Groundwater Sample Logs
Final GSIP SOW
Plume Geochemistry Phase
(Roux, Associates)

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB1-04GW0INS Page 1 of 1 Field Staff: LC/AG/HAT

Date Sampled 7/30/01, 7/31/01, 8/1/01, 8/2/01, 8/3/01, 8/15/01, 11/6/01, 11/7/01
Stick-up Height 1.5 feet
Depth to Water 11.3 feet below top of casing
Total Depth 14.0 feet below top of casing
Depth of Tubing (sample interval) 12.0 feet below top of casing

Start purge 0930, 1615
Start parameters
End purge 0955, 1640
Total purge time: ____ hours, ____ minutes
Parameters Stabilized? ____

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

11/6/01 purged dry

Comments

very low recharge, collect 3 VOC's on 7/30 w/ pump
7/31 – collect 1 As/As Spec. sample w/ check valve
8/1 - collected 1 Total/Dis. Met. Sample w/ check valve
8/2 - collected 1 Unfiltered 8270 sample; 8/3/01 collected 1 TBPO4 sample in 1/2 hr.
8/15 collected 1 filtered SVOC and 1 TSS/bicarb. sample time 1 hour.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB1-04GW01NS Page 1 of 1 Field Staff: LC/HT

Date Sampled 11/7/01, 11/6/01
Stick-up Height 0.4 feet
Depth to Water 14.0 feet below top of casing
Total Depth 18.0 feet below top of casing
Depth of Tubing (sample interval) 16.0 feet below top of casing

Start purge 1500
Start parameters
End purge 1530
Total purge time: ____ hours, ____ minutes
Parameters Stabilized? ____

Sampling time: 0.5hr.

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments
Sampled w/ check valve

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sampl CB2-05GW02 Page 1 of 2 Field Staff: LC

Date Sampled 8/17/01
Stick-up Height 0.1 feet
Depth to Water 12.96 feet below top of casing
Total Depth 22.75 feet below top of casing
Depth of Tubing (sample interval) 20.75 feet below top of casing

Sulfide: 0.12 mg/L
ferrous iron: 3.30 mg/L

Start purge 0925
Start parameters 0945
End purge 1210
Total purge time: 2 hours, 45 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
0945		200		16.50	1760	5.94	-109.3	1.76	118
0950	5	200		16.35	1705	5.99	-144.9	1.11	—
0955	10	200		16.30	1705	6.02	-163.1	1.00	63.8
1000	15	200		16.20	1695	6.02	-159.1	0.94	42.7
1005	20	200		16.35	1687	6.01	-162.0	0.95	48.0
1010	25	200		16.27	1685	6.01	-157.7	0.92	44.6
1015	30	200		16.25	1673	6.01	-159.1	0.91	46.2
1020	35	200		15.84	1664	6.00	-165.3	1.03	112
1025	40	200	5	15.70	1665	5.99	-171.2	1.00	140
1030	45	200		15.77	1651	5.98	-178.9	0.92	85
1035	50	200		15.78	1648	5.98	-184.7	0.91	80
1040	55	200		15.72	1647	5.98	-191.9	0.91	85
1045	60	200		15.70	1646	5.97	-196.5	0.88	90
1050	65	200		15.70	1644	5.97	-219.1	0.91	90
1055	70	200		15.51	1642	5.97	-259.7	0.90	120
1100	75	200		15.53	1629	5.96	-302.5	0.88	400
1105	80	200		15.40	1627	5.96	-323.1	0.88	550
1110	85	200		15.42	1627	5.96	-326.5	0.94	480
1120	95	200		15.29	1629	5.95	-280.1	1.07	110

Comments

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB2-05GW02 Page 2 of 2 Field Staff: LC

Date Sampled 8/17/01
Stick-up Height 0.1 feet
Depth to Water 12.96 feet below top of casing
Total Depth 22.75 feet below top of casing
Depth of Tubing (sample interval) 20.75 feet below top of casing

Start purge 0925
Start parameters 0945
End purge 1210
Total purge time: 2 hours, 45 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1125	100	200		15.37	1625	5.95	-275.0	1.00	110
1130	105	200		15.26	1624	5.95	-284.6	0.98	150
1135	110	200		15.23	1622	5.94	-259.2	1.00	160
1140	120	200	10	15.29	1619	5.94	-272.8	0.99	200
1145	125	200		15.25	1623	5.95	-326.8	0.95	360
1150	130	200		15.28	1624	5.95	-322.9	0.94	210
1155	135	200		15.21	1630	5.96	-305.0	0.96	140
1200	140	200		15.25	1628	5.96	-284.3	1.04	150
1205	145	200		15.26	1628	5.95	-280.3	0.98	140
1210	150	200		15.45	1624	5.95	-279.1	0.95	140

Comments

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB2-056W03R Page 1 of 1 Field Staff: AC / CY

Date Sampled 8/17/01
Stick-up Height 0.1 feet
Depth to Water 13.09 feet below top of casing
Total Depth 31.5 feet below top of casing
Depth of Tubing (sample interval) 29.5 feet below top of casing

Sulfide: 0.08 mg/L
ferrous iron: 3.30 mg/L

Start purge 1310
Start parameters 1400
End purge 1445
Total purge time: 1 hours, 35 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1400		300	5	15.90	1857	6.54	-44.0	0.91	130
1405	5	300		15.77	1859	6.54	-46.6	0.91	70
1410	10	300		15.73	1829	6.54	-62.4	1.03	31
1415	15	300		15.73	1859	6.60	-65.0	0.83	29
1420	20	300		15.72	1860	6.61	-70.9	0.70	22
1425	25	300		15.75	1858	6.62	-57.3	0.91	32
1430	30	300	10	15.80	1855	6.62	-55.9	0.61	40
1435	35	300		15.76	1859	6.63	-68.4	0.66	27
1440	40	300		15.74	1856	6.63	-62.8	0.62	28
1445	45	300		15.90	1859	6.63	-74.3	0.62	29

Comments

call Brooks + give (206) 632-6206 Findlay McKay
Airbill No ebecca Wood

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB2-06GW02NS Page 1 of 1 Field Staff: CY

Date Sampled 8-13-01
Stick-up Height 2.6 feet
Depth to Water feet below top of casing
Total Depth 14' feet below top of casing
Depth of Tubing (sample interval) 13.8' feet below top of casing

Sulfide: 0.71 mg/L
Ferrous iron: 3.30 mg/L

Start purge 1110
Start parameters Not able to collect
End purge 1150
Total purge time: 3 hours, 37 minutes
Parameters Stabilized? Not able to collect

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1150	40	50 mL/min	0.75	23.33°C	2084	6.79	-162.9	3.50	800

Comments
1/2" water level ~~well~~ Not able to be measured = probe will not go down. Used tubing to determine approximate depth to water = 11'; Purge until dry or ~~until~~ at least 3 well volumes Purged more than 3x volume - total purge volume about 0.75 gal. - Slight sheen on water, med. odor

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample ~~CB-03GW~~ CB3-03GW01 JC Page 1 of 1 Field Staff: LC

Date Sampled 7/9/01, 7/20/01
Stick-up Height 1.3 feet
Depth to Water 15.11 feet below top of casing
Total Depth 20.0 feet below top of casing
Depth of Tubing (sample interval) 18.0 feet below top of casing

Sulfide: 0.08mg/L
ferrous iron: 2.70mg/L

Start purge 1200
Start parameters —
End purge ~~1815~~ 1600 JC
Total purge time: 4 hours, — minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1305		30		26.33	2394	7.51	-21.0	12.16	270
1310	6	30		28.50	2390	7.53	-14.2	12.76	263
1315	10	30		28.16	2389	7.54	-13.7	13.22	261
AT 1530 ~~1530~~	5	30		32.12	2061	7.59	17.3	11.67	489
JC 1535 ~~1535~~	10	30		32.11	2081	7.60	17.1	11.73	555
JC 1540 ~~1600 1530~~	15	30							
1555		30		22.68	1140	7.35	-88.4	9.78	140
1600		30		22.91	1509	7.43	-85.3	10.88	156
1605		30		23.17	2110	7.55	-69.8	12.63	167

Comments

Very low purge rate (<30mL/min), air in tubing is impacting parameters
1615 collect condensed suite (1830 sampling complete)
EPA collected 2L on 7/10/01 in 50min.
-Collected 1 filtered SVOC sample on 7/20/01 (40min.)

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB3-026W03 Page 1 of 1 Field Staff: LC

Date Sampled ~~7/8/01~~ 7/9/01 LC
Stick-up Height 0.9 feet
Depth to Water 15.59 feet below top of casing
Total Depth 24.3 feet below top of casing
Depth of Tubing (sample interval) 22.3 feet below top of casing

Sulfide: 0.03mg/L
ferrous iron: 2.03mg/L

Start purge 0920
Start parameters 0940
End purge 1015
Total purge time: — hours, 55 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
0940		400		12.65	2784	6.80	-129.7	3.64	23.1
0945	5	400		12.62	2790	6.79	-144.3	6.40	13.0
0950	10	400		12.71	2777	6.80	-128.5	6.15	9.07
0955	15	400		12.53	2785	6.80	-133.5	6.63	8.76
1000	20	400		12.55	2784	6.80	-141.7	7.72	7.93
1005	25	400		12.91	2792	6.81	-147.8	7.71	6.05
1010	30	400		12.77	2796	6.81	-152.8	7.91	6.59
1015	35	400		12.71	2785	6.81	-154.7	8.37	6.34

Comments

Tetra Tech NUS collected 3-1L plastic bottles to be analyzed for Bicarbonate, Anions, TDS and 3L for dup.
-collect sample at 1030

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample ~~CB3GW03~~ CB3-03GW03 fc Page 1 of 1 Field Staff: LC

Date Sampled 7/16/01
Stick-up Height 1.9 feet
Depth to Water 9.17 feet below top of casing
Total Depth 33.0 feet below top of casing
Depth of Tubing (sample interval) 31.0 feet below top of casing

Sulfide: 0.74 mg/L
ferrous iron: 3.30 mg/L

Start purge 1340
Start parameters 1410
End purge 1450
Total purge time: 1 hours, 10 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1410		300		19.45	1273	6.25	-165.2	0.02	118
1415	5	300		17.43	1268	6.24	-179.9	0.02	33.6
1420	10	300		17.31	1265	6.24	-182.9	0.06	22.3
1425	15	300		17.28	1268	6.25	-186.1	0.05	25.7
1430	20	300	5	17.43	1264	6.25	-187.9	0.05	20.1
1435	25	300		17.03	1265	6.25	-191.7	0.07	23.6
1440	30	300		17.03	1261	6.25	-192.9	0.06	19.3
1445	35	300		16.99	1258	6.25	-194.5	0.06	19.1
1450	40	300	7	16.95	1260	6.25	-196.4	0.06	19.2

Comments
EPA collected 2L in 15 min.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB4-03GW03 Page 1 of 2 Field Staff: AG/HAT

Date Sampled 7/10/01
Stick-up Height 1.2' feet
Depth to Water 7.68 feet below top of casing
Total Depth 46.5 feet below top of casing
Depth of Tubing (sample interval) 45 feet below top of casing

sulfide = 0.02 mg/L
ferrous iron = 1.54 mg/L

Start purge 0930
Start parameters 1020
End purge 1215
Total purge time: 2 hours, 45 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
				±3%	3%	±0.1	±10	10%	10%
1020	0	300		17.11	1949	6.69	-126.9	-0.03	412
1025	5			15.73	1950	6.73	-117.9	0.01	207
1030	10			15.55	1951	6.75	-113.5	0.00	141
1035	15			15.58	1960	6.76	-108.2	0.00	101.4
1040	20			15.51	1962	6.75	-89.8	0.00	58.2
1045	25			15.57	1958	6.77	-101.8	0.01	45.5
1050	30			15.63	1959	6.78	-102.3	0.01	38.5
1055	35			15.62	1958	6.77	-102.5	0.01	25.6
1100	40			15.53	1971	6.77	-100.0	0.02	21.8
1105	45			15.58	1962	6.78	-101.4	0.00	17.6
1110	50			15.52	1968	6.78	-98.0	0.00	15.0
1115	55			15.48	1967	6.77	-99.0	0.00	11.3
1120	60			15.62	1968	6.77	-98.1	0.00	10.66
1125	65			15.60	1969	6.78	-98.6	-0.01	9.69
1130	70			15.64	1969	6.41	-26.4	-0.07	7.54
1135	75			15.76	1975	6.77	-87.9	-0.02	14.0
1140	80			15.71	1972	6.78	-94.5	-0.01	8.51
1145	85			15.65	1968	6.78	-95.9	0.00	7.74
1150	90			15.76	1973	6.79	-95.8	0.00	6.08

Comments
EPA collected 2 L for 15 min

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB4-03GW03 Page 2 of 2 Field Staff: AG/HAT

Date Sampled 7/10/01
Stick-up Height 1.2 feet
Depth to Water 7.68 feet below top of casing
Total Depth 46.5 feet below top of casing
Depth of Tubing (sample interval) 45 feet below top of casing

Start purge 0930
Start parameters 1020
End purge 1215
Total purge time: 2 hours, 45 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1155	95	300		15.60	1975	6.79	-95.7	-0.01	4.64
1200	100	↓		15.62	1972	6.79	-93.0	-0.01	5.16
1205	105	↓		15.69	1971	6.80	-96.6	-0.01	4.07
1210	110	↓		15.64	1975	6.79	-95.7	-0.01	3.94
1215	115	↓		15.72	1985	6.78	~~-84.2~~ -88.9	-0.01	3.20
~~1220~~ HAT									

Comments

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB4-04GW01 Page 1 of 1 Field Staff: CY

Date Sampled 8/16/01
Stick-up Height 2.11 feet
Depth to Water 17.75 feet below top of casing
Total Depth 21 feet below top of casing
Depth of Tubing (sample interval) 20 feet below top of casing

sulfide = 0.0 mg/L
ferrous iron = 3.30 mg/L

Start purge 0840
Start parameters
End purge 1210
Total purge time: 3 hours, 30 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments
pumping much less than 50 mL/min

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB4-04GW02 Page 1 of 1 Field Staff: HAT

Date Sampled 8/16/01
Stick-up Height _____ feet
Depth to Water NM feet below top of casing
Total Depth 31 feet below top of casing
Depth of Tubing (sample interval) 30 feet below top of casing

sulfide = 0.80 mg/L
ferrous iron = 3.30 mg/L

Start purge 0930 → 1130
Start parameters _____
End purge _____
Total purge time: 3 hours, — minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)

Comments
purged till dry & then sampled recharge

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB4-05GW03NS Page 1 of 1 Field Staff: LC

Date Sampled 8/31/2001
Stick-up Height 1.1 feet
Depth to Water 21.80 feet below top of casing
Total Depth 35.0 feet below top of casing
Depth of Tubing (sample interval) 33.0 feet below top of casing

Sulfide: > 0.80 mg/L
Ferrous Iron: > 3.30 mg/L

Start purge 1045
Start parameters —
End purge 1445
Total purge time: 4 hours, 0 minutes
Parameters Stabilized? N

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1045		300	—	—	—	—	—	purge water too silty	

Comments

Purge water extremely silty, could not use YSI due to volume of silt, readings could not be taken — Purge for 4 hours (EPA protocol), collect NS sample at 1445
EPA collects split sample at 1515

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB5-01GW01 Page 1 of 1 Field Staff: LC

Date Sampled 7/16/01
Stick-up Height 1.9 feet
Depth to Water 10.91 feet below top of casing
Total Depth 17.15 feet below top of casing
Depth of Tubing (sample interval) 15.15 feet below top of casing

Sulfide: 0.44 mg/L
ferrous iron: 3.3 mg/L

Start purge 1045
Start parameters 1125
End purge 1220
Total purge time: 1 hours, 35 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1125		250		15.79	2553	6.19	-184.3	0.39	138
1130	5	250		16.64	2516	6.20	-192.3	0.03	90.2
1135	10	250		16.49	2524	6.24	-201.4	0.04	110
1140	15	250		16.45	2503	6.26	-203.3	0.06	47.1
1145	20	250		16.61	2523	6.28	-205.7	0.07	34.6
1150	25	250		16.14	2524	6.29	-207.5	0.08	26.9
1155	30	250		16.22	2527	6.28	-206.5	0.10	27.0
1200	35	250		16.24	2527	6.29	-206.5	0.08	28.2
1205	40	250		16.29	2532	6.28	-207.7	0.08	29.5
1210	45	250	5	16.41	2539	6.29	-211.8	0.04	23.3
1215	50	250		16.42	2530	6.29	-212.0	0.04	24.5
1220	55	250	6	16.43	2535	6.30	-213.6	0.04	22.4

Comments
EPA collected 4L in 30 min.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB5-02GW02 Page 1 of ___ Field Staff: HAT/AG

Date Sampled 7/9/01
Stick-up Height 0.9 feet
Depth to Water 11.04 feet below top of casing
Total Depth 21.03 feet below top of casing
Depth of Tubing (sample interval) 20.03 feet below top of casing

sulfide = 0.12 mg/L
ferrous iron = 0.37 mg/L

Start purge 0940
Start parameters 1005
End purge 1115
Total purge time: 1 hours, 35 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C) 3%	Spec. Cond. (uS) 3%	pH ±0.1	ORP (mV) ±10	DO (mg/L) 10%	Turbidity (NTU) 10%
1005	0	200		19.31	4549	7.43	-108.9	-0.22	155
1010	5			HAT ~~15~~ 17.04	4534	7.39	-131.7	-0.27	131
1015	10			16.72	4535	7.38	-152.6	-0.02	149
1020	15			16.89	4553	7.38	-141.2	0.08	204
1025	20			16.75	4560	7.38	-140.6	0.11	142
1030	25			16.45	4553	7.37	-144.4	0.15	120
1035	30			16.13	4575	7.36	-144.6	0.13	103.0
1040	35			16.16	4580	7.36	-147.0	0.12	87.5
1045	40			16.51	4580	7.36	-142.5	0.13	85.4
1050	45			16.70	4593	7.36	-142.9	0.26	78.5
1055	50			16.66	4592	7.36	-145.7	0.30	76.3
1100	55			16.89	4590	7.36	-139.1	0.33	79.2
1105	60			16.77	4594	7.36	-141.4	0.52	71.5
1110	65			16.75	4589	7.36	-140.2	0.52	71.3
1115	70			16.59	4585	7.36	-135.2	0.48	70.0
~~1120~~	~~75~~	HAT							

Comments
EPA collected 6L

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CBS-02GW03 Page 1 of ___ Field Staff: HAT/AG

Date Sampled 7/9/01
Stick-up Height 2.1 feet
Depth to Water 9.87 feet below top of casing
Total Depth ___ feet below top of casing
Depth of Tubing (sample interval) ___ feet below top of casing

Sulfide = 0.07 mg/L
ferrous iron = 3.30 mg/L

Start purge 1300
Start parameters 1315
End purge 1345
Total purge time: 0 hours, 45 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C) 3%	Spec. Cond. (uS) 3%	pH +/- .1	ORP (mV) +/-10	DO (mg/L) 10%	Turbidity (NTU) 10%
1315	0	300		15.90	2401	6.67	-172.4	-0.07	60.9
1320	5			15.14	2401	6.67	-173.2	-0.05	33.7
1325	10			14.46	2425	6.67	-174.7	-0.04	16.6
1330	15			14.26	2430	6.68	-178.5	-0.01	13.4
1335	20			14.28	2419	6.70	-181.2	-0.02	13.0
1340	25			14.25	2423	6.70	-183.8	-0.02	13.7
1345	30			14.26	2421	6.70	-183.9	-0.02	13.8

Comments
EPA -> 3L

HAT

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CBS-03GW03 Page 1 of ~~2~~ 1 Field Staff: HAT

Date Sampled 8/16/01
Stick-up Height 2.8 feet
Depth to Water 10.18 feet below top of casing
Total Depth 38' feet below top of casing
Depth of Tubing (sample interval) 37' feet below top of casing

sulfide = 0.48 mg/L
ferrous iron = 1.15 mg/L

Start purge 1230
Start parameters 1305
End purge 1400
Total purge time: 1 hours, 30 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1305	0	400		12.89	18858	7.59	8.5	0.56	50
1310	5			12.91	18849	7.59	7.5	0.54	34
1315	10			12.82	18842	7.63	0.6	0.48	27
1320	15			12.84	18908	7.64	-7.7	0.41	20
1325	20			12.79	19014	7.65	-20.0	0.52	16
1330	25			12.74	19085	7.64	-26.7	0.56	16
1335	30			12.67	19211	7.65	-39.8	0.49	14
1340	35			12.56	19338	7.70	-55.8	0.55	13
1345	40			12.60	19339	7.67	-59.3	0.55	13
1350	45			12.51	19393	7.68	-65.4	0.45	13
1355	50			12.48	19456	7.68	-73.9	0.42	14
1400	55			12.47	19526	7.69	-75.4	0.44	14

Comments
Odor; strong reaction (bubbles + smoke) w/ HCl & H_2SO_4 & sulfide reagent

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB6-036W01 Page 1 of __ Field Staff: AG

Date Sampled 7/18/01
Stick-up Height 1.8 feet
Depth to Water 12.81 feet below top of casing
Total Depth 17.09 feet below top of casing
Depth of Tubing (sample interval) 16.09 feet below top of casing

Sulfide : 0.80 mg/L
ferrous iron 0.31

Start purge 1110
Start parameters 1150
End purge 1230
Total purge time: 1 hours, 20 minutes
Parameters Stabilized? yes

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
				3%	3%	+/-.1 ~~3%~~ AG	+/-10	10%	10%
1150	0	210 ~~AG~~		16.95	3294	7.46	-247.2	6.50	24
1155	5			16.54	3382	7.49	-254.8	6.57	21
1200	10			16.59	3407	7.48	-264.5	6.60	21
1205	15			16.51	3451	7.45	-270.1	6.80	19
1210	20			16.60	3468	7.49	-275.9	6.73	19
1215	25			16.59	3463	7.49	-278.0	6.78	23
1220	30			16.63	3460	7.50	-282.1	6.85	19
1225	35			16.67	3464	7.50	-283.6	6.89	19
1230	40		5	16.70	3452	7.50	-285.3	6.93	18

Comments

Bubbles in YSI chamber may effect parameters.
EPA collected 2 L in 15 ~~minute~~ minutes AG Water has odor.
Sampled MS + MSD.
with regular samples and samples of MS + MSD sampling took about 4 1/2 hours

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB6-0361W02 Page 1 of 1 Field Staff: LC

Date Sampled 7/19/01
Stick-up Height 2.0 feet
Depth to Water 12.78 feet below top of casing
Total Depth 24.3 feet below top of casing
Depth of Tubing (sample interval) 22.3 feet below top of casing

Sulfide: 0.23mg/L
ferrous iron: 0.10mg/L

Start purge 1400
Start parameters 1535
End purge 1615
Total purge time: 2 hours, 15 minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1535		100		18.38	13281	7.72	-451.5	0.0	181
1540	5	100		17.44	13125	7.67	-477.4	0.28	84.6
1545	10	100		17.50	13319	7.65	-488.6	0.30	32.4
1550	15	100		17.02	13305	7.64	-492.4	0.32	30.0
1555	20	100		17.23	13290	7.64	-492.9	0.26	32.8
1600	25	100		17.41	13322	7.65	-470.3	0.28	44.7
1605	30	100		17.67	13379	7.65	-465.5	0.29	34.6
1610	35	100		17.84	13457	7.66	-456.1	0.29	36.3
1615	40	100	5	17.92	13468	7.66	-455.8	0.29	35.0

Comments
EPA collected 2L in 30min.
Total sampling time = 2hrs

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB6-03GW03 Page 1 of 2 Field Staff: AG

Date Sampled 7/31/01
Stick-up Height 2 feet
Depth to Water 13.81 feet below top of casing
Total Depth 32.5 feet below top of casing
Depth of Tubing (sample interval) 32.3 feet below top of casing

Sulfide: 0.10 mg/L
ferrous iron: 0.09 mg/L

Start purge 0940
Start parameters 1005
End purge
Total purge time: ____ hours, ____ minutes
Parameters Stabilized? ____

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	3% Temperature (degrees C)	3% Spec. Cond. (uS)	+/-.1 pH	+/-10 ORP (mV)	1% DO (mg/L)	1% Turbidity (NTU)
1005	0	400	5	15.28	6297	7.87	-210.3	0.91	100
1010	5			15.74	6328	7.86	-261.2	0.70	25
1015	10			15.62	6320	7.86	-276.2	0.58	20
1020	15			15.70	6327	7.86	-286.4	0.26	22
1025	20			15.78	6323	7.86	-289.9	0.23	7.4
1030	25			15.76	6300	7.86	-300.2	0.19	13
1035	30			15.68	6313	7.85	-296.1	0.19	13
1040	35			15.77	6297	7.85	-299.5	0.14	10
1045	40			15.70	6297	7.85	-303.7	0.20	13
1050	45			15.64	6311	7.85	-308.2	0.25	12
1055	50			15.78	6275	7.85	-310.1	0.22	7.9
~~1105~~ 1100	55			16.00	6258	7.84	-315.1	0.29	7.5
1105	60			15.91	6241	7.84	-317.3	0.24	7.6
1110	65			15.79	6252	7.84	-316.6	0.29	5.9
1115	70			15.91	6231	7.84	-314.3	0.20	6.8
1120	75			15.93	6219	7.83	-321.1	0.18	6.7
1125	80			15.74	6249	7.83	-321.8	0.11	6.4
1130	85			16.01	6210	7.82	-323.6	0.13	5.5
1135	90			16.01	6204	7.83	-323.9	0.29	5.4

Comments
EPA collected 2 L in 10 minutes

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CTB6-036W03 Page 2 of 2 Field Staff: AG

Date Sampled 7/31/01
Stick-up Height 2 feet
Depth to Water 13.81 feet below top of casing
Total Depth 32.5 feet below top of casing
Depth of Tubing (sample interval) 32.3 feet below top of casing

Start purge 0940
Start parameters 1005
End purge 1240
Total purge time: 3 hours, 5 minutes
Parameters Stabilized? yes

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1150	105	400	15	16.12	6195	7.82	-322.0	0.11	30
1155	110			16.15	6211	7.81	-321.1	0.15	16
1200	115			16.10	6.82	7.81	-316.7	0.10	6.8
1210	125			16.28	6161	7.80	-312.4	0.10	6.4
1215	130			16.12	6193	7.80	-314.3	0.27	16
1220	135			16.26	6149	7.80	-317.5	0.25	7.3
1225	~~140~~ 150			16.22	6171	7.80	-320.1	0.41	5.8
1240	155			16.35	6157	7.79	-318.0	0.42	5.8
1245	160			16.44	6150	7.79	-318.7	0.43	5.3

Comments

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB7-010W01 Page 1 of 1 Field Staff: AG

Date Sampled 7/17/01
Stick-up Height 1.4 feet
Depth to Water 4.84 feet below top of casing
Total Depth 12.2 feet below top of casing
Depth of Tubing (sample interval) 11.2 feet below top of casing

Sulfide 0.08 mg/L
Ferrous iron: 3.30

Start purge 0920
Start parameters 0950
End purge 1115
Total purge time: 1 hours, ~~55~~ 50 minutes
Parameters Stabilized? Yes

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
0950	0	300	4	16.86	1446	6.49	-200.0	0.07	100
0955	5			16.81	1444	6.51	-204.2	0.08	60
1000	10			16.80	1442	6.52	-204.6	0.08	37
1005	15			16.78	1440	6.54	-205.0	0.08	31
1010	20			16.77	1443	6.54	-204.5	0.06	29
1015	25			16.77	1444	6.55	-205.1	0.05	24
1020	30			16.76	1446	6.55	-205.1	0.05	23
1025	35			16.75	1446	6.56	-206.1	0.06	23
1030	40			16.75	1446	6.57	-206.6	0.05	23
1035	45			16.73	1449	6.56	-206.9	0.05	21
1040	50			16.74	1448	6.56	-206.9	0.05	19
1045	55			16.76	1450	6.57	-206.6	0.03	21
1050	60			16.76	1451	6.57	-207.2	0.03	20
1055	65			16.75	1451	6.58	-207.1	0.03	16
1100 ~~1060~~	70			16.76	~~TB~~ AG 1454	6.57	-206.9	0.02	16
1105 AG	75			16.74	AG 1455	6.57	-206.2	0.02	16
1110	80		11	16.81	1452	6.58	-207.0	0.02	15
1115	85								
1120	90								

Comments
EPA collected 4L in 30 minutes.
Sheen on water

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB7-01GW03 Page 1 of ___ Field Staff: AG

Date Sampled 7/17/01
Stick-up Height 0.9 feet
Depth to Water 4.45 feet below top of casing
Total Depth ~62 feet below top of casing
Depth of Tubing (sample interval) ~61 feet below top of casing

Sulfide: 0.12 mg/L
Ferrous iron: 2.48 mg/L

Start purge Worked on 1 ½ hours then stopped started again @ 1500
Start parameters 1515
End purge ~~1610~~ 1600
Total purge time: 2 hours, ~~25~~ 15 minutes
Parameters Stabilized? Yes

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C) 3%	Spec. Cond. (uS) 3%	pH +/- .1	ORP (mV) +/- 10	DO (mg/L) 10%	Turbidity (NTU) 10%
1515	0	300	7	14.00	497	5.86	-50.4	0.12	40
1520	5			13.90	488	5.68	-36.7	0.08	24
1525	10			13.85	485	5.58	-31.1	0.06	23
1530	15			13.66	484	5.51	-25.3	0.05	24
1535	20			13.73	487	5.45	-20.0	0.05	14
1540	25			13.71	482	5.43	-17.6	0.05	13
1545	30			13.71	480	5.41	-14.1	0.05	15
1550	35			13.63	481	5.38	-11.0	0.05	13
1555	40			13.55	480	5.36	-6.7	0.05	13
1600	45			13.56	471	5.35	-3.3	0.05	13
			13						

Comments EPA collected 2 L in 10 minutes

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB7-02GW01 Page 1 of 1 Field Staff: AG

Date Sampled 7/16/01
Stick-up Height 1.7 feet
Depth to Water 11.32 feet below top of casing
Total Depth 22.0 feet below top of casing
Depth of Tubing (sample interval) 20.0 feet below top of casing

Sulfide: 0.01 mg/L
ferrous iron: 5.50 mg/L

Start purge 1400
Start parameters 1430
End purge 1600
Total purge time: 2 hours, — minutes
Parameters Stabilized? Y

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1430	0	400	2	13.84	2968	5.94	-128.1	0.27	17
1435	5			13.43	2965	5.98	-131.4	0.07	45
1440	10			13.37	2966	5.98	-132.6	0.05	15
1445	15			13.45	2963	5.98	-127.8	0.17	8.0
1450	20			13.29	2963	6.01	-132.4	0.04	6.7
1455	25			13.58	2963	6.01	-133.9	0.03	6.6
1500	30			13.68	2958	6.01	-133.8	0.06	6.4
1505	35			13.59	2957	6.02	-134.3	0.04	7.1
1510	40			13.64	2962	6.01	-133.9	0.04	6.6
1515	45			13.59	2961	6.01	-134.0	0.03	7.2
1520	50			13.66	2957	6.00	-126.5	0.17	6.6
1525	55			13.62	2950	6.02	-132.1	0.03	11
1530	60			13.55	2950	6.03	-132.3	0.03	10
1535	65			13.58	2951	6.02	-132.2	0.02	9.5
1540	70			13.63	2952	6.01	-132.0	0.03	9.1
1545	75			13.72	2950	6.02	-131.9	0.03	6.8
1550	80			13.45	2951	6.01	-131.5	0.04	7.5
1555	85			13.52	2949	6.01	-131.2	0.04	6.9
1600	90			13.58	2943	6.02	-131.2	0.04	6.89

AG

Comments
Some bubbles occur in flow through cell, may effect parameters
EPA collected 2L in 10 minutes.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB7-02-GW02 Page 1 of 1 Field Staff: AG

Date Sampled 7/16/01
Stick-up Height 1.4 feet
Depth to Water 12.39 feet below top of casing
Total Depth 30.0 feet below top of casing
Depth of Tubing (sample interval) 24.0 feet below top of casing

Sulfides 0.05 mg/L
ferrous iron 3.30 mg/L

Start purge 1005
Start parameters 1150
End purge 1300
Total purge time: 2 hours, 55 minutes
Parameters Stabilized? yes

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	3% Temperature (degrees C)	3% Spec. Cond. (uS)	+/-.1 pH	+/-10 ORP (mV)	10% DO (mg/L)	10% Turbidity (NTU)
1150	0	300	15	13.30	1217	5.49	-64.1	0.32	200
1155	5			13.10	1224	5.53	-69.2	0.15	50
1200	10			13.07	1225	5.54	-72.0	0.08	37
1205	15			13.09	1218	5.55	-72.0	0.06	40
1210	20			13.06	1221	5.56	-65.9	0.10	40
1215	25			13.10	1219	5.60	-70.9	0.05	22
1220	30			13.21	1220	5.59	-71.2	0.05	11
1225	35			13.09	1219	5.60	-70.1	0.05	16
1230	40			13.13	1218	5.61	-69.5	0.05	8.8
1235	45			12.97	1217	5.61	-68.1	0.05	9.0
1240	50			13.07	1221	5.61	-67.0	0.05	6.9
1245	55			13.10	1217	5.62	-65.8	0.04	7.2
1250	60			13.11	1216	5.62	-64.6	0.04	6.6
1255	65			13.12	1215	5.61	-63.3	0.04	7.0
1300	70		23						

Comments

EPA sampled ~~to~~ AG 2L in 10 minutes
It took a long time of purging to decrease the amount of sediment in the water.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB7-03GW01 Page 1 of 2 Field Staff: AG

Date Sampled 7/25/01
Stick-up Height ~~13.51~~ 2.6 feet
Depth to Water 13.51 feet below top of casing
Total Depth 19.1 feet below top of casing
Depth of Tubing (sample interval) 18.1 feet below top of casing

Sulfide 0.80 mg/L
ferrous iron: 0.21 mg/L

Start purge 0940
Start parameters 1000
End purge 1150
Total purge time: 1 hours, 50 minutes
Parameters Stabilized? Yes

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1000	0	360	2	15.72	2594	7.13	-196.5	6.80	37.5
1005	5			14.94	2587	7.10	-212.3	6.94	21.6
1010	10			14.90	2584	7.18	-221.3	6.97	19.9
1015	15			14.90	2585	7.20	-224.6	6.96	11.2
1020	20			14.91	2580	7.18	-225.5	7.94	15.9
1025	25			14.93	2551	7.16	-226.2	8.32	19.1
1030	30			14.97	2591	7.15	-227.3	8.43	16.0
1040	40			15.04	2582	7.22	-228.3	7.54	15.7
1045	45			15.04	2587	7.19	-228.7	8.00	13.4
1050	50			15.06	2572	7.09	-230.8	8.18	14.3
1055	55			15.07	2571	7.13	-230.4	7.73	15.7
1100	60			15.07	2579	7.15	-230.9	7.77	16.2
1105	65			15.10	2570	7.17	-231.2	8.01	18.6
1110	70			15.16	2581	7.19	-232.9	7.85	16.5
1125	85			15.11	2580	7.15	-233.5	7.87	17.9
1130	90			15.16	2571	7.16	-233.3	7.40	20.6
1135	95			15.15	2570	7.16	-233.7	7.27	19.5
1140	100			15.12	2575	7.15	-234.1	7.63	27.4
1145	105			15.17	2571	7.16	-234.4	7.15	25.3

Comments
EPA collects ~~2~~ 4 L in 20 minutes

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB7-03GW01 Page 2 of 2 Field Staff: AG

Date Sampled 7/25/01
Stick-up Height 2.6 feet
Depth to Water 13.51 feet below top of casing
Total Depth 19.1 feet below top of casing
Depth of Tubing (sample interval) 18.1 feet below top of casing

Start purge 0940
Start parameters 1000
End purge 1150
Total purge time: 1 hours, 50 minutes
Parameters Stabilized? Yes

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1150	110		11	15.17	2571	7.17	-234.9	7.2 mg/l	26.7

Comments

CLICK TO CONTINUE.

ROUX ASSOCIATES, INC.
Final GSIP SOW Soil/Groundwater Investigation
Groundwater Sampling Form

Sample CB7-03GW02R Page 1 of 1 Field Staff: AG

Date Sampled 7/25/01
Stick-up Height 1.8 feet
Depth to Water 12.04 feet below top of casing
Total Depth 34.5 feet below top of casing
Depth of Tubing (sample interval) 32.5 feet below top of casing

sulfide 0.80 mg/L
ferrous iron 0.01 mg/L

Start purge 1250
Start parameters 1335
End purge 1405
Total purge time: 1 hours, ~~30~~ 15 minutes
Parameters Stabilized? yes

Purging Information

Time of Day	Elapsed Time (min)	Purge Rate (mL/min)	Cumulative Volume Purged (gallons)	Temperature (degrees C)	Spec. Cond. (uS)	pH	ORP (mV)	DO (mg/L)	Turbidity (NTU)
1335	0	360	9	14.55	3597	6.95	-284.5	0.73	16.8
1340	5			13.95	3545	6.92	-292.9	0.57	17.8
1345	10			13.89	3523	6.94	-293.1	0.61	17.3
1350	15			13.89	3522	6.96	-210.8	0.68	18.0
1355	20			13.89	3515	6.97	-293.7	0.57	16.0
1400	25			13.99	3516	6.97	-296.7	0.56	16.7
1405	30		14	13.94	3518	6.98	-300.1	0.57	17.0

Comments
EPA collected 2L in 10 minutes.