IN-SITU LOW FLOW LOGS

Off-Post Low Flow Set Up

At off-post privately owned wells a faucet splitter is used to allow the pump to purge a large volume of water while collecting field parameters from the purged water. One side of the splitter is placed at a manageable volume for the Troll 9000 to record the parameters. The other side of the splitter is left at a full flow rate to allow water purging.

Low Flow Logs

The attached logs include data collected by the Troll 9000. Each log includes Project Information, Pump Information, Well Information, and Pumping Volume Information. Most of the data required to populate these fields are not available from the owners of the wells. Stabilization settings were left at zero because every well will stabilize at different levels. The low-flow stabilization summary shows the last five measurements collected before the sample is collected. As the measurements stabilize to within 10% of the previous reading, the well is properly purged and formation water is being pumped to surface. At that time the sample can be collected.

Project Information:		**Pump Information:**	
Operator Name	SE_CB	Pump Model/Type	
Company Name	Parsons	Tubing Type	
Project Name	CSSA Quarterly Groundwater Monitoring	Tubing Diameter	0 [in]
Site Name	Camp Stanley Storage Activity	Tubing Length	0 [ft]
		Pump placement from TOC	0 [ft]

Well Information:		**Pumping information:**	
Well Id	JW-7	Final pumping rate	0 [mL/min]
Well diameter	0 [in]	Flowcell volume	117 [mL]
Well total depth	0 [ft]	Calculated Sample Rate	3510 [sec]
Depth to top of screen	0 [ft]	Sample rate	20 [sec]
Screen length	0 [in]	Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [uS/cm]	Turb [NTU]	DO [ug/L]	ORP [mV]
Stabilization Settings			+/-0	+/-0	+/-0	+/-0	+/-0
Last 5 Readings	12:34:00	71.57	6.78	1.38	18.79	15717.96	289.39
	12:34:21	71.39	6.77	1.38	30.58	16105.13	294.01
	12:34:42	71.28	6.76	1.38	10.23	15044.96	298.41
	12:35:01	71.17	6.75	1.38	15.55	14892.76	301.54
	12:35:22	70.79	6.73	1.38	12.46	15335.50	304.53
Variance in last 3 readings		-0.11	-0.01	0.00	-20.35	-1060.16	4.40
		-0.12	-0.01	0.00	5.32	-152.21	3.12
		-0.37	-0.03	0.00	-3.08	442.75	2.99

Project Information:		**Pump Information:**	
Operator Name	SE_KC	Pump Model/Type	
Company Name	Parsons	Tubing Type	
Project Name	CSSA Quarterly Groundwater Monitoring	Tubing Diameter	0 [in]
Site Name	Camp Stanley Storage Activity	Tubing Length	0 [ft]
		Pump placement from TOC	0 [ft]

Well Information:		**Pumping information:**	
Well Id	LS-5	Final pumping rate	0 [mL/min]
Well diameter	0 [in]	Flowcell volume	117 [mL]
Well total depth	0 [ft]	Calculated Sample Rate	3510 [sec]
Depth to top of screen	0 [ft]	Sample rate	15 [sec]
Screen length	0 [in]	Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [uS/cm]	Turb [NTU]	DO [ug/L]	ORP [mV]
Stabilization Settings			+/-0	+/-0	+/-0	+/-0	+/-0
Last 5 Readings	9:43:13	71.81	6.75	774.99	0.31	523.14	-65.70
	9:43:29	72.01	6.75	776.57	0.21	481.27	-62.79
	9:43:44	72.14	6.75	777.89	0.20	453.61	-60.69
	9:43:59	72.24	6.75	778.82	0.20	436.91	-59.15
	9:44:15	72.32	6.75	779.49	0.16	425.64	-58.00
Variance in last 3 readings		0.13	0.00	1.32	-0.01	-27.66	2.09
		0.10	0.00	0.93	0.00	-16.71	1.54
		0.08	0.00	0.67	-0.04	-11.26	1.15

Project Information:		**Pump Information:**	
Operator Name	SE_KC	Pump Model/Type	
Company Name	Parsons	Tubing Type	
Project Name	CSSA Quarterly Groundwater Monitoring	Tubing Diameter	0 [in]
Site Name	Camp Stanley Storage Activity	Tubing Length	0 [ft]
		Pump placement from TOC	0 [ft]

Well Information:		**Pumping information:**	
Well Id	OFR-3	Final pumping rate	0 [mL/min]
Well diameter	0 [in]	Flowcell volume	117 [mL]
Well total depth	0 [ft]	Calculated Sample Rate	3510 [sec]
Depth to top of screen	0 [ft]	Sample rate	15 [sec]
Screen length	0 [in]	Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [uS/cm]	Turb [NTU]	DO [ug/L]	ORP [mV]
Stabilization Settings			+/-0	+/-0	+/-0	+/-0	+/-0
Last 5 Readings	10:20:09	74.18	6.82	574.18	0.19	5325.07	165.38
	10:20:24	72.89	6.82	568.10	0.04	5468.88	165.17
	10:20:40	71.85	6.80	562.29	0.16	5457.03	165.55
	10:20:56	71.62	6.80	560.42	0.14	5359.17	165.60
	10:21:11	71.59	6.80	560.49	0.02	5328.65	165.68
Variance in last 3 readings		-1.04	-0.02	-5.81	0.12	-11.85	0.39
		-0.23	0.00	-1.87	-0.01	-97.85	0.04
		-0.03	0.01	0.07	-0.12	-30.52	0.09

Project Information:		**Pump Information:**	
Operator Name	SE_KC	Pump Model/Type	
Company Name	Parsons	Tubing Type	
Project Name	CSSA Quarterly Groundwater Monitoring	Tubing Diameter	0 [in]
Site Name	Camp Stanley Storage Activity	Tubing Length	0 [ft]
		Pump placement from TOC	0 [ft]

Well Information:		**Pumping information:**	
Well Id	OFR-2	Final pumping rate	0 [mL/min]
Well diameter	0 [in]	Flowcell volume	117 [mL]
Well total depth	0 [ft]	Calculated Sample Rate	3510 [sec]
Depth to top of screen	0 [ft]	Sample rate	10 [sec]
Screen length	0 [in]	Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [uS/cm]	Turb [NTU]	DO [ug/L]	ORP [mV]
Stabilization Settings			+/-0	+/-0	+/-0	+/-0	+/-0
Last 5 Readings	11:08:14	71.40	6.79	610.89	25.57	6916.81	123.00
	11:08:25	71.41	6.78	610.56	25.05	6992.10	123.94
	11:08:36	71.43	6.78	610.65	27.15	7009.73	123.85
	11:08:46	71.55	6.78	611.71	23.97	7042.07	124.20
	11:08:58	71.55	6.79	611.63	33.61	7041.22	124.24
Variance in last 3 readings		0.02	0.00	0.08	2.10	17.63	-0.09
		0.12	0.00	1.06	-3.17	32.35	0.34
		0.00	0.01	-0.08	9.64	-0.86	0.04

Project Information:		**Pump Information:**	
Operator Name	SE_KC	Pump Model/Type	
Company Name	Parsons	Tubing Type	
Project Name	CSSA Quarterly Groundwater Monitoring	Tubing Diameter	0 [in]
Site Name	Camp Stanley Storage Activity	Tubing Length	0 [ft]
		Pump placement from TOC	0 [ft]

Well Information:		**Pumping information:**	
Well Id	LS-7	Final pumping rate	0 [mL/min]
Well diameter	0 [in]	Flowcell volume	117 [mL]
Well total depth	0 [ft]	Calculated Sample Rate	3510 [sec]
Depth to top of screen	0 [ft]	Sample rate	15 [sec]
Screen length	0 [in]	Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [uS/cm]	Turb [NTU]	DO [ug/L]	ORP [mV]
Stabilization Settings			+/-0	+/-0	+/-0	+/-0	+/-0
Last 5 Readings	9:32:58	72.11	6.38	655.78	0.06	5028.65	245.96
	9:33:13	72.06	6.38	655.31	0.04	4923.45	248.10
	9:33:28	72.02	6.37	654.93	0.17	4797.49	250.58
	9:33:43	72.01	6.37	654.74	-0.03	4772.46	251.05
	9:33:59	71.98	6.36	654.55	0.09	4631.87	253.27
Variance in last 3 readings		-0.04	-0.01	-0.38	0.13	-125.96	2.48
		-0.01	0.00	-0.19	-0.20	-25.03	0.47
		-0.03	-0.01	-0.19	0.12	-140.59	2.22

Project Information:		**Pump Information:**	
Operator Name	SE_KC	Pump Model/Type	
Company Name	Parsons	Tubing Type	
Project Name	CSSA Quarterly Groundwater Monitoring	Tubing Diameter	0 [in]
Site Name	Camp Stanley Storage Activity	Tubing Length	0 [ft]
		Pump placement from TOC	0 [ft]

Well Information:		**Pumping information:**	
Well Id	RFR-10	Final pumping rate	0 [mL/min]
Well diameter	0 [in]	Flowcell volume	117 [mL]
Well total depth	0 [ft]	Calculated Sample Rate	3510 [sec]
Depth to top of screen	0 [ft]	Sample rate	15 [sec]
Screen length	0 [in]	Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [uS/cm]	Turb [NTU]	DO [ug/L]	ORP [mV]
Stabilization Settings			+/-0	+/-0	+/-0	+/-0	+/-0
Last 5 Readings	11:33:19	72.91	6.73	658.15	2.95	8062.07	254.31
	11:33:35	73.07	6.73	658.43	5.44	7730.96	253.36
	11:33:50	73.09	6.74	657.39	3.95	7254.91	252.60
	11:34:05	73.05	6.74	656.92	4.42	6663.58	251.91
	11:34:22	73.02	6.74	656.92	4.87	6230.46	251.36
Variance in last 3 readings		0.01	0.00	-1.04	-1.49	-476.06	-0.77
		-0.04	0.00	-0.47	0.47	-591.33	-0.68
		-0.03	0.00	0.00	0.45	-433.11	-0.56