

**APPENDIX D**  
**GROUNDWATER SAMPLING FORMS**



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: BF-3Project Name/Number: 7th AZ WQARF Site Date: 3-19-13 Sampler: BN MO

### WELL INFORMATION

Total Well Depth: 75' Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 64.77' bks  
 Well Depth ("a", ft): 75' Screened Interval (ft) From: 50' to: 75' Depth to LNAPL (ft): —  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 = — gal 3 Casing Volumes — gal LNAPL Thickness (ft): —  
 Control Box PSI 70 Charge 6 Exhaust 12

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1603 Time Completed: 16:38 Total Purge Time: 35 min  
 Purge Method: low flow Pump Setting: 71 ft Total Purge Volume: 21L

Elapsed Time (Min)	Extraction Rate (ml/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
1603	6000	28.1	2769	6.52	2.24	3.69	423	NO	
1606	"	27.7	2758	6.52	1.42	1.01	402	"	
1610	"	27.7	2757	6.51	.26	.52	390	"	
1615	"	27.7	2764	6.51	.11	.42	374	"	
1620	"	27.7	2761	6.51	.39	.39	365	"	
1625	"	27.8	2773	6.51	.10	.36	353	"	
1630	"	27.7	2768	6.50	.31	.30	332	"	
1635	"	27.5	2769	6.50	.37	.58	326	"	
1638	"	27.7	2777	6.50	.54	.46	320	"	

### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 16:39 Time Completed: — Sampling Method: —

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
BF-3	16:40	poly	1L	1	Alk Cl SO <sub>4</sub> NO <sub>3</sub>	none	
BF-3	16:39	VOAs	40ml	3	Meth/Eth	HCl	
BF-3	16:39	VOAs	40ml	3	8260	HCl	
BF-3	16:39	Amber VOA	40ml	3	TUC	HCl	
Ferrous Iron	16:42	—	10ml	—	Spectro	—	0.08 mg/L
Sulfide	16:51	—	10ml	—	Spectro	—	1 mg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes
	QA-Blank		1720	8260	



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: 7AZP-1Project Name/Number: 7th AZ WQARF Site Date: 3-19-13 Sampler: BV MD

### WELL INFORMATION

Total Well Depth: 85' Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 67.12' bbs  
 Well Depth ("a", ft): 85' Screened Interval (ft) From: 60' to: 85' Depth to LNAPL (ft): —  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 = — gal 3 Casing Volumes — gal LNAPL Thickness (ft): —  
 Control Box PSI = 70 Charge = 6 sec Exhaust = 12 sec

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1410 Time Completed: 1455 Total Purge Time: 35 min  
 Purge Method: low flow Pump Setting: 77 ft Total Purge Volume: 21 L

Elapsed Time (Min)	Extraction Rate (ml/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
1410	600	27.3	3307	6.43	9.77	4.90	391	no	
1420	"	28.1	3388	6.65	0.67	3.91	274	no	residual gen. prod
1425	"	27.1	3334	6.62	.04	3.41	260	"	
1430	"	26.9	3328	6.60	.26	3.07	247	"	
1435	"	26.9	3322	6.60	.58	3.05	219	"	
1440	"	26.9	3320	6.60	.78	3.13	210	"	
1445	"	26.8	3315	6.61	.65	3.15	193	"	
1450	"	26.9	3220	6.61	.73	3.21	186	"	
1455	"	27.0	3340	6.62	.45	3.28	182	"	

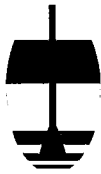
### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1456 Time Completed: 1519 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
7AZP-1	1457	Poly	1L	1	Alkalinity NO <sub>2</sub>	none	
7AZP-1	1456	VOA	40ml	3	Meth/Eth	HCl	
7AZP-1	1456	VOA	40ml	3	8260	HCl	
7AZP-1	1456	Ambr. VOA	40ml	3	TOC	HCl	
Parous Iron	1510	—	10ml	—	Spectro	—	0.16 mg/L
Sulfide	1519	—	10ml	—	Spectro	—	2 u/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: 7AZP-9Project Name/Number: 7th AZ WQARF Site Date: 3-19-13 Sampler: BSV MO

### WELL INFORMATION

Total Well Depth: 90' Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 84-31 btoe  
 Well Depth ("a", ft): 90' Screened Interval (ft) From: 70' to: 90' Depth to LNAPL (ft): 85-31 btoe  
 Casing Volume:  $(a - b) \times d^2 \times 0.0408 =$           gal 3 Casing Volumes          gal LNAPL Thickness (ft):           
 Control box PSI = 90 charge = 6 sec Exhaust = 12 sec

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1140 Time Completed: 1220 Total Purge Time: 40 min  
 Purge Method: low flow Pump Setting: 87'-88' Total Purge Volume: 20 L

Elapsed Time (Min)	Extraction Rate (/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
11:40	500 ml/min	27.3	2905	6.66	.86	5.42	286	NO	cloudy
11:44	"	26.7	2882	6.65	875	4.64	228	"	"
11:50	"	26.6	2892	6.65	334	3.38	188	"	"
11:58	"	26.4	2856	6.61	82.8	2.29	<del>288</del>	"	lightly cloudy
12:05	"	26.4	2849	6.61	30	2.16	182	"	clean
12:10	"	26.3	2847	6.61	18.2	2.40	180	"	clean
12:15	"	26.4	2844	6.60	22.5	2.44	151	"	"
12:20	"	26.3	2834	6.61	14.8	2.48	146	"	"

### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1221 Time Completed: 1230 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
7AZP-9	1222	poly	1L	1	Alk Cl say Na <sub>2</sub>	none	
7AZP-9	1221	VOA	40ml	3	Meth/Eth.	HCl	
7AZP-9	1224	VOA	40ml	3	8260	HCl	
7AZP-9	1221	Amber VOA	40ml	3	TOC	HCl	
Ferrus Iron	1223	—	10ml	—	spectro	—	0.62 mg/L
Sulfide	1230	—	10ml	—	Spectro	—	52 µg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: 7AZP-11Project Name/Number: 7th AZ WQARF Site Date: 3-19-13 Sampler: BV MD

### WELL INFORMATION

Total Well Depth: 90 Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 77.71' bhc  
 Well Depth ("a", ft): 90 Screened Interval (ft) From: 70' to: 90' Depth to LNAPL (ft): —  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 =        gal 3 Casing Volumes        gal LNAPL Thickness (ft): —  
 GeoControl box PSI 70 Charge 6 sec Exhaust 11 sec

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 9:05 Time Completed: 9:40 Total Purge Time: 35 min  
 Purge Method: bladder pump Pump Setting: 83' bhc Total Purge Volume: 21L

Elapsed Time (Min)	Extraction Rate (ml/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
9:05	600	23.7	2783	6.77	19.1	6.76	230	NO	
9:09	600	25.4	2849	6.53	6.16	2.88	207	"	
9:14	"	25.7	2868	6.52	3.99	2.79	194	"	
9:18	"	25.7	2872	6.52	3.69	2.88	185	"	
9:23	"	25.8	2880	6.52	3.24	2.90	177	"	Replaced bottles in YSI
9:29	"	25.7	2879	6.51	3.40	2.86	122	"	
9:33	"	25.8	2885	6.51	1.39	2.96	136	"	
9:36	"	25.9	2897	6.51	0.78	2.86	138	"	
9:40	"	25.9	2890	6.51	0.75	2.90	139	"	

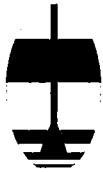
### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 9:41 Time Completed:        Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
7AZP-11	9:42	poly	1L	1	Alk Cl SO <sub>4</sub> NO <sub>3</sub>	none	
7AZP-11	9:41	VOA	40ml	3	Meth/Ethene/Ethane	HCl	
7AZP-11	9:41	VOA	40ml	3	8260	HCl	
7AZP-11	9:41	Amber VOA	40ml	3	TOC	HCl	
Ferrrous Iron	<del>9:44</del> 9:44		10ml	—	Spectro	—	.09 mg/L
Sulfide	9:50	9:50	10ml	—	Spectro	—	1.0 µg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: 7AZP-10Project Name/Number: 7th AZ WQARF Site Date: 3/18/13 Sampler: BSV; MO

### WELL INFORMATION

Total Well Depth: 94' Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 82.59' h2o  
 Well Depth ("a", ft): 94' Screened Interval (ft) From: 74' to: 94' Depth to LNAPL (ft): -  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 = 7.1 gal 3 Casing Volumes 22.3 gal LNAPL Thickness (ft): -  
 geo control PSI = 75 Charge time = 5 Exhaust time = 12

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 12:26 Time Completed: 13:05 Total Purge Time: 46 min  
 Purge Method: low flow Pump Setting: 86 Total Purge Volume: 1220

Elapsed Time (Min)	Extraction Rate (ml/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
12:26	400 ml	27.7	4754	6.51	122	4.68	156.9	no	
12:30	"	27.5	4754	6.58	104	4.65	149.5	"	
12:33	"	27.4	4747	6.57	101.5	4.37	134.4	"	
12:36	"	27.4	4744	6.56	83.1	3.90	128.0	"	
12:44	"	27.3	4733	6.56	49.5	3.11	119.7	"	
12:50	"	27.2	4722	6.55	29.9	2.94	114.6	"	
12:55	"	27.3	4733	6.55	24.9	2.94	111.8	"	
13:00	"	27.4	4738	6.55	24.9	2.90	110.0	"	
13:05	"	27.3	4733	6.55	23.6	3.03	109.3	"	

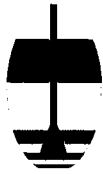
### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 13:06 Time Completed: 13:31 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
7AZP-10	13:06	VQA	40 ml	3	8260B	HCl	
7AZP-10	13:06	VQA	40 ml	3	Meth/Ethene/Ethane	HCl	
7AZP-10	13:07	Poly	1L	1	Alk, Cl, NO <sub>3</sub> , SO <sub>4</sub>	none	48hr hold
7AZP-10	13:06	Ambow VQA	40 ml	3	TOC	HCl	
Ferrous Iron	13:21	glass	10 ml	1	Spectro	NA	0.13 mg/L
Sulfide	13:34	"	10 ml	1	"	NA	28 mg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: MW-PD-5Project Name/Number: 7th AZ WQARF Site Date: 3/18/13 Sampler: BV #  
MO

### WELL INFORMATION

Total Well Depth: 88' Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 80.84' blue  
 Well Depth ("a", ft): 88' Screened Interval (ft) From: 66 to: 86 Depth to LNAPL (ft): —  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 = — gal 3 Casing Volumes — gal LNAPL Thickness (ft): —  
 Gas Control | PSI = 70 Charge time = 6 Exhaust time = 11

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 15:20 Time Completed: 15:55 Total Purge Time: 35 min  
 Purge Method: low flow Pump Setting: 84 ft Total Purge Volume: 17.5L

Elapsed Time (Min)	Extraction Rate (ml/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
15:20	500	30.9	6677	6.31	2.24	5.65	293	NO	
15:24	"	26.9	6618	6.30	16.7	1.11	233	"	
15:30	"	26.8	6600	6.32	28.7	0.88	216	"	
15:35	"	26.7	6574	6.33	26.0	0.77	204	"	
15:40	"	26.7	6573	6.33	21.7	0.69	197	"	
15:45	"	26.7	6563	6.33	15.0	0.63	189	"	
15:50	"	26.5	6542	6.33	8.61	0.56	182	"	
15:55	"	26.5	6540	6.33	6.67	0.54	180	"	

### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 15:56 Time Completed: 16:57 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
MW-PD-5	15:56	VOA	40ml	3	8260B	HCl	
MW-PD-5	15:56	VOA	40ml	3	Meth/sthane/sthal	HCl	
MW-PD-5	15:57	Poly	1L	1	Alk, Cl, NO <sub>2</sub> , SO <sub>4</sub> none		48hr Hold
MW-PD-5	15:56	Amber VOA	40ml	3	TOC	HCl	
Ferric Iron	16:01	glass	10ml	1	Spectro	N/A	.6 mg/L
Sulfide	16:11	glass	10ml	1	Spectro	N/A	4 mg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: BF-1Project Name/Number: 7th AZ WQARF Site Date: 3-20-13 Sampler: BV MD

### WELL INFORMATION

Total Well Depth: 81' Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 66.20' b/c  
 Well Depth ("a", ft): 81' Screened Interval (ft) From: 50.5' to: 80.5' Depth to LNAPL (ft): \_\_\_\_\_  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 = \_\_\_\_\_ gal 3 Casing Volumes \_\_\_\_\_ gal LNAPL Thickness (ft): \_\_\_\_\_

*chase 7 exhaust 12*

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 12:45 Time Completed: 1320 Total Purge Time: 35 minPurge Method: bladder pump Pump Setting: 75 ft Total Purge Volume: 21L

Elapsed Time (Min)	Extraction Rate (m/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
12:45	600	29.8	2504	6.58	19.3	4.63	469	N	Fine gravel particles in discharge
12:50	"	27.4	2507	6.52	14.7	1.57	432	N	"
12:55	"	27.4	2511	6.51	5.74	.55	422	"	"
13:00	"	27.4	2511	6.51	4.11	.68	414	"	clean
13:05	"	27.3	2503	6.51	2.43	.39	394	"	"
13:10	"	27.3	2503	6.51	1.85	.76	378	"	"
13:15	"	27.2	2501	6.51	.92	.42	353	"	"
13:20	"	27.2	2503	6.51	1.18	.31	340	"	"

### SAMPLING INFORMATION AND SAMPLE RECORD

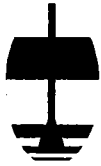
Time Started: 13:21 Time Completed: 1333 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
BF-1	1321	VOL	40ml	3	8260	HCl	
BF-1	↓	VOL	40ml	3	Met/EM	HCl	
BF-1	↓	VOL	40ml	3	TOC	HCl	
BF-1	1322	gpd	1L	1	Alk Cl SO <sub>4</sub> NO <sub>3</sub>	none	
Ferrous	1328	—	10ml	—	Spectro	—	.1 mg/L
Sulfide	1333	—	10ml	—	"	—	3 mg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes
BF-1	GW	Dup-1		8260	





# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: 7AZP-6Project Name/Number: 7th AZ WQARF Site Date: 3/20/13 Sampler: MO BV

### WELL INFORMATION

Total Well Depth: 95' Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 83.67' b/c  
 Well Depth ("a", ft): 95' Screened Interval (ft) From: 65' to: 95' Depth to LNAPL (ft): —  
 Casing Volume:  $(a - b) \times d^2 \times 0.0408 =$             gal 3 Casing Volumes            gal LNAPL Thickness (ft): —  
Change 7 Exhaust 12

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 9:32 Time Completed: 10:50 Total Purge Time: 33 min  
 Purge Method: low flow Pump Setting: 90 FT Total Purge Volume: 18.15 L

Elapsed Time (Min)	Extraction Rate (ml/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
932	550	25.6	2721	6.66	1.83	6.65	226	NO	
935	"	26.3	2773	6.60	7.64	5.69	210	"	
940	"	26.5	2782	6.60	18.6	4.58	204	"	
945	"	26.4	2780	6.59	29.0	3.55	198	"	
1030	"	26.7	2793	6.58	35.3	5.55	181	"	out of N <sub>2</sub>
1035	"	26.6	2790	6.57	34.6	4.50	177	"	
1040	"	26.7	2796	6.57	34.2	3.39	171	"	
1045	"	26.8	2796	6.56	29.0	3.30	156	"	
1050	"	26.8	2797	6.56	29.0	3.27	162	"	

### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 10:51 Time Completed: 11:02 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
7AZP-6	10:51	VOA	40ml	3	8260	HCl	
7AZP-6	10:51	VOA	40ml	3	Meth/ETH	HCl	
7AZP-6	10:51	Ambicor VOA	40ml	3	TDC	HCl	
7AZP-6	10:52	poly	1L	1	Alk cl NO <sub>3</sub> SO <sub>4</sub>	none	
Ferrrous	10:54	—	10ml	—	Spectro	—	1.23 mg/L
Sulfide	11:02	—	10ml	—	Spectro	—	40 mg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: MW-PD-30Project Name/Number: 7th AZ WQARF Site Date: \_\_\_\_\_Sampler: BV MO

### WELL INFORMATION

Total Well Depth: 81' Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 68.66' btoe  
 Well Depth ("a", ft): 81' Screened Interval (ft) From: 61' to: 81' Depth to LNAPL (ft): \_\_\_\_\_  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 = \_\_\_\_\_ gal 3 Casing Volumes \_\_\_\_\_ gal LNAPL Thickness (ft): \_\_\_\_\_

*change 7 exhaust 12*

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1420 Time Completed: 1455 Total Purge Time: 35 min  
 Purge Method: low flow Pump Setting: 79 ft Total Purge Volume: 21 L

Elapsed Time (Min)	Extraction Rate (L/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
1420	600	28.0	2660	6.50	1.13	4.11	500	no	
1425	"	27.6	2655	6.53	9.74	2.33	462	"	
1430	"	27.8	2660	6.53	13.2	1.01	440	"	
1435	"	28.0	2674	6.54	22.8	.76	413	"	
1440	"	28.1	2680	6.54	21.3	.78	388	"	
1445	"	28.1	2702	6.54	18.0	.77	361	"	
1450	"	28.0	2712	6.54	13.0	.77	345	"	
1455	"	28.0	2721	6.54	9.2	.59	329		

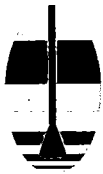
### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1456 Time Completed: \_\_\_\_\_ Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
MW-PD-30	1456	VOA	40ml	3	8260	HCl	
MW-PD-30	1456	VOA	40ml	3	Meth/Eth	HCl	
MW-PD-30	1456	Amby VOA	40ml	3	TDC	HCl	
MW-PD-30	1457	poly	1L	1	Alk U Na <sub>2</sub> SO <sub>4</sub>	none	
Ferrous	1501	-	10ml	-	Spectro	-	0.39 mg/L
Sulfide	1508	-	10ml	-	Spectro	-	14 mg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: 7AZP-10Project Name/Number: 7th AZ WQARF Site Date: 3-21-13Sampler: MO BV

### WELL INFORMATION

Total Well Depth: 91' Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 82.49' b/c  
 Well Depth ("a", ft): 91' Screened Interval (ft) From: 74' to: 94' Depth to LNAPL (ft): —  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 =        gal 3 Casing Volumes        gal LNAPL Thickness (ft): —

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 10:51 Time Completed: 11:41 Total Purge Time: 50-min  
 Purge Method: Low flow Pump Setting: 88' Total Purge Volume: 27.5-L

Elapsed Time (Min)	Extraction Rate (ml/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
1051	550 ml/min	26.6	2638	6.6	4.29	6.33	522	NO	clean
1055	"	26.5	2635	6.65	76.4	6.17	460	"	slightly cloudy
1100	"	26.6	2640	6.61	69.9	5.74	431	"	"
1105	"	26.5	2636	6.61	54.9	5.45	402	"	"
1110	"	26.5	2634	6.61	38.2	5.44	386	"	"
1115	"	26.6	2640	6.60	29.6	5.42	359	"	"
1120	"	26.7	2647	6.60	20.6	5.40	351	"	"
1126	"	26.8	2652	6.61	13.6	4.20	335	"	"
1140	"	26.9	2665	6.62	3.48	3.06	295	"	clean

### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1140 11:28 Time Completed: 11:41 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
Ferrous	11:28	—	10ml	—	Spectro	—	.66 mg/L
Sulfate	11:36	—	10ml	—	Spectro	—	26
7AZP-10	1140	VVA	40ml	3	260B	HCL	
7AZP-10	1140	VVA	40ml	3	Meth/Ethyl/Ethyl	HCL	
7AZP-10	1140	number VVA	40ml	3	TOC	HCL	
7AZP-10	1141	Poly	1L	1	H <sub>2</sub> O <sub>2</sub> , NO <sub>2</sub> , SO <sub>4</sub>	None	48 hr hold

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: 7AZP-5Project Name/Number: 7th AZ WQARF Site Date: 3-21-13 Sampler: MO BV

### WELL INFORMATION

Total Well Depth: 90' Casing Diameter ("d", in.): 4 1/4" Depth to Water ("b", ft): 64.44  
 Well Depth ("a", ft): 90' Screened Interval (ft) From: 65' to: 85' Depth to LNAPL (ft): —  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 = \_\_\_\_\_ gal 3 Casing Volumes \_\_\_\_\_ gal LNAPL Thickness (ft): —  
 Charge 7 Exhaust 12

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 8:53 Time Completed: 9:28 Total Purge Time: 35 min  
 Purge Method: low flow Pump Setting: 75 ft Total Purge Volume: 21 L

Elapsed Time (Min)	Extraction Rate (ml/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
853	6000	22.5	1654	6.62	4.07	5.29	499	NO	
900	11	25.3	1787	6.59	1.29	2.83	434	11	
905	11	25.5	1795	6.60	.88	1.27	374	11	
910	11	25.6	1799	6.59	1.19	1.20	362	11	
915	11	25.7	1781	6.60	1.83	.79	335	11	
920	11	25.7	1800	6.59	1.64	1.03	314	11	
925	11	25.7	1795	6.56	1.12	.95	299	11	
928	11	25.7	1807	6.56	1.04	.85	295	11	

### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 9:29 Time Completed: 9:45 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
7AZP-5	9:30	poly	1L	1	Alk U NH <sub>3</sub> sq	none	
7AZP-5	9:29	VOA	40ml	3	8260	HCl	
7AZP-5	↓	VOA	40ml	3	Meth/Eth	↓	
7AZP-5	↓	Ambic VOA	40ml	3	TOC	↓	
Ferrous	9:36	—	10ml	—	Spectro	—	0.05 mg/L
Sulfide	9:45	—	10ml	—	Spectro	—	5 mg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: YC-5Project Name/Number: 7th AZ WQARF Site Date: 3-21-13 Sampler: BV MD

### WELL INFORMATION

Total Well Depth: 85 Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 66.87' btoe  
 Well Depth ("a", ft): 85 Screened Interval (ft) From: 55 to: 80 Depth to LNAPL (ft): 66.35' btoe  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 = \_\_\_\_\_ gal 3 Casing Volumes \_\_\_\_\_ gal LNAPL Thickness (ft): 0.32'  
 Charge 1 sec Exhaust 12 sec Strainer Setting 14' btoe

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1420 Time Completed: 15:06 Total Purge Time: 46-min  
 Purge Method: low flow Pump Setting: 78' Total Purge Volume: 23-L

Elapsed Time (Min)	Extraction Rate (ml/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
1420	500	27.1	2413	5.93	9.90	6.00	100	no	clean discharge
1425	"	26.7	2398	6.41	11.1	1.87	122	"	"
1430	"	26.7	2400	6.41	14.2	2.30	122	"	"
1435	"	26.7	2397	6.42	9.75	2.52	129	"	"
1440	"	26.8	2401	6.43	6.09	1.09	117	"	"
1445	"	26.8	2399	6.43	3.96	1.33	48	"	"
1450	"	26.7	2397	6.43	2.57	1.60	16	"	"
1455	"	26.7	2393	6.43	1.50	1.52	-42	"	"

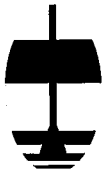
### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1456 Time Completed: 15:11 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
YC-5	1457	poly	1L	1	Alk Cl Mg Sp	none	
↓	1456	VOA	40ml	3	8260	HCl	
↓	1456	VOA	↓	↓	Meth/ETH	↓	
↓	1456	Ambour VOA	↓	↓	TOL	↓	
Ferrous	1504	—	10ml	—	Spectro	—	
Sulfide	1511	—	10ml	—	Spectro	—	

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: 7AZP-2Project Name/Number: 7th AZ WQARF Site Date: 3-21-13 Sampler: BV MO

### WELL INFORMATION

Total Well Depth: 65' Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 68.15' bto c  
 Well Depth ("a", ft): 85' Screened Interval (ft) From: 58.7' to: 83.9' Depth to LNAPL (ft): 66.71' bto c  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 = \_\_\_\_\_ gal 3 Casing Volumes \_\_\_\_\_ gal LNAPL Thickness (ft): 1.44'  
Change 7 sec Exhaust 12 sec Stronger 73' bto c

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1556 Time Completed: 17:16:43 Total Purge Time: 16:43 47 min  
 Purge Method: low flow Pump Setting: 77' Total Purge Volume: 28.2 - L

Elapsed Time (Min)	Extraction Rate (gal/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
1556	600	25.9	1513	6.60	2.92	5.00	6.2	light sheen	odor strong
1601	"	25.9	1567	6.62	4.29	3.65	84.2	light sheen	odor P.H.O
1606	"	25.8	1583	6.62	3.43	3.71	-0.3	"	"
1611	"	25.8	1583	6.62	2.06	4.00	-14.8	"	"
1616	"	25.7	1594	6.62	2.01	5.29	-81.5	"	"
1621	"	25.7	1597	6.61	2.45	3.37	-63	"	"
1626	"	25.6	1567	6.62	1.40	4.41	-95	"	"
1631	"	25.6	1589	6.62	1.40	4.65	-96	"	"

### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1632 Time Completed: 1648 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
7AZP-2	1633	poly	1L	1	Alk Cl NO <sub>3</sub> S <sub>4</sub>	none	
↓	1632	VOA	40ml	3	8260	HCl	
↓	1632	VOA	↓	↓	meth/Eth	↓	
↓	1632	Ambic VOA	↓	↓	TOC	↓	
Ferrous	1640	—	10ml	—	Spectro	—	.08 mg/L
Sulfide	1648	—	10ml	—	Spectro	—	33 mg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes



# HYDRO GEO CHEM, INC.

## Groundwater Sampling Form

Well ID: YC-5Project Name/Number: 7th AZ WQARF Site Date: 3-21-13 Sampler: BV MO

### WELL INFORMATION

Total Well Depth: 85 Casing Diameter ("d", in.): 4" Depth to Water ("b", ft): 66.87' b/c  
 Well Depth ("a", ft): 85 Screened Interval (ft) From: 55 to: 80 Depth to LNAPL (ft): 66.35' b/c  
 Casing Volume: (a - b) X d<sup>2</sup> X 0.0408 = \_\_\_\_\_ gal 3 Casing Volumes \_\_\_\_\_ gal LNAPL Thickness (ft): 0.32'  
 Charge 7 sec Exhaust 12 sec Strainer Setting 74' b

### PURGE INFORMATION AND FIELD MEASUREMENTS

Time Started: 1420 Time Completed: 15:06 Total Purge Time: 46 min  
 Purge Method: low flow Pump Setting: 78' Total Purge Volume: 23-L

Elapsed Time (Min)	Extraction Rate (ml/min)	Temp (°C)	E.C. (mS/cm)	pH	Turbidity (NTU)	D.O. (mg/l)	ORP (mV)	Odor or Sheen?	Notes
1420	500	27.1	2413	5.93	9.90	6.00	100	no	Clear discharge
1425	"	26.7	2398	6.41	11.1	1.87	122	"	"
1430	"	26.7	2400	6.41	14.2	2.30	122	"	"
1435	"	26.7	2397	6.42	9.75	2.52	129	"	"
1440	"	26.8	2401	6.43	6.09	1.09	117	"	"
1445	"	26.8	2399	6.43	3.96	1.93	48	"	"
1450	"	26.7	2397	6.43	2.57	1.60	16	"	"
1455	"	26.7	2393	6.43	1.50	1.52	-42	"	"

### SAMPLING INFORMATION AND SAMPLE RECORD

Time Started: 1456 Time Completed: 15:11 Sampling Method: grab

Sample No.	Time	Container Type	Volume	No. of Containers	Analysis Method	Preservative	Notes
YC-5	1457	poly	1L	1	Alc Cl Mg SO <sub>4</sub>	none	
↓	1456	VOA	40ml	3	9260	HCl	
↓	1456	VOA	↓	↓	Meth/ETH	↓	
↓	1456	Ambion VOA	↓	↓	TOL	↓	
Ferrous	1504	—	10ml	—	Spectro	—	0.11 mg/L
Sulfide	1511	—	10ml	—	Spectro	—	4 µg/L

### QUALITY CONTROL SAMPLE RECORD

Orig. Sample No.	QC Sample Type	QC Sample No.	Time	Analysis Method	Notes