Owner Operator: Conoco Phillips

Well: Parachute 4-65

Location: S.W. o fl-70 and S. Powhatan Rd., Aurora, CO

Comments by:

John F. Dougherty, P.E. 1865 South Oswego St. Aurora, CO 80012

1. Reference Sheet 1 Site Plan by CVL consultants, this engineering document does not carry the Seal of a Colorado registered Professional Engineer. Same with Sheets 2 and 3 site plans that show site grading and drainage designs. Indeed, the application lists these documents as "Engineered Plan". Application should be sealed by a PE as an assurance that such plans are engineered in accordance with Professional Standard of Care and current regulations.

Colorado law is very explicit that Engineering work should be sealed and performed under the care and control of a registered Professional Engineer: Here is the law citation for ready reference:

12-25-104. Forms of organizations permitted to practice.

A partnership, corporation, limited liability company, joint stock association, or other entity is not eligible for licensure under this part 1. An entity may practice r offer to practice engineering in Colorado only if the individual in responsible charge of the entity's engineering activities performed in Colorado is a professional engineer licensed in Colorado. All engineering documents, plats, and reports issued by or for the entity in connection with engineering work performed in this state must bear the seal and signature of the Coloradolicensed professional engineer who is in responsible charge of and directly responsible for the engineering work.

2. The Sheet 1 listing of requested waivers notes that the 31.5 feet VR tower is required for the "process as a whole". Do CVL and the Owner assert that such height is as engineered with supporting calculations or Process simulation? It is recognized that the State requires capture of fugitive emissions, but has the Owner considered alternate technologies that accomplish the VR mandate, while also meeting the City's height Performance Requirement of current regulations?

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A picture of one such Vapor Recovery unit is offered here for comparison purposes:



3. In the height waiver notes of Sheet 1, it states that the Combustor is only required until a gas pipeline is built. And the Combustor height is described to be same as the VR tower, yet the table on Sheet 3 lists 25-feet. Visual inspection of other QTI Combustors already installed at other sites appear taller when viewed from the fence line (but not measured). Can COP confirm the height of the Combustors, please? If the Combustor height does, indeed, exceed the City's Performance Requirement of current regulations, has the Owner considered other technologies?

The notes say the Combustor is only required until a gas pipeline can be built, yet the drawings note the necessary compressor unit is "Potential". When will the Pipeline be installed such that the Combustors can be retired and removed from the property to eliminate this non-compliance with the City's height Performance Standard?

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For reference, this picture shows the four (4) combustors already installed at Conoco's Watkins Rd dual-well pad. The adjoining trailers and truck in the center give an indication of the large size of these units. And note the farm fence in the foreground at the property boundary, giving absolutely no visual attenuation of the equipment and installation.



4. The applicant is encouraged, and indeed mandated by Colorado Law, to develop drainage Engineering Documents which are developed under the care of a PE. This was done with another application by the Owner. Note that this application has site civil works stamped by a Licensed Surveyor. It is our belief that such designs should be produced by a licensed Professional Engineer with Civil Engineering capability to insure drainage and potential runoff is in accordance with a standard of professional care and regulations.

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5. Reference the waiver request for a barbed wire farm fence. The City's Performance Standard is for a fence that provides "Visual Attenuation. Although the immediate area may be currently agricultural in nature, it is the City's experience that residential development occurs rapidly in such areas. Further, the Performance Standard is of benefit to the traffic that passes by such sites. And the requested waiver does not provide assured exclusion by the curious, by children, or by potential terrorist activity.

For ready reference, a photo is offered of the fence type required by City regulation – this fence exists at a Public Service of Colorado switchyard at 13<sup>th</sup> and Washington in Denver:



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It is noted that Public Service also employs a "tip-panel" fence style that ideally demonstrates its desire to be a good neighbor by providing excellent visual and noise attenuation, as well as effective landscaping. This example is from Public Service's switchyard just west of 13<sup>th</sup> and Colorado at Harrison Street:



6. Reference the waiver request for exemption to landscaping requirements of current City Performance Requirements. The request notes no water source is available, yet the Owner is bringing in thousands (millions?) of gallons of water for Fracking purposes, and the plans show a water tank of about 1.5 million gallons of storage, Cannot the Owner truck in a few hundred gallons of water each month during growing season to maintain landscaping as required by the city? Note that the State of Colorado uses "live snow fences" with planted evergreen trees that receive no irrigation, yet thrive in the prairie along I-70.

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7. Reference Sheet 2, Drilling Plan drawing, there is no containment shown around above ground septic storage.

- 8. Reference Sheet 3, Production Plan drawing, no containment is shown for the "pumping unit". The compressor is shown as "potential" yet the application says the Combustors are only until a pipeline is built (which would require the compressors. So when will a pipeline be built, so that the Combustors can be retired and removed? Or is the pipeline itself, "potential" and not really planned?
- 9. Page 5 of the application regarding the road exemption notes that 10-foot turnouts will be provided about every 1,000 feet. The road note of page 3 shows a length of 395 feet. How many turnouts will be provided?
- 10. Page 3 and 4 says that all produced Oil and Gas will be trucked off site until pipelines are built. Does that mean no gas flaring will take place, or is the statement incorrect?
- 11. The application depicts cut and fill plans, and drainage and grading plans that are produced by a Licensed Surveyor. It is our belief that such civil designs should be prepared by a registered Professional Engineer and with Civil Engineering qualifications.
- 12. Page 49 intended Best Management Practices notes Combustors will be used to eliminate the need for Vapor Recovery Units. Is the 31-foot VR Tower planned or not?
- 13. Reference Sheet 3 Operation Plan, it is noted that the Flare and Combustor units are located in the S.E. corner and downwind area of the pad. And, prevailing wind in this area is believed to be from the WNW as judged by aircraft landing patterns predominantly to the North. The Owner should consider if these fired units should not be located <a href="Upwind">Upwind</a> like his other applications and as suggested by API and other guidelines. At minimum, the Owner should conduct a formal Hazop session to determine if the planned layout is a safe one. And the plan drawings should contain a prevailing wind direction, commonly paired with the North arrow.

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