## Attachment E.I.3. Field Forms

Note: This attachment contains field forms PCC intends to utilize. PCC retains the right to substitute functionally equivalent field forms to those presented herein.

# GROUNDWATER SAMPLING LOG

| SITE NAME: | SITE LOCATION: | |
|---|---|---|
| WELL NO: | SAMPLE ID: | DATE: |

## PURGING DATA

| WELL DIAMETER (inches): | TUBING DIAMETER (inches): | WELL SCREEN INTERVAL DEPTH: feet to feet | STATIC DEPTH TO WATER (feet): | PURGE PUMP TYPE OR BAILER: |
|---|---|---|---|---|

**WELL VOLUME** PURGE**: 1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= ( feet – feet) X gallons/foot = gallons

**EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + ( gallons/foot X feet) + gallons = gallons

| INITIAL PUMP OR TUBING DEPTH IN WELL (feet): | FINAL PUMP OR TUBING DEPTH IN WELL (feet): | PURGING INITIATED AT: | PURGING ENDED AT: | TOTAL VOLUME PURGED (gallons): |
|---|---|---|---|---|

| TIME | VOLUME PURGED (gallons) | CUMUL. VOLUME PURGED (gallons) | PURGE RATE (gpm) | DEPTH TO WATER (feet) | pH (standard units) | TEMP. ($^{O}$C) | COND. µS/cm | DISSOLVED OXYGEN mg/L | DISSOLVED CO2 mg/L | TURBIDITY (NTUs) | OTHER COMMENT (describe) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

**WELL CAPACITY** (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
**TUBING INSIDE DIA. CAPACITY** (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

**PURGING EQUIPMENT CODES:** **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **O** = Other (Specify)

## SAMPLING DATA

| SAMPLED BY (PRINT) / AFFILIATION: | SAMPLER(S) SIGNATURE(S): | SAMPLING INITIATED AT: | SAMPLING ENDED AT: |
|---|---|---|---|

| PUMP OR TUBING DEPTH IN WELL (feet): | TUBING MATERIAL CODE: | FIELD-FILTERED: Y N Filtration Equipment Type: | FILTER SIZE: ____ µm |
|---|---|---|---|

FIELD DECONTAMINATION: PUMP Y N TUBING Y N (replaced) DUPLICATE: Y N

| SAMPLE CONTAINER SPECIFICATION | | | | SAMPLE PRESERVATION | | | INTENDED ANALYSIS AND/OR METHOD | SAMPLING EQUIPMENT CODE | SAMPLE PUMP FLOW RATE (mL per minute) |
|---|---|---|---|---|---|---|---|---|---|
| SAMPLE ID CODE | # CONTAINERS | MATERIAL CODE | VOLUME | PRESERVATIVE USED | TOTAL VOL ADDED IN FIELD (mL) | FINAL pH | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

REMARKS:

**MATERIAL CODES**: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

**SAMPLING EQUIPMENT CODES:** **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

**NOTES:** 1. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS

**pH:** ± 0.1 units **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** stable, or all readings ≤ 10 NTU

*Source FDEP, 2009; Trihydro 2015; EPA Operating Procedure, Groundwater Sampling, SESDPROC-301-R4, 2017; Trihydro 2022*

# Subsurface Soil Gas Measurment Field Form

**Instruction:**
1) Connect to the CR1000X datalogger using PC400. Using the public display, record the CO2 reading in parts per million (ppm) at the closest time interval to the initial field equipment readings. Convert the CO2 ppm reading to percentage (divide by 10,000), for comparison to field equipment readings.
2) Collect gas meter readings from soil vapor sample point.
3) Collect soil vapor sample when gas meter readings have stabilized (3 consecutive readings, all parameters +/- 10%).

Lantec Model/Serial Number:

| **Monitoring Station 1** | Date/Time: | | | | Weather: | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SCSW-1 | SVP-1S | | | | DCSW-1 | SVP-1D | | | |
| PC400 Reading | Gas Meter Readings | | | | PC400 Reading | Gas Meter Readings | | | |
| W1 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) | W2 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) |
| | Reading 1 | | | | | Reading 1 | | | |
| | Reading 2 | | | | | Reading 2 | | | |
| | Reading 3 | | | | | Reading 3 | | | |
| CO2 (%) | Reading 4 | | | | CO2 (%) | Reading 4 | | | |
| | Reading 5 | | | | | Reading 5 | | | |
| | Reading 6 | | | | | Reading 6 | | | |
| | Reading 7 | | | | | Reading 7 | | | |
| | Sample Time : | | | | | Sample Time : | | | |

| **Monitoring Station 2** | Date/Time: | | | | Weather: | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SCSW-2 | SVP-2S | | | | DCSW-2 | SVP-2D | | | |
| PC400 Reading | Gas Meter Readings | | | | PC400 Reading | Gas Meter Readings | | | |
| W1 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) | W2 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) |
| | Reading 1 | | | | | Reading 1 | | | |
| | Reading 2 | | | | | Reading 2 | | | |
| | Reading 3 | | | | | Reading 3 | | | |
| CO2 (%) | Reading 4 | | | | CO2 (%) | Reading 4 | | | |
| | Reading 5 | | | | | Reading 5 | | | |
| | Reading 6 | | | | | Reading 6 | | | |
| | Reading 7 | | | | | Reading 7 | | | |
| | Sample Time : | | | | | Sample Time : | | | |

| **Monitoring Station 3** | Date/Time: | | | | Weather: | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SCSW-3 | SVP-3S | | | | DCSW-3 | SVP-3D | | | |
| PC400 Reading | Gas Meter Readings | | | | PC400 Reading | Gas Meter Readings | | | |
| W1 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) | W2 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) |
| | Reading 1 | | | | | Reading 1 | | | |
| | Reading 2 | | | | | Reading 2 | | | |
| | Reading 3 | | | | | Reading 3 | | | |
| CO2 (%) | Reading 4 | | | | CO2 (%) | Reading 4 | | | |
| | Reading 5 | | | | | Reading 5 | | | |
| | Reading 6 | | | | | Reading 6 | | | |
| | Reading 7 | | | | | Reading 7 | | | |
| | Sample Time : | | | | | Sample Time : | | | |

# Subsurface Soil Gas Measurment Field Form

**Instruction:**
1) Connect to the CR1000X datalogger using PC400. Using the public display, record the CO2 reading in parts per million (ppm) at the closest time interval to the initial field equipment readings. Convert the CO2 ppm reading to percentage (divide by 10,000), for comparison to field equipment readings.
2) Collect gas meter readings from soil vapor sample point.
3) Collect soil vapor sample when gas meter readings have stabilized (3 consecutive readings, all parameters +/- 10%).

Lantec Model/Serial Number:

| **Monitoring Station 1** | Date/Time: | | | | Weather: | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Monitoring Station 4** | Date/Time: | | | | Weather: | | | | |
| SCSW-4 | SVP-4S | | | | DCSW-4 | SVP-4D | | | |
| PC400 Reading | Gas Meter Readings | | | | PC400 Reading | Gas Meter Readings | | | |
| W1 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) | W2 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) |
| | Reading 1 | | | | | Reading 1 | | | |
| | Reading 2 | | | | | Reading 2 | | | |
| | Reading 3 | | | | | Reading 3 | | | |
| CO2 (%) | Reading 4 | | | | CO2 (%) | Reading 4 | | | |
| | Reading 5 | | | | | Reading 5 | | | |
| | Reading 6 | | | | | Reading 6 | | | |
| | Reading 7 | | | | | Reading 7 | | | |
| | Sample Time : | | | | | Sample Time : | | | |

| **Monitoring Station 5** | Date/Time: | | | | Weather: | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SCSW-5 | SVP-5S | | | | DCSW-5 | SVP-5D | | | |
| PC400 Reading | Gas Meter Readings | | | | PC400 Reading | Gas Meter Readings | | | |
| W1 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) | W2 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) |
| | Reading 1 | | | | | Reading 1 | | | |
| | Reading 2 | | | | | Reading 2 | | | |
| | Reading 3 | | | | | Reading 3 | | | |
| CO2 (%) | Reading 4 | | | | CO2 (%) | Reading 4 | | | |
| | Reading 5 | | | | | Reading 5 | | | |
| | Reading 6 | | | | | Reading 6 | | | |
| | Reading 7 | | | | | Reading 7 | | | |
| | Sample Time : | | | | | Sample Time : | | | |

| **Monitoring Station 6** | Date/Time: | | | | Weather: | | | | |
|---|---|---|---|---|---|---|---|---|---|
| SCSW-6 | SVP-6S | | | | DCSW-6 | SVP-6D | | | |
| PC400 Reading | Gas Meter Readings | | | | PC400 Reading | Gas Meter Readings | | | |
| W1 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) | W2 CO2 VAL (ppm) | | $CO_2$ (%) | $O_2$ (%) | $CH_4$ (%) |
| | Reading 1 | | | | | Reading 1 | | | |
| | Reading 2 | | | | | Reading 2 | | | |
| | Reading 3 | | | | | Reading 3 | | | |
| CO2 (%) | Reading 4 | | | | CO2 (%) | Reading 4 | | | |
| | Reading 5 | | | | | Reading 5 | | | |
| | Reading 6 | | | | | Reading 6 | | | |
| | Reading 7 | | | | | Reading 7 | | | |
| | Sample Time : | | | | | Sample Time : | | | |

# PFI Russell, KS LICOR Readings

Field Personnel: _____ Site: _____

| Location | Offset | AM | | | | PM | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | |
| CO2-01-A1 | | | | | | | | | | |
| CO2-01-A2 | | | | | | | | | | |
| CO2-01-A3 | | | | | | | | | | |
| CO2-01-A4 | | | | | | | | | | |
| CO2-01-B1 | | | | | | | | | | |
| CO2-01-B2 | | | | | | | | | | |
| CO2-01-B3 | | | | | | | | | | |
| CO2-01-B4 | | | | | | | | | | |
| CO2-01-C1 | | | | | | | | | | |
| CO2-01-C2 | | | | | | | | | | |
| CO2-01-C3 | | | | | | | | | | |
| CO2-01-C4 | | | | | | | | | | |
| CO2-01-D1 | | | | | | | | | | |
| CO2-01-D2 | | | | | | | | | | |
| CO2-01-D3 | | | | | | | | | | |
| CO2-01-D4 | | | | | | | | | | |
| CO2-01-E1 | | | | | | | | | | |
| CO2-01-E2 | | | | | | | | | | |
| CO2-01-E3 | | | | | | | | | | |
| CO2-01-E4 | | | | | | | | | | |

LICOR Readings

# PFI Russell, KS LICOR Readings

Field Personnel: _____ Site: _____

| Location | Offset | AM | | | | PM | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | |
| CO2-02-A1 | | | | | | | | | | |
| CO2-02-A2 | | | | | | | | | | |
| CO2-02-A3 | | | | | | | | | | |
| CO2-02-A4 | | | | | | | | | | |
| CO2-02-B1 | | | | | | | | | | |
| CO2-02-B2 | | | | | | | | | | |
| CO2-02-B3 | | | | | | | | | | |
| CO2-02-B4 | | | | | | | | | | |
| CO2-02-C1 | | | | | | | | | | |
| CO2-02-C2 | | | | | | | | | | |
| CO2-02-C3 | | | | | | | | | | |
| CO2-02-C4 | | | | | | | | | | |
| CO2-02-D1 | | | | | | | | | | |
| CO2-02-D2 | | | | | | | | | | |
| CO2-02-D3 | | | | | | | | | | |
| CO2-02-D4 | | | | | | | | | | |
| CO2-02-E1 | | | | | | | | | | |
| CO2-02-E2 | | | | | | | | | | |
| CO2-02-E3 | | | | | | | | | | |
| CO2-02-E4 | | | | | | | | | | |

LICOR Readings

# PFI Russell, KS LICOR Readings

Field Personnel: _____ Site: _____

| Location | Offset | AM | | | | PM | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | |
| CO2-03-A1 | | | | | | | | | | |
| CO2-03-A2 | | | | | | | | | | |
| CO2-03-A3 | | | | | | | | | | |
| CO2-03-A4 | | | | | | | | | | |
| CO2-03-B1 | | | | | | | | | | |
| CO2-03-B2 | | | | | | | | | | |
| CO2-03-B3 | | | | | | | | | | |
| CO2-03-B4 | | | | | | | | | | |
| CO2-03-C1 | | | | | | | | | | |
| CO2-03-C2 | | | | | | | | | | |
| CO2-03-C3 | | | | | | | | | | |
| CO2-03-C4 | | | | | | | | | | |
| CO2-03-D1 | | | | | | | | | | |
| CO2-03-D2 | | | | | | | | | | |
| CO2-03-D3 | | | | | | | | | | |
| CO2-03-D4 | | | | | | | | | | |
| CO2-03-E1 | | | | | | | | | | |
| CO2-03-E2 | | | | | | | | | | |
| CO2-03-E3 | | | | | | | | | | |
| CO2-03-E4 | | | | | | | | | | |

LICOR Readings

# PFI Russell, KS LICOR Readings

Field Personnel: _____ Site: _____

| Location | Offset | AM | | | | PM | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | |
| CO2-04-A1 | | | | | | | | | | |
| CO2-04-A2 | | | | | | | | | | |
| CO2-04-A3 | | | | | | | | | | |
| CO2-04-A4 | | | | | | | | | | |
| CO2-04-B1 | | | | | | | | | | |
| CO2-04-B2 | | | | | | | | | | |
| CO2-04-B3 | | | | | | | | | | |
| CO2-04-B4 | | | | | | | | | | |
| CO2-04-C1 | | | | | | | | | | |
| CO2-04-C2 | | | | | | | | | | |
| CO2-04-C3 | | | | | | | | | | |
| CO2-04-C4 | | | | | | | | | | |
| CO2-04-D1 | | | | | | | | | | |
| CO2-04-D2 | | | | | | | | | | |
| CO2-04-D3 | | | | | | | | | | |
| CO2-04-D4 | | | | | | | | | | |
| CO2-04-E1 | | | | | | | | | | |
| CO2-04-E2 | | | | | | | | | | |
| CO2-04-E3 | | | | | | | | | | |
| CO2-04-E4 | | | | | | | | | | |

LICOR Readings

# PFI Russell, KS LICOR Readings

Field Personnel: _____ Site: _____

| Location | Offset | AM | | | | PM | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | |
| CO2-05-A1 | | | | | | | | | | |
| CO2-05-A2 | | | | | | | | | | |
| CO2-05-A3 | | | | | | | | | | |
| CO2-05-A4 | | | | | | | | | | |
| CO2-05-B1 | | | | | | | | | | |
| CO2-05-B2 | | | | | | | | | | |
| CO2-05-B3 | | | | | | | | | | |
| CO2-05-B4 | | | | | | | | | | |
| CO2-05-C1 | | | | | | | | | | |
| CO2-05-C2 | | | | | | | | | | |
| CO2-05-C3 | | | | | | | | | | |
| CO2-05-C4 | | | | | | | | | | |
| CO2-05-D1 | | | | | | | | | | |
| CO2-05-D2 | | | | | | | | | | |
| CO2-05-D3 | | | | | | | | | | |
| CO2-05-D4 | | | | | | | | | | |
| CO2-05-E1 | | | | | | | | | | |
| CO2-05-E2 | | | | | | | | | | |
| CO2-05-E3 | | | | | | | | | | |
| CO2-05-E4 | | | | | | | | | | |

LICOR Readings

# PFI Russell, KS LICOR Readings

Field Personnel: _____ Site: _____

| Location | Offset | AM | | | | PM | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | Date | Time | LICOR Reading | HydraProbe Moisture ($m^3/m^3$) | |
| CO2-06-A1 | | | | | | | | | | |
| CO2-06-A2 | | | | | | | | | | |
| CO2-06-A3 | | | | | | | | | | |
| CO2-06-A4 | | | | | | | | | | |
| CO2-06-B1 | | | | | | | | | | |
| CO2-06-B2 | | | | | | | | | | |
| CO2-06-B3 | | | | | | | | | | |
| CO2-06-B4 | | | | | | | | | | |
| CO2-06-C1 | | | | | | | | | | |
| CO2-06-C2 | | | | | | | | | | |
| CO2-06-C3 | | | | | | | | | | |
| CO2-06-C4 | | | | | | | | | | |
| CO2-06-D1 | | | | | | | | | | |
| CO2-06-D2 | | | | | | | | | | |
| CO2-06-D3 | | | | | | | | | | |
| CO2-06-D4 | | | | | | | | | | |
| CO2-06-E1 | | | | | | | | | | |
| CO2-06-E2 | | | | | | | | | | |
| CO2-06-E3 | | | | | | | | | | |
| CO2-06-E4 | | | | | | | | | | |

## LICOR Readings

# Equipment-Calibration Report

This document can be used by Trihydro employees to report equipment-calibration information including reason and calibration outcome. **A copy of this report should be submitted to the Trihydro Quality Manager, care of tpage@trihydro.com.**

| | |
|---|---|
| **Equipment type:** | **Manufacturer:** |
| **Model:** | **Serial/ID no.:** |
| **Calibration standard:** | |
| **Purchase date:** | **Responsible business unit:** |
| **Location:** | **Calibration frequency:** |

| | Daily | Weekly | Monthly | Quarterly | Annually | Other |
|---|---|---|---|---|---|---|
| **Use frequency:** | | | | | | |

| **Calibration Date** | **Calibration Reason** (e.g., routine, broken, rough use, etc.) | **Inspector** | **Date Next Calibration Due** | **Calibration Comments** (e.g., accuracy, defects, lube, clean, etc.) |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Pace® Location Requested (City/State):

# CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

| | |
|---|---|
| Company Name: | Contact/Report To: |
| Street Address: | Phone #: |
| | E-Mail: |
| | Cc E-Mail: |
| Customer Project #: | Invoice to: |
| Project Name: | Invoice E-mail: |
| Site Collection Info/Facility ID (as applicable): | Purchase Order # (if applicable): |
| | Quote #: |
| Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET | County / State origin of sample(s): |
| Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other_____ | Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No |
| | **Rush (Pre-approval required):** [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other _____ **Date Results Requested:** |
| | DW PWSID # or WW Permit # as applicable: Field Filtered (if applicable): [ ] Yes [ ] No Analysis: |

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only: Proj. Mgr: / AcctNum / Client ID: / Table #: / Profile / Template: / Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

| Customer Sample ID | Matrix * | Comp / Grab | Composite Start Date | Composite Start Time | Collected or Composite End Date | Collected or Composite End Time | # Cont. | Residual Chlorine Result | Residual Chlorine Units | Sample Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Additional Instructions from Pace® :

Collected By:
Printed Name
Signature

Customer Remarks / Special Conditions / Possible Hazards:

| # Coolers: | Thermometer ID: | Correction Factor (°C): | Obs. Temp. (°C): | Corrected Temp. (°C): | [ ] On Ice |
|---|---|---|---|---|---|
| | | | | | |

| Relinquished by/Company: (Signature) | Date/Time: | Received by/Company: (Signature) | Date/Time: |
|---|---|---|---|
| Relinquished by/Company: (Signature) | Date/Time: | Received by/Company: (Signature) | Date/Time: |
| Relinquished by/Company: (Signature) | Date/Time: | Received by/Company: (Signature) | Date/Time: |
| Relinquished by/Company: (Signature) | Date/Time: | Received by/Company: (Signature) | Date/Time: |

Tracking Number:

Delivered by: [ ] In- Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

# Chain of Custody Instructions

***Pace Location Requested**: City and State of Pace Laboratory testing is to be performed at.
***Company Name**: Client's company name
***Street Address**: Client's mailing address
***City, State, Zip**: Client's city, state and zip code for mailing
***Contact/ Report to**: Person to receive results
**Customer Project # and Project Name**: Client's reference to the project or work involved with these samples.
**Site Collection Info/ Facility ID**: Client's location of project
**Time Zone**: Check time zone of sample to ensure proper hold times are met.
**Purchase Order #**: Client specific number to be listed on project invoice for client billing purposes.
**Invoice To:** Client contact the project invoice needs to be emailed to.
**Invoice Email:** Email address that project invoice will need to be emailed to
***Phone #**: Client's contact phone number
**E-mail**: Client's e-mail for correspondence and final report
**Regulatory Program**: List the program that is guiding the work to ensure proper regulations are followed: DW, RCRA, etc.
**Data Deliverable**: Please select or enter required deliverables.
***County/State Origin of Samples**: Enter the county to ensure proper handling of regulated soils. State required to ensure proper reporting.
**Field Filtered**: Indicate if samples have been filtered in the field. If samples are required to be field filtered and filtering is not indicated, a qualifier will be added to all associated data.

***Customer Sample ID**: The unique sample ID you want to appear on the analytical report
***Collected Date**: Date sample was collected. For composite samples, please fill in both beginning and end date.
***Collected Time**: Time sample was collected. For composite samples, please fill in both beginning and end time.
***Comp/Grab**: Please denote "GRAB" if the sample was collected at one time from one specific location. Please denote "COMP" if the sample is a composite of samples collected at one or more times or locations and combined to make one sample.
***Matrix**: Select from list provided list. If prepopulated chain is provided for you matrix codes may vary.
***Number and Type of Containers**: Total number of containers per container type submitted for the samples
***Container Size:** Specify container size from list.
***Container Preservation Type**: Specify sample preservation from provided list.
***Analysis Requested**: Write the analysis name (or an abbreviation), the name of a group of tests, or the method number you would like us to perform. Examples are BOD, TCLP Metals, PCBs, Method 624, etc. Place a check mark in the small boxes that correspond to the sample(s) on which you want these tests performed.

**Sample Comment**: List any notes or important information about the individual sample here. Please identify in the sample comment if a sample should be used for MS/MSD.

**Customer Remarks/Special Conditions/Possible Hazards**: List special instructions about the sample here. If the sample is known or suspected to be hazardous indicate that here and attach SDS if possible. This space can also be used for listing additional analyses, or to request an extra copy of the report to be sent to an alternate person/address, etc.

**Rush request**: If faster than standard turnaround time results are needed. Circle one of the rush options and note the day the results are requested by. All rush requests require preapproval by the laboratory. Surcharges will apply for non- standard turnaround times. Results will be due by the end of business on the date due based on standard turnaround time unless other arrangements have been made with your Project Manager.

Summarized Sample Acceptance Policy Requirements:

- Proper, full and completed chain-of-custody documentation
- Readable unique sample container identification written in indelible ink
- Appropriate sample container
- Sufficient sample volume to perform requested tests
- Received within required holding time
- Received within temperature preservation requirements
- Sample containers received in good condition (not leaking or broken)
- Any custody seal intact
- Properly preserved
- No headspace in volatile water samples
- **Note:** When sample specific Quality Control is required (e.g. MS/MSD) please ensure necessary sample containers and sample volume is provided.

A data qualifier and/or case narrative will be added to the final test report when the above sample acceptance requirements are not met.

Location Specific Sample Acceptance Policy available from your Project Manager

***Collected By**: Printed name of sample collector
***Collected By Signature**: Signature of sample collector

***Relinquished By/Received By:** This form **must be signed** each time the sample(s) changes hands. Custody seals are available upon request if needed.

***Required field**: Failure to fill in a required field may result in a sample(s) being put on hold until information can be obtained. This may result in a delay in receiving results.

# Memorandum

**Prepared For:** Purefield Carbon Capture, LLC
**From:** Trihydro Corporation
**Date:** February 4, 2025
**Re:** Standard Operating Procedure – Quality Control Field Sampling

---

## 1.0 PURPOSE, SCOPE, AND RESPONSIBILITIES

This standard operating procedure (SOP) was prepared in accordance with U.S. Environmental Protection Agency Region 4, Field Sampling Quality Control Guidance (SESDPROC-911-R5). This SOP is intended to provide methods for quality control field sampling at the Purefield Carbon Capture, LLC (PCC) Russell $CO_2$ Storage Complex. The guidelines provided establish quality control procedures for shallow subsurface (groundwater and soil gas) sampling activities. The procedures below supply information on equipment that is suitable for sampling use and proper field sampling procedures, resulting in the collection of representative samples.

PCC(and its subcontractors) are responsible for meeting SOP requirements. For projects where activities within this SOP are necessary, the Project Manager (or designee) is responsible for ensuring that those activities are conducted in accordance with this and other SOPs. Project team members are responsible for documenting procedural information in sufficient detail (i.e., calculations, field notes, reports, etc.) and reporting changes. Such documentation will be included as a component of project records.

## 2.0 PLANNING AND PROCEDURES

Quality control sampling at the PCC Russell $CO_2$ Storage Complex involves the collection field duplicates for groundwater and soil gas samples. These samples are collected and documented to measure the integrity of field collection and analytical methods.

### 2.1 EQUIPMENT

The following equipment is recommended for quality control sampling (in addition to equipment needed for the respective sampling):

- ☐ Required personal protective equipment (PPE), listed in site-specific health and safety plans (generally nitrile gloves and safety glasses for low-flow sampling)
- ☐ Sample containers and preservatives
- ☐ Sample labels
- ☐ Chain-of-custody (COC) forms
- ☐ Paper towels

- ☐ Ice chest or cooler
- ☐ Ice and resealable plastic bags
- ☐ Field logbook
- ☐ Calculator
- ☐ Wrist watch or phone (with digital display)

## 2.2 FIELD DUPLICATES

Field duplicate samples will be collected to evaluate sample homogeneity, handling, shipping, storage and preparation, and laboratory consistency. Collecting field duplicate samples will ensure laboratory analytical procedures and methods can be duplicated.

Field duplicate samples will be collected at a rate of 10 percent (i.e., for every 10 field samples collected, one field duplicate sample is collected). A minimum of one field duplicate sample will be collected per event when less than ten field samples are anticipated. Information pertaining to the field duplicate sample will be recorded on field sampling forms, the duplicate number will be used for sample identification (i.e., DUP-1), but no sample identification information is to be included on the COC form or sample label. The field duplicate samples will be analyzed using the same parameter list as the rest of the field samples. The same packaging, shipping, handling, and COC methods will be used for the duplicate samples as the field samples.

## 2.3 FIELD BLANKS

In accordance with U.S. Environmental Protection Agency Region 4, Field Sampling Quality Control Guidance (SESDPROC-911-R5), field blanks will not be collected at the PCC Russell $CO_2$ Storage Complex because no samples are collected for volatile organic compound (VOC) analysis.

## 2.4 TRIP BLANKS

In accordance with U.S. Environmental Protection Agency Region 4, Field Sampling Quality Control Guidance (SESDPROC-911-R5), trip blanks will not be collected at the PCC Russell $CO_2$ Storage Complex because no samples are collected for VOC analysis.

## 2.5 ANALYTICAL DATA REVIEW AND VALIDATION

Groundwater and soil gas analytical data will be evaluated in general accordance with validation criteria set forth in the US EPA Superfund Contract Laboratory Program National Functional Guidelines for Data Review. All analytical data collected from the PCC Russell $CO_2$ Storage Complex will undergo a US EPA Level 2 data validation. Validation criteria may be modified as appropriate per requirements stipulated within the applicable method. The criteria of precision, accuracy, representativeness, completeness, and comparability will be evaluated as follows:

- Precision is a measure of the variability of individual sample measurements and evaluated by comparison of results of laboratory and field duplicate analyses using the relative percent difference.
- Accuracy is a measure of the analytical bias (difference between the actual sample analyte value and the measured sample analyte value) and is evaluated by analyzing samples of known concentration (initial and continuing calibration, surrogate compounds added to samples during analysis, laboratory control samples, etc.) and calculating the percent recovery.
- Representativeness is a measure of the degree to which the data set accurately reproduces the characteristics of the population and is a function of selecting sampling locations that adequately represent the whole population. Representativeness is evaluated by examining field parameters collected during sample purging as well as evaluating instrument performance checks, initial and continuing calibration, laboratory blanks, internal standards, and sample homogenization.
- Completeness is a measure of the amount of data collected, analyzed, and validated compared to the target specified in the work plan and is evaluated by calculating the percentage of the number of valid data points relative to the number that were planned.
- Comparability is a qualitative measure of the confidence with which one data set can be compared against another. Comparability is ensured during work plan development by specifying sampling methods that are consistent with those of other data sets. Comparability is evaluated during data validation by checking for consistency in analytical processes (e.g., correct method used for all analysis, same analytes reported, same units reported, holding times met, and consistency in detection limits).

***Data Management.*** The fluid level measurements, well stabilization criteria, and laboratory analytical data obtained during samling events at the PCC Russell $CO_2$ Storage Complex will be entered in the operating record and stored within the project database. Additionally, data validation records will also be recorded and stored within the project database.

## 2.7 PROCEDURAL CHANGES

When procedures change, PCC or its subcontractors will update and reapprove this SOP. Modifications may address a small component of the SOP or the entire SOP. Review of the SOP will occur 5 years after the previous revision date. The revision date will be added to the schedule (below), the title page, and the naming convention that appears in the corner of each page.

If an SOP describes a process that is no longer followed, it will be withdrawn from its active file location and archived.

REVISION SCHEDULE

| Revision Date and Number | Reason for Revision | Most Recent Revision Date and SOP Library Upload | Facilitator | Technical Reviewer |
|---|---|---|---|---|
| Original | New SOP | January 23, 2025 | Thomas Johns | Maggie Parish |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |