

Appendix C: WRIA 35 Monitoring Data

Date	Site	Time	Air	Water	Fecal (/100 mL)	TPN (mg/L)	Ammonia (mg/L)	Phosphorus (mg/L)	TSS (mg/L)	Observations
			Temp (°C)	Temp (°C)						
4/23/2002	LD1	9:00		8	272					water a little turbid
	ND2	9:22		8	56					water clear
	SD3	9:28		8	42					water clear
	PAT1	10:11		10	104					water a little turbid
	PAT2	10:30		8	320					barn next to creek
	PAT3	10:54		8	340					water slightly turbid; barnyard up & down stream
	PAT6	11:17		5	20					Duplicate site; new site; fast, slightly turbid water
	ALP2	12:00		10	22					spilled first bottle
	ALP4	12:22		10	208					new site; after confluence w/ Page Cr.?
5/7/2002	LD1	9:10	5	8	920					few cows downstream; clear water
	ND2	9:33	3.5	8	190					clear water; tall grass along bank
	SD3	9:41	3	7	460					clear water; stream is shallow & wide; lots of shade
	PAT1	10:25	3	6.5	158					fast water; algae on bottom of culvert; bottle rinsed
	PAT2	10:46	3	5	196					water has a green tint (due to aquatic veg?); no cows
	PAT3	11:05	3	5	200					few trees planted; no cows in barnyard; water eddying at REW
	PAT6	11:40	1.5	3.5	40					Duplicate site; fast, clear water; grass growing
	ALP2	12:08	7	9	104					stream wide & shallow at bridge; cobble bed; clear water
	ALP4	12:24	6.5	9	2600					stream wide & shallow at bridge; cobble bed; clear water
5/21/2002	LD1	9:12	12	12	800	1.590	0.068	0.114	22	cows up & downstream; grass grazed down; fresh cow pie along bank
	ND2	9:43	11	12	420	1.680	0.016	0.099	18	tall grass along stream; no grazing at the site; water clear
	SD3	10:00	11	12	1020	1.600	0.026	0.134	5	heard a bird - pheasant or chuckar; saw a deer heading toward creek
	PAT1	10:43	14	12.5	430	0.588	0.027	0.156	24	water slightly turbid; cows on pasture away from creek
	PAT2	11:14	14	11	620	0.615	0.028	0.164	37	no grazing up or downstream; water slightly turbid
	PAT3	11:38	12	10	310	0.657	0.026	0.170	63	cows in barnyard corral away from stream; water slightly turbid; no grazing up or downstream
	PAT6	12:16	10	8	140	0.144	0.017	0.088	35	spring crop and summer fallow upstream; water slightly turbid
	ALP2	12:45	11	12	180	0.609	0.021	0.064	18	recently oiled the road & oiled bridge, too; clear water
	ALP4	13:04	14	12	3900	0.897	0.049	0.079	24	water level up from last time; shaded riparian area, but grass is grazed

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6/4/2002	LD1	9:00	24	17	1570					bare soil on REW bank; pile of tumbleweeds in the creek; cows in downstream part of pasture
	ND2	9:30	21	15	550					deer ran from the site; no grazing; tall grass & trees at the site
	SD3	9:43	23	16	640					heavily shaded site, but some sun reaches the creek surface; upstream is not shaded
	PAT1	10:23	25	18	460					bucket rinsed; turbid water; dozens of swallows present; sample taken on downstream LEW
	PAT2	10:44	23	17	450					water turbid; no grazing or cows in the barnyard, but it had been sprayed; an owl flew away from the site into nearby trees
	PAT3	10:55	17	16.5	570					cows in pasture on upstream REW & drinking from the creek; bare soil next to culvert on REW; water slightly turbid
	PAT6	11:40	23	14	108					water is deeper this month; water is slightly turbid; some bank erosion downstream
	ALP2	12:01	23	17	296					looks the same as 2 weeks ago; talked w/ Sam Ledgerwood; oil soaked in road, but is puddled up in some spots
	ALP4	13:18	27	18	780					shallow stream; some bare soil on REW; cows are further downstream
6/18/2002	LD1	9:46	17	16	600	1.210	0.017	0.139	18	oil-like sheen on water surface; no cows in entire pasture
	ND2	10:17	17	14	1650	1.660	0.014	0.156	12	grass is tall & hiding much of the stream; some seed/pollen was captured in w/ the samples (esp. the TSS)
	SD3	10:31	17	15	1420	0.687	0.016	0.102	4	the road next to the creek upstream has been recently improved & used; water clear & shaded
	PAT1	11:21	19	17	168	0.647	0.016	0.18	5	the grass is tall; there is a pool just downstream of culvert; swallows still present
	PAT2	11:47	19	16	660	0.834	0.017	0.207	19	water hemlock blooming; an owl flew from under the bridge; water slightly turbid
	PAT3	12:10	21	16	~500	1.360	0.16	0.472	108	water very turbid - the area received large amount of rain in short time; cows back in barnyard & not pasture
	PAT6	13:09	17	15	530	0.220	0.013	0.101	12	water slightly turbid, so source of PAT3 turbidity is between these sites;
	ALP2	13:48	17	14	450	0.526	0.012	0.083	26	water slightly turbid; it must have rained hard-I can see areas that washed on sides of the roads
	ALP4	14:07	21	16	920	0.655	0.015	0.096	47	no cows along stream; site looks the same as last time, but maybe new fencing on downstream side of bridge

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7/9/2002	LD1	9:19	29	18	320					no cows in pasture; small trees shading creek; sediment substrate; clear H2O
	ND2	9:41	24.5	15	188					grass shading stream; deer standing in H2O downstream; no grazing
	SD3	9:57	28	16	160					dropped bottle, so got another bottle; riparian tree upstream died
	PAT1	10:46	27	16	180					cows 1 mile upstream; water level down; clear water; lrg. cobble substrate
	PAT2	11:07	27	15.5	208					no cows; slow moving water; some aquatic veg.; lower flow; cr. shaded by grass
	PAT3	11:26	28	16	380					cows in pasture along cr., but none next to creek; periphyton upstream
	PAT6	12:03	27	16.5	108					clear water; small cobble substrate; a few fingerling fish seen; cr. shaded by grass
	ALP2	12:30	28	17.5	240					wide & shallow stream; good flow; cobble substrate; willows weeping
	ALP4	13:30	29.5	18.5	320					clear water; cobble bottom; good flow; no grazing, but soils compacted
7/23/2002	LD1	9:02	28	20	316	2.170	0.03	0.136	38	water slow; small fish present; more aquatic veg., no cows
	ND2	9:35	32	17	390	1.320	0.013	0.85	10	good flow; took flow on downstream side this time
	SD3	9:51	25	18.5	450	0.643	0.02	0.096	28	very low flow - some sediment mixed with sample; air temp taken under the bridge
	PAT1	10:37	29	22	92	0.195	0.023	0.157	2	water level is lower and is not flowing as fast (flow was estimated at 2.45)
	PAT2	11:13	34	21	80	0.438	0.025	0.186	9	water lower and slower; still lots of periphyton; clear water
	PAT3	11:38	29	19	820	1.350	0.018	0.273	15	better flow; periphyton mat appeared bigger; water level the same (?); rubbed the mouth of the fecal bottle on a rock
	PAT6	12:17	31	20	148	0.475	0.023	0.089	6	grass seed in the sample; water lower; clear water; broke thermometer so had to buy a new one
	ALP2	13:18	30	20	460	0.462	0.01	0.065	16	looks the same as 2 weeks ago; flow is good; water level the same?
	ALP4	13:40	36	22	480	0.628	0.019	0.107	34	water appears a little lower; water slightly turbid; no cows

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8/6/2002	LD1	9:14	20.3	15.3	230					very, very low flow; lots of duckweed; creek is dry further downstream; no cows; air temp probably not stabilized long enough & influenced by heat in car
	ND2	9:35	16.7	14.3	310					good flow; grass still shades the creek
	SD3	9:44	14.6	14.2	320					more water than 2 weeks ago (covered the fecal bottle) - the area must have received some precip.
	PAT1	10:22	16.2	15.8	220					had to rinse fecal bottle; water level higher; cows in pasture 1 mile upstream
	PAT2	10:43	15.9	15.7	730					old, abandoned cutbank failure upstream REW above current stream bank - the sediment did not reach the creek
	PAT3	10:59	15.5	14.8	480					no cows; took sample by hand; otherwise site looks the same
	PAT6	11:34	16.2	13.5	200					water level a little lower than the fecal bottle; water clear
	ALP2	12:00	17.6	15.9	250					rocks wet about 2" above water surface - a rain storm must have come through; water level higher than last time
	ALP4	12:17	17.2	16.1	2850					water level higher here as well; no cows (they were being worked by the house)
8/20/2002	LD1	9:20	19.3	16.4	248	0.783	0.013	0.102	9	water level a little higher, but creek is still dry downstream; riparian and aquatic vegetation larger; clear water
	ND2	9:52	20.4	15.1	208	1.230	0.01	0.095	8	good flow; otherwise the site looks the same
	SD3	10:07	20.5	15.0	148	0.449	0	0.07	0	took water sample upstream side of bridge; water level back down to where it was 7/23; water clear; otherwise everything appears the same at the site
	PAT1	10:56	20.1	17.8	330	0.221	0.012	0.143	2	some green algae and foam floating on water surface just past the end of the culvert; water level up slightly
	PAT2	11:18	20.6	17	160	0.470	0.013	0.19	2	water level lower; creek almost choked with aquatic vegetation; duckweed on surface
	PAT3	11:39	21	15.7	236	1.610	0.011	0.299	8	cows in upstream barnyard on LEW - no access to the creek, but it is sloped toward the creek; clear water; water level may be a little higher
	PAT6	12:17	20.2	14.8	68	0.575	0.012	0.106	9	water level lower - had to tip over fecal sampler

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8/20/02 continued	ALP2	12:43	20	17.8	116	0.410	0	0.087	10	good flow; site appears the same
	ALP4	13:00	22.1	17.5	144	0.545	0	0.081	8	someone cleared away dead branches/trees from riparian area, otherwise the site appears the same
9/10/2002	LD1	9:07	24	15	132					vegetation is larger; riparian vegetation completely shades the creek upstream
	ND2	9:27	22	15	220					looks the same; took sample on downstream side of bridge
	SD3	9:36	26	14	124					water level low; can barely see the water flowing; took sample on upstream side
	PAT1	10:14	28	14	110					several fish in pool downstream of the culvert (is the culvert a barrier?); took sample upstream of culvert
	PAT2	10:31	28	14	2200					water level low; flow is barely visible; took sample on downstream side of bridge
	PAT3	10:47	31	15	284					water level may be slightly higher; cows not present on REW, and only 5 or so were in the barnyard upstream LEW
	PAT6	11:19	25	13	200					water level about the same; water clear
	ALP2	11:46	25	15	2900					looks the same as 2 wks ago; some trash on downstream left bank
9/24/2002	ALP4	12:01	30	15	256					looks the same as 2 wks ago; stream still shaded
	LD1	8:59	17	11	152	1.040	0	0.081	7	upstream choked with aquatic vegetation; shallow water; flow barely visible but better than 2 weeks ago
	ND2	9:21	18	16	208	1.320	0	0.087	5	good flow; still lots of grass along the stream banks; took sample on downstream side of bridge
	SD3	9:38	20	10	48	0.473	0	0.066	1	trees starting to turn color; took sample on upstream side of bridge; low flow
	PAT1	10:20	20	10	200	0.154	0	0.131	0	water level is a little higher; clear water
	PAT2	10:41	24	12	276	1.050	0	0.194	0	looks the same as 2 weeks ago; lots of aquatic vegetation under water surface
	PAT3	11:00	27	12	52	1.510	0	0.27	1	good flow; cows can't access stream on REW, but still some cows in barnyard on LEW away from creek
	PAT6	11:31	25	11	40	0.725	0	0.111	5	water level is low; lots of bugs on water surface; looks the same as 2 weeks ago

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9/24/02 continued	ALP2	11:58	21	14	340	0.556	0	0.106	16	clear water with good flow; stream is wide and shallow
	ALP4	12:16	21	14	5000	0.749	0	0.117	17	wide and shallow creek; flow still low but fairly fast; more tree limbs in the creek
10/8/2002	LD1	9:06	16	11	56					leaves changing color; higher and faster flow; cows in barnyard upstream
	ND2	9:26	21	12	164					some grass is on the water surface; water level may be higher; trails through the grassy pasture on REW due to humans??
	SD3	9:35	21	10	4					water slightly higher and faster; took 2 samples since the first bottle was rinsed and contained sediment; took the sample on the downstream side of the bridge.
	PAT1	10:17	19	11	38					water level higher; saw several thumb sized fish; rinsed duplicate fecal bottle
	PAT2	10:38	20	12	332					creek choked with aquatic vegetation; grass from the banks fallen onto water surface; otherwise the same
	PAT3	10:57	20	12	480					water still cold; level appears the same; several mats of periphyton on streambed; cows upstream and downstream LEW in barnyard don't have access to the creek
	PAT6	11:32	21	10	32					took sample downstream side of bridge due to clumps of vegetation upstream; grass completely shades the creek downstream of the bridge
	ALP2	11:57	21	12	284					site looks the same: water level still low; coke cup and trash still there
	ALP4	12:21	20	13	2350					water level higher; otherwise the stream looks the same

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10/22/2002	LD1	8:54	10	8	58	1.11	0	0.076	3	Water level higher and flow is visible; aquatic veg slowing flow upstream of the bridge; most leaves have fallen off riparian veg.
	ND2	9:20	8	11	72	1.31	0	0.088	4	Water level is higher and seems faster; a fence has been constructed and extends across the creek, but no livestock is present; the creek is easily visible since the grass on the stream banks has fallen over
	SD3	9:33	11	7	9	0.468	0	0.059	0	water level up significantly; flow may be faster; abundance of dead leaves in the water
	PAT1	10:15	19	7	25	0.466	0	0.102	0	flow is a little higher, otherwise the site looks the same; found puppy!
	PAT2	10:47	18	9	98	1.15	0	0.183	0	site looks the same; grass upstream of bridge and other veg starting to fade
	PAT3	11:11	16	9	290	1.38	0	0.254	0	cows had been in the pasture along the creek, but grass remained so it was not grazed for very long; creek looks the same otherwise
	PAT6	11:46	16	8	50	0.681	0	0.1	4	site and water level look the same
	ALP2	12:14	17	11	60	0.542	0	0.089	9	site looks the same as 2 weeks ago; flow still appears the same
	ALP4	12:37	17	11	5550	0.723	0	0.092	5	site looks the same: wide and shallow stream; no activity in the pasture
11/5/2002	LD1	8:52	3	0	15					Creek frozen over w/ thick ice (had to break ice); ~ 10 cows in pasture downstream REW
	ND2	9:12	6	8	23					1 cow in pasture that includes the creek; stream not frozen
	SD3	9:21	6	1	13					Creek frozen over w/ thick ice; had to take the sample further downstream where the ice was thinner and easier to break; a lot of leaves in & around creek

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11/5/02 continued	PAT1	10:02	7	0	52					creek frozen along banks (thalweg not frozen through culvert); flow still up
	PAT2	10:23	5	0	58					creek frozen, so had to break ice; hard to tell if the water is deeper
	PAT3	10:43	9	4	20					creek not frozen; periphyton turning brown; ~ 24 cows on upstream LEW
	PAT6	11:18	6	2	6					creek frozen along LEW bank, otherwise the stream is flowing w/ no ice; water level is still low
	ALP2	11:40	9	6	24					water level is up slightly, but still lower than the fecal sampler; patch of ice along the bank; the road is a little muddy
	ALP4	12:00	7	5	1100					flow a little higher; no ice; no cows in the pasture; saw a few spots of foam against LWD in middle of the creek upstream
11/18/2002	LD1	9:06	12	7	7	1.660	0.018	0.078	2	creek is full of tumbleweeds downstream; water level is higher; no ice; some green aquatic veg. still upstream; ~ 6 cows in pasture downstream
	ND2	9:28	8	10	14	1.510	0	0.085	1	no ice; site looks the same; more grass trampled down in the pasture, but not too bad; I didn't see the cow
	SD3	9:41	9	2	2	0.836	0	0.052	0	water level the same; no ice but very cold water; many leaves in and along the creek; lots of sediment in the fecal bottle
	PAT1	10:24	11	6	172	0.968	0	0.132	0	site looks the same; ended up rinsing the fecal bottle
	PAT2	10:44	12	6	42	1.090	0	0.153	0	water level is higher; no ice; lots of grass/ aquatic veg. in the creek
	PAT3	11:03	11	7	33	1.630	0	0.189	2	cows in pasture at the site for ~ 2 wks.; still some green aquatic veg.
	PAT6	11:46	9	6	1	0.652	0	0.084	0	site looks the same; took sample on downstream side of bridge
	ALP2	12:16	10	8	38	0.579	0	0.075	5	site looks the same
ALP4	12:37	9	8	128	0.699	0	0.075	4	site looks the same; can see where cattle are penned up away from the creek	

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12/3/2002	LD1	9:08	3	3	27					flow appears a little faster & level appears a little higher; saw a tire & pop can along the creek upstream; no cows; still a little green aquatic veg remaining
	ND2	9:27	3	8	15					frost on all the vegetation; riparian vegetation has fallen into the creek in some spots; clear water; I didn't see the cow
	SD3	9:35	2	4	3					water level about the same; pop cans in the water; a few dead tree limbs in the water; clear water
	PAT1	10:16	5	2	88					frost & snow on cement around the culvert; water level appeared to be slightly higher; rinsed the fecal bottle since lots of sediment was captured in the first sample
	PAT2	10:39	3	3	106					deep pool on downstream side of bridge; can see parts of the creek bottom in spots now; clear water; aquatic veg still green downstream
	PAT3	10:54	3	4	98					water level a little higher; no cows at the site, but paths are worn with some bank trampling & manure along the banks; cows in pen upstream LEW
	PAT6	11:34	1	3	12					snow on the bridge; water is shallow, but about the same as last time; otherwise sight looks the same as last time
	ALP2	11:59	4	6	76					creek looks the same; clear water; something smells bad - perhaps rotting leaves or ???
	ALP4	12:17	5	6	320					site looks the same; no cows; clear water; water level about the same (same height on the sampler)

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12/17/2002	LD1	9:21	2	6	10	2.240	0	0.122	16	tumbleweeds have covered the creek; 8 bulls in pasture downstream; water slightly turbid, but can see the bottom where vegetation has been washed away; still some green aquatic vegetation
	ND2	9:47	3	3	73	1.600	0	0.087	3	can see more of the creek bed since the grass has been washed against the banks; cow is not in the pasture; water is colder than 2 weeks ago; good flow
	SD3	9:57	8	4	100	1.710	0	0.125	5	foam on water surface in front of rocks downstream; clear water; can see the leaves on the creek bed; may be a few more branches in the water
	PAT1	10:38	13	5	148	1.700	0	0.223	2	thermometer was in the sun; site looks the same; water level may be a tad higher, but the water hasn't covered the swallow droppings in the culvert yet; water is slightly turbid
	PAT2	10:56	14	5	44	1.410	0	0.195	1	site looks the same; can see more of the creek bed upstream since grass has been washed against the banks; thermometer in the sun
	PAT3	11:54	11	5	16	1.600	0	0.202	1	more cows may have had access to the creek but are no longer present (stubble height lower & more bank trampling); water is clear; cows are in the corral away from the creek upstream LEW
	ALP2	12:50	8	6	56	0.758	0	0.093	16	water level looks like it was higher at some point; water slightly turbid otherwise the site looks the same; the road was graded and is now a little muddy
	ALP4	13:10			1450	0.976	0	0.104	7	site looks the same; water may be a little more turbid than 2 wks ago; cows upstream may have access to part of the creek; forgot to record temperatures