

Heli Source

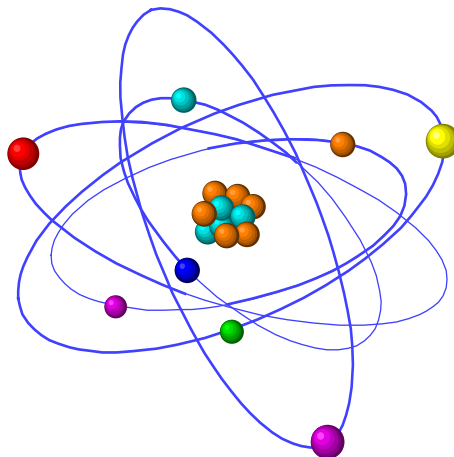
Work Order-Ref #: 21271

Vapor Intrusion Assessment (VIA)

Surface Casing Vent (SCV) Flow Test

Cameron Hills B-38

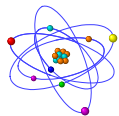
October 31, 2021



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FORENSIC SOLUTIONS FOR ENERGY CHALLENGES

**1.0 Vapor Intrusions Assessment (VIA) Summary**

Operating Company: Strategic Oil and Gas Ltd.
Well Name: Paramount et al Cameron Hills B-38
UWI: B-38 60-10N 117-30W

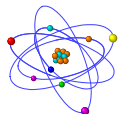
License Number: 2002
Test Date: October 31, 2021
GCHEM Project Number: 21271

1.1 Production Casing Assessment Summary Table

| | | | |
|---|------------------------|----------------------------|-------------------------|
| Combustible Gas (CH ₄) (%LEL) | nm | | |
| Hydrogen Sulphide (H ₂ S) Gas (ppm v/v) | nm | | |
| PC Flow Rate (m ³ /day) | nm | | |
| P-T Date Logger Installed | nm | | |
| P-T Data Logger Removed | nm | | |
| P-T Data Logger Test Duration | nm | | |
| MAX Pressure (kPa) | nm | | |
| Gas Spl. Collection-Measurement | Total Collected | Analysis Requested* | Classification** |
| PC Samples (Total) | 0 | | |
| PC Combustible Gas Class. Level-1 (Chemical) | | NA | NA |
| PC Combustible Gas Class. Level-2 (δ ¹³ C) | | NA | NA |
| PC Combustible Gas Class. Level-3 (δD) | | NA | NA |
| PC Combustible Gas Class. Level-4 (¹⁴ C) | | NA | NA |

1.2 Surface Casing Vent Flow (SCVF) Assessment Summary Table

| | | | |
|--|------------------------|----------------------------|-------------------------|
| SCV Ten-Minute Bubble Test Result | PASS | | |
| SCV Flow Rate (m ³ /day) | 0 | | |
| SCV Pressure-Temp Logger Installed | NA | | |
| SCV Pressure-Temp Data Logger Removed | NA | | |
| SCV Shut-In Time (hrs) | NA | | |
| SCV MAX-Recorded Build Up Pressure (kPa) | NA | | |
| SCV Stabilized Build-up Pressure (kPa): | NA | | |
| SCV Stabilized Build-up Time (hours) | NA | | |
| SCV Standpipe Max CH ₄ Content (ppm v/v): | 11 | | |
| SCV Standpipe Max H ₂ S Content | <1 | | |
| SCV Gas Spl. Collection-Measurement | Total Collected | Analysis Requested* | Classification** |
| SCV Samples (Total) | 1 | | |
| SCV Combustible Gas Class. Level-1 (Chemical) | | 1 | NON-IMPACTED |
| SCV Combustible Gas Class. Level-2 (δ ¹³ C) | | NA | NA |
| SCV Combustible Gas Class. Level-3 (δD) | | NA | NA |
| SCV Combustible Gas Class. Level-4 (¹⁴ C) | | NA | NA |



1.3 Soils Outside Casing (AGM) Assessment Summary Tables

A) Non-Intrusive CH₄ Surface Soil Scan (PMD) (Figure-1 and Table-1)

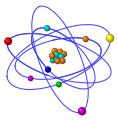
| | |
|--|-----------|
| Well Casing Surface CH ₄ Test Sites | 28 |
| MAX Surface CH ₄ Reading | 1 ppm v/v |
| MAX H ₂ S Well Soil Reading (ppm v/v) | <1 |
| Number of Background Sites | 1 |
| MAX Background CH ₄ (ppm v/v) | 1 |
| Max H ₂ S BKG Soil Reading (ppm v/v) | <1 |
| Surface CH₄-PMD Gas Classification | |
| NON-IMPACTED | |

B) Non-Intrusive Surface Enclosed Soil Vapor FLUX Chamber Test

| | | | |
|--|------------------------|----------------------------|------------------|
| Surface SV-FC CH ₄ Test Sites | nm | | |
| MAX SV-FC CH ₄ Reading | nm | | |
| SV-FC Gas Spl. Collection-Measurement | Total Collected | Analysis Requested* | Test Site |
| SV-FC Samples (Total) | 0 | | |
| SV-FC & Sites Requested for Level-1 Analysis | | NA | NA |
| Combustible Gas Classification Level-1 (Chem.) | | NA | |
| SV-FC & Sites Requested for Level-2 Analysis | | NA | NA |
| Combustible Gas Classification Level-2 (δ ¹³ C) | | NA | |
| SV-FC & Sites Requested for Level-3 Analysis | | NA | NA |
| Combustible Gas Classification Level-3 (δD) | | NA | |
| SV-FC & Sites Requested for Level-4 Analysis | | NA | NA |
| Combustible Gas Classification Level-4 (¹⁴ C) | | NA | |

C) Intrusive Auger Test Holes with Soil Vapor Probes (Figure 2 and Table 2)

| | | | |
|--|------------------------|----------------------------|--|
| Number Soil Vapor Probe (SVP) Test Sites | 20 | | |
| MAX SVP CH ₄ Reading (ppm v/v) | 12.1%LEL | | |
| Max H ₂ S SVP Field Reading (ppm v/v) | <1 | | |
| Number SVP BKG Test Sites | 1 | | |
| MAX SVP CH ₄ BKG Test Sites (ppm v/v) | 1 | | |
| SVPs Gas Spl. Collection & Measurement | Total Collected | Analysis Requested* | Test Site |
| Soil Vapor Probes (SVPs) AGM (Total) | 8 | | |
| SVP & Sites Requested for Level-1 Analysis | | 8 | N0.3, E0.3, S0.3, W0.3, W0.7, SW0.3, SW0.7 & NW0.3 |
| Combustible Gas Classification Level-1 (Chem.) | | Hydrocarbon Contamination | |
| SVP & Sites Requested for Level-2 Analysis | | 0 | NA |
| Combustible Gas Classification Level-2 (δ ¹³ C) | | NA | |
| SVP & Sites Requested for Level-3 Analysis | | 0 | NA |
| Combustible Gas Classification Level-3 (δD) | | NA | |
| SVP & Sites Requested for Level-4 Analysis | | 0 | NA |
| Combustible Gas Classification Level-4 (¹⁴ C) | | NA | |



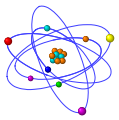
| | | | |
|--|---|----------------------------|------------------|
| BKG Gas Spl. Collection-Measurement | 7 | Analysis Requested* | Test Site |
| BKG Soil Vapor Probe (SVPs) (Total) | 1 | | |
| BKG & Sites Requested for Level-1 Analysis | | 1 | BKG NW15 |
| Combustible Gas Classification Level-1 (Chem.) | | | BASELINE |
| BKG & Sites Requested for Level-2 Analysis | | 0 | NA |
| Combustible Gas Classification Level-2 ($\delta^{13}\text{C}$) | | | NA |
| BKG & Sites Requested for Level-3 Analysis | | 0 | NA |
| Combustible Gas Classification Level-3 (δD) | | | NA |
| BKG & Sites Requested for Level-4 Analysis | | 0 | NA |
| Combustible Gas Classification Level-4 (^{14}C) | | | NA |

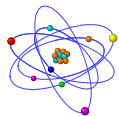
* Sample selection for chemical and isotope analysis (geochemical analytical suite) selected by client/operator.

1.4 Interpreted Source of Migrating Gases

| Sample Point | Geologic Formation | Depth Range | Source Depth |
|---|--------------------|-------------|--------------|
| No samples submitted for stable isotope composition analysis. | | | |





**3.0 Vapor Intrusion and Surface Casing Vent Flow Testing and Sampling Comments****Assessment-Collection Date: October 31, 2021**

- 1) The Surface Casing Vent passed the ten-minute bubble test (11 ppm v/v methane).
- 2) A surface combustible gas scan was performed near the wellbore using a Sensit Portable Methane Detector (PMD). All readings were low (1 ppm v/v) comparable to background (1 ppm v/v) established 15m northwest from the wellbore (Figure 1, Table 1).
- 3) An intrusive soil gas migration test was then performed by drilling test holes and inserting Soil Vapor Probes (SVPs). Combustible gas readings in the SVPs were elevated within 0.7m of the wellbore (up to 12.1% LEL at SW0.3m), comparable to the background probe (1 ppm v/v methane) installed approximately 15m northwest of the wellbore to establish background levels in the area and for comparison to other samples collected during this investigation (Figure 2, Table 2).
- 4) Eight soil gas samples from SVPs (N0.3, E0.3, S0.3, W0.3, W0.7, SW0.3, SW0.7 & NW0.3) and gases from background (BKG NW15) were collected, contained, and preserved for geochemical analysis and characterization, classification, geologic origin (source) and depth measured from the KB (Table 3).
- 5) Methane and C₂ + light alkane gas levels in soil gases collected near the wellbore are slightly elevated (at SW0.3 and NW0.3), comparable to background established 15m northwest of the wellbore (Figure 3).
- 6) Light alkane gas levels in the soil gas samples collected from SW0.3 and NW0.3 are elevated but the light alkane gas distribution (C₁<C₂<C₃~C_nC₄) are not consistent with the light alkane gas distribution of a thermogenic natural gas (C₁>>C₂>C₃>nC₄>nC₅). This indicates the combustible gases in the soils at these locations are likely the result of the breakdown/decomposition/weathering of hydrocarbon or chemical spills and not the result of migrating thermogenic natural gases.
- 7) Elevated combustible gas readings in the soils are the result of the present of elevated methane levels. Elevated methane contents in soils gases without corresponding elevated C₂+ levels indicate the presence of biogenic methane (swamp gas). The biogenic methane is likely the result of bacterial effects on possible hydrocarbon contamination in the soils.
- 8) C₆₊ contents in the soil samples are low and comparable to background levels (Figure 4).
- 9) This well does not contain evidence of SCVF or gas migration at the time of this investigation.

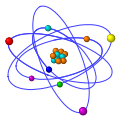


Figure 1. AGM Non-Intrusive Surface PMD

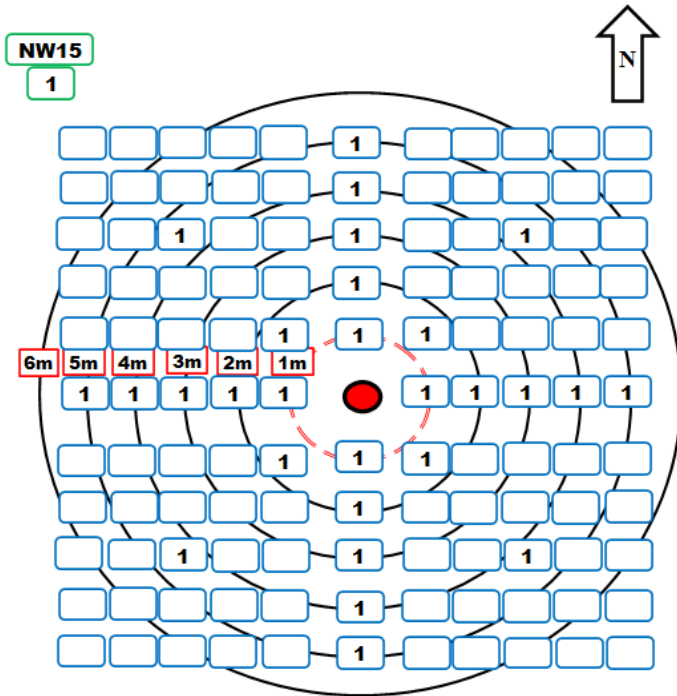


Figure 1A. Non-Intrusive CH₄ Surface Well Casing Detail VIEW

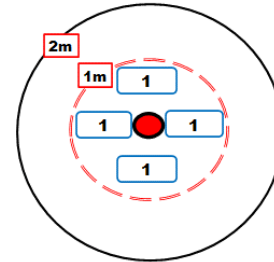


Table 1. AGM Non-Intrusive Surface PMD

| WELL CASING (AGM) Non-Intrusive Surface PMD (CH ₄) Soil Scan | | | | | | | | |
|--|---------------------|---------|----------|---------------------|---------|----------|---------------------|---------|
| Test | PMD CH ₄ | | Test | PMD CH ₄ | | Test | PMD CH ₄ | |
| Site (m) | (ppm v/v) | (% Vol) | Site (m) | (ppm v/v) | (% Vol) | Site (m) | (ppm v/v) | (% Vol) |
| N.5 | 1 | | E.5 | 1 | | S.5 | 1 | |
| N1 | 1 | | E1 | 1 | | S1 | 1 | |
| N2 | 1 | | E2 | 1 | | S2 | 1 | |
| N3 | 1 | | E3 | 1 | | S3 | 1 | |
| N4 | 1 | | E4 | 1 | | S4 | 1 | |
| N5 | 1 | | E5 | 1 | | S5 | 1 | |
| N5-E1 | | | E5-S1 | | | S5-W1 | | |
| N4-E1 | | | E5-S2 | | | S4-W1 | | |
| N3-E1 | | | E5-S3 | | | S3-W1 | | |
| N2-E1 | | | E5-S4 | | | S2-W1 | | |
| N1-E1 | 1 | | E5-S5 | | | S1-W1 | 1 | |
| N1-E2 | | | E4-S5 | | | S1-W2 | | |
| N2-E2 | | | E4-S4 | | | S2-W2 | | |
| N3-E2 | | | E4-S3 | | | S3-W2 | | |
| N4-E2 | | | E4-S2 | | | S4-W2 | | |
| N5-E2 | | | E4-S1 | | | S5-W2 | | |
| N5-E3 | | | E3-S1 | | | S5-W3 | | |
| N4-E3 | | | E3-S2 | | | S4-W3 | | |
| N3-E3 | 1 | | E3-S3 | 1 | | S3-W3 | 1 | |
| N2-E3 | | | E3-S4 | | | S2-W3 | | |
| N1-E3 | | | E3-S5 | | | S1-W3 | | |
| N1-E4 | | | E2-S5 | | | S1-W4 | | |
| N2-E4 | | | E2-S4 | | | S2-W4 | | |
| N3-E4 | | | E2-S3 | | | S3-W4 | | |
| N4-E4 | | | E2-S2 | | | S4-W4 | | |
| N5-E4 | | | E2-S1 | | | S5-W4 | | |
| N5-E5 | | | E1-S1 | 1 | | S5-W5 | | |
| N4-E5 | | | E1-S2 | | | S4-W5 | | |
| N3-E5 | | | E1-S3 | | | S3-W5 | | |
| N2-E5 | | | E1-S4 | | | S2-W5 | | |
| N1-E5 | | | E1-S5 | | | S1-W5 | | |

| BACKGROUND Non-Intrusive Surface PMD (CH ₄) Soil Scan | | | | | | | | |
|---|---------------------|-----|----------|---------------------|-----|----------|---------------------|-----|
| Test | PMD CH ₄ | | Test | PMD CH ₄ | | Test | PMD CH ₄ | |
| Site (m) | (ppm v/v) | (%) | Site (m) | (ppm v/v) | (%) | Site (m) | (ppm v/v) | (%) |
| NW15 | 1 | | | | | | | |

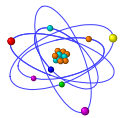


Figure 2. AGM Intrusive SVPs-

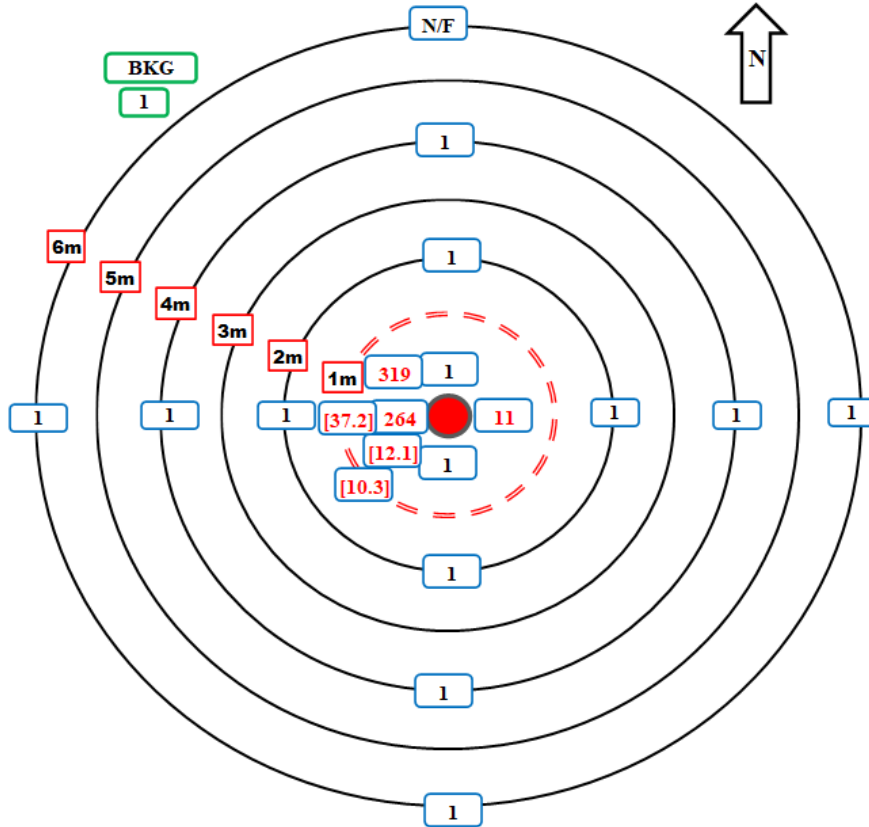


Table 2. AGM Intrusive SVPs

| Test Site (m) | Intrusive AGM - Hand Auger-Test Hole-Install Soil Vapor Probes (SVPs) ATM-Isolated | | | | | | Gas Sample (Y-N) | Site Assessment Comments |
|---------------|--|--------|----------------------------|------|-----------------|---------------|------------------|--------------------------|
| | Soil Vapor Probes | | H ₂ S (ppm v/v) | Type | Soil Parameters | | | |
| | IR-CH ₄ (ppm v/v) | (%LEL) | | | Moist. (1-5) | HC-CONT (Y-N) | | |
| N0.3 | 1 | | <1.0 | Slit | 5 | No | Slit | |
| N2 | 1 | | <1.0 | Slit | 5 | No | No | |
| N4 | 1 | | <1.0 | Slit | 5 | No | No | |
| N6 | N/F | | <1.0 | Slit | 5 | No | No | No Flow |
| E0.3 | 11 | | <1.0 | Slit | 5 | No | Yes | |
| E2 | 1 | | <1.0 | Slit | 5 | No | No | |
| E4 | 1 | | <1.0 | Slit | 5 | No | No | |
| E6 | 1 | | <1.0 | Slit | 5 | No | No | |
| S0.3 | 1 | | <1.0 | Slit | 5 | No | Yes | |
| S2 | 1 | | <1.0 | Slit | 5 | No | No | |
| S4 | 1 | | <1.0 | Slit | 5 | No | No | |
| S6 | 1 | | <1.0 | Slit | 5 | No | No | |
| W0.3 | 264 | | <1.0 | Slit | 5 | No | Yes | |
| W2 | 1 | | <1.0 | Slit | 5 | No | No | |
| W4 | 1 | | <1.0 | Slit | 5 | No | No | |
| W6 | 1 | | <1.0 | Slit | 5 | No | No | |
| W0.7 | 18600 | [37.2] | <1.0 | Slit | 5 | No | Yes | |
| NW0.3 | 319 | | <1.0 | Slit | 5 | No | Yes | |
| SW0.3 | 6050 | [12.1] | <1.0 | Slit | 5 | No | Yes | |
| SW0.7 | 5150 | [10.3] | <1.0 | Slit | 5 | No | Yes | |

| Test Site (m) | Soil Vapor Probes | | | Type | Soil Parameters | | Gas Sample (Y-N) | Site Assessment Comments |
|---------------|--------------------|---------|------------------|------|-----------------|---------------|------------------|--------------------------|
| | IR-CH ₄ | | H ₂ S | | Moist. (1-5) | HC-CONT (Y-N) | | |
| | (ppm v/v) | (% Vol) | (ppm v/v) | | | | | |
| BKG NW15 | 1 | | <1.0 | Slit | 5 | No | Yes | |

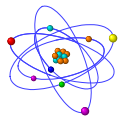


Table 1. High resolution molecular compositions of gas samples collected as part of the VIA Heli Source B-38.

| Gas Component | SCV Oct. 31-21 ppm v/v | N0.3 Oct. 31-21 ppm v/v | E0.3 Oct. 31-21 ppm v/v | E2 Oct. 31-21 ppm v/v | S0.3 Oct. 31-21 ppm v/v | W0.3 Oct. 31-21 ppm v/v | W0.7 Oct. 31-21 ppm v/v | SW0.3 Oct. 31-21 ppm v/v | SW0.7 Oct. 31-21 ppm v/v | NW0.3 Oct. 31-21 ppm v/v | BKG Oct. 31-21 ppm v/v |
|--|------------------------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------------|
| Neon | 21.40 | 22.00 | 22.42 | 20.95 | 22.24 | 21.66 | 19.85 | 18.34 | 18.89 | 18.06 | 20.90 |
| Hydrogen | 287.9 | 186.8 | 176.8 | 161.1 | 201.9 | 146.7 | 156.6 | 176.9 | 140.8 | 142.3 | 167.3 |
| Helium | 0.77 | 0.58 | 0.63 | 1.04 | 0.65 | 1.01 | 0.60 | 0.54 | 0.64 | 1.50 | 0.69 |
| Nitrogen | 776278 | 774652 | 776111 | 775960 | 774379 | 775176 | 774070 | 773558 | 772870 | 775180 | 775165 |
| Oxygen | 222741 | 223556 | 222410 | 219652 | 223032 | 223316 | 223325 | 221907 | 220997 | 223510 | 223065 |
| Carbon Dioxide | 672.7 | 1584 | 1288 | 4213 | 2365 | 1121 | 2093 | 1986 | 3021 | 871.2 | 1600 |
| Methane | 16.15 | 14.04 | 12.92 | 12.74 | 16.09 | 238.4 | 352.2 | 2307 | 2969 | 113.9 | 1.95 |
| Ethane | 0.50 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.77 | <0.01 | 45.24 | <0.01 |
| Ethene | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Propane | 0.77 | 1.84 | <0.01 | <0.01 | 1.53 | <0.01 | 0.51 | 20.24 | 0.38 | 66.29 | <0.01 |
| Propene | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| iso-Butane | 0.25 | 1.10 | <0.01 | <0.01 | 0.96 | 0.14 | 0.38 | 6.49 | <0.01 | 12.31 | <0.01 |
| n-Butane | 0.73 | 1.22 | <0.01 | <0.01 | 0.59 | <0.01 | 0.32 | 19.67 | 0.24 | 35.55 | <0.01 |
| iso-Pentane | 0.43 | 0.74 | <0.01 | <0.01 | 0.42 | 0.26 | 0.29 | 9.17 | <0.01 | 8.15 | <0.01 |
| n-Pentane | 0.47 | 0.37 | <0.01 | <0.01 | 0.19 | <0.01 | <0.01 | 5.66 | 0.11 | 11.62 | <0.01 |
| C6+ | 0.32 | 0.55 | 0.91 | 0.06 | 1.12 | 0.22 | 1.27 | 1.97 | 0.31 | 2.05 | 0.14 |
| C1 Index (C1/C2+) | 6.56 | 4.10 | N/A | N/A | 6.95 | N/A | 423.9 | 49.78 | 4062 | 0.72 | N/A |
| C2 Index (C2/C3+) | 0.25 | N/A | N/A | N/A | N/A | N/A | N/A | 0.02 | N/A | 0.40 | N/A |
| C3 Index (C3/C4+) | 0.65 | 1.16 | N/A | N/A | 1.95 | N/A | 1.57 | 0.80 | 1.10 | 1.41 | N/A |
| C4 Index (C4/C5) | 1.56 | 3.28 | N/A | N/A | 3.04 | N/A | N/A | 3.48 | 2.10 | 3.06 | N/A |
| ΣC2+ | 2.46 | 3.42 | N/A | N/A | 2.31 | N/A | 0.83 | 46.34 | 0.73 | 158.7 | N/A |
| ATM Ratio (N2/O2) | 3.49 | 3.47 | 3.49 | 3.53 | 3.47 | 3.47 | 3.47 | 3.49 | 3.50 | 3.48 | 3.48 |
| Vol % CO2 of TG | 0.07 | 0.16 | 0.13 | 0.42 | 0.24 | 0.11 | 0.21 | 0.20 | 0.30 | 0.09 | 0.16 |
| Vol % Lt. Alk. of TG | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.24 | 0.30 | 0.03 | 0.00 |
| Vol % Lt. Alk. CH4 | 83.88 | 72.74 | 100.0 | 100.0 | 81.34 | 99.83 | 99.57 | 97.38 | 99.98 | 38.86 | 100.0 |
| Vol % Lt. Alk. C2+ | 16.32 | 27.26 | 0.00 | 0.00 | 18.66 | 0.17 | 0.43 | 2.62 | 0.02 | 61.14 | 0.00 |
| Vol % C2+ of TG | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 |
| Stable Carbon Isotope Compositions (‰ VPDB) | | | | | | | | | | | |
| d13C CH4 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| d13C C2H6 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| d13C C2H4 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| d13C C3H8 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| d13C C3H6 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| d13C i-C4H10 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| d13C n-C4H10 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| d13C i-C5H12 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| d13C n-C5H12 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| d13C CO2 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| Stable Hydrogen Isotopic Compositions (‰ VSMOW) | | | | | | | | | | | |
| dD H2 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| dD CH4 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| dD C2H6 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| dD C3H8 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| dD i-C4H10 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| dD n-C4H10 | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |
| 14C Concentration (pMC) | | | | | | | | | | | |
| | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm | nm |

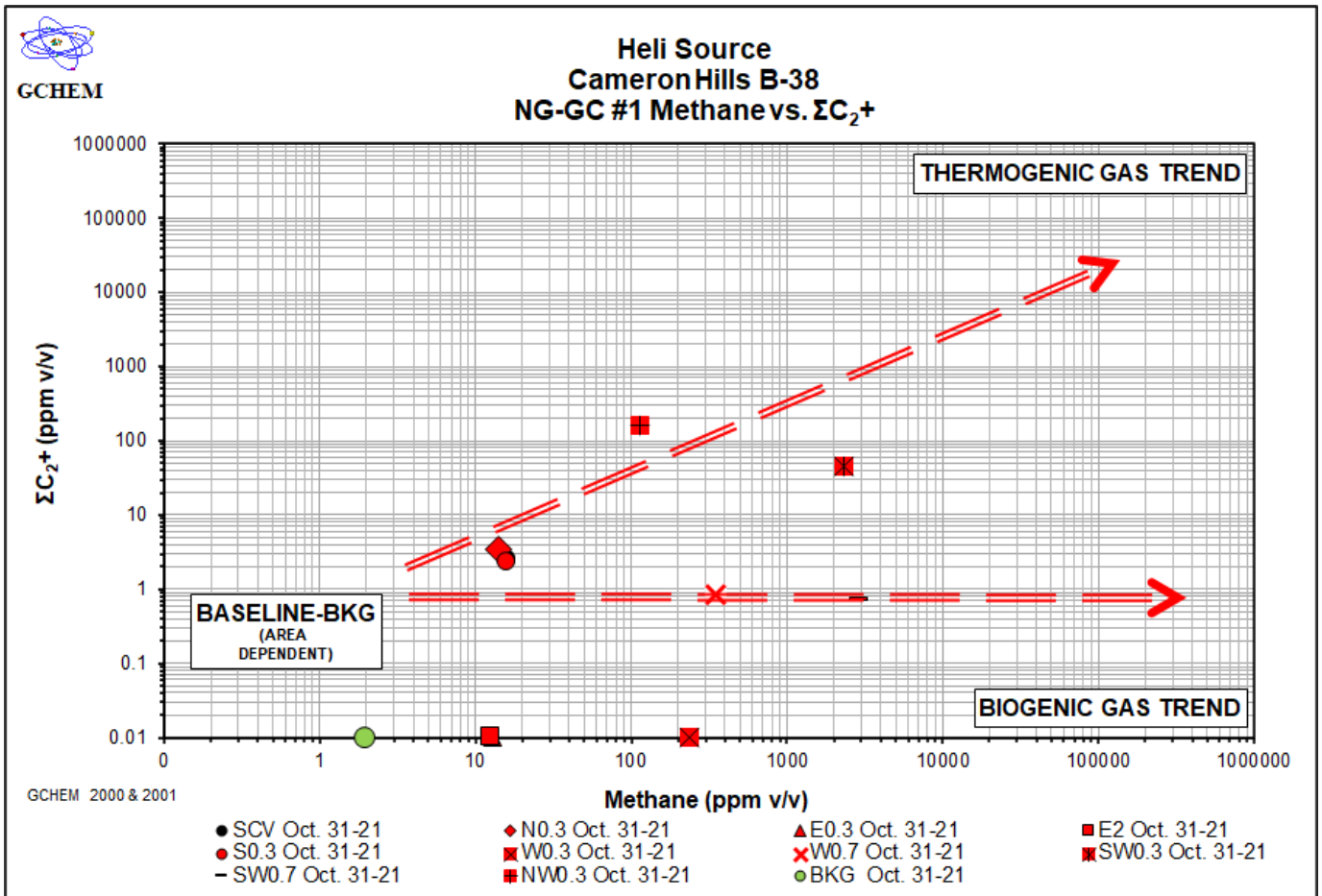
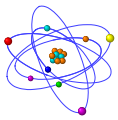


Figure 3: ΣC_2+ vs Methane. Combustible gases detected in soils and SCVs at a wellhead may result from several origins. Natural gases indicative of SCVF or AGM are thermogenic in origin (natural gas in deep reservoirs), contain high methane and C_2+ contents and plot in the Upper RH Quadrant. Low natural gas levels in background, off lease areas are naturally present in soils, vary from region to region and plot in the Lower LH Quadrant. Biogenic gases (swamp-gas) are produced by bacteria, are comprised of predominantly methane and plot in Lower RH Quadrant. Samples plotting in the Lower LH and RH do not contain SCVF or AGM and would not require down-hole remediation

NG-GC-1 Comments

NG-GC-1 Comments

- 1) Natural gases in the soils near the wellbore contain slightly elevated levels of C_2+ gases.

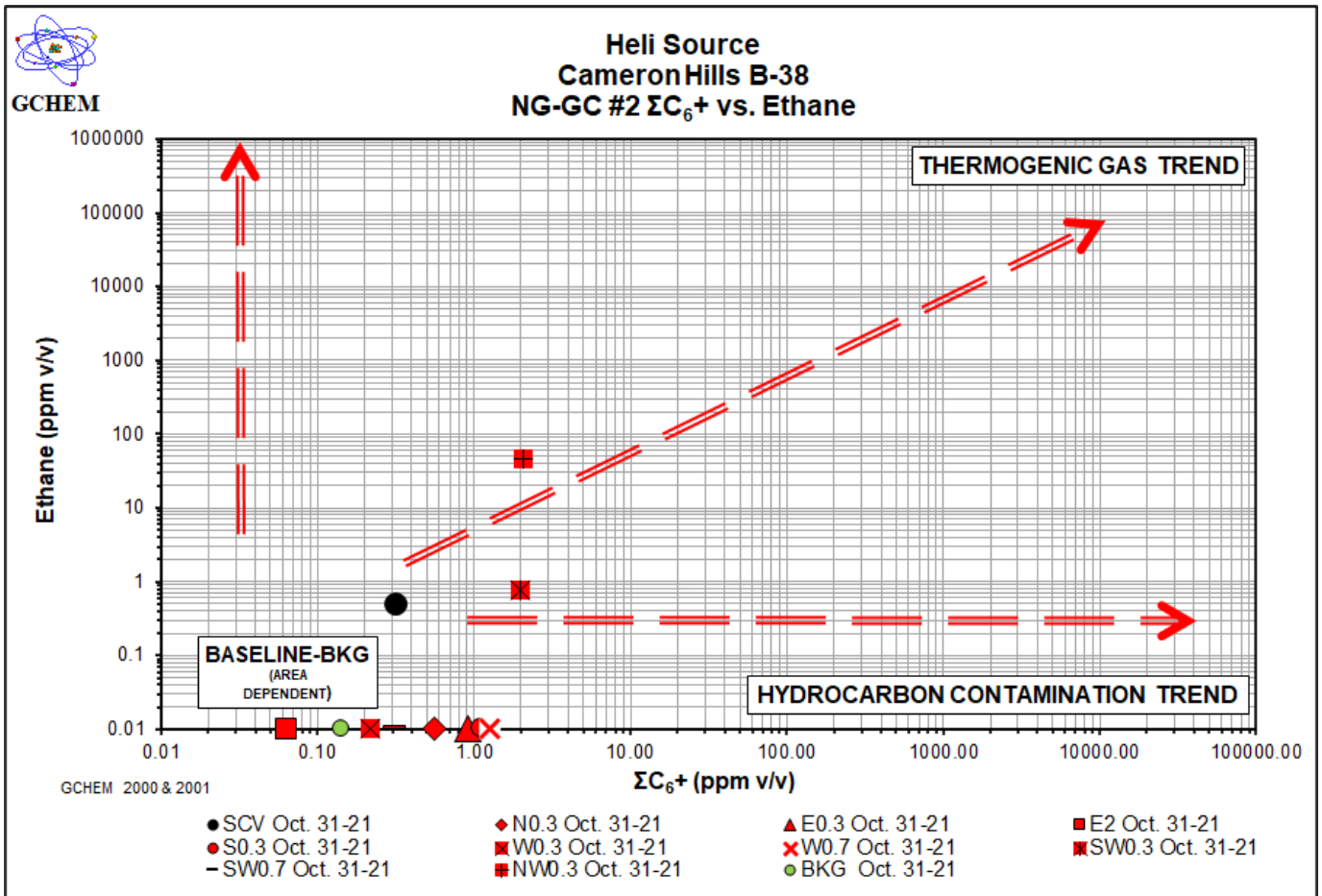
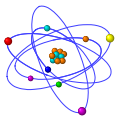


Figure 4: ΣC_6+ vs Ethane. C_6+ gases are relatively large molecules that do not readily or easily migrate in large quantities from depth upwards through subsurface fractures or micro-fractures to surface. Contamination by oil spills, fuels, and solvents is indicated by soil vapor samples that have high contents of C_6+ compounds and plot in the Lower RH Quadrant. Samples plotting in the Lower LH and RH Quadrants do not contain evidence of either SCVF or AGM and would not require downhole repair operations.

NG-GC-2 Comments

- 1) C_6+ contents of the SCV and soil gas samples are low and are similar to expected baseline readings. Measured combustible gas levels are not the result of near surface hydrocarbon or chemical contamination.