**R644. Natural Resources, Oil, Gas and Mining; Carbon Sequestration.**

**R644-4. Application Content.**

**R644-4-1. Information Required.**

Information required under this rule shall be submitted with a permit application to construct a CO2 Sequestration facility and associated Class VI wells or convert an existing well for Class VI service. For information already on file, the division may accept the required information by reference provided they are current, readily available, and sufficiently identified to be retrieved.

**R644-4-2. CO2 Sequestration Facility Application Requirements.**

(1) The following is required with each permit application:

(a) The nonrefundable application fee;

(b) The owner and operator's name, address, telephone number, and email address;

(c) The physical address of the CO2 Sequestration facility;

(d) Ownership status, and status as federal, state, private, public, or other entity;

(e) A brief description of the nature of the business associated with the activity;

(f) The activity conducted by the operator that require a permit under Title R644;

(g) Up to four SIC Codes that best reflect the principal products or services provided by the CO2 Sequestration facility;

(h) A listing of each environmental permit, construction approval, or any other relevant permit received or applied for from the division or any other federal, state, or local regulatory agency relevant to the permit activity, which may include the following:

(i) The Utah Division of Waste Management and Radiation Control;

(ii) Any underground injection control program;

(iii) NPDES program under the Clean Water Act;

(iv) Prevention of Significant Deterioration program under the Clean Air Act;

(v) Nonattainment program under the Clean Air Act;

(vi) National Emission Standards for Hazardous Pollutants preconstruction approval under the Clean Air Act;

(vii) Dredge or fill permits under Section 404 of the Clean Water Act; and

(viii) Other relevant environmental permits including any state permit issued under the Utah Cultural Resource Inventory, the Utah Paleontological Inventory or the Utah Wild and Scenic Rivers Act;

(i) Acknowledgment as to whether the CO2 Sequestration facility is located on Indian lands or other lands under the jurisdiction or protection of the federal government, or whether the CO2 Sequestration facility is located on state water bottoms or other lands owned by or under the jurisdiction or protection of Utah;

(j) Documentation of financial responsibility or documentation of the method by which proof of financial responsibility will be provided as required in Section R644-5-3. Before making a final permit decision, official documentation of financial responsibility must be submitted to and approved by the division;

(k) The names and addresses of each owner of record of land within one-half mile of the CO2 Sequestration facility boundary.

**R644-4-3. CO2 Sequestration Facility Application Contents.**

(1) An application submitted to construct a CO2 Sequestration facility or the conversion of an existing Class II well shall contain the following geological and technical information for the area of review:

(a) Maps showing property boundaries of the CO2 Sequestration facility, location of each proposed Class VI well, and the applicable area of review for each well consistent with Section R644-8-2;

(b) Maps showing the section, township, and range of the area where the activity is located and any county, city, municipality, state, tribal boundaries, and roads;

(c) Maps showing each injection well, producing well, and abandoned well, plugged well or dry holes, deep stratigraphic boreholes, and Class VI geophysical test well;

(d) Maps showing any surface bodies of water such as lakes, rivers, streams, springs, and existing water wells;

(e) Maps showing surface and subsurface disturbance, such as mines, quarries, and cleanup sites;

(f) Maps showing structures intended for human occupancy;

(g) Only information of public record is required to be included on each map, however, the applicant is required to make a diligent search to locate each well not listed in the public record.

(h) Information on the geologic structure and hydrogeologic properties of the proposed sequestration site and overlying formations, to include:

(i) Regional geologic and topographic maps and cross-sections illustrating surface geology, geologic structure, and hydrology;

(ii) Detailed maps and cross-sections indicating the location, orientation, and properties of known or suspected faults and fractures that may transect the confining zone of each proposed injection zone in the area of review and a determination that they would not interfere with containment;

(iii) Maps and stratigraphic cross-sections showing the general vertical and lateral limits of each USDW, water wells and springs within the area of review, their position relative to each injection zone and the direction of water movement, if known;

(iv) In areas with limited subsurface well control or where the subsurface geology is in doubt and cannot be described adequately, the division may request the applicant to provide geophysical seismic data of the project area;

(i) Any other maps required by the division to evaluate the proposed project.

(j) Data on the depth, areal extent, thickness, mineralogy, porosity, permeability, and capillary pressure of each injection zone and confining zone; including facies changes based on field data which may include geologic cores, outcrop data, seismic surveys, well logs, names, and lithologic descriptions;

(k) Geomechanical information on fractures, stress, ductility, rock strength, and in situ fluid pressures within the each confining zone;

(l) Information on the region's seismic history including the presence and depth of seismic sources and a determination that potential seismicity would not interfere with containment;

(m) A tabulation of each well within the area of review that penetrates each injection zone or confining zone. Such data must include a description of each well's type, construction, date drilled, location, depth, record of plugging or completion, and any additional information the division may require;

(n) Baseline geochemical data from subsurface formations and fluids, including each USDW in the area of review;

(o) Proposed operating data for each Class VI well:

(i) average and maximum daily rate and volume of the carbon dioxide stream;

(ii) total anticipated volume and mass of the carbon dioxide stream;

(iii) average and maximum injection pressure;

(iv) sources of the carbon dioxide stream;

(v) analysis of the chemical and physical characteristics of the carbon dioxide stream;

(p) Proposed pre-operational formation testing program for each Class VI well to obtain an analysis of the chemical and physical characteristics of each injection zone and confining zone and that meets the requirements listed in Section R644-9-2;

(q) Proposed stimulation program for each Class VI well, a description of stimulation fluids to be used, and a determination that stimulation will not interfere with containment;

(r) Proposed injection operation procedures for each Class VI well;

(s) Schematics or other appropriate drawings of the surface, such as wellhead and related appurtenances, and subsurface construction details of each Class VI well;

(t) Injection well construction procedures for each Class VI well that meet the requirements of Section R644-9-1;

(u) Proposed area of review and corrective action plan for each Class VI well that meets the requirements under Sections R644-8-2 and R644-8-3;

(v) Demonstration, satisfactory to the division, that the applicant has met the financial responsibility requirements under Section R644-5-3;

(w) Proposed testing and monitoring plan for each Class VI well required by Rule R644-13;

(x) Proposed injection well plugging plan for each Class VI well required by Rule R644-16;

(y) Proposed post-injection site care and site closure plan for each Class VI well required by Section R644-17-1;

(z) At the division's discretion, a demonstration of an alternative post-injection site care timeframe required by Subsection R644-17-1(3);

(aa) Proposed emergency and remedial response plan required, such as contingency plans for well failures or breaches, by Rule R644-12;

(bb) A list of contacts, submitted to the division for those states and tribes identified to be within the area of review based on information provided in Subsection (1)(a); and

(cc) Any additional information required by the division to evaluate the proposed project.

(2) An application submitted to construct a CO2 Sequestration facility shall also demonstrate that the applicant has obtained written consent of at least 70% of the reservoir's pore space owners within the CO2 Sequestration Facility.

(3) The division shall notify in writing any state or tribe within the area of review based on information provided by the applicant in Subsections (1)(a) and (1)(bb).

(4) Applications shall include a completed APD for each Class VI well, Class VI Geophysical Test Well and monitoring well. The following information shall be included for a completed APD:

(a) The name, address, telephone number, and electronic contact information of the operator;

(b) Proper identification of any relevant leases, including identification of whether the leases are state, federal, Indian, or fee;

(c) A plat or map prepared by a licensed surveyor or engineer that accurately provides:

(i) the proposed well's surface and terminus location as perpendicular distances from Public Land Survey System (PLSS) section lines;

(ii) the PLSS quarter-section or lot, section, township, range, and principal meridian where the proposed well is to be located;

(iii) bearings and distances of any pertinent PLSS section lines;

(iv) bearing and distance from the proposed well's surface to the proposed well's terminus location; and

(v) latitude and longitude coordinates of the proposed well's surface and terminus location, with any provided bearings, distances, and coordinates conforming to a coordinate reference system having datum, north reference, and measurement units acceptable to the division;

(d) A copy of the Division of Water Rights approval, or the identifying number of approval, for use of water at the drilling site;

(e) A drilling program containing the following information:

(i) The estimated tops of important geologic markers;

(ii) The estimated depths at which the top and the bottom of anticipated water, oil, gas, or other mineral-bearing formations are expected to be encountered, and the plans for protecting such resources;

(iii) The minimum specifications for pressure control equipment to be used and a schematic diagram thereof showing sizes, pressure ratings or API series, proposed testing procedures and testing frequency;

(iv) Any supplementary information more completely describing the drilling equipment and casing program;

(v) The type and characteristics of the proposed circulating medium to be employed in drilling, the quantities and types of mud and weighting material to be maintained, and the monitoring equipment to be used on the mud system;

(vi) The anticipated type and amount of testing, logging, and coring;

(vii) The expected bottom hole pressure and any anticipated abnormal pressures or temperatures or potential hazards, such as hydrogen sulfide, that are expected to be encountered, along with contingency plans for mitigating such identified hazards;

(viii) Any other relevant or unique information that would assist the division's assessment and consideration of the application; and

(f) An APD will not be approved until an onsite predrill evaluation is performed by the division as outlined in Section R649-3-18.

**KEY: oil and gas law**

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**Authorizing, and Implemented or Interpreted Law: 40-11-3**