

**COLORADO DEPARTMENT OF
PUBLIC HEALTH AND
ENVIRONMENT**

Consultation Guidance for the:

**COLORADO OIL AND GAS
CONSERVATION COMMISSION
AMENDED RULES**

June 2009

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I. Purpose and Goals

This "living" document shares how the Colorado Department of Public Health and Environment (CDPHE or Department) views its role and responsibilities under the amended Colorado Oil and Gas Conservation Commission (COGCC) rules that became effective April 1, 2009 on State and private lands and will become effective July 1, 2009 on Federal lands. It will be updated on a periodic basis to impart additional knowledge and perspective as CDPHE gains experience implementing the rules. The primary audiences for this guidance include industry permitting staff, local governments, COGCC staff and the public. CDPHE encourages suggestions on how to maximize the usefulness of this guidance. Updates can be found at www.colorado.gov/cs/Satellite/CDPHE-DEHS/CBON/1251594746968.

CDPHE has developed this guidance to achieve several important goals. First, this agency considers it a high priority to offer a framework for how we plan to consult on operator variance requests and Comprehensive Drilling Plans; as well as how we intend to respond to consultation requests made by Local Government Designees (LGDs). Second, CDPHE believes that creating this guidance will afford the regulated community, local governments and the public a desired transparency and certainty regarding involvement with the amended COGCC rules. In turn, we hope this guidance will maximize permitting efficiency and consistency. Third, CDPHE hopes this guidance encourages and helps focus regular communications among COGCC, CDPHE, operators, local governments and the public. Finally, CDPHE has organized itself to ensure this agency's involvement with the amended COGCC rules is both effective and efficient. This guidance offers key contacts.

This guidance is furthermore designed to complement COGCC rulemaking and other implementation guidance including:

- The amended rules
- The Statement of Basis, Specific Statutory Authority, and Purpose
- The COGCC Permitting Manual
- Statewide outreach meetings and trainings

II. Disclaimer

The policies and procedures set out in this document are intended solely for informational guidance for CDPHE personnel, the regulated community, local governments and interested members of the public. It describes general practices and recommendations regarding CDPHE consultation on the amended COGCC rules. It should be noted that the provisions of this guidance are not binding for any specific consultation actions and CDPHE intends that case by case circumstances will be taken into account as appropriate. It is not intended and cannot be relied upon to create rights, substantive or procedural, enforceable by any person in litigation with the CDPHE. Finally, CDPHE reserves the right to be at variance with this guidance. CDPHE also reserves the right to change this guidance at any time, and will make every effort to widely distribute and make available any subsequent revisions to the guidance.

III. A Brief Summary of Relevant Legislation and Regulations **- A Focus on CDPHE's Involvement in the Amended COGCC Rules¹:**

In 2007, the General Assembly passed legislation to better address the potential adverse impacts that can accompany oil and gas development. Among the legislative directives (codified in certain sections of the Colorado Oil and Gas Conservation Act) was that the COGCC rules provide a timely and efficient procedure by which the CDPHE has an opportunity to provide comments during the COGCC's decision-making process. The amended COGCC rules now provide for consultation with CDPHE in certain circumstances on matters relating to the protection of public health, safety, welfare and the environment.

Amended COGCC Rules 305 and 306d set forth how CDPHE consultation is to occur, the procedures for consultation, and the results of consultation. Highlights include:

- Under limited circumstances, a requirement that COGCC consult with CDPHE on an oil and gas location assessment (Form 2A), as follows:
 - The *local government designee (LGD)* timely requests consultation with CDPHE on a Form 2 or a Form 2A for concerns regarding public health, safety, and welfare, or impacts to the environment.
 - An *operator* seeks a variance from a provision of one of the following rules intended to protect public health, safety, welfare or the environment:
 - Rule 317B Public Water System Protection;
 - Rule 325 Underground Disposal of Water;
 - Rule 603 Drilling and Well Servicing Operations and High Density Area Rules;
 - Rule 608 Coalbed Methane Wells;
 - Rule 805 Odors and Dust;
 - 900-Series E&P Waste Management; and/or
 - Rule 1002.f. Stormwater Management.
 - An *operator* requests a modification to an existing Commission order to increase well density or otherwise proposes to increase well density to more than one (1) well per forty (40) acres
 - The *Commission* develops a basin-wide order that may have an impact on public health, safety, and welfare, or the environment.

¹Please refer to the Statement of Basis, Specific Statutory Authority, and Purpose, the amended COGCC rules, and related implementation guidance for additional details. They can be found on the COGCC website.

- A consultation period of up to 40 days, with clock starting when COGCC notifies electronically the CDPHE of the complete Form 2 or Form 2A (which must occur concurrently with COGCC posting the complete permit application on its website for public comment). Consultation may occur in a shorter time period depending on the quality and completeness of information provided to support the consultation, including information CDPHE recommends that operators submit (see below), timing of initial discussions with the operator, complexity of consultation topics, CDPHE staff workload at the time of consultation and involvement by LGDs. If warranted, CDPHE will contact the operator as early as feasible after receiving the complete application to obtain additional information from the operator necessary to complete its review and to discuss any questions the agency may have. In no event will the consultation time period be less than that of the public comment period to ensure that CDPHE can consider public comment.
- A consultation process consisting of reviewing the proposed project, discussing the proposed project with the operator/COGCC where warranted, and making written recommendations to the COGCC regarding conditions of approval. Note that the time available for a consultation may be as long as forty (40) days or as short as twenty-six (26) days, depending on whether the LGD uses all fourteen (14) days to notify the COGCC of a request for consultation with the CDPHE.
- A consultation waiver is provided to CDPHE and CDPHE may exercise this right at any time.

New COGCC Rule 216 creates a voluntary and flexible planning and permitting tool, known as a Comprehensive Drilling Plan (CDP), which operators can tailor to their needs. Operators electing to take advantage of Rule 216 must invite CDPHE to participate in development of a CDP. CDPHE will evaluate its participation in a CDP based on the proposed activity's relative potential impact on public health, welfare and the environment. Additionally, CDPHE will consider location and geographic area, particularly as it relates to where people live and work, water resources, including drinking water supplies, and topography that affects stormwater-related matters.

CDPHE anticipates involvement in CDPs to vary depending on the specific CDP. For example, CDPHE is likely to have little or no consulting role in cases where an operator pursuing a CDP has no plans to request a variance from rules listed above. On the other hand, if the CDP involves variances from public drinking water protection or odor rules, CDPHE will likely play a larger consulting role. CDPHE encourages operators to meet early to discuss their proposed CDP so that CDPHE can evaluate whether consultation makes sense and why.

Other highlights of CDPHE consultation on CDPs include:

- The CDPHE consultation process for a CDP does not include the forty (40) day time constraint. Rather consultation may be as flexible as the CDP process itself.

- When CDPHE participates in a CDP, the Department will review a CDP proposal, identify information needs, discuss operations and potential impacts, and recommend measures to minimize adverse impacts resulting from the proposal. CDPHE will make recommendations to the COGCC.
- When consulting on a CDP, CDPHE will involve the LGD. CDPHE places great weight on the local perspective. To this end, CDPHE strongly encourages operators who pursue a CDP to communicate with the LGD early.
- Where the operator has provided information it believes is substantially equivalent to that required for a Form 2A, CDPHE will offer recommendations to COGCC on whether the agency agrees that the substantial equivalency test has been met for those aspects of the CDP involving public health, safety, and welfare, or the environment impacts, including the public comment period. Where the operator does not provide such information, CDPHE will develop recommendations based on available information.

IV. Recommendations Regarding the Responsibilities of Key Participants

As with any permitting process there are key participants. In the case of the amended COGCC rules, the COGCC itself is ultimately responsible for creating, administering and enforcing the COGCC rules; including all permits. The operator or applicant initiates, usually via permit applications, discussions requiring COGCC permit review and action. Under the amended COGCC rules, the public may now comment on many proposed permits. And, as described previously, the amended COGCC rules create a consultative role for CDPHE under certain limited circumstances.

CDPHE is providing below recommendations regarding the roles of key participants (including itself) where CDPHE consultation occurs. These recommendations do not constitute new rule requirements. Rather they are presented to offer a perspective on what CDPHE believes will maximize timely and efficient consultation.

Operators

- Operators seeking a variance from the Director must check the variance request box on Form 2/2A.
- CDPHE strongly encourages operators planning to request a variance to contact the Department prior to submitting their Form 2/2A application to discuss the nature of the variance request
- CDPHE urges operators making variance requests to provide information regarding the basis, need, alternative mitigation ideas and any other information that may be helpful to CDPHE evaluation of the request and development of its recommendations to the COGCC. By taking this step, operators will maximize their ability to streamline the consultation process.
- Operators expecting to or desiring to discuss the likelihood of triggering the CDPHE consultation requirements should contact the CDPHE Oil and Gas Consultation Coordinator (see Section IV of this document for contact information). The Coordinator will arrange a meeting between with appropriate CDPHE staff and the operators/others, as necessary.

Public

- Communicate concerns and perspective informally and regularly to local government representatives and CDPHE.
- Formulate all public comments to be substantive and offer specific information necessary to evaluate concerns. Comments, such as "we don't want the drilling operation in our community" do not provide sufficient information to allow COGCC and CDPHE to be responsive.

Local Government Designees (LGDs)

- The LGD may request a consultation with CDPHE on a Form 2 or Form 2A within the first fourteen (14) days of the forty (40) day consultation period (the 40 day consultation period begins with the start of the public comment period).
- The LGD must formally notify (in writing) the COGCC of a request to consult with CDPHE. CDPHE encourages the LGD to copy CDPHE on this request to expedite a decision on whether to consult and, if applicable, to complete its review and make recommendations to the COGCC. This recommended step is important because the consultation time period could be as short as 26 days, depending on how quickly the LGD makes a consultation request.
- CDPHE also strongly recommends that LGDs provide with any consultation request information conveying the need and basis for the consultation, as well as additional information that would be relevant to the consultation.
- To the extent they can, based on knowledge of potential permit applications in their jurisdictions and related public health and environmental considerations, LGDs are also encouraged to contact the CDPHE Oil and Gas Consultation Coordinator before making a consultation request to discuss potential matters involving oil and gas development that may drive future consultation requests.
- CDPHE encourages LGDs to communicate with local environmental health directors regarding questions and concerns involving public health and the environment associated with oil and gas development. CDPHE also encourages LGDs to contact the CDPHE Oil and Gas Consultation Coordinator any time to ask questions pertaining to CDPHE's role in the consultation process. However, it is important for all to note that the rules in question are COGCC's and all broader questions regarding the rules should be raised with the COGCC.

COGCC

- COGCC must notify the relevant LGD and CDPHE (via electronic notice) that a permit application has been posted on the COGCC website for public comment. Notification must be concurrent with the posting.
- Upon request by CDPHE, COGCC will discuss consultation issues with CDPHE staff, including attending possible meeting(s) with CDPHE and others.

CDPHE

Upon notification of a consultation request/trigger and receipt of the complete permit application, CDPHE will conduct an initial screening of the consultation request. If CDPHE determines that no additional consultation is necessary and that it will not submit recommendations to COGCC, the agency will alert COGCC as soon as possible in writing of its decision. If consultation proceeds, CDPHE may initiate discussions with the operator, LGD, surface owner, other interested parties and/or COGCC staff, as part of its consultation review.

CDPHE consultation may differ depending upon various consultation types:

- Variance Requests: The consultation process will involve reviewing a permit application, including the variance request, and any associated information provided with the permit application, including alternative mitigation plans and may involve discussions with the operator or others. Upon completion of its review, CDPHE will submit its written recommendations to COGCC. CDPHE will copy and email the operator on its recommendation letter to the COGCC.
- Well Density Increases: CDPHE's review will focus on the potentially increased public health and/or environmental impacts resulting from surface disturbance associated with an increase in well density. CDPHE will evaluate this information and contact the operator or others if necessary to complete its review and provide recommendations to COGCC. CDPHE does not anticipate making recommendations to the COGCC as part of well density increase consultation that, for example, would require operators to reduce air emissions for Clean Air Act nonattainment purposes. However, depending on the situation, CDPHE could recommend to COGCC that operators conduct air quality monitoring to bolster efforts by the Air Quality Control Commission to manage air Colorado's air quality. In short, CDPHE will not recommend public health and environmental protection measures that are the responsibility of the CDPHE and its Commissions to consider and promulgate, but could recommend measures that enhance our understanding of the contribution the oil and gas industry makes to public health and environmental challenges.
- LGD Requests: A consultation request from the LGD will involve a CDPHE review of the permit application and supporting information, as well as any additional information provided to CDPHE by the LGD. CDPHE will consider consultation requests based on this information. If the LGD consultation request does not identify specific concerns and provide any factual information that may be needed to support such concerns, CDPHE may not be able to develop consultation recommendations for submission to COGCC.

V. Additional General CDPHE Guidance to Operators

CDPHE encourages operators seeking variances from any of the rules listed above to contact CDPHE prior to submission of the Form 2A to discuss the basis for the variance. Such a discussion will assist in conveying what information would be helpful to CDPHE when reviewing the variance request and making its recommendations to COGCC.

CDPHE also encourages operators to include in variance requests information the operator believes demonstrates how a proposed alternative to the applicable rule will provide substantially equivalent protection to public health, welfare and the environment and the need for the variance (including, if applicable, how compliance with a rule is infeasible, conflicts with other rules, etc). For example, operators wishing to obtain a variance from the requirement in Rule 805.b (Odors) prohibiting a pit with a potential to emit 5 tpy or greater constructed after the effective date of the rules from being located within 1/4 mile of a residence or other building unit, would have to offer an alternative means for ensuring that the emissions from that pit can be maintained at 5 tpy or less.

CDPHE anticipates that early (prior to submittal of a permit application) discussions with the operator and others regarding potential conditions necessary for granting a variance will facilitate rapid development of CDPHE recommendations and approval by COGCC. However, in no event will CDPHE finalize recommendations to the COGCC prior to the end of the public comment period.

CDPHE encourages operators to submit Form 2/2a applications after consultation with LGDs and conduct applicable local permitting processes as early as possible. This approach will minimize LGD concerns and subsequent potential consultation requests from LGDs.

VI. Additional CDPHE Guidance to Operators Specific to Rule 805b(2) – Odors

Introduction

This section provides additional information regarding a number of unique aspects of Rule 805b(2) and its relationship to air quality permitting requirements of CDPHE.

COGCC Rule 805b(2) requirements are designed to control odor where oil and gas development occurs near residences, neighborhoods and other occupied structures by requiring operators to install pollution control equipment on certain tanks, pits and glycol dehydrators in Garfield, Mesa and Rio Blanco Counties. These requirements place essentially no additional permitting requirements on operators beyond those currently required for tanks and glycol dehydrators by Air Quality Control Commission (AQCC) Regulation 3 (as amended in the fall of 2008). The possible exception would be if an operator chooses to seek a variance from Rule 805b(2)D, applicable to certain pits (see below). Rule 805b(2) simply requires operators to include the emission controls in an existing or a to-be-issued permit, not just the emission source. The amended COGCC rules require compliance with these provisions by October 1, 2009. Appendix A (attached) presents details of APCD permit requirements under COGCC Rule 805.b(2), based on equipment type.

Key Rule 805.b(2) Provisions

- Applies to **Condensate Tanks, Glycol Dehydrators, Crude Oil and Produced Water Tanks and Pits:**
 - Located in Garfield/Mesa/Rio Blanco Counties.
 - With Volatile Organic Compound (VOC) emissions of greater than or equal to 5 tons per year (TPY)².
 - Placed within ¼ mile of “a building unit, educational facility, assembly building, hospital, nursing home, board and care facility, jail, or designated outside activity area” (See COGCC Rules, 100-Series Definitions).
- Requires that such equipment install and operate an emissions control device capable of reducing VOC emissions by 90/95%, depending on the equipment.
- Requires that the operator hold a valid CDPHE Air Pollution Control Division (APCD) permit for the emissions control equipment.
- Prohibits new pits from being located within ¼ mile of “a building unit, educational facility,” etc, without a variance.
- Requires a variance and CDPHE consultation if an operator prefers not to install required pollution control equipment on tanks or glycol dehydrators.

² See Appendix B for Guidance on how operators can determine if equipment emissions exceed the 5 TPY threshold.

APCD Permits and Associated Permit Acquisition Timing

With respect to the requirement that operators obtain a valid APCD permit for equipment subject to Rule 805b(2), the APCD will include relevant COGCC requirements regarding installation, use and maintenance of a VOC control device in the APCD issued air permit for existing or new equipment. It is important to note that oil and gas facilities located in attainment areas currently must comply with existing permitting (for ≥ 5 tpy emission sources) and Air Pollutant Emission Notice (APEN) (for ≥ 2 tpy emission sources, pursuant to Air Quality Control Commission (AQCC) Regulation 3.

There are two APCD permit types which may be applicable to emission control equipment subject to COGCC Rule 805, depending on equipment type and location.

General Permits – APCD considers general permits approved at the time they are applied for since all permit conditions contained in the General Permit are pre-established after public comment. Operators may apply for these permits AFTER production begins. For purposes of Rule 805, applying for a General Permit constitutes “holding a valid permit from the CDPHE”.

Individual Permits to Construct – APCD requires operators to apply for and obtain approval of individual permits to construct BEFORE an operator installs the Rule 805 control equipment. Timing for obtaining these permits varies, depending on equipment type, completeness of the permit application and its complexity and CDPHE permitting staff workload.

VII. CDPHE Approach to Consultation on Key COGCC Rules

Introduction

This section presents a framework for how CDPHE intends to consider variance requests for specific provisions within key COGCC rules involving public health, welfare and environmental protection measures. For each rule, CDPHE offers its views on:

1) Information the Department believes would help it to effectively and efficiently evaluate variance requests³; 2) General criteria CDPHE will use in evaluating specific variance requests; and, 3) Typical options for alternatives that CDPHE believes should generally qualify for a variance, where applicable.

CDPHE wishes to remind the reader that, in most cases, information contained in this section is general by design, so that specific case by case circumstances can be considered during consultation. CDPHE also strongly encourages operators to provide relevant information in narrative form, with supporting maps and data easily used to develop recommendations. Failure to do this could force CDPHE to recommend not approving a variance based on lack of information necessary to evaluate the request.

CDPHE again emphasizes that its role is limited to making recommendations to COGCC regarding variance requests. The decision on whether to approve the request and what, if any, conditions to impose, will be made by the COGCC, under COGCC rules.

Rule 317b: Public Water System Protection

Information Preferred by CDPHE to Evaluate Variance Requests:

For Form 2 or 2A Permit Applications:

- Information requirements required by Form 2/2A identified under Rule 303.
- Identification of which buffer zone (e.g. internal, intermediate, external) the proposed DCPS location will be within and the location of the nearest classified water supply segment.
- Whether the proposed DCPS operation is an expansion of an existing DCPS location or a new DCPS location (as of May 1, 2009 on Federal land or April 1, 2009 for all other land, or the date that the oil and gas location becomes subject to 317B).
- A brief description of how the proposed location for which a variance is being requested will meet the criteria specified in COGCC Rule 317B.c.1., including:
 - A brief description of each proposed Best Management Practice (BMP), any operating procedures or design features that will result in substantially equivalent protection of drinking water quality in the Surface Water Supply Area (these would be in addition to those contained in the minimum requirements of Rule 317B.d.)

³ Note: recommendations listed in this document do not constitute additional information requirements of the COGCC rules. They are merely recommendations developed by CDPHE technical experts that CDPHE believes would help inform an evaluation of variance requests. CDPHE will evaluate variance requests regardless of whether this information is provided.

- A brief description of any special site conditions that make the selected BMP's appropriate for the proposed DCPS operation.
- A description of any proposed containment devices and downgradient perimeter berming structures to comply with Rule 603.e.12 or 604.a.4, as applicable; as well as any proposed surface water sampling locations; accompanied by an 8 ½" by 11" vicinity or 1:24,000 U.S. Geological Survey topographic map of the locations within 317B buffer zones.

For Comprehensive Drilling Plans:

- All of the above, where the proposed DCPS location will be subject to 317B.
- An indication of whether a variance is being requested for each specific DCPS location within the CDP, or only some/one.
- CDPHE encourages operators to develop a CDP water quality monitoring plan for surface water sampling locations that addresses multiple DCPS operations, providing the monitoring plan provides equivalent coverage. Description to include fluid retention capacities in relationship to onsite fluid storage.

General Criteria for Recommending Variance Approval:

- Ability to evaluate variance request based on information submitted.
- The relationship of site-specific conditions to proposed Best Management Practices for ability of the BMPs to offer substantially equivalent protection of drinking water quality. CDPHE will base this determination on the potential risk(s) to downgradient public water system(s) and how the proposed BMPs minimize risk.
- Demonstrated ability of proposed alternative BMPs, monitoring etc. to provide substantially equivalent protection of the drinking water quality in instances where the operator requests a variance from any of the minimum requirements in Rule 317B.d.

Typical options for Which CDPHE Would Generally Recommend Variance Approval:

- Frequent (e.g. weekly) spill prevention meetings identifying staff responsibilities to provide a quick and effective response to a spill with appropriate onsite documentation.
- Special design features for the drilling pad to minimize the possibility of a spill reaching the classified water supply segment (e.g. sloped well pad away from classified water supply segment)
- Daily inspections of DCPS equipment for leaks and equipment problems with appropriate onsite documentation.
- Strategic planning for use, storage, and transfer of hazardous materials (e.g. in designated areas with limited access and away from the classified water supply segment).
- Increased testing frequency of blowout prevention equipment (BOPE).
- Use of a rig floor safety valve with connections suitable for use with each size and tool joint or coupling being used on the job.
- Graveled well pads to reduce chemical/sediment travel

- High level emergency shutdown systems for tanks
- Elevated and anchored tanks located in floodplains

Rule 805: Odors and Dust

Information Preferred by CDPHE to Evaluate Variance Requests:

- In cases where an operator is unable to meet the October 1, 2009 compliance date:
 - A written explanation and any supporting documentation on:
 - Why the compliance date cannot be met
 - How soon the compliance date can be met
 - What steps will be taken in the interim to ensure compliance with Colorado Air Quality Commission Regulation No. 2, if this variance is granted
 - Any information required by Form 2/2A and any other data reasonably available to the operator, which may better inform CDPHE’s variance request review.
 - In the event an operator can not meet the compliance date because necessary control equipment is unavailable, CDPHE recommends that the operator provide with the variance request three written proposals for this equipment from vendors.
- In cases where the equipment subject to this regulation will be located within ¼ mile of any residence or occupied dwelling⁴, but the control device will not meet Rule 805 control requirements (e.g. 90% or 95% control of VOCs):
 - A written explanation and any supporting documentation on:
 - The control efficiency of the proposed control device
 - Why the control device efficiency is less than what Rule 805 requires
 - Whether the proposed control device is a demonstrated technology. For example, has information/ data been presented to demonstrate the effectiveness of alternative control equipment (e.g., manufacturer guarantee on the control efficiency, laboratory or stack tests from existing control equipment, and successful field experience by others)
 - What steps will be taken to ensure compliance with Air Quality Control Commission Regulation No. 2 if this variance is granted
 - Steps that have been taken to communicate the requested variance conditions with owners of all residences or occupied dwellings within ¼ mile of the proposed equipment
 - Any information required by Form 2/2A and any other data reasonably available to the operator, which may better inform the CDPHE’s review.
 - A description of the proposed Best Management Practices (BMPs) and/or operating procedures that will result in substantially equivalent protection of air quality. This information should include any special site conditions or descriptions that make the selected BMPs appropriate for the particular operation.

⁴ “Residence or occupied dwelling” is used in this guidance as a shorthand reference to the language in 805 encompassing “any building unit, educational facility, assembly building, hospital, nursing home, board and care facility, jail, or designated outside activity area.”

- In cases where an operator requests a variance to a pit located within ¼ mile of any residence or occupied dwelling:
 - A written explanation and any supporting documentation on:
 - Why the pit must be built within ¼ mile of a building or occupied dwelling.
 - Steps that have been taken to communicate the requested variance conditions with owners of all residences or occupied dwellings within ¼ mile of the proposed equipment.
 - What steps will be taken to ensure compliance with APCD Regulation No. 2 if this variance is granted.
 - Estimated uncontrolled volatile organic compound (VOC) emissions and basis for the estimate.
 - Whether control equipment will be installed to reduce VOC emissions and, if so, the type of control equipment and its control efficiency.
 - Whether the proposed control equipment represents a demonstrated technology. For example, has information/ data been presented to demonstrate the effectiveness of alternative control equipment (e.g., manufacturer guarantee on the control efficiency, laboratory or stack tests from existing control equipment, and successful field experience by others)?
 - Any information required by Form 2/2A and any other data reasonably available to the operator, which may better inform the Division's review process.

- For pneumatic devices where the operator requests to use a high-bleed device instead of a non-pneumatic one, even though it may be technically feasible to use a low-bleed device:
 - A written explanation and any supporting documentation on:
 - Why a high-bleed device is proposed if it is technically feasible to use a low-bleed device.
 - The estimated VOC emissions from the alternative.
 - Steps that will be taken to ensure compliance with Regulation No. 2 if this variance is granted.
 - Any information required by Form 2/2A and any other data reasonably available to the operator, which may better inform CDPHE's review.

General Criteria for Recommending Variance Approval:

- Ability to evaluate the variance request based on the information submitted.
- The site specific conditions, particularly location of and density of residences/occupied dwellings to the proposed Rule 805 equipment.
- The proposed practices and/or alternative controls' ability to ensure substantially equivalent reduction of odor causing emissions. CDPHE will base this determination on the potential impacts on public welfare and how those impacts are minimized by the operator's proposed efforts.
- Willingness of residents and others occupying dwellings within a ¼ mile of the proposed equipment to have the equipment located at the proposed location.

Typical Options for Which CDPHE Would Generally Recommend Variance Approval:

- Flare devices for the destruction of VOC compounds.
- Vapor Recovery Units for the capture of VOC compounds.
- Thermal Oxidizers for the destruction of VOC compounds.
- Rerouting of VOC vapors to the fuel header (for glycol dehydrator units).
- Use of an enclosed tank(s) in lieu of an open pit.
- Covered pits that allow for the collection and destruction of VOC compounds.
- For pneumatic devices, the use of compressed air or nitrogen gas instead of VOC-containing natural gas; electric valve controllers (powered by the grid or solar electricity); or, mechanical control systems.

900 Series Rules: Exploration and Production Waste

Introduction

Given the number of individual rules that fall within the COGCC 900 Series rules, CDPHE has identified the following individual rules where it anticipates CDPHE consultation will most likely occur when an operator seeks a variance from a 900 Series Rule:

- General and Special Rules: 902e and 902f
- Pit Lining Requirements and Specifications: 904a, 904b 904c, 904d;
- Closure of Pits, Buried or Partially Buried Produced Water Vessels: 905b.(4)
- Centralized E & P Waste Management Facilities: 908.b(7);
- Concentrations and Sampling for Soil and Groundwater: Table 910-1

CDPHE also wishes to highlight COGCC Rule 905(b)(3)(A), which states that synthetic liners must be disposed of in accordance with legal requirements for solid waste disposal. The COGCC cannot grant a variance from this requirement because the requirement is established by the Solid Waste Act and Regulations. Disposal of synthetic liners other than at permitted solid waste sites and facilities is a violation of the Solid Waste Act and Regulations. Operators wishing to discuss synthetic liner disposal requirements may do so with CDPHE Solid Waste Management staff.

***IMPORTANT NOTE:** Pursuant to Rules 904.a.(2), 904.c, 904.d, operators may avoid pit lining requirements and specifications for certain pits without obtaining a variance if they can demonstrate to the satisfaction of the COGCC Director that an alternative liner system offering equivalent protection to public health, safety, and welfare, including the environment and wildlife resources will be used. Operators should contact COGCC Environmental Staff directly for guidance on alternative pit liner and specifications that would offer equivalent protection.*

Information Preferred by CDPHE to Evaluate Variance Requests⁵:

⁵ Note: Most of the following information is required for centralized E&P waste management facilities pursuant to Rule 908.b(7).

CDPHE encourages operators to submit the information required by Rule 908.b.7 for centralized E & P waste management facilities to assist the Department in evaluating a request for a variance from any of the E & P waste disposal and management requirements specified in 900 series regulations. CDPHE will look for information related to the natural setting or engineering controls that can be integrated into the proposed project to demonstrate that the proposed alternative approach will be equally protective of public health and the environment.

To facilitate evaluation of variance requests, CDPHE recommends that operators present the information listed below and use it to substantiate the equivalency of the proposed variance request to the protectiveness represented by the regulation that would otherwise apply. CDPHE anticipates that a significant amount of professional judgment will be exercised in preparing and reviewing variance requests.

- Geologic data, including, but not limited to:
 - Type and thickness of unconsolidated soils.
 - Type and thickness of consolidated bedrock, if applicable.
 - Local and regional geologic structures.
 - Any geologic hazards that may affect the design and operation of the facility.
- Hydrologic data, including, but not limited to:
 - Surface water features within two (2) miles.
 - Depth to shallow ground water and major aquifers.
- Water wells within one (1) mile of the site boundary and well depth, depth to water, screened intervals, yields, and aquifer name.
- Hydrologic properties of shallow ground water and major aquifers including flow direction, flow rate, and potentiometric surface and:
 - Site location in relation to the floodplain of nearby surface water features.
 - Existing quality of shallow ground water.
 - An evaluation of the potential for impacts to nearby surface and ground water.
- Engineering data, including, but not limited to:
 - Type and quantity of material required for use as a liner, including design components.
 - Chemical compatibility of liner materials with waste stream.
- Hydraulic conductivity of the proposed liner element or elements differing from those specified in the rules, including:
 - Additional leak detection controls if appropriate.
 - Location and depth of cut for liners.
 - Location, dimensions, and grades of all surface water diversion structures.
 - Location and dimensions of all surface water containment structures.
 - Location of all proposed facility structures and access roads.

Please note that some engineering information may be based on “typical” designs that are refined for specific locations. This can be facilitated by COGCC-approved standard operating procedures (SOPs) or best management practices (BMPs).

General Criteria for Recommending Variance Approval:

The overall criteria CDPHE will use when evaluating variance requests is whether the proposed alternative offers substantially equivalent protection to public health, safety, welfare and the environment. For example, CDPHE could consider the amount and concentrations of the waste that would be managed using a proposed pit location or liner configuration different from that in the rules, along with the regulatory provisions for which the variance is being requested.

CDPHE will also use the information submitted and result of comparisons of the preferred waste management approach and the approach specified in rule showing how the following standards will be met:

- Ground Water protection criteria (Table 910-1, unless other constituents are detected, when Basic Standards for Ground Water 5 CCR 1002-41, Regulation 41 may apply).
- Soil remediation standards (Table 910-1).
- Surface water standards.
- Rule 805 odor management provisions involving waste pits.

Site specific conditions will also be used to evaluate the proposed variance request, particularly how they ensure substantially equivalent protection of the soil and ground water quality as compared to the regulatory requirements and/or the Table 910-1 concentrations.

Specific Guidance for Variance Requests involving Table 910-1:

Operators may request a variance from the Table 910-1 standards. However, CDPHE will be disinclined to recommend a variance from the Table 910-1 standards. The reasons for this disinclination were presented during the COGCC hearings on Table 910-1. Variances to Table 910-1 would require a risk evaluation and assessment of any alternate levels of contamination. Risk assessments are very expensive and time consuming to prepare and review. Currently, COGCC staff does not have the resources to review risk assessments. Furthermore, clean-up to alternative standards would usually require some type of institutional control on any land where Table 910-1 standards were not achieved. This would probably include an environmental covenant, which the COGCC cannot issue.

Typical Options for Which CDPHE Would Generally Recommend Variance Approval:

Alternatives for establishing Natural Background per Footnote 4 in Table 910-1:
CDPHE recommends the approach outlined in following guidance document, but other alternatives with equivalent statistical rigor could be proposed:

<http://www.colorado.gov/cs/Satellite/CDPHE-HM/CBON/1251616113557>

1002f Rules: Stormwater Management

Introduction

The stormwater management provisions contained in Rule 1002.f.(2) fill a regulatory gap that would otherwise allow storm and non storm related discharges from oil and gas operations. These provisions apply to the post-construction operation of oil and gas producing facilities. Stormwater controls for protecting water quality during the construction of a facility are addressed separately in the CDPHE/Water Quality Control Division (WQCD) stormwater permitting requirements in the Colorado Discharge Permit System Regulations (5 CCR 1002-61). Please see the Statement of Basis and Purpose for additional details.

The Statement of Basis and Purpose lists places operators may look to for guidance in selecting BMPs. They include:

- The Urban Drainage and Flood Control District's Volume III
www.udfcd.org/downloads/down_critmanual.htm
- CDOT's BMP Manual
<http://www.dot.state.co.us/Environmental/envWaterQual/wqms4.asp>
- Guidelines in BLM's Exploration and Development Gold Book
- Civil engineering design manuals for roads, drainages, culverts, etc., which specify appropriate design specifications for stable infrastructure

The combination of BMPs that meet the intent of Rule 1002.f will vary depending on location, topographic relief, soil erosion potential, presence of vegetative or other erosion resistant cover, facility size, local hydrology and the nature of materials used at the site.

Information Preferred by CDPHE to Evaluate Variance Requests:

Rule 1002.f.(2) specifies that "Oil and gas operators shall implement and maintain Best Management Practices (BMPs) at all oil and gas locations to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, and site degradation." It further specifies that "BMPs shall be selected based on site-specific conditions, such as slope, vegetation cover, and proximity to water bodies, and may include maintaining in-place some or all of the BMPs installed during the construction phase of the facility." Given the flexibility afforded the operator in selecting BMPs under Rule 1002.f.(2), CDPHE would not generally recommend variances unless the operator can show that there is little, if any, chance of erosion or off-site transport of sediment at the site. This demonstration would require information on specific soils classifications, topography and vegetative cover for the site where the ground disturbance will take place. CDPHE would evaluate such information to determine the erosion potential of the soils in order to assess potential for off-site transport of sediment.

CDPHE would also want to evaluate information identified under Rule 216.c (1-4, 8, 10, 11, and 12) when considering variance requests associated with CDPs.

It is worth noting that Rule 1002.f.(3)(A) specifies that “The Post-Construction Stormwater Program shall reflect good faith efforts by operators to select and implement BMPs intended to serve the purposes of this rule.” Here, operators must select BMPs that address potential sources of pollution which may reasonably be expected to affect the quality of discharges associated with the ongoing operation of production facilities during the post-construction and reclamation operation of the facilities. Similar to subsection 1002.f.(2), this provision offers significant flexibility to the operator to implement BMPs and verify their condition and performance through periodic inspections. This is supported by language in the Statement of basis and Purpose that indicates “The Commission recognizes that some oil and gas locations have certain characteristics that do not warrant development of a stormwater management plan. The locations include those with a the slope of less than 5 %, vegetative cover or permanent erosion resistant cover greater than 75%, a distance from a perennial stream or Classified Water Supply Segment greater than 500 feet, a location size less than one acre, measured by the amount of surface disturbance at the time of the termination of a construction stormwater permit issued by CDPHE and soil with low erosion potential.” This said, CDPHE would not generally recommend variances from rule 1002.f.(3) because the rule is designed not to be prescriptive, and instead provide operators options for developing plans and selecting BMPs based only on the level of performance necessary to protect the environment in the vicinity of the operations.

General Criteria for Recommending Variance Approval

Notwithstanding the above, operators may still choose to seek variances from the stormwater rules. In such cases, CDPHE will use the following criteria when evaluating a variance request:

- Ability to conclude that the alternative BMP or Post-Construction Stormwater Program and any suggested alternative protocols or monitoring proposed to be employed will result in substantially equivalent protection to water quality

Typical options for Which CDPHE Would Generally Recommend Variance Approval:

- For Rule 1002.f.(2) - situations where the location is on rock with virtually no soil cover.
- For Rule 1002.f.(3) - locations greater than one acre (measured by the amount of surface disturbance at the time of the termination of a construction stormwater permit issued by CDPHE) or where the slope is 10% or less if the vegetative or permanent erosion resistant cover is greater than 75% , the distance from perennial stream or Classified Water Supply Segment is greater than 500 feet and the soil has low erosion potential.

VIII. Frequently Asked Questions

Prepared answers to frequently asked questions can be found on the COGCC Website by first clicking on “*Final Amended Rules*” and then clicking on “*Frequently Asked Questions.*”

IX. Contact

CDPHE has assembled a team of technical and policy subject matter experts to assist with CDPHE's consultation on the amended COGCC rules, many of whom were actively involved in development of the COGCC rules. CDPHE's Oil and Gas Consultation Coordinator (see below) will be the first point of contact for inquiries and will assure that appropriate CDPHE staff are available to assist with consultation in a timely and efficient manner.

Kent Kuster: Oil and Gas Consultation Coordinator.
Email: Kent.Kuster@state.co.us.
Phone: 303.692.3663

Appendix A: Rule 805.b(2) – APCD Permitting

Rule 805 Equipment (PTE ≥ 5TPY) ⁶	APCD Permit Currently Req'd?	Type of APCD Permit ⁷	Specific APCD Action Needed to Accommodate Rule 805	Operator Action Needed to Comply with Rule 805 ⁸
<u>Existing Condensate Tank</u> <ul style="list-style-type: none"> • At well site • Off well site⁹ 	Yes	General Permit (Reg 3 & 7)	APCD to modify General Permit (after 30 day public comment period) to include Rule 805 emission control equipment and operating conditions where applicable (April/May 2009)	Notify APCD of Rule 805 applicability
		Individual Permit to Construct (Reg 3 & 7)	APCD to issue standard permit addendum for Rule 805 emission control equipment where applicable (April/May 2009)	Notify APCD of Rule 805 applicability
<u>New Condensate Tank</u> <ul style="list-style-type: none"> • At well site • Off well site 	Yes	General Permit (Reg 3&7)	Same as for existing equipment	File a General Permit application to APCD.
		Individ. Permit to Construct	When applying for APCD permit for emission equipment, include description of emission controls	Notify APCD of Rule 805 applicability.
<u>Existing Crude Oil Tank</u> <ul style="list-style-type: none"> • At well site • Off well site 	Yes	Individ. Permit to Construct for all crude oil tanks with PTE ≥ 5TPY (Reg 3). Future APCD plans include possible shift to general permit, depending on permitting experience	Since APCD permit requirements for crude oil tanks are new (rule promulgated 12/08, effective 2/1/09) APCD will make minor changes to accommodate rule 805; APCD will issue permits for emission source and control equipment to address both APCD and Rule 805 permit requirements. APCD will expedite (“Red Tag”) permit review on Rule 805 crude oil tank apps.	For existing equipment, Notify APCD of Rule 805 applicability.
				<u>New Crude Oil and Tank</u> <ul style="list-style-type: none"> • At well site • Off well site

⁶ *Existing* means equipment is permitted and operating before May 1, 2009 on Federal lands and April 1, 2009 on all other lands. *New* means equipment is not existing or permitted by COGCC before May 1, 2009 on Federal lands and April 1, 2009 on all other lands. The APCD will provide existing/develop new guidance regarding how to determine whether the 5 TPY threshold is exceeded for all Rule 805 equipment

⁷ **Note:** APCD General Permits for well site operations require operators to apply for this permit within 90 days after submittal of COGCC Report of 1st Production. Individual Permits to Construct require operators to apply and receive this permit prior to construction of the emission source

⁸ See Footnote 2 for timing of necessary operator action.

⁹ *At well site* means an E&P site that is physically located with well pad and related equipment. *Off well site* means non E&P site that is located away from well site, but connected by virtue of a pipeline or process relationship, such as a tank located at a compressor station used to compress gas produced from the well site.

Rule 805 Equipment (PTE ≥5TPY)	Currently Regulated by APCD?	Type of APCD Permit	Specific APCD Action Needed to Accommodate Rule 805	Operator Action to Comply with Rule 805
<u>Existing Produced Water Tank</u> (at or off well site)	Yes	General Permit	Since APCD permit requirements for produced water tanks are also new (AQCC rule promulgated 12/08, effective 2/1/09), APCD will develop a simple general permit for this equipment (April or May 2009), applicable to existing produced water tanks upon notification by the operator, to new tanks at well sites upon application for the general permit, and to new tanks off well sites upon review and approval of a permit to construct	For existing Rule 805 equipment, notify APCD of Rule 805 applicability
<u>New Produced Water Tank</u> <ul style="list-style-type: none"> • At well site • Off well site 	Yes	General Permit Individual Permit to Construct		For new Rule 805 equipment located at well site, apply for General Permit For new Rule 805 equipment located off well site, apply for Individual Permit to Construct
<u>Existing Glycol Dehydrator</u> (at or off well site)	Yes	Individual Permit to Construct	APCD will issue a “general addendum” to existing APCD permits	For existing Rule 805 equipment, notify APCD of Rule 805 applicability
<u>New Glycol Dehydrator</u> (at or off well site)	Yes	Individual Permit to Construct	APCD will include a standard clause in individual Permits to Construct to address Rule 805 requirements	For new Rule 805 equipment, include in APCD application that Rule 805 applies to ensure Rule 805 standard clause for dehydrators can be included in the permit.
New Waste Pit (≥5TPY) ¹⁰	Yes	None	No action, unless operator requests a variance from Rule 805b.2.D, in which case APCD may require operator to have an APCD permit for the pit emission control equipment, depending on site specific conditions. In such cases, operator would need to apply for an Individual Permit to Construct. Note: any pit with potential emissions ≥5tpy now requires an APCD permit (or ≥2tpy requires an APCD APEN) (AQCC rule promulgated 12/08, effective 2/1/09).	Apply for a variance request and consult with CDPHE

¹⁰ 805 Rules do not apply to existing waste pits.

APPENDIX B: CDPHE Guidance on Calculating Emissions For Rule 805.b(2) Applicability

CDPHE Guidance on Calculating Emissions For COGCC Rule 805.b(2) Applicability

This draft document provides guidance on how oil and gas operators will calculate VOC emissions per requirements under the COGCC Rule 805.b(2). For the purposes of this guidance the term “potential to emit” (PTE) is considered the actual uncontrolled emissions as calculated based on the *actual* throughput for existing sources¹ and the actual uncontrolled emissions as calculated based on the *projected* throughput for new sources².

To avoid redundancy, this document will not provide specific guidance on how to run third party emission calculation software packages (i.e. GRI GLYCalc, EPA TANKS, E&P Tanks). Please refer to technical manuals provided with the respective software for additional information.

Glycol Dehydrators

For glycol dehydrators, actual uncontrolled emissions shall be based on typical operating conditions. Examples of such conditions include:

- Gas throughput
- Wet gas analysis (prior to contactor tower)
- Glycol circulation rate
- Temperature and pressure of inlet gas stream

Operators shall use a representative gas analysis to determine emissions. For existing sources, the operator shall base the emissions estimates on actual operating conditions examples collected from the field. If the dehydrator is new, actual operating parameters shall be based on projections made by the operator. A representative gas analysis from a nearby source may be used initially for new sources. After the dehydrator is installed, operators will typically be asked to recalculate emissions using a wet gas analysis specific to the source to validate the original Rule 805.b(2) applicability determinations. Such recalculations shall be reflected as a standard permit condition. Operators shall use GRI GlyCalc or a commercial process simulator will be used to estimate emissions. This approach mirrors standard CDPHE/APCD Air Pollution Emission Notice (APEN) filing activities.

While no CDPHE/APCD permit will be required pursuant to the COGCC rules for equipment emitting less than 5 TPY, when such a permit is required operators must provide all supporting documentation (e.g., gas analysis) in accordance with standard permitting practices.

Condensate, Crude Oil, and Produced Water Tanks

Background: Storage tanks commonly have the following three types of emissions: flashing losses, working losses and breathing losses. *Flashing loss* emissions occur when a liquid with entrained gases goes from a higher pressure to a lower pressure. Flash emissions commonly occur when hydrocarbon liquids are dumped from a production separator vessel to an atmospheric storage tank. *Working loss* emissions result from displacement of vapors in the tank when storage tanks are filled. *Breathing loss* emissions result from displacement of vapors in the storage tank due to daily changes in tank temperature and pressure. CDPHE recognizes that there are no breathing losses from buried tanks. Flash emissions will not result from all storage tanks, but working and breathing loss emissions will. If a condensate or crude oil storage tank will not result in flash emissions, then emissions estimates need only include working and breathing losses. Operators must calculate these emissions using either AP-42 emission factors, EPA TANKs, or other CDPHE/APCD approved method. EPA TANKs may be downloaded online at: <http://www.epa.gov/ttnchie1/software/tanks/index.html>. Please also refer to AP-42 or other APCD approved simulation software.

For purposes of this guidance, tanks which are manifolded together shall be calculated as a single source to determine whether actual uncontrolled emissions exceed rule 805.b(20) applicability thresholds. Such calculations follow standard CDPHE/APCD approaches.

General Guidance for Condensate, Crude Oil and Produced Water Tanks

For condensate storage tanks with past, uncontrolled actual emissions of volatile organic compounds of less than 5 tons per year that may become subject to COGCC Rule 805.b(2) by virtue of the addition of newly drilled well or the recompletion or stimulation of an existing well, operators of such tanks shall have 90 days after the date of first production of a newly drilled, recompleted or stimulated well to install and operate any required air pollution control equipment.

Guidance Regarding Throughput for Condensate, Crude Oil and Produced Water Tanks:

For existing tanks, operators shall calculate actual uncontrolled emissions using the annual actual throughput of such tanks (e.g. bbl/year).

For new tanks, the operator shall base actual storage tank throughput upon projections.²

Guidance Regarding Flash Emissions for Condensate and Crude Oil Tanks:

For condensate or crude oil storage tanks with flash emissions, operators shall calculate actual emissions calculated using one of the following two methods. First, the operator may calculate actual emissions using the following general emissions factor:

County Location of Source	Emissions Factor
Garfield, Mesa, Rio Blanco	10 lb VOC/BBL condensate produced

This emissions factor accounts for all three emissions sources including: flash, working and breathing losses.

Second, the operator may estimate emissions using a site-specific emissions factor based on actual operating conditions (temperature, pressure, formation and condensate composition) specific to the source. The site specific emissions factor must be developed in accordance with the provisions of the CDPHE/APCD's guidance PS memo 05-01 "Oil & Gas Condensate Tank Batteries". For a copy of this guidance memo, please visit <http://www.colorado.gov/cs/Satellite/CDPHE-AP/CBON/1251597387439>.

Guidance Specific to Produced Water Tanks:

As a result of the 2008 CDPHE/APCD rulemaking activity, the Division, working with operators, has developed guidance on how to calculate emissions from produced water tanks. Please visit the following link and look under the "New Produced Water General Permit and APEN" heading for guidance:

<http://www.colorado.gov/cs/Satellite/CDPHE-AP/CBON/1251597643332>

Pits

Operators must estimate actual uncontrolled emissions based on typical mass-balance approach (i.e., volume of water times percentage of pollutant) that assumes 100% evaporation or alternative method approved by CDPHE/APCD (e.g. EPA Method 8015). However, if preferred by the operator, CDPHE/APCD will also consider any and all information/data provided by the operator to demonstrate an alternative (non mass-balance) approach for determining actual uncontrolled pit emissions. Information to support this approach could include that related to pit contents, residence time of the pit contents and inlet water sampling.³

1 - Uncontrolled Actual Emissions are defined in Colorado Air Quality Control Commission Regulation No. 3 as "the annual emission rate corresponding to the annual process rate listed on the Air Pollutant Emission Notice form, without consideration of any emission control equipment or procedures."

2 -Estimated projection: The owner/operator shall update estimated emissions within thirty days of first production but no later than ninety days post-production, as allowed per existing Regulation No. 3 reporting requirements.

Also, CDPHE staff is working with COGCC staff to assist COGCC staff in determining whether a technical amendment to the COGCC rules is necessary to support the contents of this guidance or whether this guidance requires modification.

3- This guidance applies only to determining the applicability of pits' emissions, per Series 805. Guidance for determining uncontrolled actual emissions for pits is specific to Series 805 rules only, based on limited pond volume, the temporary nature of such ponds, etc. Nothing in this guidance should be construed regarding the APCD permitting of evaporative ponds/ water treatment facilities.