations.
  - (2) **Waiver.** The Surface Owner or the Surface Owner's appointed agent may waive, permanently or otherwise, their right to consult with the Operator at any time. Such waiver will be in writing and signed by the Surface Owner.
- c. **Building Unit Owners and Tenants.** An Operator and Director will be available to meet for a Formal Consultation Process with residents (including owners and tenants) of Building Units located within 2,000 feet of the proposed Deep Geothermal Location. Building Unit Owners, their agents, their tenants, or a Relevant or Proximate Local Government may request such a meeting.
  - (1) **Information Provided by Operator.** When meeting with Building Unit owners or their appointed agent(s) or tenants, the Operator will provide the following information:
    - A. The date construction is anticipated to begin;
    - B. The anticipated duration of pad construction, drilling, and completion activities;
    - C. The types of equipment anticipated to be present on the proposed Deep Geothermal Location;

- D. The Operator's interim and final Reclamation obligation;
- E. A description and diagram of the proposed Deep Geothermal Location that includes the dimensions of the proposed Deep Geothermal Location and the anticipated layout of production or injection facilities, Pipelines, roads, and any other areas to be used for Deep Geothermal Operations;
- F. Information relevant to potential health, safety, welfare, and environmental impacts associated with Deep Geothermal Operations, including but not limited to security, noise, light, odors, dust, and traffic; and
- G. Information about proposed Best Management Practices or mitigation measures to avoid, minimize, or mitigate those impacts.

(2) **Waiver.** The Building Unit owner, agent, or tenant may waive, permanently or otherwise, their respective right to receive notice pursuant to the Commission's Rules. Any such waiver will be in writing, signed by the owner, their agent, or tenant.

(3) The Operator and the Director will consider all concerns related to public health, safety, and welfare, including protection of the environment and wildlife resources, raised by Building Unit owners, their agents, or tenants during the Formal Consultation Process, including concerns raised during informational meetings or in written comments. The Operator will provide a written response to all such concerns to the Director as an attachment to the Form 2G prior to the Director or Commission making a decision on the application pursuant to Rule 1305.

(4) All information provided pursuant to this Rule 1304.c will also be provided in all languages spoken by 5% or more of the population in the census block group(s) within 2,000 feet of each proposed Deep Geothermal Location.

d. **Schools, Child Care Centers, and School Governing Bodies.**

(1) The Operator will provide a pre-application notice of intent to conduct Deep Geothermal Operations to any relevant School, Child Care Center, and School Governing Body within 2,000 feet as measured from the Deep Geothermal Location to:

- A. The property line of a parcel currently owned by the School, Child Care Center, or School Governing Body as identified through county assessor records;
- B. The property line of a parcel considered a Future School Facility as identified on the final approved plat that may be obtained from the planning department of the Local Government; or
- C. What reasonably appears to be a School Facility (regardless of property ownership) based on the Operator's review of current aerial maps that show surface development or surveys of the area.

(2) The Notice will include:

- A. The Operator's contact information;
- B. The location and general description of the proposed Deep Geothermal Location, including the cultural distances table as required under Rule 1305.b.(3). B., and drawings, maps, and figures required under Rule 1305.b.(3).C. - O.

- C. Contact information of Relevant Local Government;
- D. Contact information of state agencies entitled to pre-application consultation pursuant to this Rule 1304, including any community liaisons or community engagement specialists affiliated with such agencies or ECMC;
- E. The anticipated date that construction will begin and the expected schedule of drilling and completion activities;
- F. A description of the status of the Relevant Local Government's siting disposition, if applicable;
- G. Notice that the School Governing Body for the School Facility or Child Care Center may request a consultation to discuss the proposed operations by contacting the Operator, and that the Director may be invited to any meeting; and
- H. Notice that the School, Child Care Center, or School Governing Body may submit comments regarding the proposed Deep Geothermal Location to the Commission as part of the Rule 1305.d.(1) public comment period.

**e. Colorado Parks and Wildlife.**

- (1) **The Purpose of Consultation.** The purpose of consultation with CPW is to provide the Director the information necessary to determine whether an application protects Wildlife Resources and whether conditions of approval are necessary to Avoid, Minimize, or Mitigate Adverse Impacts to Wildlife Resources associated with High Priority Habitats, and protect against adverse impacts to Wildlife Resources resulting from Deep Geothermal Operations. Factors that CPW may take into consideration during consultation include, but are not limited to, the following:
  - A. Anticipated adverse impacts of the proposed Deep Geothermal Operations on Wildlife Resources;
  - B. The extent to which the proposed siting of facilities Avoids or Minimizes Adverse Impacts;
  - C. The extent to which the proposed Deep Geothermal Operations incorporate the use of existing facilities, roads, and Pipeline corridors and limit new surface disturbance and habitat fragmentation;
  - D. The extent to which the proposed Deep Geothermal Operations use technology and Best Management Practices which are protective of Wildlife Resources, including but not limited to seasonal construction and drilling limitations, noise limitations, remote operations, equipment disinfection, and transporting and storing liquids through Pipelines and large Tanks or other measures to reduce traffic volumes;
  - E. The extent to which the proposed Deep Geothermal Operations are within land used or designated to be used for residential, industrial, commercial, agricultural, or other purposes, and the existing wildlife disturbance associated with such use; and

- F. The extent to which the proposed Deep Geothermal Operations occur on federal or private lands for which the use and access of the lands in question may already be incorporated into a federal planning document, or the private Surface Owner designates the use of the land based on the function and utility of multiple use designations.

(2) **When Consultation Must Occur.** The Operator will consult with CPW about a permit application for Deep Geothermal Operations or other matter where:

- A. A proposed Deep Geothermal Location or associated new access road, utility, or Pipeline corridor falls within High Priority Habitat, a State Park, or a State Wildlife Area;
- B. A proposed Deep Geothermal Location or associated new access road, utility, or Pipeline corridor falls within federally designated critical habitat or an area with a known occurrence for a federal or Colorado threatened or endangered species;
- C. A proposed Deep Geothermal Location or associated new access road, utility, or Pipeline corridor falls within an existing conservation easement established wholly or partly for wildlife habitat;
- D. CPW requests consultation or because consultation is necessary to Avoid, Minimize, or Mitigate reasonably foreseeable Adverse Impacts to Wildlife Resources from a proposed Deep Geothermal Location or other matter where consultation is not otherwise required;
- E. The Operator seeks a variance pursuant to Rule 502 from a provision in the Commission's 1200 Series Rules, or from wildlife-specific conditions of approval or Best Management Practices approved on a Form 2G; or
- F. The Director determines that consultation would assist the Director in determining whether to recommend approving or denying a permit application for Deep Geothermal Operations.
- G. Notwithstanding the foregoing, the requirement to consult with CPW may be waived by CPW at any time. Any waiver will be based on a written finding by CPW that consultation is not necessary to protect Wildlife Resources from quantifiable adverse impacts from Deep Geothermal Operations.

(3) **When Consultation is Not Required.** Consultation will not be required if:

- A. The Director has previously approved a Form 2G and associated Wildlife Protection Plan or Wildlife Mitigation Plan that addresses the proposed Deep Geothermal Location, the proposed operations are in compliance with previously approved plans, and the associated High Priority Habitat maps under which the Director previously approved the Wildlife Protection Plan or Wildlife Mitigation Plan have not changed.
- B. CPW has previously approved, in writing, a Wildlife Protection Plan, Wildlife Mitigation Plan, or other conservation plan that remains in effect for the area that includes the proposed Deep Geothermal Operations, the Deep Geothermal Location is in compliance with such plan, and the associated High Priority Habitat maps under which CPW previously approved the Wildlife Protection Plan, Wildlife Mitigation Plan, or other conservation plan have not changed.

- C. The Operator demonstrates and CPW agrees in writing that:
  - i. The identified habitat and species triggering the consultation is no longer present and unlikely to return to the area; or
  - ii. The proposed Deep Geothermal Location is within an area either primarily or completely developed for residential, agricultural, commercial, or industrial use that makes the area incompatible with wildlife habitat.
- D. The proposed new Deep Geothermal Location would involve a one-time increase in surface disturbance of 1 acre or less contiguous with an existing Deep Geothermal Location with a Wildlife Mitigation Plan or other conservation plan that remains in effect for the area.
- E. A Commission Order limits the density of Deep Geothermal Locations within a Geothermal Resource Unit to 1 per section, and the Order includes a Wildlife Mitigation Plan or other conservation plan that remains in effect for the area.

**(4) Procedures for Consultation.**

- A. The Operator will provide:
  - i. The permit application for Deep Geothermal Operations, if applicable, or for consultations that do not involve a permit application for Deep Geothermal Operations, a description of the proposed Deep Geothermal Operations, including their location, and the phasing and duration of operations; and
  - ii. Any other relevant available information about the proposed Deep Geothermal Operations and the affected Wildlife Resources, including the wildlife habitat drawing pursuant to Rule 1305.b.(3). H. and information required by Rule 1201.
- B. If the Operator has made no reasonable accommodation for consultation, the Director will have discretion to postpone making a decision about a permit application for Deep Geothermal Operations to allow consultation to occur if the Director believes the information from consultation is necessary to determine how to protect and Avoid, Mitigate, and Minimize Adverse Impacts to Wildlife Resources.
- C. The Surface Owner may waive their right to participate in the consultation and is not obligated to provide access to its surface for such consultation. If access to the surface is not granted, the Operator will arrange a consultation meeting with CPW at a mutually agreeable time and location and the consultation will be based on best available data.

**(5) Result of Consultation.**

- A. As a result of consultation required by this Rule 1304.e., CPW may make written recommendations to the Director about how to protect Wildlife Resources and conditions of approval that are necessary and reasonable to Avoid, Minimize, or Mitigate direct, indirect, and cumulative Adverse Impacts to Wildlife Resources from Deep Geothermal Operations pursuant to Rules 1202 & 1203.

- B.** CPW may also recommend, in writing, that the Commission deny a permit application for Deep Geothermal Operations, Wildlife Protection Plan, Wildlife Mitigation Plan, or Compensatory Mitigation Plan due to reasonably foreseeable risks or Adverse Impacts to Wildlife Resources that cannot be Avoided, Minimized, or Mitigated to the extent necessary to protect these resources from Deep Geothermal Operations.
- C.** Except for Rule 1202.c, CPW may waive, in writing, any operating or mitigation requirements otherwise required by Rules 1202 or 1203 based on CPW's analysis of potential Unavoidable Adverse Impacts.
- D. For Rule 1202.c:**

  - i.** CPW may waive the application of and the Director may grant an exception to Rule 1202.c.(1). R for any new ground disturbance that meets the criteria of Rule 1202.c between 300 feet and 500 feet from the Ordinary High Water Mark ("OHWM") of cutthroat trout designated crucial habitat, and native fish and other native aquatic species conservation waters, if the Operator adheres to the following Best Management Practices:

    - aa.** Contain Flowback and Stimulation Fluids in Tanks that are placed on a Deep Geothermal Location in an area with downgradient perimeter berming;
    - bb.** Construct lined berms or other lined containment devices pursuant to Rule 603.o. around any new crude oil, condensate, and produced water storage Tanks that are installed after January 15, 2021;
    - cc.** Inspect the Deep Geothermal Location on a daily basis, unless the approved Form 2G provides for different inspection frequency or alternative method of compliance;
    - dd.** Maintain adequate Spill response equipment at the Deep Geothermal Location during drilling and completion operations; and
    - ee.** Not construct or utilize any Pits, except that Operators may continue to utilize existing Pits that were properly permitted, constructed, operated, and maintained in compliance prior to January 15, 2021.
  - ii.** CPW may waive the application of and the Director may grant an exception to Rule 1202.c.(1). S:

    - aa.** For perennial streams, if the Operator adheres to the following Best Management Practices for any new ground disturbance that meets the criteria of Rule 1202.c between 300 feet and 500 feet from the OHWM of sportfish management waters:

      - 1.** Contain Flowback and Stimulation Fluids in Tanks that are placed on a Deep Geothermal Location in an area with downgradient perimeter berming;

2. Construct lined berms or other lined containment devices pursuant to Rule 603.o. around any new crude oil, condensate, and produced water storage Tanks that are installed after January 15, 2021;
3. Inspect the Deep Geothermal Location on a daily basis, unless the approved Form 2G provides for different inspection frequency or alternative method of compliance;
4. Maintain adequate Spill response equipment at the Deep Geothermal Location during drilling and completion operations; and
5. Not construct or utilize any Pits, except that Operators may continue to utilize existing Pits that were properly permitted, constructed, operated, and maintained in compliance prior to January 15, 2021.

**bb.** For ephemeral and intermittent streams, if the Operator adheres to the following Best Management Practices:

1. Contain Flowback and Stimulation Fluids in Tanks that are placed on a Deep Geothermal Location in an area with downgradient perimeter berming;
2. Construct lined berms or other lined containment devices pursuant to Rule 603.o around any new crude oil, condensate, and produced water storage Tanks that are installed after January 15, 2021;
3. Inspect the Deep Geothermal Location on a daily basis, unless the approved Form 2G provides for different inspection frequency or alternative method of compliance;
4. Maintain adequate Spill response equipment at the Deep Geothermal Location during drilling and completion operations; and
5. Not construct or utilize any Pits, except that Operators may continue to utilize existing Pits that were properly permitted, constructed, operated, and maintained in compliance prior to January 15, 2021.

**iii.** CPW may waive the application of Rule 1202.c.(1). T.

**E.** Where applicable, CPW may also make written recommendations on whether a variance request pursuant to Rule 502 should be granted, under what conditions, and the reasons for any such recommendations, including requests for variances from Rule 1202.c.(1). Q–S. The Commission will consider the written recommendations of CPW and the relevant federal land management agency, if applicable, including recommended or final federal stipulations and conditions of approval.

**(6) Conditions of Approval.**

- A.** If the Director agrees that the conditions of approval or denial as recommended by CPW are necessary and reasonable to Avoid, Minimize, or Mitigate Adverse Impacts to Wildlife Resources, the Director will incorporate CPW's recommended conditions into the Director's approval on approved Form 2G.
- B.** The Director will not incorporate conditions of approval to Avoid, Minimize, or Mitigate Adverse Impacts to Wildlife Resources into the Director's approval without consent of the affected Surface Owner, unless the Director finds such conditions of approval reasonably necessary to effectuate the Commission's mission. This provision does not apply to conditions of approval to Avoid, Minimize, or Mitigate Adverse Impacts to Wildlife Resources that do not directly impact the affected Surface Owner's property or use of that property including, but not limited to, off-site compensatory mitigation requirements.
- C.** If the Director determines that any conditions of approval or denial as recommended by CPW are not necessary to Avoid, Minimize, or Mitigate Adverse Impacts to Wildlife Resources, the permit application for Deep Geothermal Operations will be subject to Commission review pursuant to Rule 503.g.(10).
- D.** The Commission will determine whether to follow CPW's recommendation when making a final decision to approve or deny a permit application for Deep Geothermal Operations.

**(7) Notification of Decision to Consulting Agency.** Where consultation occurs, the Director will provide the Director's approval or denial to CPW on the same day that the Director or Commission issues such approval or denial.

**f. Consultation with CDPHE.**

**(1) When Consultation Will Occur.**

- A.** The Operator and Director will consult with CDPHE if:
  - i.** A Relevant or Proximate Local Government requests the participation of CDPHE in the Director's consideration of a permit application for Deep Geothermal Operations based on concerns regarding public health, safety, welfare, or impacts to the environment; or
  - ii.** An Operator requests a variance from the Commission pursuant to Rule 502 from a provision of Rules 1305, 408.e, 411, 426, 427, 615, 801, 802, 803.g, 803.h, 806.c, or the Commission's 900 Series Rules as part of a permit application for Deep Geothermal Operations or UIC Aquifer exemption application.
- B.** The Director may request consultation about any permit application for Deep Geothermal Operations if the Director reasonably believes that consultation with the CDPHE would assist the Director in understanding the potential risks to public health, safety, and welfare, including protection of the environment and wildlife resources.
- C.** The Director will consult with CDPHE if CDPHE requests consultation.

- D. Notwithstanding the foregoing, the requirement to consult with CDPHE may be waived by CDPHE at any time.

**(2) Procedure for Consultation.**

- A. The consultation required by this Rule 1304.f will focus on identifying potential impacts to public health, safety, welfare, or the environment from activities associated with the permit application for Deep Geothermal Operations, and development of conditions of approval or other measures to avoid, minimize, or mitigate those potential adverse impacts.
- B. The consultation process may include, but is not limited to:
  - i. Review of the relevant permit application for Deep Geothermal Operations, variance request, Well-density application, or draft Commission regulation;
  - ii. Discussions with the Relevant Local Government(s) and Proximate Local Government(s) to better understand the Local Governments' concerns;
  - iii. Discussions with the Commission, Operator, Surface Owner, Surface Owner's tenant, emergency responders, School officials, hospital administrators, Public Water System administrators, or any other potentially Affected Person; and
  - iv. Review of public comments.

**(3) Results of Consultation.**

- A. As a result of consultation called for by this Rule 1304.f, CDPHE may make written recommendations to the Director about conditions of approval to ensure compliance with these Rules and as may be necessary and reasonable to protect public health, safety, welfare, or the environment. Such recommendations may include, but are not limited to, monitoring requirements or Best Management Practices. CDPHE may also recommend that the Director or Commission deny a permit application for Deep Geothermal Operations if necessary and reasonable to protect public health, safety, and welfare, including protection of the environment. Where applicable, CDPHE may also make written recommendations about whether a variance request should be granted or denied and the reasons for any such recommendations.
- B. **Standards for Consultation and Director Decision.** If the Director agrees that the conditions of approval recommended by CDPHE are necessary and reasonable to ensure compliance with these Rules and to protect public health, safety, and welfare, including protection of the environment and wildlife resources, the Director will incorporate CDPHE's recommended conditions into approvals of a permit for Deep Geothermal Operations. If the Director determines that any conditions of approval recommended by CDPHE are not necessary and reasonable to protect public health, safety, and welfare, including protection of the environment, the permit application for Deep Geothermal Operations will be subject to Commission review pursuant to Rule 503.g.(10).
- C. **Notification of Decision to Consulting Agency.** Where consultation occurs, the Director will provide the Director's approval or denial to CDPHE on the same day that it announces the decision.

**g. Public Water Systems.**

- (1) The Operator and Director will engage in a Formal Consultation Process with all Public Water Systems that receive notice pursuant to Rule 303.e.(1).H, unless the Public Water System waives its right to consultation.
- (2) **Groundwater Monitoring.** Among other topics, consultations pursuant to Rule 1304.g will address whether groundwater monitoring should occur pursuant to Rule 411.b.(4). B.

**h. State Land Board.**

**(1) When Consultation Will Occur.**

- A. The Operator and Director will consult with SLB if a permit application for Deep Geothermal Operations will impact any surface estate, mineral estate, geothermal resources, pore space, or water rights owned or managed by SLB.
- B. The Director may request consultation about any permit application for Deep Geothermal Operations if the Director reasonably believes that consultation with SLB would assist the director in understanding the potential impact to any surface estate, mineral estate, geothermal resources, pore space, or water rights owned or managed by SLB.
- C. The Operator and Director will consult with SLB if SLB requests a consultation regarding impacts to SLB property interests.
- D. Notwithstanding the foregoing, the requirement to consult with SLB may be waived by SLB at any time.

- (2) **Procedure for Consultation.** The consultation required by this Rule 1304.h. will focus on whether any real property interest owned or managed by SLB will be impacted by the permit application for Deep Geothermal Operations, and whether SLB has granted to the Operator the necessary permissions to impact such real property interests.

- (3) **Results of Consultation.** As a result of consultation called for by this Rule 1304.h. SLB may make written statements on whether SLB granted to the Operator the necessary permissions to utilize any real property interest owned or managed by SLB and which will be impacted by the permit application for Deep Geothermal Operations.

**i. Division of Water Resources.**

- (1) **When Consultation Will Occur.** The Operator and Director will consult with DWR on all permit applications for Deep Geothermal Operations.

- (2) **Procedure for Consultation.** The consultation required by this Rule 1304.i. will focus on:

- A. DWR's determination, if any, on whether the Geothermal Resource to be developed is an Allocated Geothermal Resource;
- B. Whether the Deep Geothermal Operator's proposed Deep Geothermal Operations require a water use permit from DWR; and
- C. Any conditions of approval DWR requests for the permit application for Deep Geothermal Operations.

(3) **Results of Consultation.** As a result of consultation called for by this Rule 1304.i. DWR may:

- A. Inform ECMC on whether DWR made a determination pursuant to Rule 1304.i.(2). A. and/or provide written comments on the determination;
- B. Inform ECMC on whether the Deep Geothermal Operator has obtained the necessary water use permit(s), if required, and provide written comments regarding the water use permit(s); and
- C. Provide written, proposed conditions of approval for the permit application for Deep Geothermal Operations necessary to effectuate DWR's mission.

j. **Environmental Protection Agency.**

(1) **Criteria for Consultation.**

- A. The Operator and Director will consult with EPA for any permit application for Deep Geothermal Operations which may result in any injection activities regulated under the Safe Drinking Water Act.
- B. The Director will consult with EPA for any permit application for Deep Geothermal Operations which may require an aquifer exemption from EPA for Underground Sources of Drinking Water.
- C. The Director will consult with EPA if EPA requests consultation.

(2) **Procedure for Consultation.**

- A. The consultation period with EPA may last as long as necessary for EPA to determine whether to issue the necessary authorization to inject pursuant to the Safe Drinking Water Act.
- B. The consultation required by this Rule 1304.j. will focus on whether the Operator has obtained the necessary authorization to inject pursuant to the Safe Drinking Water Act from EPA, and whether the Operator has obtained the necessary aquifer exemption from EPA for Underground Sources of Drinking Water.

(3) **Results of Consultation.** Neither the Director nor the Commission will approve a permit for Deep Geothermal Operations which includes a Geothermal Injection Well without written verification from EPA that the Operator has obtained the necessary authorizations pursuant to the Safe Drinking Water Act required for the proposed Deep Geothermal Operations, and that the Operator must obtain any necessary aquifer exemptions for Underground Sources of Drinking Water, where required.

**k. Tribal Governments.**

- (1) Criteria for Consultation.** As to permit applications for Deep Geothermal Operations subject to Commission regulatory and permitting authority pursuant to Rule 201.d.(2), the Operator and Director will consult with the Southern Ute Indian Tribe for any permit application in which the applicant contemplates locating a Deep Geothermal Location within the exterior boundaries of the Southern Ute Indian Reservation. The Operator and Director will consult with the Southern Ute Indian Tribe and/or Ute Mountain Ute Tribe for any permit application for Deep Geothermal Operations which either tribe finds may impact tribal minerals and/or Geothermal Resources, or may adversely affect other tribal resources.
- (2) Procedure for Consultation.**

  - A.** The consultation period with the Southern Ute Indian Tribe and/or the Ute Mountain Ute Tribe is as long as necessary for the tribes to determine whether the proposed Deep Geothermal Operations will impact tribal minerals and/or Geothermal Resources, or may adversely affect other tribal resources.
  - B.** The consultation required by this Rule 1304.k. will focus on whether the Operator's proposed Deep Geothermal Operations will potentially impact tribal minerals and/or Geothermal Resources, or may adversely affect other tribal resources.
- (3) Results of Consultation.**

  - A.** Neither the Director nor the Commission will approve a permit for Deep Geothermal Operations which will impact tribal minerals and/or Geothermal Resources without express approval of the relevant tribal government which controls the minerals and/or geothermal resources at issue.
  - B.** As to permit applications for Deep Geothermal Operations subject to Commission regulatory and permitting authority pursuant to Rule 201.d.(2), the relevant tribal government may request any conditions of approval to the permit for Deep Geothermal Operations necessary to protect tribal sovereignty, public health, safety, and welfare, including protection of the environment and wildlife resources.

**l. Bureau of Land Management.**

- (1) Criteria for Consultation.** As to permit applications for Deep Geothermal Operations which contemplate locating a Deep Geothermal Location on lands where any federal entity controls or manages the surface estate or which contemplate exploring for and producing federal Geothermal Resources, the Operator and Director and applicant will consult with the Bureau of Land Management.
- (2) Results of Consultation.**

  - A.** Neither the Director nor the Commission will approve a permit for Deep Geothermal Operations which will permit a Deep Geothermal Location on federal lands, or which will explore for and produce federal Geothermal Resources without approval of the relevant federal entity.
  - B.** The relevant federal entity may request conditions of approval to the permit for Deep Geothermal Operations.

### 1305. PERMITTING OF DEEP GEOTHERMAL OPERATIONS

- a. **General Provisions.** Prior to commencing Deep Geothermal Operations or drilling a Geothermal Science Well, a Deep Geothermal Operator will obtain the Director's or Commission's approval of a permit for Deep Geothermal Operations.
- b. **Permit for Deep Geothermal Operations.** A permit application for Deep Geothermal Operations will include with the following:
  - (1) For at least one portion of a geothermal tract within the proposed area, documentation showing the applicant's status as an Owner within the area. Acceptable forms of documentation include, but are not limited to:
    - A. Geothermal and/or nontributary water deed or memorandum;
    - B. Geothermal and/or nontributary water lease or memorandum; or
    - C. Any other agreement confirming the applicant's right to drill into and produce a Geothermal Resource, or a memorandum of such agreement.
  - (2) **Form 2 Required.** The Operator will submit a Form 2, Application and Permit to Drill, for the proposed Deep Geothermal Well(s). The Form 2 will include the following requirements, including those described in the Rules incorporated below by reference:
    - A. Rule 308.b.(1) - Distances to nearest building, Building Unit, public road, above ground utility, railroad, and property line;
    - B. A wellbore diagram;
    - C. Details of the proposed work;
    - D. Rule 308.b.(4) - Well location plat;
    - E. Rule 308.b.(5) - Deviated drilling plan;
    - F. Rule 308.b.(6) - Casing and cementing plan;
    - G. Rule 308.b.(7) - Statewide offset well evaluation; and
    - H. Rule 308.b.(8) - Hydraulic fracturing treatment at depths 2,000 feet or less.
    - I. A Form 2 for a Geothermal Injection Well will include those information requirements found at Rules 803.g.(5), (6), (9), & (10).
    - J. With their Form 2, Operators will state whether the proposed Well is subject to the requirements of § 24-65.1-108, C.R.S., because it is located in an area designated as one of state interest.
    - K. A Form 2 to Convert an existing Well will include a demonstration of appropriate logging and/or mechanical testing as approved by the Director, pursuant to Rule 1311.f.(2).
  - (3) **Form 2G Required.** The Operator will submit a Form 2G for the proposed Deep Geothermal Location(s). The Form 2G will include the following requirements, including those described in the Rules incorporated below by reference:

- A.** Rule 1303.b. - Local Government siting information;
- B.** Rule 304.b.(3) - Cultural Distances;
- C.** Rule 304.b.(4) - Location pictures;
- D.** Rule 304.b.(5) - Site equipment list;
- E.** Rule 304.b.(6) - Geothermal Flowline and Off-Location Flowline Descriptions;
- F.** Rule 304.b.(7). A - Location drawings;
- G.** Rule 304.b.(7). B - Layout drawings, as they pertain to the proposed Deep Geothermal Location(s), except those describing Well completion and stimulation, hydraulic fracturing, or Flowback;
- H.** Rule 304.b.(7).C - Wildlife habitat drawing;
- I.** Rule 304.b.(7). D. - Preliminary process flow diagrams;
- J.** Rule 304.b.(7). E - Hydrology map;
- K.** Rule 304.b.(7). F - Access Road map;
- L.** Rule 304.b.(7). G - Related location and flowline map;
- M.** Rule 304.b.(7).H - Directional Well plat, if one or more Deep Geothermal Well(s) proposed for the Location are directional rather than vertical;
- N.** Rule 304.b.(7). I - Geologic Hazard map;
- O.** Rule 304.b.(7). J - Disproportionately Impacted Community map;
- i.** If the proposed Deep Geothermal Location is within 2,000 feet of a Residential Building Unit, High Occupancy Building Unit, or School Facility located within a Disproportionately Impacted Community, the applicant will:
  - aa.** Comply with Rule 304.c.(20). B. and C. by providing a community outreach plan;
  - bb.** In developing the community outreach plan required by this Rule 1305.b.(3). O., the applicant will consult with the Commission's community liaison to identify local community organizations representative of the potentially impacted communities. If the community liaison identifies such local community organizations, the applicant will coordinate with such organization(s) to distribute necessary and relevant notice and information to the community;
  - cc.** Deep Geothermal Operators are encouraged to develop and disseminate educational materials on geothermal technology and project-specific information as part of its community outreach; and

- dd.** Include a proposed plan for how the Deep Geothermal Operator will avoid, minimize, or mitigate adverse impacts of drilling and production operations upon the Disproportionately Impacted Community;
- P.** Rule 304.b.(8) - Geographic information system ("GIS") data;
- Q.** Rule 304.b.(9) - Land use description;
- R.** Rule 304.b.(10) - NRCS map unit description;
- S.** Rule 304.b.(11) - Best Management Practices;
- T.** Rule 304.b.(12) - Surface Owner information;
- U.** Rule 304.b.(13) - Proximate Local Government information;
- V.** Rule 304.b.(14) - Wetlands;
- W.** Rule 304.b.(15) - Schools and Child Care Centers;
- X.** Rule 304.c.(1) - Emergency spill response program, if construction and/or drilling operations are proposed within 2,640 feet of a GUDI or Type III Well;
- Y.** Rule 304.c.(2) - Noise mitigation plan;
- Z.** Rule 304.c.(3) - Light mitigation plan;
- AA.** Rule 304.c.(4) - Odor mitigation plan (if within 2,000 feet of a Residential Building Unit);
- BB.** Rule 304.c.(5) - Dust mitigation plan;
- CC.** Rule 304.c.(6) - Transportation plan, if the Relevant Local Government requires it;
- DD.** Rule 304.c.(7) - Operations safety management program,
- EE.** Rule 304.c.(8) - Emergency response plan,
- FF.** Rule 304.c.(9) - Flood shut-in plan, if in a Floodplain;
- GG.** Rule 304.c.(10) - Hydrogen sulfide drilling operations plan, if H<sub>2</sub>S is anticipated;
- HH.** Rule 304.c.(11) - Waste management plan, specific to construction, drilling, any data gathering operations, and for any subsequent Well statuses such as Shut-In or Temporarily Abandoned until the Well is either re-permitted or Plugged and Abandoned;
- II.** Rule 304.c.(14) - Topsoil protection plan;
- JJ.** Rule 304.c.(15) - Stormwater management plan;
- KK.** Rule 304.c.(16) - Interim Reclamation plan;

- LL.** Rule 304.c.(17) - Wildlife plan;
- MM.** Rule 304.c.(18) - Water plan;
- NN.** Rule 304.c.(21) - Geologic Hazard plan, if any Geologic Hazards are identified/confirmed on the Geologic Hazard Map;
- OO.** Details on the end use of the operations including:
- i. Whether the Operator will utilize the Geothermal Resources to produce or store mechanical or thermal energy, and if so, details of the process(es) that the Operator will employ to produce or store such energy, the anticipated amount of energy to be produced or stored expressed in joules or megawatts, and the ultimate disposition of any energy to be produced or stored;
  - ii. Whether the Operator will utilize the Geothermal Resources for heating buildings or other structures or infrastructure, and if so, the details of how the Operator will transport the Geothermal Resource to the ultimate use point;
  - iii. Any other end use contemplated by the Deep Geothermal Operations including details on how the Operator will achieve such end use; and
  - iv. Whether the Operator will extract minerals from Geothermal Fluids and the Operator's plan for disposition of those extracted minerals;
- PP.** Whether the Deep Geothermal Operations contemplate reinjection of fluids, and if so, the number of reinjected fluids anticipated;
- QQ.** Any surface facilities the Operator anticipates locating on the Deep Geothermal Location; and
- RR.** Evidence or certification that the Deep Geothermal Operator has a right to construct a Deep Geothermal Location at the proposed site. Such requirement can be satisfied with:
- i. A redacted version of any written agreement between the Deep Geothermal Operator and the surface owner including a Surface Use Agreement, a geothermal and/or nontributary water lease, or other written agreement which includes authorization from the surface owner to construct the Deep Geothermal Location at the proposed site, a description of the lands subject to the agreement, signatures of the parties to the agreement, dates of signature, and any provisions of the agreement that are relevant to the Form 2G; or
  - ii. Certification that the Deep Geothermal Operator has a right to construct pursuant to § 37-90.5-105, C.R.S.

- (4) As to the Form 2G requirements described in Rule 1305.b.(3), a Deep Geothermal Operator may omit an informational requirement of the Form 2G if the required information is not applicable. The Deep Geothermal Operator will include an explanation of why the information is not applicable. Nothing in this Rule 1305.b.(4) precludes the Director or Commission from requiring the applicant to submit information otherwise required by Rule 1305.b.(3) because the Director or Commission determines that the information is applicable.
- c. The applicant may submit substantially equivalent information or plans developed through a Local Government land use process or a federal agency permitting or leasing process in lieu of providing information required by this Rule 1305. Nothing in this Rule 1305.c. precludes the Director or Commission from requiring the applicant to submit information otherwise required by Rule 1305. because the Director or Commission determines that the information developed through the Local Government land use process or federal agency permitting or leasing process must be supplemented.
- d. Notice of Completeness and Public Comment. When the Director determines that the application for Deep Geothermal Operations is complete, the Director will post the application and supporting materials to the Commission's website and will notify the Relevant and Proximate Local Government. The website posting will provide:
  - (1) The date by which public comments must be received to be considered, which is:
    - A. 60 days from the date the permit application for Deep Geothermal Operations is posted if the permit application for Deep Geothermal Operations includes any proposed Deep Geothermal Location(s) within 2,000 feet of a Residential Building Unit, High Occupancy Building Unit, or School Facility within a Disproportionately Impacted Community; and
    - B. 30 days from the date the permit application for Deep Geothermal Operations was posted for all other permit applications for Deep Geothermal Operations; and
  - (2) The mechanism for the public to provide comments.
- e. **Consideration and Approval or Denial.** Upon closure of the public comment period, the Director will review all public comments and consultative documents received:
  - (1) If appropriate, the Director may administratively issue a conditional approval of the permit for Deep Geothermal Operations.
  - (2) The Director will inform the Commission and Relevant and Proximate Local Governments when the Director issues a conditional approval of the permit for Deep Geothermal Operations.
  - (3) The Director's conditional approval will become final 10 days after the Director issues a conditional approval, unless the Commission stays the conditional approval on its own motion.
  - (4) If the Director determines that there are circumstances that warrant the permit application for Deep Geothermal Operations going before the Commission for a special hearing, the Director will issue a director's recommendation pursuant to Rule 306 and will work with the applicant to schedule the hearing as soon as possible.

**f. Specific Provisions for Geothermal Science Wells.**

- (1) The provisions of this Rule 1305 apply to permit applications for Geothermal Science Wells, except that applicants may omit the following listed provisions from the permit application:

  - A. Rule 1305.b.(3). I. - Preliminary process flow diagrams;
  - B. Rule 1305.b.(3). L. - Related location and flow line map;
  - C. Rule 1305. b.(3).OO. - Details of the end use of the operations; and
  - D. Rule 1305.b.(3). PP. - Reinjection of fluids.
- (2) Permit applications for Geothermal Science Wells will include the following provisions specific to Geothermal Science Wells:

  - A. A general description of the timing, duration, and types of tests that may be run in the wellbore for scientific purposes;
  - B. A general description of the reason for the scientific well and its potential future use;
  - C. **Flow Testing for Geothermal Information or Development.** A flow test for each Geothermal Science Well will be conducted for a continuous period of not less than 72 hours unless the Director specifies or approves a different period of time. Such flow testing will not exceed a cumulative total of 7 days unless the Director has granted prior written approval of additional testing. DWR may impose other test requirements as deemed necessary. Copies of any temperature records and any fluid sample analysis obtained from the testing will be submitted through a Form 4, Sundry Notice.
    - i. **Discharge of Flow Testing Fluids** - An Owner or Operator of a Geothermal Science Well is responsible for being knowledgeable about, and complying with, regulations for discharge. The Well owner shall also be responsible for obtaining and maintaining any necessary discharge permits required by WQCD.
  - D. Operators of Deep Geothermal Science Wells will comply with Rule 905.c.(2).D., when applicable.

**1306. SUSPENDING APPROVED DEEP GEOTHERMAL OPERATIONS**

The Director may suspend an approved permit for Deep Geothermal Operations, or any associated permits for Geothermal Resource Units, Form 2Gs, or Form 2s, if the Director has reasonable cause to believe that information submitted on an application was materially incorrect. An Operator may petition the Commission to review the Director's decision.

**1307. EXPIRATION**

- a. Permits for Deep Geothermal Operations are valid for five years. The following expirations will occur five years from the approval date of the permit for Deep Geothermal Operations:

- (1) If drilling operations have not commenced for a permitted Well, the Form 2 for the undrilled Well is null and void.
  - (2) If drilling operations have not commenced at any Wells on a Deep Geothermal Location, the Form 2G(s) for that Deep Geothermal Location, any associated Production Facilities designed to serve only that Location, and the associated Form 2s are null and void; or
  - (3) If drilling operations have not commenced for any permitted Well in a Geothermal Resource Unit, the Geothermal Resource Unit order will be vacated, and any associated Form 2Gs and Form 2s are null and void.
  - (4) When issuing a permit for Deep Geothermal Operations, including a Form 2, Form 2G, or Geothermal Resource Unit, the Director or Commission may impose conditions of approval to the five-year expiration necessary and reasonable for the specific type of Deep Geothermal Operation or to protect public health, safety, welfare, the environment, and wildlife resources, or avoid, minimize, and mitigate adverse impacts to Disproportionately Impacted Communities.
- b. **Extensions.** The Commission or Director will not approve extensions for a permit for Deep Geothermal Operations, a Form 2G, a Form 2, or a Geothermal Resource Unit.
  - c. **Applications and Refile Forms After Expiration.** Refile permit applications for Deep Geothermal Operations, Refile Form 2Gs, Refile Form 2s, and Geothermal Resource Unit applications may be filed within 60 days prior to expiration or anytime following expiration and are subject to the Commission's Rules in effect at the time of submission.
  - d. **Reclamation.** Any built Deep Geothermal Location for which a Form 2G expires pursuant to Rule 1307.a will be subject to final Reclamation pursuant to the Commission's 1000 Series Rules unless the Deep Geothermal Operator refiled pursuant to Rule 1307.c. in which case the Deep Geothermal Operator need not conduct final reclamation until either six months after the initial expiration date or upon a final decision on the refiled application(s), whichever is sooner. If the refiled application is approved, the Deep Geothermal Operator need not conduct final reclamation while the Form 2G is valid.

#### 1308. SUBSEQUENT OPERATIONS ON EXISTING WELLS

- a. The Operator will submit and obtain the Director's approval of a Form 4 before conducting any subsequent Well operations involving heavy equipment, except for routine Well maintenance.
- b. **Verbal Approval.** If during the course of the subsequent operations or routine Well maintenance the Operator determines that additional subsequent operations involving heavy equipment that are not routine maintenance are necessary, the Operator may obtain verbal approval from the Director to conduct the subsequent operations. If the Operator obtains verbal approval from the Director, the Operator will submit a Form 4 to obtain written approval from the Director within 7 days.
- c. **Information Requirements.** The Form 4 will describe the details of the proposed work.
- d. **Approval of Subsequent Well Operations.** The Director may approve a Form 4 that complies with all requirements of the Commission's Rules, and protects and minimizes adverse impacts to public health, safety, and welfare, including protection of the environment and wildlife resources.

- (1) The Director may add any conditions of the approval to a Form 4 that are necessary and reasonable to ensure compliance with all requirements of the Commission's Rules, or to protect and minimize adverse impacts to public health, safety, and welfare, including the environment and wildlife resources.
  - (2) The Director will review the Deep Geothermal Location where the Well is located to ensure that necessary and reasonable conditions of approval are applied to protect and minimize adverse impacts to public health, safety, welfare, the environment, and wildlife resources.
- e. **Notice Requirements.** An Operator will provide notice of operations covered by Rule 1308.a to the Surface Owner pursuant to Rule 412.a.(4). The Operator will also provide notice and a copy of the Form 4 for subsequent operations to the Relevant and Proximate Local Government within two business days of submitting the Form 4 to the Commission.

### **1309. GEOTHERMAL RESOURCE UNITS**

#### **a. Procedural Requirements.**

- (1) Operators will submit permit applications for Geothermal Resource Units either simultaneously with or subsequent to submission of a corresponding permit application for Deep Geothermal Operations. It is the Commission's preference that permit applications for Deep Geothermal Operations and permit applications for Geothermal Resource Units be submitted simultaneously. In no event will an Operator submit a permit application for a Geothermal Resource Unit prior to submitting the corresponding permit application for Deep Geothermal Operations.
- (2) All permit applications for Geothermal Resource Units will include the following information:
  - A. Certification that the Operator has complied with the Local Government siting disposition requirements.
  - B. Certification that the Operations in the Geothermal Resource Unit will be conducted in a reasonable manner to protect and minimize adverse impacts to public health, safety, and welfare, including the protection of the environment and wildlife resources.
  - C. The proposed unit boundary and interwell completion setback distances.
  - D. All existing Locations and associated Wells that are developing the same formation(s) in the application lands. The permit application will discuss what the Operator intends to do with the existing Locations and Wells.
  - E. The wellbore orientation for all Wells in the proposed unit.
  - F. Whether there are existing Geothermal Resource Units within the proposed application lands and what the disposition of the existing Geothermal Resource Units and Wells will be under the proposed permit application.
  - G. The approved production and injection rates for any existing Geothermal Resource Units and/or Wells that are developing the same formation(s) in the application lands, if applicable.

- H. The Deep Geothermal Locations that are proposed for the unit. If an Operator previously submitted a permit application for Deep Geothermal Operations, the Operator will identify the document number for the Form 2G. If the Form 2G has already been approved, the Operator will identify its Location ID number.
  - I. The total number of proposed Wells for the unit.
  - J. **Unit Plan.** A unit plan which describes how the Geothermal Resource Unit will be operated in a manner which encourages sustainable use of the Geothermal Resource. The unit plan will include the Operator's plan for equitable compensation to any impacted owner of an Allocated Geothermal Resource to be included in the proposed Geothermal Resource Unit. The unit plan will include the Operator's plan for controlling the quantity of Geothermal Fluids extracted, including any plans to reinject Geothermal Fluids.
  - K. **Unit Area of Review.** The application will include a review of all existing Wells within the unit area and within 1/4 mile of the unit boundary, describing existing isolation of injection zones, oil and gas production formations, formations containing Geothermal Resources, confining layers, and Underground Sources of Drinking Water.
  - L. Any additional information that may be required to support the requested prayer for relief.
  - M. All prior orders that implicate the prayer for relief.
  - N. Certification that satisfies the requirements of Rule 505.a.
  - O. For at least one portion of a geothermal tract within the proposed unit, documentation showing the applicant's status as an Owner within the unit. Acceptable forms of documentation include, but are not limited to:
    - i. Geothermal and/or nontributary water deed or memorandum;
    - ii. Geothermal and/or nontributary water lease or memorandum; or
    - iii. Any other agreement confirming the applicant's right to drill into and produce a Geothermal Resource, or a memorandum of such agreement.
  - P. For federal Geothermal Resources, certification that the Operator will comply with any applicable federal unit agreement or communitization agreement requirements.
- (3) Operators who can demonstrate ownership of all Geothermal Resources to be impacted by the proposed Deep Geothermal Operations are not required to comply with the equitable compensation information requirements.
- (4) Deep Geothermal Operators will provide notice of its permit application for a Geothermal Resource Unit to all Geothermal Resource owners whose Geothermal Resources will be impacted by the proposed Geothermal Resource Unit. The Deep Geothermal Operator will provide such notice within 7 days of the completeness determination required pursuant to Rule 1309.b. and 1305.d. The notice required by this Rule 1309.a.(4) will include:
- A. An introductory letter including:

- i. The Deep Geothermal Operator's contact information including its electronic mail address, phone number, and physical address(es) to which the public may direct questions and comments;
    - ii. The contact information for the Relevant Local Government;
    - iii. The Commission's website address and main telephone number;
    - iv. The location of all proposed or permitted Deep Geothermal Wells and Locations; and
    - v. The anticipated date that each phase of operations will commence (by month and year).
  - B. A copy of the Unit Plan required by Rule 1309.a.(2).J.;
  - C. The document number(s) assigned to the permit application for the Geothermal Resource Unit; and
  - D. Information about the Commission's public comment process and the relevant deadlines pursuant to Rule 1305.d.
  - E. The notice required by this Rule 1309.a.(4) will comply with the procedure for providing notice described at Rule 303.e.(3).
- b. **Consideration and Approval or Denial.** Permit applications for Geothermal Resource Units are subject to the notice of completeness and public comment period provisions of Rule 1305.d. Approval or denial of the permit application for Geothermal Resource Units is subject to the approval or denial provisions of Rule 1305.e.
- c. **Forms.** For permit applications for Geothermal Resource Units filed simultaneously with the underlying permit application for Deep Geothermal Operations, the applicant will include the required information as an attachment to the Form 2. For permit applications for Geothermal Resource Units filed subsequent to an approved permit for Deep Geothermal Operations, the applicant will include the required information on a Form 4.
- d. **Amending Existing Unit.** The Deep Geothermal Operator will submit a Form 4 to amend the boundaries of the Geothermal Resource Unit if, upon review of technical testimony or data, the Deep Geothermal Operator or Director determines the impacted Geothermal Resources do not correspond with the established unit boundaries. The Deep Geothermal Operator will comply with Rule 1309.a.(4).A – C. and E., to provide notice to those Geothermal Resource owners whose Geothermal Resources will be included or excluded as a result of the amendment.

#### 1310. **EQUITABLE COMPENSATION FOR GEOTHERMAL RESOURCES.**

- a. A permit application for a Geothermal Resource Unit may request the inclusion of Allocated Geothermal Resources owned by unleased interest owners in the GRU, provided that the unleased interest owners are equitably compensated by the Operator for use of those Allocated Geothermal Resources.
- b. In its permit application for a Geothermal Resource Unit which includes a request that the Commission include Allocated Geothermal Resources owned by unleased interest owners, the Operator will include the following:

- (1) Evidence that the Operator owns, or has secured the written consent of Owners of more than 45% of the Allocated Geothermal Resources to be included within the proposed Geothermal Resource Unit. Such evidence may be provided prior to or after drilling of a well, but no later than 90 days in advance of the date the matter is to be decided by the Director or Commission pursuant to Rule 510.
  - (2) Evidence that the Operator tendered to the unleased interest owners a good faith, reasonable offer to lease or participate at least 90 days prior to the decision on the Geothermal Resource Unit. For the purposes of this Rule 1310, "good faith" means a state of mind consisting in observance of reasonable commercial standards of fair dealing in Deep Geothermal Operations, and absence of intent to defraud or seek unconscionable advantage.
  - (3) A proposed plan for equitable compensation to any impacted interest Owner of an Allocated Geothermal Resource to be included in the Geothermal Resource Unit.
- c. Upon a showing by the applicant that it has complied with the Commission's rules, the Director or Commission may deem an Owner to be a nonconsenting interest owner in the Geothermal Resource Unit if:
- (1) The Operator certifies that it provided notice to all nonconsenting interest owners to be included within the proposed Geothermal Resource Unit. The Operators will comply with Rule 303.e.(3) for the procedure for providing notice. The notice must include:
    - A. The Operator's contact information including its electronic mail address, phone number, and physical address(es) to which the public may direct questions and comments;
    - B. The Operator's proposed plan for equitable compensation for all Geothermal Resources to be included in the Geothermal Resource Unit;
    - C. ECMC's information sheet about the procedural steps involved with the Director's and Commission's review of permit application for the Geothermal Resource Unit;
    - D. ECMC's information sheet about the Commission's public comment process and the relevant deadlines;
    - E. ECMC's information sheet about how the public may view the status of the permit application for the Geothermal Resource Unit on the Commission's website; and
    - F. Information on how the public may learn more details about and ask questions about the permit application for the Geothermal Resource Unit prior to the closure of the public comment period.
    - G. All written information provided pursuant to this Rule 1310.c.(1) will also be provided in all languages spoken by 5% or more of the population in all census block groups within 2,000 feet of each proposed Geothermal Resource Unit.
  - (2) After receiving an offer to participate, and being given at least 60 days to review the offer, the Owner does not elect in writing to consent to participate in the cost of the Well(s) concerning which the Geothermal Resource Unit order is sought. The offer to participate will include the following information, at a minimum:
    - A. The location and objective depth of the Well(s).

- i. Directional Wells will include the estimated measured depth and true vertical depth ("md", "tvd"); and
    - ii. Horizontal Wells will include the estimated measured depth, true vertical depth, and lateral length ("md", "tvd", and "ll");
  - B. The estimated drilling and completion cost in dollars of the Well(s) (both the total cost and the Owner's share);
  - C. The estimated spud date for the Well(s) or range of time within which spudding is to occur; and
  - D. Contact information for an Operator representative who will be available to answer Owner questions, and ECMC's brochure describing its procedures for reviewing and approving applications for Geothermal Resource Units which include nonconsenting interest owners.
  - E. An authority for expenditure prepared by the Operator and containing the information required above, together with additional information deemed appropriate by the Operator may satisfy these obligations.
- (3) If, after receiving a good faith offer to lease and given at least 60 days to review the offer, the unleased interest owner has failed to accept or refused a reasonable offer to lease.
  - (4) For an offer to lease to be considered reasonable and have been made in good faith, the offer will be written in clear and neutral language and include information on which the offered price can be determined to be fair. At any hearing or in written comment on the Geothermal Resource Unit, the burden of showing that an offer to lease is not reasonable or not made in good faith is upon the Owner of the Allocated Geothermal Resources who opposes inclusion in the Geothermal Resource Unit.
- d. **A nonconsenting interest owner will be subject to cost recovery.**
  - e. **Consideration and Approval or Denial.** A permit application for a Geothermal Resource Unit that will include nonconsenting interest owners will be considered concurrently with the associated permit application for the GRU, pursuant to Rule 1309. If an Operator submits a permit application to include nonconsenting interest owners after approval of a GRU, the permit application to include nonconsenting interest owners is subject to the approval or denial provisions of Rule 1305.e.

#### **1311. CONVERTING WELLBORES FOR DEEP GEOTHERMAL OPERATIONS**

- a. Converting wellbores includes repurposing an existing Well for any purpose other than its originally intended and permitted use.
- b. An Operator will not convert an existing Well unless the Director approves a Form 2 and 2G.
  - (1) For a Form 2G required by this Rule 1311, the Deep Geothermal Operator may avail itself of the substantially-equivalent provisions in Rule 1305.c. as to information or plans developed through a Local Government land use process, a federal agency permitting or leasing process, or a previously approved Form 2A for the existing Oil and Gas Location proposed to be converted.

- c. The Director may request any information necessary and reasonable to determine that the proposed well conversion protects and minimizes adverse impacts to public health, safety, welfare, the environment, and wildlife resources. This may include the Director requesting a permit application for Deep Geothermal Operations pursuant to Rule 1305.
- d. Any significant change to the design and operation of a Location, including but not limited to the addition of surface Facilities necessary for the conversion of a wellbore, may require Director or Commission approval of a permit application for Deep Geothermal Operations.
- e. When converting a wellbore to use for Deep Geothermal Operations, the applicant will include in its permit application a Surface Use Agreement or memorandum of Surface Use Agreement between the applicant and the owner of the surface estate covering the proposed Deep Geothermal Location.
- f. **Permitting Requirements.** To convert an existing Well, an Operator will:
  - (1) Submit a Form 2 and Form 2G, pursuant to Rules 1305.b.(2) and (3); and
  - (2) Demonstrate the wellbore integrity for converted Wells with appropriate logging and/or mechanical testing as required by Rule 417.
- g. The Notice of Completeness and Public Comment provisions of Rule 1305.d. apply to applications filed under this Rule 1311.

#### 1312. GEOTHERMAL INJECTION

- a. An Operator cannot operate a Geothermal Injection Well without authorization to inject from the relevant authority pursuant to the Safe Drinking Water Act, an approved Form 4 pursuant to Rule 1312.d, and an approved Form 2 for the Geothermal Injection Well.
- b. For Deep Geothermal Operations utilizing Geothermal Injection Wells, the Operator will comply with Rule 805, and Rule 806.a. and b.
- c. **Geophysical Logs.** Operators will run openhole gamma ray, electrical resistivity, and neutron/density logs from total depth to the bottom of the surface casing on all Geothermal Injection Wells, in addition to any other logging requirements of Rule 408.r., unless otherwise specified as a condition of approval on the Form 2.
- d. **Form 4, Authorization to Inject.** After a Geothermal Injection Well is completed, recompleted, or after Injection Zones are temporarily abandoned, the Deep Geothermal Operator will file a Form 4, Authorization to Inject. The Form 4, Authorization to Inject will include the following as-constructed details:
  - (1) **Wellbore Diagram.** A final schematic drawing showing all casing strings with cement volumes and tops, plug back total depth, isolation devices, depth of any existing open or squeezed perforations, setting depths of any bridge plugs, formation tops, perforations in the Injection Zone, tubing and packer size, and setting depths.
  - (2) **Casing and Cementing.** Documentation of the final casing and cement in the Geothermal Injection Well, any existing remedial cement confirmed during the work, and remedial cement placed during the work.

- (3) **Cement Bond Log.** Unless already provided to the Commission, to determine if the cement has been placed to adequately isolate the Injection Zone, production zones, and Groundwater, a cement bond or other cement evaluation Log will be run and provided with this report as a means of verifying cementing records.
  - (4) **Mechanical Integrity Testing Requirement.** Before the Director or Commission approve the authorization to inject, the proposed Geothermal Injection Well will satisfactorily pass a mechanical integrity test pursuant to Rule 417 and be witnessed by the Director.
- e. **Maximum Allowable Injection Rate and Surface Injection Pressure.** The Director will set the maximum allowable injection rate and surface injection pressure in the approved Form 4, Authorization to Inject. Except during Hydraulic Fracturing Treatment, the maximum allowable injection pressure will be set below the fracture gradient of the injection zone, as determined by a step-rate injection test in the Geothermal Injection Well, a step rate injection test in an offset well completed in the same injection zone, or other test acceptable to the Director. The maximum allowable injection pressure will assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures. Until a step-rate injection test is performed, the maximum allowable injection pressure will be set consistent with a formation pressure gradient of 0.6 pounds per square inch ("psi") per total vertical foot from surface to the uppermost injection perforation.
- f. Deep Geothermal Operators utilizing Geothermal Injection Wells will perform continuous seismic monitoring if:
  - (1) The Director determines it necessary to protect public health, safety, and welfare, including protection of the environment and wildlife resources;
  - (2) The Operator plans to inject at a rate exceeding 40,000 bbl/day; or
  - (3) If injection is to occur within any Precambrian basement formation or within 300 feet in the vertical dimension of any Precambrian basement formation.
- g. For Deep Geothermal Operations that are subject to Rule 1312.f, the Operator will provide seismic monitoring data to the Director upon request, and a traffic light protocol for seismicity associated with injection activities may be applied as a condition of approval.
- h. Geothermal Injection Wells may only inject the following types of Fluids:
  - (1) Geothermal Fluids from the same geothermal reservoir, including any Geothermal Fluids produced during flow testing;
  - (2) Fresh or recycled water used for the makeup of minor system losses; or
  - (3) Other Fluids with prior approval from the Director or other relevant authority.
- i. When an Operator proposes to inject any Fluid other than Geothermal Fluids or fresh or recycled water, pursuant to Rule 1312.h.(3), the Operator will comply with Rule 803.g.(5).C. and D.

### 1313. OPERATIONS AND REPORTING

- a. **Form 7G, Deep Geothermal Operator's Monthly Report of Operations.** Operators will report all existing Deep Geothermal Wells that are not Plugged and Abandoned on the Form 7G, Deep Geothermal Operator's Monthly Report of Operations within 45 days after the end of each month.

- (1) Operators will report a Deep Geothermal Well every month from the month that it is spud until it has been Plugged and Abandoned and reported for one month as abandoned. In addition to their producing and injecting and Plugged and Abandoned Wells, Operators will identify and list all drilling, Shut-In Wells, Suspended Operations, Temporarily Abandoned Wells, and Waiting on Completion Wells on their Form 7G reports.
- (2) Operators will report each formation that is completed in a Deep Geothermal Well every month from the time that it is completed until it has been abandoned and reported for one month as abandoned.
- (3) Operators will report the volume and disposition of Geothermal Fluids produced from a Deep Geothermal Well within 45 days after the end of each month. The reported volumes will include all Fluids produced during Flowback, initial testing, Completion, and production of the Deep Geothermal Well or Geothermal Injection Well. Produced fluids include, but are not limited to, produced water and fluids recovered during drilling, casing cementing, pressure testing, Completion, workover, and formation stimulation of all Deep Geothermal Wells including production, exploration, injection, service and monitoring wells.
- (4) Operators will report the volume of any Fluids injected into a Geothermal Injection Well within 45 days after the end of each month. Any added fresh or recycled water, including but not limited to "makeup water" described in Rule 1312.h.(2), will be reported separately. The Operator will also report the source(s) of such water.
- (5) Operators will report surface temperature and flow rate readings of Geothermal Fluid as near as practicable to the wellhead of a Deep Geothermal Well.
- (6) For any Closed-Loop Geothermal System, Operators will report volumes and percentages of Fluid lost to the subsurface.
- (7) Operators will measure and report Fluids and Geothermal Fluids in accordance with Rule 431.a.

**b. Form 4, Sundry Notices.** Deep Geothermal Operators are subject to the provisions of Rule 404.a. and d.

- (1) Deep Geothermal Operators will comply with Rule 1302.a. for any Form 4 submitted to propose a change to an approved permit for Deep Geothermal Operations.
- (2) Deep Geothermal Operators will comply with Rule 1305.a. for any Form 4 submitted to propose a change to an approved Form 2G associated with a Deep Geothermal Location or Facility.
- (3) When amending a Form 2A previously approved for Oil and Gas Operations to include Ancillary Heat Production of Geothermal Resources, the Operator will submit a Form 4, Sundry Notice proposing such change to the approved Oil and Gas Operations, unless the Operator proposes to deepen, re-enter, or recompleat a Well to facilitate Ancillary Heat Production, in which the Operator will comply with Rule 308.

**c. Form 42, Field Operations Notice.** Deep Geothermal Operators will comply with the provisions of Rules 405.a.-r. and 405.t.

**d. Deep Geothermal Location Construction.** Deep Geothermal Operators will comply with the provisions of Rules 406 and 407.

- e. **Deep Geothermal Drilling Rules.** Deep Geothermal Operators will comply with the provisions of Rule 408.a.- e., 408.g. - p. and Rule 408.r.- aa.
  - (1) **Cementing.** Deep Geothermal Operators will comply with Rule 408.f; alternative cementing methods must be approved in writing by the Director or Commission.
    - A. To request approval of an alternative cementing method in the permit application for Deep Geothermal Operations, the Deep Geothermal Operator will describe the proposed alternative cementing method in its Form 2 required by Rule 1305.b.(2).
    - B. To request approval of an alternative cementing method after approval of the Form 2, the Deep Geothermal Operator will submit a Form 4 describing the proposed alternative cementing method.
    - C. As to both Rule 1313.e.(1).A. and B., the Director or Commission can request, and the Deep Geothermal Operator will provide, any additional information the Director or Commission consider necessary to adequately assess the proposed alternative cementing method.
- f. **Directional Drilling.** Deep Geothermal Operators will comply with the provisions of Rule 410.a.-c.
- g. **Public Water System Protection.** Deep Geothermal Operators will comply with the provisions of Rule 411.
- h. **Surface Owner Notice.** Deep Geothermal Operators will comply with the provisions of Rule 412.b.
- i. **Form 5, Drilling Completion Reports.** Deep Geothermal Operators will comply with the provisions of Rule 414.
- j. **Form 5A, Completed Interval Report.** Deep Geothermal Operators will submit a Form 5A, Completed Interval Report for a Deep Geothermal Well within 30 days after Completion of the Deep Geothermal Well. The requirements of Rule 416.b. and c. are applicable to Form 5As submitted for Deep Geothermal Wells.
- k. **Mechanical Integrity Tests and Bradenhead Monitoring.**
  - (1) **Mechanical Integrity Tests for Geothermal Injection Wells.**
    - A. Deep Geothermal Injection wells are subject to Rule 417.a.
    - B. All Deep Geothermal Wells are subject to Rule 417.b-g.
  - (2) **Form 21, Mechanical Integrity Test.** Deep Geothermal Operators will comply with Rule 418.
  - (3) **Bradenhead Monitoring.** Deep Geothermal Operators will comply with Rules 419 and 420.
- l. **Statewide Floodplain Requirements.** Deep Geothermal Operators will comply with Rule 421.
- m. **Welfare Protection Standards.** Rules 422, 423, 424, 426, and 427 apply to Deep Geothermal Operations.

- n. **Well Control.** Deep Geothermal Operators will comply with Rule 428.
- o. **Measurement and Reporting of Produced, Reused, Recycled, and Injected Water.** Deep Geothermal Operators will comply with Rule 431.a.-b. In the context of Deep Geothermal Operations, Rule 431.a.-b. apply to all Deep Geothermal Wells including Geothermal Injection Wells. In addition to the requirements of Rule 431.a.-b., when reporting fluid volumes on the Form 7G, Deep Geothermal Operators will also calculate volumes in gallons and acre-feet.
- p. **Abandonment.** Deep Geothermal Operators will comply with Rules 434.a., 434.b., 434.c.(2).A.i., 434.c.(2).B., 434.c.(2).C., and 435.
- q. **Seismic Operations, Notice, Consultation, and Reporting.** Deep Geothermal operators will comply with Rule 436.
- r. **Hydraulic Fracturing Chemical Additives.** Deep Geothermal Operations will comply with Rule 437.

#### 1314. GEOTHERMAL SAFETY AND FACILITIES OPERATIONS

- a. **Inspection and Maintenance.** Deep Geothermal Operators will regularly inspect Deep Geothermal Locations and Facilities. All Deep Geothermal Wells, equipment, and Facilities utilized in the development of Geothermal Resources, will be maintained in good condition to prevent loss of Geothermal Resources, and to protect public health, safety, and welfare, including protection of the environment and wildlife resources. Deep Geothermal Operators will promptly investigate, and if appropriate, repair, replace, or remediate any malfunctioning equipment or process. If a Deep Geothermal Operator takes action to address any malfunctioning equipment or process identified during an inspection, the Deep Geothermal Operator will maintain documentation of the action taken, and provide it to the Director upon request. The Deep Geothermal Operator will submit documentation of the results of all Deep Geothermal Facility inspections to the Director upon request.
- b. **Corrosion.**
  - (1) The Operator will check the condition of the casing on any Geothermal Well with a pipe analysis log in conjunction with any other logging requirements of Rule 408.r.
  - (2) On a Form 4, Sundry Notice, Operators will provide a corrosion risk assessment that includes prevention measures to minimize internal and external corrosion within one year of a new Geothermal Well commencing production, or a Geothermal Injection Well commencing injection, and then at least once every five (5) years thereafter.
  - (3) The corrosion risk assessment shall include consideration of at least the following:
    - A. Evaluation of casing and tubing integrity and identification of defects caused by corrosion or other chemical or mechanical damage;
    - B. Corrosion potential of Geothermal Fluids and solids, including the impact of operating pressures, temperatures, and compositions on the corrosion potential of Geothermal Fluids; and
    - C. Corrosion potential of uncemented casing.

- c. **General Safety Requirements.** Operators will operate and maintain all Deep Geothermal Facilities in a safe manner. Operators will train their employees in the safe conduct of all job responsibilities, including safe operation and location of all equipment. An Operator will ensure that all contractors, subcontractors, and persons directly under the Operator's control on a Deep Geothermal Location or at a Deep Geothermal Facility receive adequate training and are aware of the hazards presented by the Operator's Deep Geothermal Operations.
- d. Deep Geothermal Operators will comply with Rule 602.
- e. **Operational and Safety Requirements.** Deep Geothermal Operators will comply with Rules 603.a-c, 603.f, 603.h-j, and 603.l-o.
- f. **Setbacks and Siting Requirements.** Deep Geothermal Operators will comply with Rules 605.a-e, 605.g-h, 606, 607, 608.c, 608.e-g.
  - (1) At the time the Deep Geothermal Well is drilled, the Well will be located not less than 200 feet from Building Units, public roads, above ground utility lines, or railroads, unless the applicant can justify such placement with technical testimony at hearing or in the application, and the applicant includes informed consent from all Building Unit owner(s) and tenant(s) explicitly agreeing to the proposed Deep Geothermal Well.
  - (2) No Geothermal Pad Surface will be located less than 500 feet from one or more Building Units not subject to a Surface Use Agreement or waiver, unless the Deep Geothermal Operator can justify such placement with technical testimony at hearing or in the application, and the applicant includes informed consent from all Building Unit owner(s) and tenant(s) explicitly agreeing to the proposed Geothermal Pad Surface.
- g. **Fire Prevention And Protection.** Deep Geothermal Operators will comply with Rules 610.a-h, 610.j, 610.l-r.
- h. **Air And Gas Drilling.** Deep Geothermal Operators will comply with Rule 611.
- i. **Hydrogen Sulfide Gas.** Deep Geothermal Operators will comply with Rules 612.
- j. **Groundwater Baseline Sampling And Monitoring.** Deep Geothermal Operators will comply with Rule 615.
- k. Those 1100-Series Rules applicable to Flowlines are also applicable to Geothermal Flowlines.

#### 1315. GEOTHERMAL RESERVOIR MONITORING

- a. On a Form 4, Sundry Notice, Operators of Deep Geothermal Wells and Geothermal Science Wells will report the initial state of the Geothermal Resource, obtained as soon as practicable after Completion of such Well, by providing data of temperature and pressure, as well as initial flow rates and volumes if a flow test was done.
- b. On a Form 4, Sundry Notice, Operators will provide observation well records within 30 days of any measurement taken in an observation well, or temperature gradient well, including temperature and pressure readings.
- c. Operators will annually report a summary of Fluid usage by submitting a Form 4 Sundry to the Deep Geothermal Facility:

- (1) For any Open-Loop Geothermal System, Operators will submit a summary of the difference between the volumes of Fluids produced and injected, including any fluid loss, and the volume and source of makeup water, if any.
  - (2) For any Closed-Loop Geothermal System, Operators will submit a summary of types and volumes of Fluids used in the system, including any fluid loss.
- d. Where the Director believes it is necessary to prevent waste, prevent the degradation of the geothermal resource, protect correlative rights, or to protect and minimize adverse impacts to public health, safety, welfare, the environment, and wildlife resources, the Director may require subsurface temperature or pressure measurements.
- e. The Director may require injection and/or reinjection of fluid where necessary for the maintenance of underground pressures, the prevention of subsidence, or the disposal of brines.

### 1316. FINANCIAL ASSURANCE FOR DEEP GEOTHERMAL OPERATIONS

#### a. Applicability.

- (1) **All Deep Geothermal Wells.** This Rule 1316 applies to every Deep Geothermal Well and its associated Deep Geothermal Location and Deep Geothermal Facilities, in Colorado, except for those Deep Geothermal Operators who have an approved "Option 6" Financial Assurance Plan, pursuant to Rule 702.d.(6), and who are in compliance with their obligations to provide such Financial Assurance.
- (2) **Approved Wells Not Yet Spud.** All references to Wells in this Rule 1316 include Deep Geothermal Wells subject to an approved but not yet expired Form 2 that have not yet been Spud.
- (3) **Wells Subject to Federal Financial Assurance.** Notwithstanding the provisions of Rule 1316.a.(1) and (2), an Operator may demonstrate in its Financial Assurance Plan that it has already provided or will provide Financial Assurance for the same Deep Geothermal Well, Deep Geothermal Location, or Deep Geothermal Facilities to the federal government at the time it files a Form 2G. All Operators with Deep Geothermal Wells subject to federal bonding requirements will so indicate in its Financial Assurance Plan. The Commission or Director will determine whether the Financial Assurance required by the federal government is substantially equivalent to the Commission's 700-Series Financial Assurance obligations and, if not, what additional Financial Assurance is required, so long as the additional Financial Assurance does not duplicate Financial Assurance imposed by the federal government.

- b. **Form 3, Financial Assurance Plan.** Operators of 1 or more Wells subject to this Rule 1316 will file Financial Assurance Plans as required by this Rule 1316.b. Each Financial Assurance Plan will demonstrate how the Operator is financially capable of fulfilling its obligations under the Geothermal Act and the Commission's Rules.

#### (1) Initial Financial Assurance Plan Submissions.

- A. **Wells Approved Before the Effective Date of this Rule.** Operators who operate Deep Geothermal Wells approved by the Commission, Director, or DWR prior to the effective date of this Rule 1316 will submit an initial Financial Assurance plan by January 1, 2025.

**B. All Other Wells for Deep Geothermal Operations.** Operators who submit permit applications for Deep Geothermal Operations pursuant to Rule 1305 will include a Financial Assurance Plan in the permit application for Deep Geothermal Operations.

- (2) **Review of Initial Financial Assurance Plan.** Review of initial Financial Assurance Plans for Deep Geothermal Operations will occur according to the procedures described in Rules 702.b.(1).C. & 702.e.(1). If the Director denies the Operator's proposed initial Financial Assurance Plan for Deep Geothermal Operations, the denial is subject to Commission review pursuant to the procedures described at Rules 702.b.(1).C. & 702.e.(2). Only CDPHE, CPW, or a Relevant Local Government with jurisdiction over Deep Geothermal Wells subject to the Deep Geothermal Operator's initial Financial Assurance Plan may file a petition pursuant to Rule 507 to participate formally as a party in the Financial Assurance Hearing. If the Director denies the Operator's proposed initial Financial Assurance Plan, either the Operator or the Director may file an application for Commission review under Rule 702.b.(1).C.i.
- (3) **Revised Financial Assurance Plans.** A Deep Geothermal Operator will file a revised Financial Assurance Plan if the Deep Geothermal Operator believes that a change to its approved Financial Assurance Plan is warranted due to a change in circumstance. Revised Financial Assurance Plans will be reviewed, approved, or denied according to the procedures described at Rules 702.b.(2) & 702.e.(1). Only CDPHE, CPW, or a Relevant Local Government with jurisdiction over Deep Geothermal Wells subject to the Deep Geothermal Operator's revised Financial Assurance Plan may file a petition pursuant to Rule 507 to participate formally as a party in the Financial Assurance Hearing. If the Director denies the Operator's proposed revised Financial Assurance Plan, either the Operator or the Director may file an application for Commission review under Rules 702.b.(2).A.
- (4) **Director's Annual Review.** The Director will conduct a review of every registered Deep Geothermal Operator's Financial Assurance at least once every fiscal year pursuant to Rule 707.a.(1). The Director may require an Operator to file a revised Financial Assurance Plan and file an application for a Financial Assurance hearing pursuant to Rule 503.g.(11) based on the Director's annual review pursuant to this Rule 1316.b.(4).
- (5) **Discretionary Review.** If the Director has reasonable cause to believe that the Commission may become burdened with the costs of fulfilling an Operator's plugging and abandonment, reclamation, or remediation obligations under the Geothermal Act or the Commission's Rules because the Operator has demonstrated a pattern of non-compliance with the Commission's Rules or other unique circumstances, the Director may file an application for a Financial Assurance hearing pursuant to Rule 503.g.(11) to obtain the Commission's approval of a plan for the Operator to provide additional Financial Assurance beyond what would otherwise be required under the Commission's Rules.
- (6) **Consolidation of Related Operators.** Where a registered Operator owns, holds, or controls 50% or more of one or more other registered Operators, that parent company Operator and its subsidiary Operators may be consolidated, at their discretion, for purposes of determining the applicable amount of required Financial Assurance, provided the parent Operator guarantees all Financial Assurance obligations for itself and the consolidated subsidiary entities. Consolidation under this Rule will include all of a parent Operator's subsidiary Operators.

**c. Contents of Financial Assurance Plans for Deep Geothermal Operations.** Financial Assurance Plans for Deep Geothermal Operations will meet the following informational criteria:

- (1) **Information Requirements.**
  - A. **Well Status, Designation, and Depth Data.** A summary table accounting for all Wells subject this Rule 1316, including the number of Wells that fall within each operational status and designation as of the date the Financial Assurance Plan is submitted, and the true vertical depth of such Wells.
  - B. **Asset Retirement Planning.** A demonstration of how the Operator is planning for the retirement of its Deep Geothermal Operations and Deep Geothermal Facilities based on the projected life of the Deep Geothermal Operations, age of the infrastructure, and related information.
- (2) **Financial Assurance Amount.** The amount of Financial Assurance the Operator will provide to the Commission as soon as practicable but no later than 90 days from the Commission's approval of the Financial Assurance Plan, which will be:
  - A. **Single Well Plugging and Abandonment Cost.** The Single Well Plugging and Abandonment Cost, as defined in these Rules;
  - B. **Location Reclamation Costs.** The Location Reclamation Cost, as defined in these Rules;
  - C. **Other Financial Assurance.** The amount of Financial Assurance required by Rules 703.b, 703.c., and 703.e.
- (3) **Type of Financial Assurance.** The Operator will indicate the type of Financial Assurance the Operator proposes to provide, pursuant to Rule 701.
- (4) **Certification of Financial Capability.** An Operator will provide a certification of financial capability signed by an Operator's corporate officer to ensure it is financially capable of meeting all of the obligations imposed by the Geothermal Act and Commission's Rules.
- d. **General Liability Insurance.** Deep Geothermal Operators will comply with general liability insurance obligations pursuant to Rule 705.
- e. **Release or Claim of Financial Assurance.** Financial Assurance provided under this Rule 1316 is subject to the release and/or claim provisions of Rule 706.

#### 1317. ENVIRONMENTAL IMPACT PREVENTION

- a. **General Standards.** Deep Geothermal Operators will comply with Rule 901.
- b. **Pollution.** Deep Geothermal Operators will comply with Rule 902.a-e.
- c. **Venting or Flaring Natural Gas.** Deep Geothermal Operators will comply with Rule 903.a-c.
- d. **Management of Waste.** Deep Geothermal Operators will comply with Rule 905.a-b, 905.d-g and Rule 906.
- e. **Pits.** Deep Geothermal Operators will comply with Rules 908, 909, and 910.
- f. **Closure of Deep Geothermal Facilities.** Deep Geothermal Operators will comply with Rule 911.
- g. **Spill and Releases.** Deep Geothermal Operators will comply with Rule 912.

- h. **Site Investigation, Remediation, and Closure.** Deep Geothermal Operators will comply with Rule 913.
- i. **Criteria to Establish Points of Compliance.** Deep Geothermal Operators will comply with Rule 914.
- j. **Concentrations and Sampling for Soil and Groundwater.** Deep Geothermal Operators will comply with Rule 915.

#### 1318. PROTECTION OF WILDLIFE RESOURCES

- a. **Wildlife Plans.** Deep Geothermal Operators will comply with Rule 1201.
- b. **Operating Requirements.** Deep Geothermal Operators will comply with Rule 1202.
- c. **Compensatory Mitigation for Wildlife Resources.** Deep Geothermal Operators will comply with Rule 1203.
  - (1) For permit applications for Deep Geothermal Operations in which the Deep Geothermal Operator requests an exemption from the compensatory mitigation requirements of Rule 1203, the consultation required between ECMC, CPW, and the Deep Geothermal Operator will be conducted as part of the pre-application consultation required by Rule 1304.e.

#### 1319. RECLAMATION REGULATIONS

Deep Geothermal Operators will comply with Rules 1001-1004.

#### 1320. RULES OF PRACTICE AND PROCEDURE FOR DEEP GEOTHERMAL OPERATIONS

- a. **Applicability of 500-Series Rules of Practice and Procedure.** Deep Geothermal Operators are subject to the Rules of Practice of Procedure found at Rules 501 - 505 and Rules 507 - 530.
- b. **Specific Applicability of Rule 503.g.(10).** If the Director determines that there are unique circumstances that warrant the permit application for Deep Geothermal Operations or Geothermal Resource Units going before the Commission for a special hearing, the Director may initiate such a hearing pursuant to Rule 503.g.(10).
- c. **Specific Applicability of Rule 211 and Rule 503.g.(12).B.**
  - (1) **Relevant Local Government or Surface Owner Applications to Require Plugging and Abandonment of a Deep Geothermal Well or Closure of Deep Geothermal Location.** For applications by Relevant Local Governments or Surface Owners to require Plugging and Abandonment a Deep Geothermal Well(s) or closure of a Deep Geothermal Location(s) pursuant to Rules 211 and 503.g.(12).B., the Relevant Local Government or Surface Owner applicant will comply with Rules 503.g.(12).B.i. and iii.
    - A. In addition to the requirements of Rule 503.g.(12).B.i. and iii., the Relevant Local Government or Surface Owner applicant will also certify that the Deep Geothermal Well has been an Inactive Well each year of the previous three years.

- (2) **Time Limit on Used or Useful for Conversion of an Oil and Gas Well to a Deep Geothermal Well.** For applications filed within two years of the effective date of this 1300 Series by Relevant Local Governments or Surface Owners to require Plugging and Abandonment of an Oil and Gas Well(s) or closure of an Oil and Gas Location(s) pursuant to Rules 211 and 503.g.(12).B. where the Operator asserts that the Oil and Gas Well(s) and/or Oil and Gas Location(s) are Used or Useful because the Operator intends to convert the Oil and Gas Well(s) to a Deep Geothermal Well(s), there is a rebuttable presumption that the wells will be utilized for Deep Geothermal Operations. For such applications pursuant to Rules 211 and 503.g.(12).B. filed more than two years from the effective date of this 1300 Series Rules, if the Operator has not filed an application to convert the Oil and Gas Well(s) to a Deep Geothermal Well(s), pursuant to Rule 1311, there is a rebuttable presumption that the Oil and Gas Well(s) is not Used or Useful for Deep Geothermal Operations.