


**COLORADO**

 Oil & Gas Conservation  
 Commission

Department of Natural Resources

 1120 Lincoln Street, Suite 801  
 Denver, CO 80203

October 4, 2017

 Via First Class Mail and email to: [ray.scott.senate@state.co.us](mailto:ray.scott.senate@state.co.us) and [bob.rankin.house@state.co.us](mailto:bob.rankin.house@state.co.us)

 Senator Ray Scott  
 Assistant Majority Leader  
 State Capitol  
 Denver, Colorado 80203

 Representative Bob Rankin  
 State Representative  
 State Capitol  
 Denver, CO 80203

Re: Abandoned well inventory Information Request

Dear Senator Scott and Representative Rankin:

Thank you for your September 6, 2017 request for information concerning abandoned wells in Colorado. The Colorado Oil and Gas Conservation Commission appreciates your interest and welcomes the opportunity to engage with you and your colleagues on this important topic. The Commission's responses to your information request are enclosed.

On a per-well basis, Commission data show the average cost to plug and abandon an orphaned well is six times greater than the amount of financial assurance held by the state. If costs to remediate environmental impacts and reclaim a well site are included, the average actual costs exceed available financial assurance by a factor of fourteen.

COGCC is currently tracking 244 known orphaned wells that require plugging and 300 associated locations that require reclamation. In addition, an estimated 400 undiscovered locations/wells are likely located in historic oil and gas fields around the state. The rate of new orphan wells is also accelerating each year with no sign of slowing down. Commission data show sixty-three potentially "distressed operators" who each operate at least ten wells with at least 50% of their wells off-line, producing at one-third the "stripper well" rate, or delinquent for a required mechanical integrity test. Collectively, these operators own 3,998 wells across the state.

COGCC does not expect all distressed operators to abandon their assets, and those who do will not do so all at once or even in the same year. But, in our experience, many of them ultimately will not have the resources to properly plug, remediate, or reclaim their wells or locations and the state will inherit that responsibility. Under existing financial assurance obligations and legislative appropriations, the state also lacks the resources necessary to plug, reclaim, and remediate the hundreds or even thousands of additional wells that may become orphaned in the future.

 P 303.894.2100 F 303.894.2109 [www.colorado.gov/cogcc](http://www.colorado.gov/cogcc)

 Commissioners: John H. Benton - Chair, Howard Boigon - Co-Vice Chair, Tommy Holton - Co-Vice Chair,  
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 John W. Hickenlooper, Governor | Robert W. Randall, Executive Director, DNR | Matthew J. Lepore, Director


*Senator Ray Scott*  
*Representative Bob Rankin*  
*October 2, 2017*  
*Page 2*

We look forward to answering additional or follow-up questions about the state's aging oil and gas infrastructure and to collaborating with the General Assembly to arrive at an effective and efficient solution before this issue gets away from us.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew J. Lepore". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Matthew J. Lepore  
Director

CC (via email only):

John H. Benton, Chair, Colorado Oil and Gas Conservation Commission  
Robert Randall, Executive Director, Department of Natural Resources  
Doug Vilsack, Legislative Liaison, DNR



## Colorado Oil and Gas Conservation Commission response to Senator Scott and Representative Rankin's Abandoned Well Inventory Information Request

October 4, 2017

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### Question 1

*What is the most accurate, current inventory (number) of abandoned wells or locations that the COGCC is aware of and tracking? In which basin(s) are these wells or facilities located?*

Response: As of September 2017, COGCC is tracking plugging tasks for 244 wells and reclamation tasks at 300 locations. Each location may have zero (not drilled or already plugged), one, or multiple wells. Known orphan location and well counts are listed by basin in the following table.

Known Orphan Well and Location Count by Basin

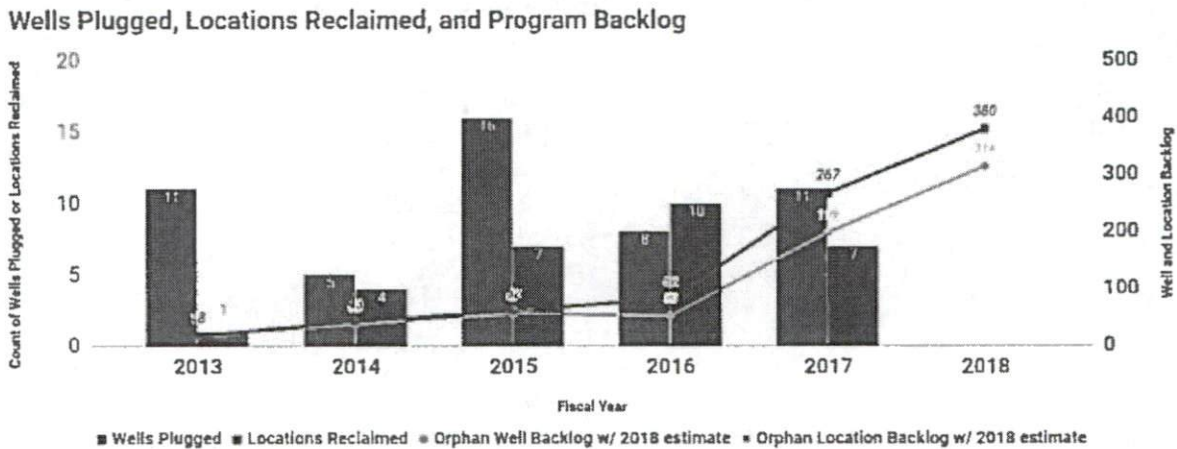
<u>Basin</u>	<u>Wells</u>	<u>Locations</u>
Canon City Embayment	8	8
Denver-Julesburg	81	112
Hugoton Embayment	4	21
North Park	21	18
Paradox	22	28
Piceance	36	35
Raton	3	3
San Luis	0	0
San Juan	69	74
Sand Wash	0	1
<b>KNOWN WELLS AND LOCATIONS SUBTOTAL =&gt;</b>	<b>244</b>	<b>300</b>

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COGCC is aware that there are existing undiscovered orphan wells and locations in historic fields such as Rangely and Florence in addition to those that are currently known and tracked. A conservative estimate by COGCC staff is that there are 400 additional undiscovered orphan wells and locations (one well per location) in need of plugging and reclamation by the state, increasing COGCC's estimate of existing orphan wells to 644 and locations to 700. While COGCC is considering strategies to document and evaluate undiscovered wells and locations, limited staff time and funding is prioritized to addressing the known backlog of orphan wells and locations.

Well plugging, reclamation, and remediation task prioritization continues on a weekly basis. As of September 2017, the current counts of 244 tracked well plugging tasks and 300 tracked reclamation tasks are up from counts of 199 tracked wells and 267 tracked locations at the end of FY2017.

Planning estimates of 314 wells and 380 locations for FY-2018 shown on the following figure include an additional 60 wells and 60 locations from anticipated bond claims plus estimated values for undiscovered orphans (10 additional wells and 20 additional locations):



## Question 2

*What is the most accurate, current forecast (numbers) of abandoned wells or locations that the COGCC is aware of and tracking? In which basins are these wells or facilities located?*

**Response:** Since 2015, COGCC has closely tracked a data set intended to identify potentially “distressed operators,” who may not be able to operate their assets economically. COGCC initiated this review to identify operators who can be required to increase their financial assurance pursuant to Commission Rule 707. The key metrics COGCC evaluates are:

1. Total number of wells owned;
2. What percentage of the operator's wells either are shut-in (SI) or temporarily abandoned (TA);
3. What percentage of the operator's SI or TA wells have not had a mechanical integrity test (MITs) performed when required; and
4. What percentage of the operator's wells produce less than five barrels of oil equivalent ("BOE") per day (one-third the rate of a "stripper well," which is defined as well that produces less than 15 BOE per day).

While these criteria do not measure an operator's financial health directly, in COGCC's experience operators with a high percentage of SI or TA wells, delinquent MITs, or very low producing wells present the greatest risk of abandoning their assets without performing required plugging, reclamation, and remediation.

Using data current through August 4, 2017, COGCC analyzed the above criteria for every operator in the state. We considered operators who own ten or fewer wells separately because the state can more easily absorb small numbers of abandoned wells or locations. In addition, we excluded operators who own more than 750 wells from our final analysis because it is less likely such large operators would abandon a large number of wells en masse. Applying these criteria, COGCC has identified 63 potentially "distressed operators" for whom at least 50% of their wells are either SI or TA; delinquent for an MIT; or producing less than five BOE per day. Collectively, these operators own 3,998 wells in Colorado.

In addition, there are 113 operators who own fewer than ten wells that have at least 50% of their wells shut-in or temporarily abandoned; have delinquent MITs; or produce less than five BOE per day. Collectively, these operators own 314 wells.

COGCC believes this analysis is a good gauge of the scope of the potential future abandoned well issue in Colorado. COGCC does not expect all 176 of these distressed operators to abandon their assets, and those who do will not do so all at once or even in the same year. Additionally, one could select different thresholds and move the numbers of distressed operators and their associated wells up or down. Nonetheless, based on past experience, we expect many of these operators ultimately may not have the resources to properly plug, remediate, or reclaim their wells or locations, and the state would inherit that responsibility. Under existing financial assurance obligations and legislative appropriations the state also lacks the resources necessary to plug, reclaim, and remediate hundreds or even thousands of additional abandoned wells.

### Question 3

*How many wells or locations has COGCC remediated in each of the past five calendar years and in what basins are these wells or facilities located? What is the aggregate and per project cost for the plugging and abandonment of these wells or facilities?*

Response: On average, COGCC plugged 10 orphan wells and reclaimed six oil and gas locations per year between 2013 and 2017. Well and location counts by basin for the last five fiscal years are presented in the following tables.

WELLS PLUGGED BY FISCAL YEAR					
	2013	2014	2015	2016	2017
Canon City Embayment	6	0	0	0	0
Denver-Julesburg	0	4	1	3	3
Hugoton Embayment	0	0	4	0	0
Paradox	0	0	1	1	3
Piceance	1	1	10	0	3
Raton	1	0	0	0	0
San Juan	1	0	0	1	0
San Luis	0	0	0	0	0
Sand Wash	2	0	0	4	2
<b>Total Wells Plugged</b>	<b>11</b>	<b>5</b>	<b>16</b>	<b>9</b>	<b>11</b>

LOCATIONS RECLAIMED* BY FISCAL YEAR					
	2013	2014	2015	2016	2017
Canon City Embayment	0	0	0	0	0
Denver-Julesburg	0	1	0	5	3
Hugoton Embayment	0	0	5	0	0
Paradox	0	0	0	2	1
Piceance	0	2	2	2	1
Raton	0	0	0	0	0
San Juan	1	0	0	0	0
San Luis	0	0	0	0	0
Sand Wash	0	1	0	1	2
<b>Total Locations Reclaimed*</b>	<b>1</b>	<b>4</b>	<b>7</b>	<b>10</b>	<b>7</b>

\* initial reclamation activities performed (monitoring and maintenance may be on-going)

The aggregate five-year cost for plugging and reclamation was \$2.6 million. The average plugging cost per well was \$35,000. The average reclamation and remediation cost per location was \$39,000. The total average cost for a single well location, including 10% contingency is approximately \$82,500. See summary table below.

**COGCC Orphan and Distressed Operator (ODO) Program**  
**Expenditures by Funding Source and Work Type for Fiscal Years 2013 through 2017**

Fiscal Year	BOND	FROW	EMGY	Total Expenditures	Plugging Costs	Reclamation Costs	Environmental & Other Costs	Average Plugging Costs per Well	Average Reclamation Costs per Location	Average Environmental & Other Costs per Location
2013	\$39,810	\$350,041	\$0	\$387,897	\$335,198	\$23,015	\$29,685	\$30,473	\$23,015	\$29,885
2014	\$15,926	\$429,032	\$0	\$444,958	\$257,891	\$174,287	\$12,781	\$51,578	\$43,572	\$3,195
2015	\$65,719	\$414,841	\$0	\$480,560	\$361,470	\$79,880	\$39,210	\$22,592	\$11,411	\$5,801
2016	\$60,388	\$439,683	\$15,383	\$515,455	\$270,358	\$179,117	\$65,981	\$33,765	\$17,912	\$6,598
2017	\$323,024	\$441,148	\$0	\$764,172	\$397,683	\$219,110	\$147,379	\$36,153	\$31,301	\$21,054
Averages =>	\$100,973	\$414,949		\$518,808	\$324,520	\$135,082	\$68,007	\$34,918	\$25,442	\$13,227

Five-Year  
 Sum => \$504,887 \$2,074,746 \$15,383 \$2,593,042 \$1,622,599 \$675,408 \$295,035

SUM OF AVERAGE ENGINEERING + RECLAMATION + ENVIRONMENTAL & OTHER COSTS => **\$73,587**

Round up to \$75,000 and add 10% contingency => **\$82,500**

**Notes:**

\* Total Expenditures reconciled with accounting data on 8/14/2017

#### Question 4

*How many wells or locations is the COGCC presently remediating and what are the projected costs for each of these ongoing projects in 2018 fiscal year:*

Response: The General Assembly appropriated \$445,000 for Plugging & Reclaiming Orphaned Wells ("PROW") in FY-2018. In addition, COGCC has claimed \$403,609 in financial assurance (bonds) from defunct operators, earmarked for FY-2018 projects. COGCC has 16 plugging or MIT projects and 11 reclamation projects scheduled for completion in FY-2018 using the PROW appropriation and claimed financial assurance.

COGCC has a breakdown of the tasks and associated costs necessary to plug 91 of the 244 known orphan wells. The estimated cost to perform the plugging work is \$3.5 million at today's costs. The estimated cost to reclaim 112 of 300 locations is \$4.4 million at today's costs. With additional project management and funding resources, COGCC could work through the existing inventory of known orphan well projects more quickly.

#### Question 5

*To what extent has the COGCC utilized the required operator bonding as a funding mechanism to offset the costs of plugging and abandonment? Does the COGCC consider this funding mechanism to be inadequate? If so, does this suggest a need to consider adjustments to current bonding requirements?*

Response: COGCC always uses any available financial assurance (bonding) for a particular orphan well prior to using funds from the Plugging and Reclaiming Orphaned Wells appropriation. Financial assurance, if available, can offset some costs for plugging, remediating, and reclaiming orphan well locations, but in most cases is not sufficient to complete all necessary work.

The average amount of financial assurance available from bond claims for orphan well work done between 2010 and 2017 (26 operators) was \$7,862 per location. No financial assurance is available for many legacy orphan well locations; taking these locations into account, the average financial assurance available is \$6,000 per location. As noted in response to question no. 3, the average cost just to plug an orphaned well is \$35,000 while the total average cost to plug, reclaim, and remediate a single-well orphan location is \$82,500.

The COGCC's financial assurance requirements were last updated in 2008. The Commission's consideration of financial assurance requirements in the 2008 rule changes is documented in the Commission's December 17, 2008 rulemaking Final Statement of Basis and Purpose (pp 48-52), available at [http://cogcc.state.co.us/documents/reg/Rules/2008/COGCCFinalSPB\\_121708.pdf](http://cogcc.state.co.us/documents/reg/Rules/2008/COGCCFinalSPB_121708.pdf). These changes did not eliminate "blanket bonds," which allow an operator to cover many wells with a single financial assurance instrument. For example, \$60,000 serves

as financial assurance for plugging and abandoning up to 99 wells. While many other oil and gas producing states allow blanket bonds, Colorado's blanket bond amounts are on the low end of the scale.

Increasing existing financial assurance requirements -- blanket bonding amounts in particular -- potentially could reduce the state's liability exposure for new wells, but would not address the threat posed by existing under-bonded wells. Moreover, we expect the industry would vigorously oppose any increase in existing financial assurance requirements.

Creation of a separate, industry-sponsored reserve fund for plugging, reclaiming, and remediating orphan wells avoids many of the obstacles posed by increasing financial assurance requirements. For example, the fund could be used to address existing under-bonded wells. Other states have had success with industry-sponsored orphan well funds. The Oklahoma Energy Resources Board, for example, has cleaned-up 15,000 orphan well sites funded solely by voluntary industry contributions. See <http://www.oerb.com/well-site-clean-up>.

If a voluntary, industry-funded orphan well reserve fund is not established in the near term, a comprehensive review of COGCC's existing financial assurance requirements would be warranted. The state's orphan well inventory is growing at an increasing rate that shows little sign of slowing down.

#### Question 6

*To what extent is the COGCC using existing statutory funding mechanisms necessary to address the abandoned well situation, e.g. § 34-60-122 C.R.S.? It would appear this existing statute gives COGCC funding, provided the fund balance is replenished via its share of severance taxes. Furthermore, other existing law makes clear that plugging abandoned wells is well within the ambit of "preventing or mitigating a condition that might result in significant adverse environmental impact", § 34-60-124, C.R.S.*

Response: The Oil and Gas Conservation and Environmental Response Fund (the "Fund") created by C.R.S. section 34-60-122 constitutes a large majority of COGCC's annual operating budget and, with limited exceptions, is subject to annual appropriation by the General Assembly. See C.R.S. §§ 34-60-124(3), (10). A mill levy on the value of oil and gas production is the largest funding source for the Fund. C.R.S. § 34-60-122(1)(a). The two-year average of the unobligated portion of the Fund may not exceed six million dollars. See C.R.S. § 34-60-122(1)(b). The Commission must have an adequate balance in the Fund at the end of each fiscal year to pay expenses at the beginning of the next fiscal year.

Within the Fund, C.R.S. § 34-60-122(5) creates an "environmental response account" (the "ERA"), into which penalties imposed for violations of the Act or COGCC rules are deposited. The ERA is used as the first source of revenue for expenditures authorized by § 34-60-124(4). The ERA may be used to address orphan well issues that cause or

threaten to cause significant adverse environmental impacts. C.R.S. § 34-60-124(4)(a)(I). The ERA may not be used to pay for staffing and general overhead. C.R.S. §§ 34-60-122(5), 124(10).

In fiscal year 2017-18, the General Assembly appropriated \$445,000 for Plugging and Reclaiming Orphaned Wells. The ERA is the source of most of the funds used for the PROW appropriation. Even if the Commission has a backlog of orphan well projects (as it does now) and the fund balance in the ERA exceeds the PROW appropriation (as it does now), the Commission cannot spend more on orphan well projects than the General Assembly appropriates for PROW.

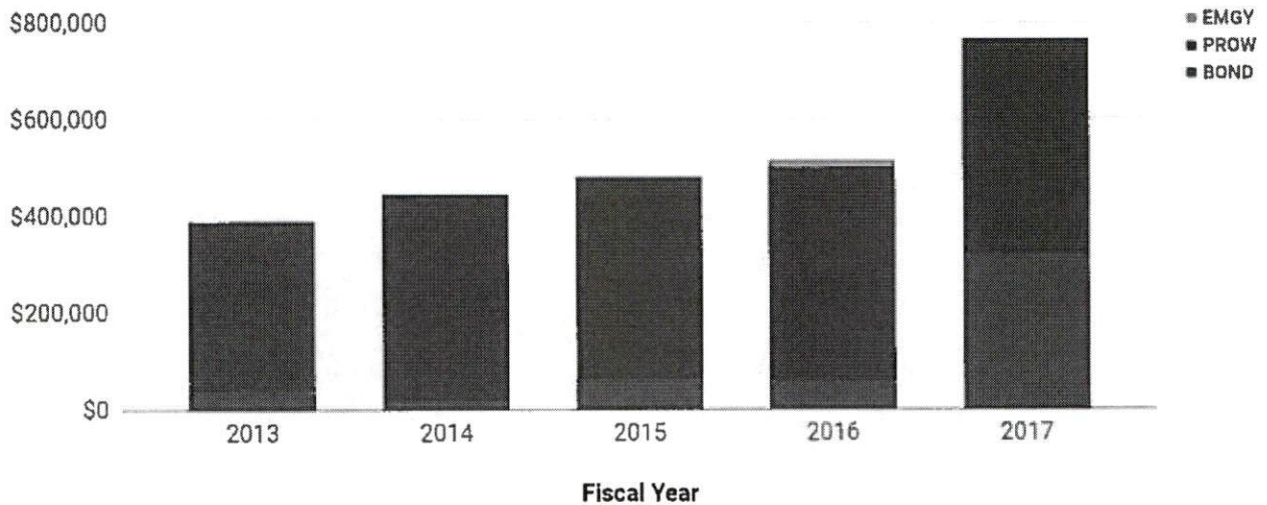
In addition, the General Assembly appropriated \$750,000 from the Fund for emergency response actions. The Commission historically has treated the emergency response appropriation as “insurance” for use in true emergencies. COGCC has used emergency response appropriation to address orphan wells only on a limited basis when clear actual or threatened impacts to the environment exist. As with the PROW appropriation, the General Assembly would need to substantially increase the emergency response appropriation if it intended it to serve as both emergency insurance and a meaningful source of orphan well project funding.

Bond, PROW, and emergency expenditures for the last five fiscal years are summarized in the table below:

Fiscal Year	Bond	PROW	Emergency	Total Expenditures
2013	\$39,810	\$350,041	\$0	\$387,897
2014	\$15,926	\$429,032	\$0	\$444,958
2015	\$65,719	\$414,841	\$0	\$480,560
2016	\$60,388	\$439,683	\$15,383	\$515,455
2017	\$323,024	\$441,148	\$0	\$764,172
Sum =>	\$504,867	\$2,074,746	\$15,383	\$2,593,042
Averages =>	\$100,973	\$414,949		\$518,608

Expenditures by funding source for FY2013 through FY2017 are illustrated in the figure below:

### Fiscal Year Expenditures by Funding Source



#### Question 7

*Finally, has the COGCC examined its internal systems, policies and protocols to determine what, if any, impact staff review times, enforcement activities or other processes may be contributing to operator's financial distress?*

Response: COGCC's enforcement and penalty policies are set forth in its *Enforcement Guidance and Penalty Policy, January 2015 ("Enforcement Guidance")*, available at <http://cogcc.state.co.us/documents/reg/Policies/EnforcementGuidance.pdf>. COGCC endeavors to implement its enforcement authority fairly and consistently. When operators engage in a pattern of violations, fail to remediate environmental harm caused by their oil and gas operations, or fail to pay penalties required by Commission Orders, the Commission has exercised the authority vested in it by the General Assembly to suspend the operator's right to operate in Colorado or obtain new oil and gas permits from the Commission. C.R.S. § 34-60-121(7). The Commission recognizes these statutory remedies, when imposed, may subject operators to financial hardship; for that reason these remedies are reserved for the most egregious circumstances.

The Commission is not aware of any instance in which the time required for staff to review a permit application has had a material or direct deleterious impact on an operator's financial well-being. Most operators have an inventory of available permits and build sufficient lead time into their application submittals. COGCC has authority to expedite permit review times under extenuating circumstances that would subject an operator to significant financial consequences if the permit was delayed and exercises that authority in appropriate circumstances. Commission Rules 303.i.; 502.b.