

**SUPPLEMENTAL SITE-SPECIFIC WATER QUALITY MONITORING PLAN**

Aspen 3-65 15-14 South Pad

**Location ID TBD**

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**Crestone Peak Resources Operating, LLC**

1801 California Street #2500

Denver, CO 80202

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**ATTACHMENTS**

1. DWR water sources – Aspen 3-65 15-14 South Pad area map with one-half mile radius
2. DWR water sources inventory
3. General Well Diagram

## 1.0 - INTRODUCTION

This supplemental, site-specific water quality monitoring plan was developed as an attachment to the Crestone Peak Resources Operating, LLC (Crestone) Fieldwide Water Quality Monitoring Plan for the City of Aurora, Colorado, dated September 29, 2020 (Plan), to address the City of Aurora requirements for a Water Quality Monitoring plan as specified in the City of Aurora Oil and Gas Operator Agreement (OA) to monitor groundwater quality conditions around proposed oil and gas well locations within the City of Aurora.

The Plan complies with the procedures, guidelines, and reporting requirements in accordance with the Colorado Oil and Gas Conservation Commission (COGCC) Model Sampling and Analysis Plan (SAP). See **Attachment A** for Plan Professional Geologist (PG) certification and **Attachment B** for Plan contacts. The contacts list will be reviewed on an annual basis unless more frequent updates are warranted.

## 2.0 - ENVIRONMENTAL DUE DILIGENCE

The following describes the process Crestone used for identifying up to four sampling / monitoring locations within a one-half-mile radius and frequency of sampling / monitoring prior to commencement of drilling a New Well at the Aspen 3-65 15-14 South Pad location.

Water sources and associated reference data for this effort were acquired from publicly available datasets, including the Colorado Division of Water Resources (DWR). Spatial analysis will be completed using queries in a geographic information system (GIS) desktop environment. For purposes of the assessment, a water source is a properly and well-maintained domestic water source registered with the DWR. When evaluating locations as potential available water sources (AWSs) for sampling / monitoring, Crestone considers water sources for which the water well owner or a landowner, as applicable, has given consent for sampling and testing and had consented to have the sample data obtained made available to the public, including without limitation, being posted on the COGCC website.

### 2.1 - Water Source Identification

Crestone identified all AWS within a one-half-mile radius of the Aspen 3-65 15-14 South Pad location and evaluated the DWR water sources using the selection, exception, and timing criteria identified in the Aurora OA. The criteria include proximity to the proposed location, radial pattern around the new well, aquifer availability, and orientation of sampling locations.

As shown on the attached map and DWR water sources inventory, no AWSs were identified within the one-half-mile radius.

### 2.2 - Installation of Monitoring Well

Crestone will drill and construct up to four monitoring wells per the Aurora OA Requested Well criteria on the pad site. The Requested Wells will be drilled to adequate depths to allow for testing of the respective available aquifers down to and including the Laramie Fox-Hill. A general well arrangement diagram is attached.

### **3.0 - FIELD ASSESSMENT / DATA EVALUATION**

Baseline and subsequent water quality scheduling, field assessments, sampling processes, and data evaluations will be completed using standard industry procedures consistent with the COGCC Model SAP and as defined in the Plan.

### **4.0 - PROTECTION AND MITIGATION MEASURES**

If Crestone identifies degradation to water quality as a result of its oil and gas development, Crestone shall be responsible to mitigate the degradation of water quality to the applicable regulatory standards defined in the City of Aurora OA. A mitigation plan will be developed on a case-by-case basis depending on the degradation observed and the degree of impairment. The Plan will identify locations and frequency for sampling to document baseline groundwater conditions prior and subsequent to drilling activities.

### **5.0 - REPORTING RESULTS**

Crestone will provide copies of all test results to the City of Aurora and the water source owners within 30-days after receiving the analytical results. All results will be submitted electronically to the City of Aurora contacts identified in Plan **Attachment B** unless otherwise directed by the City of Aurora.

### **6.0 - REFERENCES**

Apex Companies, LLC (2020). *Fieldwide Water Quality Monitoring Plan – City of Aurora*.

City of Aurora (2019). *Oil and Gas Operator Agreement* (Document No. 0.337206). City of Aurora, CO.

Colorado Oil and Gas Conservation Commission. (2020). *Model Sampling and Analysis Plan Rules 609 and 318A.e(4) Colorado Oil and Gas Conservation Commission Version 2* Retrieved May 28, 2020, from [https://ecmc.state.co.us/documents/about/COGIS\\_Help/COGCC\\_Model\\_SAP\\_20200414.pdf](https://ecmc.state.co.us/documents/about/COGIS_Help/COGCC_Model_SAP_20200414.pdf)

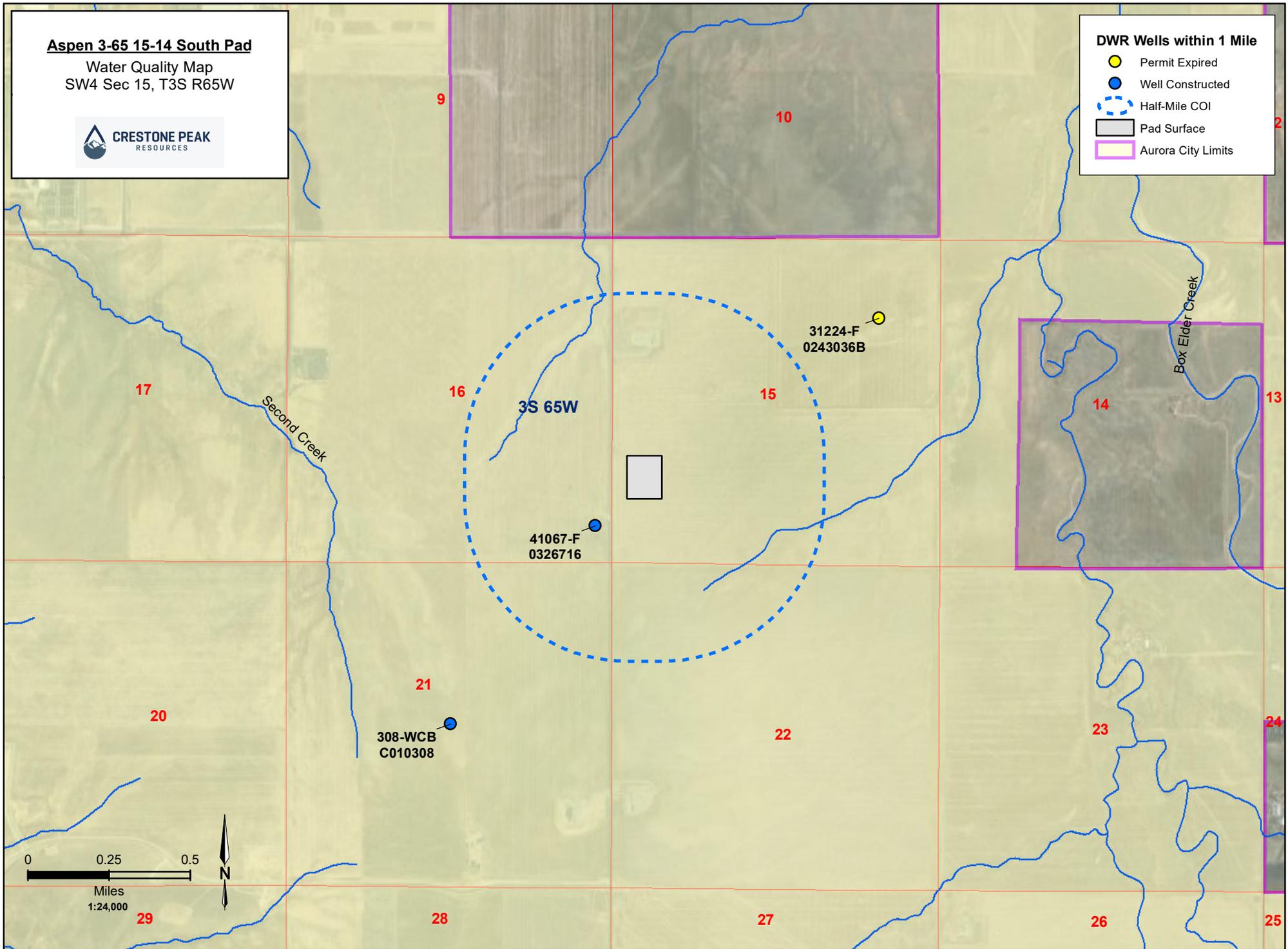
**Aspen 3-65 15-14 South Pad**

Water Quality Map  
SW4 Sec 15, T3S R65W



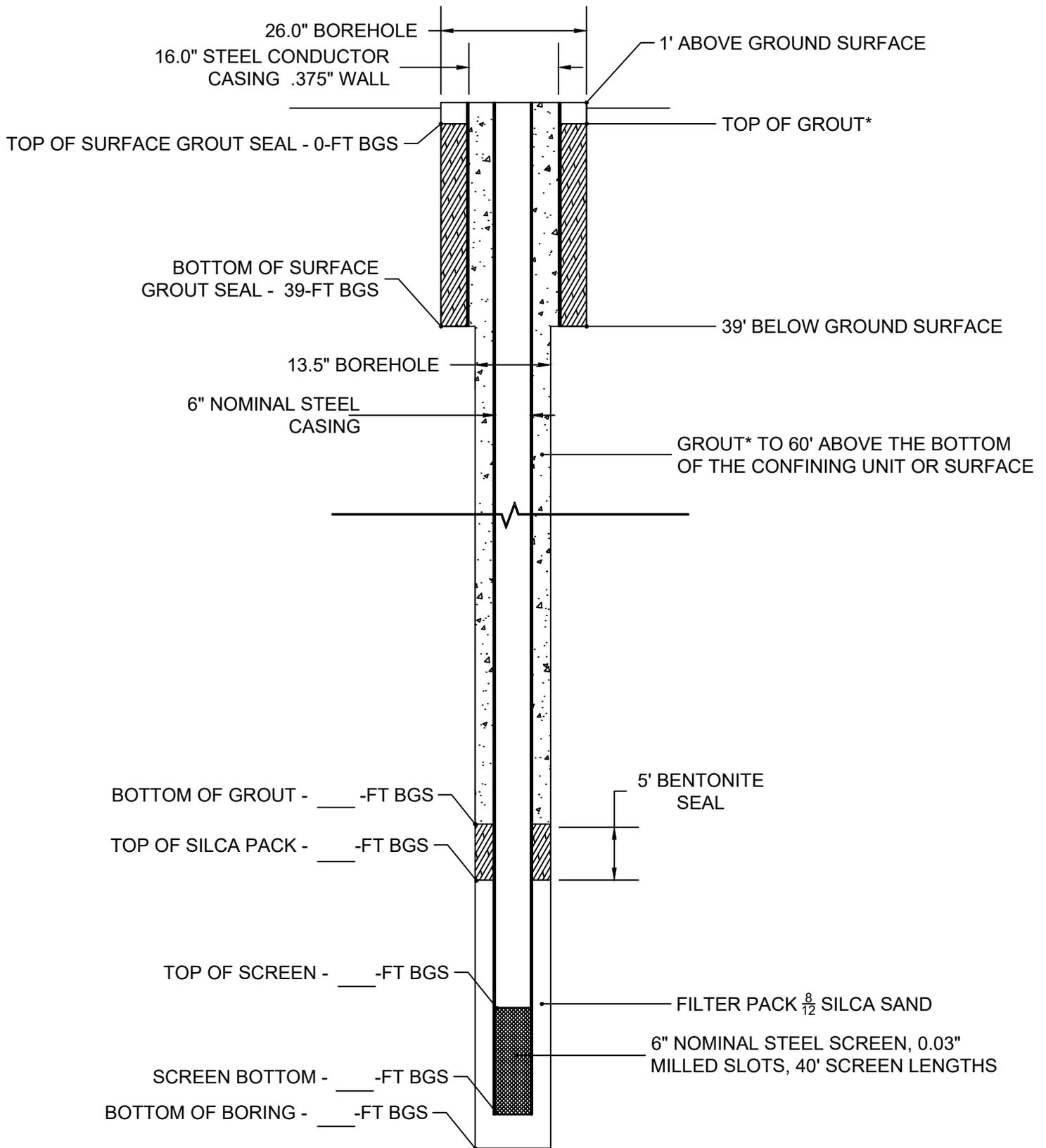
**DWR Wells within 1 Mile**

- Permit Expired
- Well Constructed
- Half-Mile COI
- ▭ Pad Surface
- ▭ Aurora City Limits



**DWR Water Sources Inventory**  
**Aspen 3-65 15-14 South Pad**

Status	Receipt	Permit	Permit Status	Contact Name	County	Twn	Rng	Sec	Q40	Q160	Latitude	Longitude	Aquifer(s)	Use(s)	TD
Eliminated - Use	0326716	41067-F	Well Constructed	US WEST COMMUNICATIONS	ADAMS	3 S	65 W	16	SE	SE	39.785241	-104.660268	UPPER ARAPAHO	Commercial	1010



\* Section 10.5.2 APPROVED GROUT

<b>WELL NAME:</b> Well 1
<b>WELL OWNER:</b> Crestone Peak Resources
<b>LOCATION:</b> Adams County, Colorado
<b>SECTION:</b> <b>TOWNSHIP:</b> <b>RANGE:</b>

