



# State Engineer's Office

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## GUIDANCE: CBM/GROUND WATER PERMITS

This document provides guidance in properly permitting Coal Bed Methane (CBM) wells with the Wyoming State Engineer's Office (SEO) – Ground Water Division.

### **Background**

The State Engineer's Office considers CBM production different than traditional natural gas production. It is similar in that the water is not the object of production; the methane reserve is the target. CBM production is different than conventional gas production due to the necessity for production of water for the production of the gas resource, thus the production of water is a requirement of the production cycle.

The intentional production, or appropriation, of ground water for the CBM production led to the designation of CBM as a *beneficial use* of water and subsequently, to a requirement for a permit to appropriate the ground water.

Coal seams in many areas of Wyoming have been and continue to be important sources of ground water to appropriators for uses including, but not limited to, stock and domestic. Wyoming water law requires that water rights be administered on the basis of *prior appropriation*, giving rise to the necessity of permitting all beneficial uses from the water source in question.

### **Permitting Process**

The SEO requires an *Application for Permit to Appropriate Ground Water* (Form U.W. 5) for each CBM well to be submitted and approved to permit status before drilling a CBM well in Wyoming.

Specific authority requiring permits for the beneficial use of ground water is covered under Wyoming Statute §41-3-930:

*Application... (a) Any person who intends to acquire the right to beneficial use of any underground water in the state of Wyoming, shall, before commencing construction of any well or other means of obtaining underground water or performing any work in connection with construction or proposed appropriation of underground water or any manner utilizing the water for beneficial purposes, file with the state engineer an application for a permit to make the appropriation and shall not proceed with any construction or work until a permit is granted by the state engineer,... The application shall contain the name and post-office address of applicant or applicants, a detailed*

*description of the proposed use, the location by legal subdivision of the proposed well or other means of obtaining underground water, the estimated depth of the proposed well, the quantity of water proposed to be withdrawn and beneficially utilized in gallons per minute and acre-feet per calendar year, the location by legal subdivision of the area or point of use shall be provided, and such other information as the state engineer may require.”*

The state engineer utilizes the information provided by the applicant when considering whether to approve the U.W. 5 Form, and if approved, to determine what conditions and limitations may be attached to the use of water. Providing incomplete or insufficient information at the time of the filing of the U.W. 5 Form can result in significant delays in permit approval or ultimately rejection of the filing by the state engineer.

### **Management of CBM Water**

The following scenarios apply when CBM water is to be used as a direct source for another beneficial use (i.e., water that is discharged to the surface or discharged to a new or existing reservoir may have additional permitting requirements through the SEO - Surface Water Division). Examples of how to fill out Items #4 (*use to which the water will be applied*) and #8, “*Tabulation Box*”, on the U.W. 5 Form are attached.

- 1) Ground water production for CBM use only: No additional permitting is required if there is no additional beneficial use other than CBM production. Under CBM use only, Item #8 on Form U.W. 5, should indicate the location of the CBM well.
- 2) If water will be used for CBM production and Stock watering: CBM and STOCK use should be marked on the U.W. 5 Form. The tabulation in Item #8 should indicate the location of the well and the stock point of use to the nearest quarter-quarter section. Stock use is defined as four (4) or less stock tanks, all located within one (1) mile of the well location.
- 3) If water will be used for CBM production and Stock watering at more than four (4) locations or at a distance greater than one (1) mile from the well: CBM and MISCELLANEOUS use should be marked on the U.W. 5 Form. The miscellaneous use should be described in the remarks and all points of use should be indicated in the Tabulation under Item #8. A Microsoft word template for a tabulation attachment is available on request.
- 4) If water will be used for CBM production and then will discharge directly to a reservoir: CBM and MISCELLANEOUS use should be marked on the U.W. 5 Form. In this case the miscellaneous use will be described as Miscellaneous, Reservoir Supply. Each reservoir location and name must be marked in the tabulation under Item #8. If the water discharges to a drainage or stream and not directly to the reservoir, RESERVOIR SUPPLY use should only be specified if the water is intended for, and will be put to use, under the permitted reservoir in question. A Microsoft word template for a tabulation attachment is available on request.

- 5) If water will be used for Oil and Gas well drilling, dust abatement, construction water (compaction), well stimulation/enhancement, or other uses not specifically covered under other use categories: CBM and MISCELLANEOUS use should be marked on the U.W. 5 Form. A tabulation of the area of use for each miscellaneous use and a location for point of collection (i.e. pit, load out, storage tank, and reservoir locations) must accompany the U.W. 5 Form. A Microsoft word template for the tabulation attachment is available on request.
- 6) If water will be used for an industrial process, such as oil field secondary recovery (water flood) operations, where there is a consumptive use of the water: CBM and INDUSTRIAL use should be marked on the U.W. 5 Form. If industrial use is indicated, a description of the use and a tabulation of the area of use must accompany the U.W. 5 Form.
- 7) If water is to be used for irrigation: CBM and IRRIGATION use should be marked on the U.W. 5 Form. A tabulation of the areas of use for the irrigation must be specified. The tabulation must include the total number of acres in each quarter-quarter of each section that receives water.
- 8) The subsequent uses of the produced water can be identified for each well on each U.W. 5 Form or a single U.W. 5 Form can be submitted for a collection point if applicable. As an example, if eight wells are collected in a single collection line and a water user elects to take the water at a common outlet, the ground water source is identified as a collection point at the location that water is diverted. All uses for the water must be identified on the collection point U.W. 5 Form as outlined above. The collection point U.W. 5 Form is a tool that can be used at a later date to establish a water right for additional uses of the water when the actual uses were not well understood at the time of original filing for the individual wells. When filing the collection point U.W. 5 Form, the source wells, uses, and tabulation of those uses must be specified.
- 9) Issuance of a permit by the SEO for aquifer storage and retrieval (ASR) wells, occurs only if the water is to be reserved for some future use. If the applicant wishes to store the water and save it for a future use, the future use should be identified as accurately as possible. If the U.W. 5 Form is approved to permit status, the appropriator will be required to meter the amount of water put into storage, and will be limited to that same amount of water upon retrieval under the ASR Permit. For specifics on this type of permitting, it is requested that the applicant contact the Ground Water Division. Additionally, the applicant should anticipate completing an Underground Injection Control (UIC), or an Aquifer Storage and Retrieval (ASR) permit application with the Wyoming Department of Environmental Quality - Water Quality Division.

In all of the scenarios presented above, the underlying theme is properly permitting all of the uses of the water, giving clear descriptions of the uses, and providing proper tabulation of areas and/or points where this use occurs.

Following the guidelines provided herein and providing timely submission of additional requested information will insure that consideration of U.W. 5 Form(s) occur(s) in a timely manner.

If the necessary information is not submitted with the U.W. 5 Form, or submitted upon request of the Ground Water Division, the U.W. 5 Form will not be considered for approval. The U.W. 5 Form(s) will be held unapproved, pending receipt of requested information and may ultimately be rejected.

### **Statutory Authority – Permits and Penalties**

An approved permit from the SEO is required prior to the construction of, and the use of ground water from a well.

*(Note: italics depict historic interpretation of the statute as implemented by the SEO)*

“W.S. §41-3-905. Application... No well shall be constructed after the effective date of this act unless a permit has been obtained from the state engineer..” *The driller or person/entity engaged in construction of a water well shall have in their possession, at the well site, a copy of the approved permit or the permit number.*

Noncompliance with W.S. §41-3-905 will result in a penalty:

W.S. §41-3-919: Prohibited Acts; penalty for violation. Any person who withdraws underground water or who fails to stop or reduce the flow of underground water in violation of any order of the state engineer made pursuant to this act, or any person who does not have a permit, certificate or vested right to appropriate underground water who shall withdraw underground water from any well other than a well for stock or domestic purposes as defined in W.S. §41-3-907, is guilty of a misdemeanor and upon conviction shall be punished under W.S. §41-3-614. [‘...is guilty of a misdemeanor and shall be fined not exceeding five hundred dollars (\$500.00). The possession or use of water lawfully denied by the water commissioner or other competent authority is prima facie evidence of guilt.’]” *(this includes violation of the SEO’s Water Well Minimum Construction Standards or special conditions and limitations attached to ground water permits).*

“W.S. §41-3-938. Penalty. Any person who drills, digs, or constructs any works for the securing of underground water without having obtained a permit is guilty of a misdemeanor and upon conviction shall be punished under W.S. §41-3-614 [‘...is guilty of a misdemeanor and shall be fined not exceeding five hundred dollars (\$500.00). The possession or use of water lawfully denied by the water commissioner or other competent authority is prima facie evidence of guilt.’]”

### **Additional Guidance Documents**

The following documents, available on the State Engineer’s website at <http://seo.state.wy.us/cbm.aspx>, summarize the permitting requirements for pits and reservoirs that have an associated beneficial use of the stored water, and pits and reservoirs that act as “full containment” with no beneficial use allowed:

- 1) Wyoming Water Law: A Summary;
- 2) Revised Interim Policy Memo for the SEO titled “State Engineer’s Office permitting requirements for water produced during the recovery of coal bed methane (CBM);
- 3) Guidance Flow Chart for the Permitting of CBM Produced Water by the Wyoming State Engineer’s Office (SEO); and
- 4) Memorandum of Understanding (MOU) between state agencies titled “Guidance for permitting Off-channel containment pits for CBM Discharges”.

Specific questions on surface water permitting should be directed to the State Engineer’s Office – Surface Water Division at (307) 777-6475.

Ground water permitting questions should be directed to the State Engineer’s Office - Ground Water Division at (307) 777-6163.

U.W. 5 Examples:

If only CBM use is indicated, provide the well location in the tabulation box.

TABULATION BOX

TWP	RNG	SEC	NE <sup>1</sup> / <sub>4</sub>				NW <sup>1</sup> / <sub>4</sub>				SW <sup>1</sup> / <sub>4</sub>				SE <sup>1</sup> / <sub>4</sub>				TOTAL	
			NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>		
49N	78W	10	X	CBM Well																

The number of stock tanks and their locations must be shown when designating stock use on Item # 4 (up to four stock tanks within 1 mile of the well).

TABULATION BOX

TWP	RNG	SEC	NE <sup>1</sup> / <sub>4</sub>				NW <sup>1</sup> / <sub>4</sub>				SW <sup>1</sup> / <sub>4</sub>				SE <sup>1</sup> / <sub>4</sub>				TOTAL		
			NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>			
49N	78W	10	X	CBM Well																	
49N	78W	10					X	Stock use @ Outfall, Tire Tank													

Miscellaneous Use (stock watering pipeline) must be indicated when more than 4 stock tanks are to be served, or if any one stock tank is more than 1 mile from the well.

TABULATION BOX

TWP	RNG	SEC	NE <sup>1</sup> / <sub>4</sub>				NW <sup>1</sup> / <sub>4</sub>				SW <sup>1</sup> / <sub>4</sub>				SE <sup>1</sup> / <sub>4</sub>				TOTAL		
			NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>			
49N	78W	10	X	CBM Well																	
48N	78W	34			X	Hydrant (Portable Tank)								X	2- Stock Tanks						3
48N	78W	33				X	Stock Tank						X	Stock Tank							2

If water is hard-piped directly to a reservoir, indicate Miscellaneous Use (Reservoir Supply) under Item #4. If the water is not directly piped and is discharged into a tributary (i.e. draw/creek/etc.) up-stream of the reservoir, it is not considered a Reservoir Supply.

TABULATION BOX

TWP	RNG	SEC	NE <sup>1</sup> / <sub>4</sub>				NW <sup>1</sup> / <sub>4</sub>				SW <sup>1</sup> / <sub>4</sub>				SE <sup>1</sup> / <sub>4</sub>				TOTAL			
			NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>	NE <sup>1</sup> / <sub>4</sub>	NW <sup>1</sup> / <sub>4</sub>	SW <sup>1</sup> / <sub>4</sub>	SE <sup>1</sup> / <sub>4</sub>				
49N	78W	10	X	CBM Well																		
48N	78W	34					X	Reservoir name, Permit No. 12345 Res.														

If water is to be used for any other use not indicated above and you would like assistance, please contact the State Engineer's Office - Ground Water Division at (307) 777-6163.