

November 21, 2017

Jim Hughes
Colorado Oil & Gas
Conservation Commission
1120 Lincoln St. Suite 801
Denver, CO 80203

**RE: Soil Gas Survey Results
Simmons GU #1 P&A Gas Well**

Dear Mr. Hughes,

Cottonwood Consulting LLC (Cottonwood) is pleased to provide you with the results of a soil gas survey conducted in the vicinity of the Simmons GU #1 plugged and abandoned well in Ignacio, Colorado (Figure 1). The methodology and associated results are summarized below.

Background

The Simmons GU #1 plugged and abandoned gas well (API #05-067-05500) was drilled in 1953 by Stanolind Oil & Gas Company to a total depth of 2,773 feet below ground surface (bgs), and completed into the Fruitland Formation (Attachment 1). Records show the well was plugged and abandoned in 1956.

Cottonwood was retained by the Colorado Oil and Gas Conservation Commission (COGCC) in November 2017 to conduct a soil gas survey to evaluate current site conditions and determine the presence or absence of methane seepage in the vicinity of the Simmons GU #1 plugged and abandoned gas well.

Methodology

Cottonwood was on-site to conduct the soil gas survey on November 15, 2017. Prior to the soil gas survey, Cottonwood conducted a utility locate to ensure that all underground utilities within the survey area were properly marked prior to ground disturbance.

Soil gas measurements were collected at 50-foot intervals in a grid surrounding the Simmons GU #1 plugged and abandoned gas well (Figure 2). An additional gas measurement was collected from a soil vapor tube near the abandoned well marker; however, prior to the measurement, Cottonwood observed that the soil vapor tube had been damaged and no interior tubing or PVC well cap was present on the soil vapor tube.

Cottonwood used a slide-hammer to advance a borehole to a total depth of approximately two feet bgs at each measurement location. Tubing connected to a GEM5000 Plus[®] Landfill Gas Meter was lowered into each borehole to collect measurements of methane, carbon dioxide,

hydrogen sulfide, carbon monoxide, and oxygen. The concentration of each gas and the associated measurement location was recorded using a Trimble GeoXH[®]. Additional observations regarding vegetation and general site conditions were recorded in a field notebook.

Results

Methane was not detected at any of the 28 soil gas measurement locations or at the soil vapor tube during the soil gas survey. Additionally, hydrogen sulfide and carbon monoxide were not detected at any of the measurement locations. Carbon dioxide was detected between 0.1 – 0.8%, and oxygen levels were generally consistent with background levels (19.9 – 20.9%). Results of the soil gas survey are presented in Table 1, and photographic documentation of site conditions during the survey are included as Attachment 2.

Conclusions

Based on the results of the November 2017 soil gas survey, it appears that methane seepage is not present in the vicinity of the Simmons GU #1 plugged and abandoned gas well.

Should you have any questions, please do not hesitate to contact me at 970-764-7356 or ksiesser@cottonwoodconsulting.com. We appreciate the opportunity to provide services to the Colorado Oil & Gas Conservation Commission.

Sincerely,



Kyle G. Siesser, P.G.
Cottonwood Consulting, LLC

Attachments: Figure 1 – Project Area Map
Figure 2 – Soil Gas Survey Map
Table 1 – Soil Gas Survey Results
Attachment 1 – Scout Card
Attachment 2 – Photographic Documentation



Legend

★ Project Location

Project Location: SESE Sec 1 T33N R8W







Mapping by: H. Ertl, 11/17/17
 Coordinate System:
 NAD 1983 UTM Zone 13 N

FIGURE 1
PROJECT LOCATION MAP
SIMMONS GU #1
COLORADO OIL & GAS
CONSERVATION COMMISSION



All measurements collected on 11/15/17. No methane was detected at the soil vapor tube or any of the gas measurement locations.

Legend

-  CBM Well
-  Plugged & Abandoned Well
-  Soil Vapor Tube
-  Gas Measurement Location

Project Location: SESE Sec 1 T33N R8W



Mapping by: H. Ertl, 11/17/17
Coordinate System:
NAD 1983 UTM Zone 13 N

FIGURE 2
SOIL GAS SURVEY MAP
SIMMONS GU #1
COLORADO OIL & GAS
CONSERVATION COMMISSION

TABLE 1
SOIL GAS SURVEY RESULTS
SIMMONS GU #1
COLORADO OIL & GAS CONSERVATION COMMISSION

SAMPLE ID	CH ₄ %	CO ₂ %	H ₂ S ppm	CO ppm	O ₂ %
1	0	0.1	0	0	20.0
2	0	0.1	0	0	20.0
3	0	0.2	0	0	20.0
4	0	0.1	0	0	19.9
5	0	0.1	0	0	20.0
6	0	0.3	0	0	19.9
7	0	0.3	0	0	19.9
8	0	0.2	0	0	20.0
9	0	0.3	0	0	20.1
10	0	0.2	0	0	20.1
11	0	0.2	0	0	20.0
12	0	0.1	0	0	20.2
13	0	0.1	0	0	20.2
14	0	0.1	0	0	20.2
15	0	0.2	0	0	20.2
16	0	0.1	0	0	20.3
17	0	0.1	0	0	20.3
18	0	0.2	0	0	20.2
19	0	0.1	0	0	20.4
20	0	0.2	0	0	20.4
21	0	0.4	0	0	20.3
22	0	0.7	0	0	20.3
23	0	0.8	0	0	20.0
24	0	0.2	0	0	20.6
25	0	0.4	0	0	20.1
26	0	0.4	0	0	20.6
27	0	0.1	0	0	20.8
28	0	0.1	0	0	20.9
Soil Vapor Tube	0	-	-	-	-

Notes:

All measurements collected 11/15/17.

CH₄- Methane

CO₂- Carbon Dioxide

H₂S- Hydrogen Sulfide

CO- Carbon Monoxide

O₂- Oxygen

ppm- Parts Per Million

%- Percent

COGIS - WELL Information

Scout Card



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Surface Location Data for API # 05-067-05500

Status: DA

10/1/1956

Well Name/No: [SIMMONS GAS UNIT #1](#) (click well name for production)

Operator: STANOLIND OIL & GAS CO - 81765

Status Date: 10/1/1956

Federal or State Lease #:

FacilityID: **214180**

LocationID:

326337

County: LA PLATA #067

Location:

SESE 1 33N8W N PM

Field: IGNACIO BLANCO - #38300

Elevation:

6,570 ft.

Planned Location 990 FSL 990 FEL

Lat/Long: 37.128639/-107.662652

Lat/Long Calculated From Footages

Wellbore Data for Sidetrack #00

Status: DA

10/1/1956

Spud Date: 4/19/1953

Spud Date is:

ACTUAL

Wellbore Permit

Permit #: 19530413

Expiration Date:

4/13/1954

Prop Depth/Form: 2600

Surface Mineral Owner Same:

Mineral Owner: FEE

Surface Owner:

Unit:

Unit Number:

Formation and Spacing: Code: FRLD , Formation: FRUITLAND , Order: 0 , Unit Acreage: 0, Drill Unit:

Wellbore Completed

Completion Date: 6/2/1953

Measured TD: 2773

Measured PB depth:

2410

True Vertical TD:

True Vertical PB depth:

Casing: String Type: SURF , Hole Size: , Size: 10.75, Top: 0, Depth: 278, Weight: 40.5

Cement: Sacks: 250, Top: 0, Bottom: , Method Grade:

Casing: String Type: 1ST , Hole Size: , Size: 7.625, Top: 0, Depth: 2454, Weight: 24

Cement: Sacks: 425, Top: 0, Bottom: , Method Grade:

Formation	Log Top	Log Bottom	Cored	DSTs
FRUITLAND	2533			
PICTURED CLIFFS	2759			

No additional interval records were found for sidetrack 00.

PHOTOGRAPHIC DOCUMENTATION



Photo 1. Simmons GU #1 plugged and abandoned well marker (1).



Photo 2. Simmons GU #1 plugged and abandoned well marker (2).



Photo 3. Soil gas measurement instrumentation and soil vapor tube next to plugged and abandoned well marker.



Photo 4. Vegetation near plugged and abandoned well marker.