

STATE OF  
COLORADO

Christopher - DNR, Brian &lt;brian.christopher@state.co.us&gt;

**Warner 10H-E165 Doc # 401779047 Form 2A Review**

16 messages

**Christopher - DNR, Brian** <brian.christopher@state.co.us>

Tue, Oct 15, 2019 at 3:35 PM

To: toby.sachen@crestonepr.com, Rebecca Treitz - DNR &lt;rebecca.treitz@state.co.us&gt;

Ms. Sachen,

For the Oil and Gas Location Assessment process for the Warner 10H-E165 Location, Document # 401779047, I will need additional information:

1. Does Crestone Peak have a set of updated BMPs for this location? This can help address my questions 2-7.
2. For BMP #2, stormwater runoff control, please provide a new, site-specific BMP for managing stormwater runoff specifically from this location and provide us with a replacement BMP.
3. BMP #3, as the COGCC does not permit the SPCC or CDPHE stormwater plans, please revise BMP #3 with site-specific language and provide us with the replacement BMP.
4. BMP #6, tank berms. Do these metal berms and liner described also apply to separators? Please update and provide us with the replacement BMP.
5. BMP #9, MLVT. Please include the vendor, size, and duration the MLVT will be on location and provide us with the replacement BMP.
6. BMP #10, noise mitigation. Please provide us with a site-specific BMP stating what and where noise mitigation will be installed at the location.
7. BMP #13, odor mitigation. Please revise the BMP to include the site-specific chemical additives, specific steps taken to minimize odors, and what direction the engine exhaust will be directed. Please provide us with the replacement BMP.
8. The Form 2A states that the right to construct is due to a lease, but the check boxes say that the surface owner is the mineral owner but the checkbox saying that they have signed the Oil and Gas Lease is not checked. Please advise.
9. The location photos do not show the horizon or area surrounding the location. Please submit an additional attachment with location photos (as the original was during growing season, having new photographs of this location outside of growing season to show the surrounding area is acceptable).
10. I will need additional information on the buildings approximately 700 ft. south of the location to determine if they qualify as building units per the 100 series definitions. This can potentially include commercial facilities and warehouses, triggering additional Director's Objective Criteria 1 scrutiny.
11. This location meets the Director's Objective Criteria 1, proximity to building unit, as measured from the edge of the disturbed Oil and Gas Location.
12. This location meets the Director's Objective Criteria 3, proximity to a municipal boundary, as measured from the edge of the disturbed Oil and Gas Location.
13. This location meets the Director's Objective Criteria 5.c., a Sensitive Area for water resources, with an estimated depth to groundwater of 10 ft.

Please provide me with this additional information within the next 30 days.

Please contact me with any questions.

Thank you,

**Brian Christopher**  
Oil & Gas Location Assessment Specialist

**COLORADO**  
Oil & Gas Conservation  
Commission  
Department of Natural Resources

P 303.894.2100 x5271

1120 Lincoln Street, Suite 801, Denver, CO 80203

Brian.Christopher@state.co.us | [www.colorado.gov/cogcc](http://www.colorado.gov/cogcc)

**Toby Sachen (Contractor)** <toby.sachen.contractor@crestonepr.com>  
To: Brian Christopher - DNR <brian.christopher@state.co.us>

Tue, Oct 15, 2019 at 5:24 PM

Hi Brian,

I am starting to address your questions. Items 5 and 8 are addressed below in red. I am looking into the BMPs as well and have made some other requests also noted in red below.

Re: Item 3 – BMP #3 is a flowline BMP not stormwater. Can you please clarify the question?

Thank you and I will be in contact.

Toby

**From:** Christopher - DNR, Brian <brian.christopher@state.co.us>

**Sent:** Tuesday, October 15, 2019 3:35 PM

**To:** Toby Sachen (Contractor) <toby.sachen.contractor@CRESTONEPR.COM>; Rebecca Treitz - DNR <rebecca.treitz@state.co.us>

**Subject:** [EXT]Warner 10H-E165 Doc # 401779047 Form 2A Review

Ms. Sachen,

For the Oil and Gas Location Assessment process for the Warner 10H-E165 Location, Document # 401779047, I will need additional information:

1. Does Crestone Peak have a set of updated BMPs for this location? This can help address my questions 2-7.
2. For BMP #2, stormwater runoff control, please provide a new, site-specific BMP for managing stormwater runoff specifically from this location and provide us with a replacement BMP.
3. BMP #3, as the COGCC does not permit the SPCC or CDPHE stormwater plans, please revise BMP #3 with site-specific language and provide us with the replacement BMP. #3 is a flowline BMP, not stormwater. Not sure what is being asked.
4. BMP #6, tank berms. Do these metal berms and liner described also apply to separators? Please update and provide us with the replacement BMP. Made information request to Process Engineer.
5. BMP #9, MLVT. Please include the vendor, size, and duration the MLVT will be on location and provide us with the replacement BMP. This information is included in the comment where we have typically supplied it. Please add this to the MLVT BMP (and remove from the comments if that is how you want to handle it):

A temporary completions area of approximately four acres will be utilized for 2 fresh water storage tanks to be used during completions operations. The state-licensed manufacturer for the subject site will either be MWS or Pinnacle Manufacturing. The tanks will hold between 40,000-42,000 barrels, are between 153'-158' in diameter, and plan to be on location for 91 days. Once completions operations are complete, this area will be completely reclaimed. Crestone certifies that the MLVTs are designed and implemented consistent with the June 13, 2014 "Policy on the Use of Modular Large Volume Tanks in Colorado." Please see attached map for the location of the tanks

6. BMP #10, noise mitigation. Please provide us with a site-specific BMP stating what and where noise mitigation will be installed at the location.
7. BMP #13, odor mitigation. Please revise the BMP to include the site-specific chemical additives, specific steps taken to minimize odors, and what direction the engine exhaust will be directed. Please provide us with the replacement BMP.
8. The Form 2A states that the right to construct is due to a lease, but the check boxes say that the surface owner is the mineral owner but the checkbox saying that they have signed the Oil and Gas Lease is not checked. Please advise. **Yes, the owners are bound by a lease they did not sign themselves.**
9. The location photos do not show the horizon or area surrounding the location. Please submit an additional attachment with location photos (as the original was during growing season, having new photographs of this location outside of growing season to show the surrounding area is acceptable). **I requested Surface Land retake these.**
10. I will need additional information on the buildings approximately 700 ft. south of the location to determine if they qualify as building units per the 100 series definitions. This can potentially include commercial facilities and warehouses, triggering additional Director's Objective Criteria 1 scrutiny. **I believe these are unoccupied and do not qualify as building units, but I asked Surface Land to confirm.**

[Quoted text hidden]

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**Christopher - DNR, Brian** <brian.christopher@state.co.us>  
To: "Toby Sachen (Contractor)" <toby.sachen.contractor@crestonepr.com>  
Cc: megan.cambell@crestonepr.com

Thu, Oct 24, 2019 at 12:53 PM

Toby and Meghan,

I am responding to this to keep this chain of communication open. My questions #3, #5, and #8 are settled. For my question #10, the fact that the building approximately 700 ft. south of the location is 13,000 sq. ft. does keep it below the threshold of a building unit for a warehouse. But please keep me in the loop for whatever Surface Land learns about the structures there.

Please let me know if you have any questions.

**Brian Christopher**  
**Oil & Gas Location Assessment Specialist**



**COLORADO**  
Oil & Gas Conservation  
Commission  
Department of Natural Resources

P 303.894.2100 x5271  
1120 Lincoln Street, Suite 801, Denver, CO 80203  
[Brian.Christopher@state.co.us](mailto:Brian.Christopher@state.co.us) | [www.colorado.gov/cogcc](http://www.colorado.gov/cogcc)

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**Mail Delivery System** <MAILER-DAEMON@state.co.us>  
To: brian.christopher@state.co.us

Thu, Oct 24, 2019 at 12:53 PM

This is the mail system at host [state.co.us](http://state.co.us).

I'm sorry to have to inform you that your message could not be delivered to one or more recipients. It's attached below.

For further assistance, please send mail to postmaster.

If you do so, please include this problem report. You can delete your own text from the attached returned message.

## The mail system

<[meghan.cambell@crestonepr.com](mailto:meghan.cambell@crestonepr.com)>: host  
[crestonepr-com.mail.protection.outlook.com](mailto:crestonepr-com.mail.protection.outlook.com)[104.47.50.36] said: 550 5.4.1  
Recipient address rejected: Access denied  
[[BY2NAM05FT035.eop-nam05.prod.protection.outlook.com](mailto:BY2NAM05FT035.eop-nam05.prod.protection.outlook.com)] (in reply to RCPT TO  
command)

Final-Recipient: rfc822; [meghan.cambell@crestonepr.com](mailto:meghan.cambell@crestonepr.com)  
Original-Recipient: [rfc822;meghan.cambell@crestonepr.com](mailto:rfc822;meghan.cambell@crestonepr.com)  
Action: failed  
Status: 5.4.1  
Remote-MTA: dns; [crestonepr-com.mail.protection.outlook.com](mailto:crestonepr-com.mail.protection.outlook.com)  
Diagnostic-Code: smtp; 550 5.4.1 Recipient address rejected: Access denied  
[[BY2NAM05FT035.eop-nam05.prod.protection.outlook.com](mailto:BY2NAM05FT035.eop-nam05.prod.protection.outlook.com)]

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 **noname**  
4K

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**Christopher - DNR, Brian** <[brian.christopher@state.co.us](mailto:brian.christopher@state.co.us)>  
To: "Toby Sachen (Contractor)" <[toby.sachen.contractor@crestonepr.com](mailto:toby.sachen.contractor@crestonepr.com)>  
Cc: [meghan.cambell@crestonepr.com](mailto:meghan.cambell@crestonepr.com)

Thu, Oct 24, 2019 at 12:57 PM

Re-sending to correct email address.

**Brian Christopher**  
**Oil & Gas Location Assessment Specialist**



**COLORADO**  
Oil & Gas Conservation  
Commission  
Department of Natural Resources

P 303.894.2100 x5271  
1120 Lincoln Street, Suite 801, Denver, CO 80203  
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**Toby Sachen (Contractor)** <[toby.sachen.contractor@crestonepr.com](mailto:toby.sachen.contractor@crestonepr.com)>  
To: "Christopher - DNR, Brian" <[brian.christopher@state.co.us](mailto:brian.christopher@state.co.us)>  
Cc: "[meghan.cambell@crestonepr.com](mailto:meghan.cambell@crestonepr.com)" <[meghan.cambell@crestonepr.com](mailto:meghan.cambell@crestonepr.com)>

Thu, Oct 24, 2019 at 1:11 PM

Hi Brian,  
I am out of town and heading home this afternoon. I will respond tomorrow  
Thx  
Toby

Sent from my iPhone

On Oct 24, 2019, at 2:54 PM, Christopher - DNR, Brian <[brian.christopher@state.co.us](mailto:brian.christopher@state.co.us)> wrote:

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**Meghan Campbell** <[meghan.campbell@crestonepr.com](mailto:meghan.campbell@crestonepr.com)>

Fri, Oct 25, 2019 at 11:51 AM

To: "Christopher - DNR, Brian" <brian.christopher@state.co.us>, "Toby Sachen (Contractor)" <toby.sachen.contractor@crestonepr.com>

Hi Brian,

Thank you for sending this. We should be able to get back to you shortly on all of your questions.

Thanks,

Meghan Campbell

Senior Regulatory Analyst

(720) 410-8487



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**Toby Sachen (Contractor)** <toby.sachen.contractor@crestonepr.com>  
To: "Christopher - DNR, Brian" <brian.christopher@state.co.us>  
Cc: Meghan Campbell <meghan.campbell@crestonepr.com>

Fri, Oct 25, 2019 at 3:15 PM

Hi Brian,

Please see my responses in red below.

Thank you for your patience.

Toby

**From:** Christopher - DNR, Brian <brian.christopher@state.co.us>

**Sent:** Tuesday, October 15, 2019 3:35 PM

**To:** Toby Sachen (Contractor) <toby.sachen.contractor@CRESTONEPR.COM>; Rebecca Treitz - DNR <rebecca.treitz@state.co.us>

**Subject:** [EXT]Warner 10H-E165 Doc # 401779047 Form 2A Review

Ms. Sachen,

For the Oil and Gas Location Assessment process for the Warner 10H-E165 Location, Document # 401779047, I will need additional information:

1. Does Crestone Peak have a set of updated BMPs for this location? This can help address my questions 2-7.
2. For BMP #2, stormwater runoff control, please provide a new, site-specific BMP for managing stormwater runoff specifically from this location and provide us with a replacement BMP. **Note: I added the specifics in a sentence to the end of the original BMP. Also, please see attached grading plan for your information.**

Crestone will comply with COGCC Rule 1002.f.(2). by utilizing BMPs at the oil and gas location to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, site degradation and protects surface waters. Examples of engineering controls that could be used when needed are:

Surface roughening

Silt fence

Erosion control blanket

Temporary slope drain

Temporary outlet protection

Sediment control log

Vehicle tracking control

Sediment trap

Stabilized staging area

Specific to this site will be sediment traps on all four corners of the pad and a diversion ditch around the perimeter of the pad.

3. BMP #3, as the COGCC does not permit the SPCC or CDPHE stormwater plans, please revise BMP #3 with site-specific language and provide us with the replacement BMP. **Settled**
4. BMP #6, tank berms. Do these metal berms and liner described also apply to separators? Please update and provide us with the replacement BMP. **Crestone does not typically put an impervious layer under the separators, but we do put a 22" metal berm around them.**
5. BMP #9, MLVT. Please include the vendor, size, and duration the MLVT will be on location and provide us with the replacement BMP. **Settled.**
6. BMP #10, noise mitigation. Please provide us with a site-specific BMP stating what and where noise mitigation will be installed at the location. **Please change "Crestone will install temporary sound walls..." to "Crestone will install temporary sound walls in all four directions..."**
7. BMP #13, odor mitigation. Please revise the BMP to include the site-specific chemical additives, specific steps taken to minimize odors, and what direction the engine exhaust will be directed. Please provide us with the replacement BMP.

Where possible, drilling rig and completion equipment engine exhaust will be directed away from occupied buildings to assist in mitigating potential odors. As necessary, Crestone may utilize chemical additives during drilling operations to mitigate odor impacts. To mitigate the effects of odor from Crestone's operations, Crestone will employ only International Association of Oil & Gas Producers (IOGP) Group III drilling base fluids with <0.5 weight % aromatics and will not use drilling fluids based on diesel. We also employ the use of mud chillers. Sealed tanks with pressure relief valves and emissions controls will be utilized for the production facilities.

8. The Form 2A states that the right to construct is due to a lease, but the check boxes say that the surface owner is the mineral owner but the checkbox saying that they have signed the Oil and Gas Lease is not checked. Please advise. **Settled.**
9. The location photos do not show the horizon or area surrounding the location. Please submit an additional attachment with location photos (as the original was during growing season, having new photographs of this location outside of growing season to show the surrounding area is acceptable). **New photos are attached.**
10. I will need additional information on the buildings approximately 700 ft. south of the location to determine if they qualify as building units per the 100 series definitions. This can potentially include commercial facilities and warehouses, triggering additional Director's Objective Criteria 1 scrutiny. **Building is below the minimum square footage to be considered a warehouse/BU.**

[Quoted text hidden]

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**2 attachments****Warner 10H-E165 Location Photos.pdf**  
596K**Warner 10H-E165 1N65W10 Grading Plan.pdf**  
836K

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**Toby Sachen (Contractor)** <toby.sachen.contractor@crestonepr.com>  
To: "Christopher - DNR, Brian" <brian.christopher@state.co.us>  
Cc: Meghan Campbell <meghan.campbell@crestonepr.com>

Fri, Oct 25, 2019 at 3:22 PM

Brian,

Sorry. I added another sentence to #2. See below.

Thanks and have a good weekend.

Toby

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**From:** Toby Sachen (Contractor)  
**Sent:** Friday, October 25, 2019 3:15 PM  
**To:** Christopher - DNR, Brian <brian.christopher@state.co.us>  
**Cc:** Meghan Campbell <meghan.campbell@crestonepr.com>

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Specific to this site will be sediment traps on all four corners of the pad and a diversion ditch around the perimeter of the pad. All slopes will be roughened and there will be vehicle tracking at all entrances.

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**2 attachments****Warner 10H-E165 Location Photos.pdf**  
596K**Warner 10H-E165 1N65W10 Grading Plan.pdf**  
836K

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**Christopher - DNR, Brian** <brian.christopher@state.co.us>  
To: "Toby Sachen (Contractor)" <toby.sachen.contractor@crestonepr.com>  
Cc: Meghan Campbell <meghan.campbell@crestonepr.com>

Wed, Oct 30, 2019 at 3:16 PM

Toby,

I have been working BMPs with Rebecca and have come up with additional questions and revisions to BMPs:

A. What contact has there been with nearby landowners? What contact has occurred with the owner of the building unit approximately 1,111 ft. southeast from the edge of the pad? Does the surface owner live in any of the nearby building units?

B. Under the comments on the facilities tab, it says that oil and water will be trucked off site. With the equipment assemblage, I am wondering if the plan is now to use pipelines?

C. BMP revisions  
1. Flammable liquids, no change.



2. Stormwater. Based on our discussions and the grading plan. Please let me know if this is accurate, and fill in any extras I may have missed, including offsite tracking control.

**Crestone will utilize BMPs at the location to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, site degradation, and protects surface waters. This location will include a diversion ditch around the perimeter of the pad with sediment traps in the NE, SE, SW, and NW corners. The location will also include road base armoring of the location surface, grading, and (include any extra here, is there a vehicle tracking pad where this location meets the county road, etc?).**

**Stormwater inspections will occur at either a 14-day frequency with precipitation triggered event inspections, 30-day frequency, or annual frequency, depending on the status of site reclamation. (This comment moved from BMP #3).**

3. Integrity testing and inspection BMP. This BMP is difficult to read and interpret. Several sections discussing inspections feel like they were added on and should be streamlined. Please also confirm the frequency of inspections, there are mentions of different frequencies for what are likely the same inspections (with some of the duplicated inspections in other BMPs).

4. Rig liner. Is the 40mm liner **synthetic**?

5. Salable gas and oil, no change.

6. Production location secondary containment, no change.

7. AVO and infra-red inspection frequencies.

~~Crestone will follow and comply with all leak detection and repair and storage tank emission management plan conditions as required by Colorado Air Quality Control Commission Regulation Number 7. This will include~~ **conduct** at least monthly Audible, Visual and Olfactory (AVO) inspections of the components and tanks at our Production Facilities at most weekly or at least monthly starting on January 1, 2017. In addition, Crestone will perform infra-red camera inspections of these components and the storage tanks at most monthly or at least annually. **Please rework this BMP to include specific inspection frequencies. BMP higher on the list states weekly AVO inspections.**

8. Dust control. Is there any plan for dust on the county road between the location and HWY 52?

9. MLVT, no change.

10. Sound mitigation

Crestone will perform a baseline noise survey prior to any operational activity measuring dBA at a distance 350 feet from the noise source or sound levels will be measured at a point twenty-five (25) feet from the structure towards the noise source. In situations where measurement of noise levels at three hundred and fifty (350) feet is impractical or unrepresentative due to topography, the measurement may be taken at a lesser distance and extrapolated to a 350-foot equivalent using the formula stated in Rule 802 of the State of Colorado Oil and Gas Conservation Commission.

~~As necessary, based on the survey,~~ Crestone will install temporary sound walls in all four directions to minimize noise and light impacts during drilling and completions and will install permanent noise mitigation at the facility location as necessary to meet all COGCC regulations. **Add comment about site access being to the west or southwest if possible (so any sounds funneled out of location are aimed away from nearby houses). Confirming the top portions. More specificity needed on the permanent noise mitigation.**

11. Second sound mitigation BMP, superseded by BMP #10. Recommend dropping.

12. Odors

Where possible, drilling rig and completion equipment engine exhaust will be directed away from occupied buildings to assist in mitigating potential odors **In which direction, west, southwest?** ~~As necessary~~ **Make this sentence more specific, when will chemical additives be used?** Crestone may utilize chemical additives during drilling operations to mitigate odor impacts. To mitigate the effects of odor from Crestone's operations, Crestone will employ only International Association of Oil & Gas Producers (IOGP) Group III drilling base fluids with <0.5 weight % aromatics and will not use drilling fluids based on diesel. We also employ the use of mud chillers. Sealed tanks with pressure relief valves and emissions controls will be utilized for the production facilities.

13. Green completions, no change.

Please let me know if you have any questions about any of this.

**Brian Christopher**  
Oil & Gas Location Assessment Specialist



**COLORADO**  
Oil & Gas Conservation  
Commission  
Department of Natural Resources

P 303.894.2100 x5271

1120 Lincoln Street, Suite 801, Denver, CO 80203

[Brian.Christopher@state.co.us](mailto:Brian.Christopher@state.co.us) | [www.colorado.gov/cogcc](http://www.colorado.gov/cogcc)

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**Meghan Campbell** <meghan.campbell@crestonepr.com>

Thu, Oct 31, 2019 at 8:49 AM

To: "Christopher - DNR, Brian" <brian.christopher@state.co.us>, "Toby Sachen (Contractor)" <toby.sachen.contractor@crestonepr.com>

Hi Brian,

Toby is out for a week so I will work on getting you information for all of the comments/questions below.

Thank you,

Meghan Campbell

Senior Regulatory Analyst

(720) 410-8487



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**Meghan Campbell** <meghan.campbell@crestonepr.com>

Thu, Oct 31, 2019 at 1:56 PM

To: "Christopher - DNR, Brian" <brian.christopher@state.co.us>, "Toby Sachen (Contractor)" <toby.sachen.contractor@crestonepr.com>

Cc: "Treitz - DNR, Rebecca" <rebecca.treitz@state.co.us>

Hi Brian,

Please see below for Crestone's responses.

A. Communication to landowners and BU owners: Crestone has not had any communication with surrounding property owners. Additionally, Crestone has not contacted the BU owner as per COGCC and WOGLA regulations, it is not required. The BU is not in close proximity to the access of the site nor do we plan to have trucks pass the BU for the haul route, or there would have been communication.

B. Facilities: We do not have a pipeline connection for this pad and production of oil and water will be trucked as noted. Gas will be going to a third party pipeline connection.

#### A. BMPs

C2. The following is accurate: Crestone will utilize BMPs at the location to control stormwater runoff in a manner that minimizes erosion, transport of sediment offsite, site degradation, and protects surface waters. This location will include a diversion ditch around the perimeter of the pad with sediment traps in the NE, SE, SW, and NW corners. The location will also include road base armoring of the location surface, grading, and vehicle tracking on the pad access.

Also, so it reads a little more clearly the rest of the BMP should read: Depending on the status of reclamation, the site will be inspected on either a 14-day, 30-day, annual or rain triggered event.

C3. Please see if these make more sense; if you feel that they need to be split into multiple BMPs, we are ok with that  
Leak Detection Program

- Annual hydrostatic test on the oil dump line from the separator to the tank battery.
- Annual hydrostatic “static” tests on our oil tanks.
- Annual hydrostatic “static” tests on our produced water tank and water dump line from the separator to the produced water tank.
- Lease Operator inspections of all equipment not to exceed 48 hours.
- Monthly documented inspections (EU).
- Annual environmental inspections of all battery and well equipment and pads.
- UT inspections of the pressure vessels every five years and input into Crestone’s RIPL Predictive Integrity Maintenance Program. (HLP separators and fuel gas separators)

The Crestone lease operator inspections are done as a routine part of the lease operators job. The lease operator would typically visit each of their assigned locations daily. They conduct a visual inspection of the facility which includes all valves, fittings, wellhead, tanks, vapor control systems and all connections. The lease operator also checks our Cygnet automation system for system pressures and flows. Any valve or fitting that is found to be leaking is either repaired immediately by the lease operator or shut-in procedures are implemented.

The monthly documented inspection, referenced previously, is done using an electronic form that is recorded in the EU system. This inspection and documentation requires the lease operator to inspect ALL aspects of the site and then triggers work orders for any leaks, or housekeeping issues.

The Lease operators also conduct a weekly – Audible, Visual, and Olfactory (AVO) inspection, which focuses on the tanks and vapor control system.

In addition, the sites are inspected with optical gas imaging cameras on a routine schedule, annually for compliance purposes with our Spill Prevention Containment and Countermeasures (SPCC) plan.

Integrity testing of flowlines is done during both the construction phase as well as during the operations phase. At the construction phase lines are tested with 100% x-ray and go through hydrotests. Pressure testing of the flowlines is conducted on an annual basis.

C4. The liner is actually RPE Liner with 10oz Geomembrane for containment we use under all of the drilling rigs (E122 (surfaces), E142 and E153).

The RPE Geomembrane material is ‘reinforced polyethylene’.

C7. Please see C3

C8. Crestone places road base, rock and recycled asphalt to assist with dust abatement. During construction, drilling, completions and reclamations phases,

Crestone monitors each site and, if needed, we will run water trucks on the lease road and county road.

C10. Crestone will perform a baseline noise survey prior to any operational activity measuring dBA at a distance 350 feet from the noise source or sound

levels will be measured at a point twenty-five (25) feet from the structure towards the noise source. In situations where measurement of noise levels at

three hundred and fifty (350) feet is impractical or unrepresentative due to topography, the measurement may be taken at a lesser distance and extrapolated to a 350-foot equivalent using the formula stated in Rule 802 of the State of Colorado Oil and Gas Conservation Commission.

As necessary, based on the survey, Crestone will install temporary 32' – 40' sound walls on the east side or up to all four sides of the well pad during drilling and completions to minimize noise and light impacts.

If needed, Crestone will install more permanent noise mitigation at the facility location as necessary to meet all COGCC regulations. These are lower profile and removable sound walls, inside the facility, to mitigate any noise from the compression area. The ability to electrify the site/permanent equipment will also assist in decreasing noise from the production equipment.

Finally, Crestone sites are constructed to allow potential future noise mitigation installation without additional disturbance.

C11. Recommend keeping this BMP but it can be added into prior BMP if that is the preference. We want it to be known that we construct our sites with the ability to add future, additional noise mitigation, if needed, without requiring additional disturbance.

C12. Where possible, drilling rig and completion equipment engine exhaust will be directed away from the occupied buildings located to the east and southeast, to assist in mitigating potential odors.

To mitigate the effects of odor from Crestone's operations, Crestone will employ only International Association of Oil & Gas Producers (IOGP) Group III drilling base fluids with <0.5 weight % aromatics and will not use drilling fluids based on diesel. We also employ the use of mud chillers. Additionally, Crestone may utilize chemical additives during drilling operations to mitigate odor impacts.

Sealed tanks with pressure relief valves and emissions controls will be utilized for the production facilities.

Please let us know if that answers all of your questions and comments or if you need further information.

Thank you,

Meghan Campbell

Senior Regulatory Analyst

(720) 410-8487



[Quoted text hidden]

To: Meghan Campbell <meghan.campbell@crestonepr.com>  
Cc: "Toby Sachen (Contractor)" <toby.sachen.contractor@crestonepr.com>, "Treitz - DNR, Rebecca" <rebecca.treitz@state.co.us>

Meghan or Toby,

While going through the previous list and an additional review, several additional issues/questions came up:

1. I will need a new location drawing that includes the location of the MLVTs.
2. We are seeing a child care facility located approximately 3317 ft east of the location, the cultural resources tab lists none within 5280 ft.
3. What is the High Occupancy Building Unit that you are seeing? Or is the closest one the Child Care Center?
4. Material handling BMP #3 Language change to the following section to remove the SPCC reference: 'In addition, the sites are inspected with optical gas imaging cameras on a routine schedule, annually for compliance purposes ~~with our Spill Prevention Containment and Countermeasures (SPCC) plan.~~'
5. Noise mitigation BMP #10. The vague language is back in and will need to be removed. Removing the 'as necessary' and 'if needed'. Also, please define specific plans for the temporary sound walls for drilling and completions.
6. Odor mitigation BMP #12. Vague language 'Where possible'. Please be more specific. Also, 'Crestone may utilize chemical additives...'. Can this become a 'Crestone will utilize chemical additives during drilling operations to mitigate odor impacts if....'

Please let me know if you have any questions.

Thanks,

**Brian Christopher**  
Oil & Gas Location Assessment Specialist



**COLORADO**  
Oil & Gas Conservation  
Commission  
Department of Natural Resources

P 303.894.2100 x5271  
1120 Lincoln Street, Suite 801, Denver, CO 80203  
[Brian.Christopher@state.co.us](mailto:Brian.Christopher@state.co.us) | [www.colorado.gov/cogcc](http://www.colorado.gov/cogcc)

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**Meghan Campbell** <meghan.campbell@crestonepr.com>  
To: "Christopher - DNR, Brian" <brian.christopher@state.co.us>  
Cc: "Toby Sachen (Contractor)" <toby.sachen.contractor@crestonepr.com>, "Treitz - DNR, Rebecca" <rebecca.treitz@state.co.us>

Tue, Nov 5, 2019 at 3:23 PM

Hi Brian,

We will get back to your shortly on these.

Thanks,

Meghan Campbell  
Senior Regulatory Analyst

(720) 410-8487



**From:** Christopher - DNR, Brian <brian.christopher@state.co.us>

**Sent:** Tuesday, November 5, 2019 2:57 PM

**To:** Meghan Campbell <meghan.campbell@crestonepr.com>

**Cc:** Toby Sachen (Contractor) <toby.sachen.contractor@CRESTONEPR.COM>; Treitz - DNR, Rebecca <rebecca.treitz@state.co.us>

**Subject:** Re: FW: [EXT]Warner 10H-E165 Doc # 401779047 Form 2A Review

Meghan or Toby,

While going through the previous list and an additional review, several additional issues/questions came up:

1. I will need a new location drawing that includes the location of the MLVTs.
2. We are seeing a child care facility located approximately 3317 ft east of the location, the cultural resources tab lists none within 5280 ft. Yes, if you are referring to the location on the other side of I-76, off of Cedar St. It should not be 5280'.
3. What is the High Occupancy Building Unit that you are seeing? Or is the closest one the Child Care Center? Is a Child Care Center with the capacity of 6 seen as a HOB?U?

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**Meghan Campbell** <meghan.campbell@crestonepr.com>

Thu, Nov 7, 2019 at 3:51 PM

To: "Christopher - DNR, Brian" <brian.christopher@state.co.us>

Cc: "Toby Sachen (Contractor)" <toby.sachen.contractor@crestonepr.com>, "Treitz - DNR, Rebecca" <rebecca.treitz@state.co.us>

Hi Brian,

Please see below for our responses. There have been some changes and hopefully these are now specific enough.

Thanks,

Meghan Campbell

Senior Regulatory Analyst

(720) 410-8487



**From:** Christopher - DNR, Brian <brian.christopher@state.co.us>  
**Sent:** Tuesday, November 5, 2019 2:57 PM  
**To:** Meghan Campbell <meghan.campbell@crestonepr.com>  
**Cc:** Toby Sachen (Contractor) <toby.sachen.contractor@CRESTONEPR.COM>; Treitz - DNR, Rebecca <rebecca.treitz@state.co.us>  
**Subject:** Re: FW: [EXT]Warner 10H-E165 Doc # 401779047 Form 2A Review

Meghan or Toby,

While going through the previous list and an additional review, several additional issues/questions came up:

1. I will need a new location drawing that includes the location of the MLVTs. Please see attached.
1. We are seeing a child care facility located approximately 3317 ft east of the location, the cultural resources tab lists none within 5280 ft. There are two child care facilities to the east, one is in home the other is associated with a preschool. It should not be 5280' and the numbers should be as follows, which can also be found on the updated Location Drawing:

School Facility: 4851' NE

School Property Line: 4771' NE

Child Care Center: 4851' NE

2. What is the High Occupancy Building Unit that you are seeing? Or is the closest one the Child Care Center? The closest HOBV is a Jehovah's Witness facility with an associated child care center during services.
3. Material handling BMP #3 Language change to the following section to remove the SPCC reference: 'In addition, the sites are inspected with optical gas imaging cameras on a routine schedule, annually for compliance purposes with our ~~Spill Prevention Containment and Countermeasures (SPCC) plan~~.' We concur with the removal of this last part.
4. Noise mitigation BMP #10. The vague language is back in and will need to be removed. Removing the 'as necessary' and 'if needed'. Also, please define specific plans for the temporary sound walls for drilling and completions. Crestone will perform a baseline noise survey prior to any operational activity measuring dBA at a distance 350 feet from the noise source or sound levels will be measured at a point twenty-five (25) feet from the structure towards the noise source. In situations where measurement of noise levels at three hundred and fifty (350) feet is impractical or unrepresentative due to topography, the measurement may be taken at a lesser distance and extrapolated to a 350-foot equivalent using the formula stated in Rule 802 of the State of Colorado Oil and Gas Conservation Commission.

Crestone will install temporary 32' sound walls on all four sides of the well pad that will go up once the pad has been constructed and stay up during drilling and completions phases to minimize noise and light impacts.

Once the wells are on production, if needed as determined by any additional sound monitoring, Crestone will install more permanent noise mitigation at the facility location to meet all COGCC regulations. These are lower profile and removable sound walls, inside the facility, to mitigate any noise from the compression area.

5. Odor mitigation BMP #12. Vague language 'Where possible'. Please be more specific. Also, 'Crestone may utilize chemical additives...'. Can this become a 'Crestone will utilize chemical additives during drilling operations to mitigate odor impacts if....' Brian it seems that we do not use any odor mitigating chemicals or masking odor chemicals outside of the Group III drilling base fluids. So corrected BMO should read: To mitigate the effects of odor from Crestone's operations, Crestone will employ only International Association of Oil & Gas Producers (IOGP) Group III drilling base fluids with <0.5 weight % aromatics and will not use drilling fluids based on diesel. We also employ the use of mud chillers.

Please change "Where possible, drilling rig and completion equipment engine exhaust will be directed away from the occupied buildings located to the east and southeast, to assist in mitigating potential odors" to "Drilling rig and completion engine exhausts are pointed straight up so as not to be directed towards any occupied buildings. During the fracturing process, diesel-fired fracturing equipment will be located in the southwest part of the pad in order to reduce proximity of emissions to nearby housing located to the east.

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**Warner 10H-E165 Pad Location Drawing wMLVT.pdf**  
867K

**Meghan Campbell** <meghan.campbell@crestonepr.com>

Fri, Nov 8, 2019 at 9:16 AM

To: Brian Hopkinson <bhopkinson@ascentgeomatics.com>, "Christopher - DNR, Brian" <brian.christopher@state.co.us>

I noted a typo, please see # 5 below.

Thank you,

Meghan Campbell

Senior Regulatory Analyst

(720) 410-8487



**CRESTONE PEAK**  
RESOURCES

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Please change "Where possible, drilling rig and completion equipment engine exhaust will be directed away from the occupied buildings located to the east and southeast, to assist in mitigating potential odors" to "Drilling rig and completion engine exhausts are pointed straight up so as not to be directed towards any occupied buildings. During the fracturing process, **diesel-fueled** fracturing equipment will be located in the southwest part of the pad in order to reduce proximity of emissions to nearby housing located to the east.

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[Quoted text hidden]



**Warner 10H-E165 Pad Location Drawing wMLVT.pdf**  
867K