

TEP BWQ Groundwater Monitoring Field Form

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Project Information			
Project:	TEP BWQ	Sample Purpose:	Courtesy
Site Name (Pad/Facility):	South Leverich 13-09	Site API or Facility ID:	335045
Station Name:	Fischer 314384	Sample Date:	11/14/22
COGCC Facility ID:	770710	Start Time:	10:30
Field Sample ID:	Fischer 314384	End Time:	1245
Landowner Name:	Joel Fischer	Sample Time:	1220
Landowner Address:	3001 S Grand Ave Glenwood Springs CO	Sample Team:	APK BOS
Water Right/Well Owner:	Joel Fischer	Observer:	BOS
Well Permit:	314384	Lead Signature:	Alley Kde
Receipt Number:	3692856	Date:	11/15/22

Station Information			
Station Description: Domestic well at Fischer residence - North of home ~75'			
Approximate Distance to Well Pad (from well location): ~4730 ft			
Station Type:	<input checked="" type="checkbox"/> Well / <input type="checkbox"/> Spring / <input type="checkbox"/> Seep / <input type="checkbox"/> Other:	Water Use:	<input checked="" type="checkbox"/> Domestic / <input type="checkbox"/> Irrigation / <input type="checkbox"/> Stock
Sampling Location: Kitchen Tap / Pipe / Well House / Hose bib / Hydrant / Other:			
GPS Well Location:	Zone	x -107.834035	y 39.435823 z 7845'
GPS Sampling Location:	Zone	x "	y " z "
Total Depth (ft):	172.175	Static Depth to Water (ft):	95.95
Total Volume x 3 gal)	292.5	Total Volume Purged (gal)	300
		Well diameter (in):	5.5

Weather Conditions			
Sky:	<input checked="" type="checkbox"/> Clear / <input checked="" type="checkbox"/> Scattered / <input type="checkbox"/> Cloudy / <input type="checkbox"/> Overcast	Estimated Air Temp (deg F):	40
Precipitation:	<input checked="" type="checkbox"/> None / <input type="checkbox"/> Light / <input type="checkbox"/> Moderate / <input type="checkbox"/> Heavy	Precip Type:	<input checked="" type="checkbox"/> None / <input type="checkbox"/> Rain / <input type="checkbox"/> Sleet / <input type="checkbox"/> Hail / <input type="checkbox"/> Snow
Wind:	<input checked="" type="checkbox"/> Calm / <input type="checkbox"/> Light / <input type="checkbox"/> Mod / <input type="checkbox"/> Strong	Wind Speed/Direction:	Calm

Field Measurements										
Parameter	Units	Reading	Time	Flag Code	Instrument	In-situ or Container	Comments			
Water Temp	deg C	8.3	1227		YSI	Cont.				
pH	s.u.	8.40	↓		↓	↓				
Sp. Conductivity	uS/cm	443.0								
Conductivity	uS/cm	302.2								
DO Saturation	%	22.7								
DO	mg/L	2.73								
Baro Press	mmHg	575.3								
ORP	RmV	634.4								
Turbidity	NTU	0.00								
Discharge	Gpm/Cfs						NM			Reduced to ~0.5 gpm
Color:	<input checked="" type="checkbox"/> Clear / <input type="checkbox"/> White / <input type="checkbox"/> Yellow / <input type="checkbox"/> Brown / <input type="checkbox"/> Green / <input type="checkbox"/> Blue / <input type="checkbox"/> Other			Light / Med / Dark						
Odor:	<input checked="" type="checkbox"/> None / <input type="checkbox"/> Mild / <input type="checkbox"/> Mod / <input type="checkbox"/> Strong									
Effervescence:	<input checked="" type="checkbox"/> None / <input type="checkbox"/> Mild / <input type="checkbox"/> Mod / <input type="checkbox"/> Strong			Bubbles: <input checked="" type="checkbox"/> None / <input type="checkbox"/> Low / <input type="checkbox"/> Mod / <input type="checkbox"/> High						
Sediment:	<input checked="" type="checkbox"/> None / <input type="checkbox"/> Light / <input type="checkbox"/> Mod / <input type="checkbox"/> Heavy			VOA Headspace: <input checked="" type="checkbox"/> None / <input type="checkbox"/> ≤ Pea Size / <input type="checkbox"/> ≥ Pea Size						
Lab Analysis:	<input checked="" type="checkbox"/> Rule 615 / <input type="checkbox"/> Rule 411 / <input type="checkbox"/> Rule 907 / <input type="checkbox"/> COA / <input type="checkbox"/> Other									
Field Filtered:	<input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No	Filter Size:	N/A	No. Filters used:	N/A					

Flag Codes: AV (averaged value), E (estimated), EC (exceeds calibration range), I (insufficient sample), N/A (not applicable), NM (not measured), NS (not stabilized), OT (other flag, see comment or notes), Q (uncertain value), Y (calculated value), VAR (variable)

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Station ID: _____ Date: _____

Landowner Comments on water quality:

Good quality, no problems

Additional information:

Flow rate = 5 gpm at 1104
 55 sec for 5 gal at 1109
 58 sec for 5 gal at 1124

Calibration Information			Date: 11/14/22		Location: office			
Instrument	Parameter	Units	Time	Calibration Standard Value	Calibration Standard Temp (°C)	Instrument Reading of Standard	Adjusted Reading	Comments
YSI ↓ MicroTPW	pH	s.u.	0708	7.00	21.2	7.03	6.99	
	pH	s.u.	0711	10.01	21.3	9.84	10.02	
	pH	s.u.						
	SpC	uS/cm	0715	447	21.2	459.4	446.6	
	SpC	uS/cm						
	DO	%	0730	Air	19.6	94.6	85.2	
	DO	%						
	ORP	RmV	0720	256	6.2	261.0	256.1	
	Turbidity	NTU	0722	1000/10/0.02	-	-	✓	

Western Water & Land, Inc.
TEP Groundwater Monitoring Field Form

Well Purging Information

Date: 11/14/22 Purge Method: 3 casings / stable parameters

Total Depth, ft (d_t): 175 Static Depth to Water, ft (d_w): 95.95 Sample/Set Depth (ft): Hydrant

Casing Radius (in): 5.5

Total Well/Casing Volume (gal or ft³): 97.5 gal Total Volume x 3 (gal or ft³): 292.5

1 ft³ = 7.48 gal

Casing Volume = $\pi r^2(d_t - d_w)$ $\pi \times \left(\frac{5.5/2}{12}\right)^2 \times (175 - 95.95) = 97.5 \text{ gal}$

Purge #	Time	Temp (°C) ±0.2°C ±3%	pH (s.u.) ±0.2 s.u.	SpC (uS/cm) ±3%	Cond (uS/cm)	DO (%)	DO (mg/L) ±10%	ORP (RmV) ±10 RmV	Water Clarity (Poor/Mod/Good) or NTUs ±10% OR <5	Effervescence (None/Slight/Mod/Heavy)	Volume Purged (gal)	Cum Vol Purged (gal)
1	1050	8.3	8.60	440.1	301.8	5.4	0.61	464.1	Good-silt-slight	None	15	15
2	1054	8.4	8.51	438.7	300.4	5.0↓	0.49	493.7	Good	None	15	30
3	1059	8.5	8.51	435.7	299.2	3.7↓	0.39	516.8	Good	None	10	40
4	1101	9.3	8.48	439.1	307.9	3.4↓	0.36	534.5	1.26	None	10	50
5	1102	9.3	8.48	439.1	308.2	3.1	0.33	551.2	0.86	None	10	60
6	1105	8.50	8.50	439.0	299.8	2.9	0.31	563.8	1.04	None	10	70
7	1108	8.50	8.47	441.3	303.5	3.0↓	0.29	579.4	1.40/0.88	None	10	80
8	1111	8.7	8.46	438.6	302.9	2.6	0.26	598.7	1.09	None	10	90
9	1114	8.6	8.48	444.0	305.1	3.1↓	0.32	620.9	1.17	None	10	100
10	1117	8.5	8.46	440.3	303.1	3.5	0.40	642.0	0.66	None	10	110
11	1119	8.6	8.47	440.3	303.0	3.0↓	0.35	648.6	0.71	None	10	120
12	1123	8.6	8.46	441.5	303.9	2.7↓	0.30	669.8	1.15	None	10	130
13	1127	8.5	8.47	443.8	304.2	3.0↓	0.34	681.6	0.80	None	10	140
14	1131	8.5	8.45	442.8	304.4	3.0	0.35	687.8	1.15	None	10	150
15	1133	8.7	8.46	443.1	304.7	1.7	0.19	682.2	1.51	None	10	160
16	1136	8.5	8.45	437.3	303.7	2.6	0.28	688.6	1.22	None	10	170
17	1139	8.4	8.45	437.8	302.4	2.5↓	0.28	682.2	1.33	None	10	180
18	1142	8.5	8.44	442.3	304.0	3.0	0.35	690.4	0.65	None	10	190
19	1145	8.6	8.44	437.3	304.5	2.7	0.29	671.2	0.61	None	10	200
20	1148	8.6	8.43	442.2	303.9	2.5	0.28	673.3	0.83	None	10	210
21	1151	8.5	8.41	442.4	302.9	1.6	0.19	655.2	1.38	None	10	220
22	1154	8.5	8.4	441.5	302.7	2.0	0.23	642.4	1.69	None	10	230
23	1157	8.5	8.4	445.1	305.4	1.3	0.15	624.7	0.79	None	10	240
24	1200	8.6	8.4	442.4	304.2	1.9	0.19	609.6	1.11	None	10	250
25	1204	8.6	8.39	444.9	305.5	1.6	0.17	604.3	0.95	None	10	260
26	1206	8.5	8.38	441.3	302.8	2.1	0.23	597.2	0.52	None	10	270
27	1209	8.6	8.39	444.2	305.8	1.3	0.15	581.3	0.67	None	10	280

Purge discharge rate: ~ 5 GPM Time: 1104

Sample discharge rate: ~ 0.5 GPM Time: 1220

Baro pressure 575.8 mmHg

#	Time	Temp	pH	S _p C	C	DO %	DO mg	ORP	Turb	Eff.	Purged	Cum.
28	1211	8.6	8.40	441.2	304.6	1.3	0.15	575.5	0.43	none	10	290
29	12	8.5	8.39	444.3	305.4	1.6	0.19	568.0	0.00	none	10	300