

APPENDIX B – WATER QUALITY DATA

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B.0 DATA USED IN DEVELOPMENT OF TMDLS

B.1 Reference Data

Table B-1. Water Quality Data at Reference Sites (see Section 5.6.1)

Monitoring Location	Activity Date	Aluminum	Arsenic	Cadmium	Copper	Iron	Lead	Zinc	Latitude	Longitude
MDEQ_WQ_WQX-M01CABNC03	6/14/2016	26	2	NA	NA	290	NA	NA	44.633	-112.9758
MDEQ_WQ_WQX-M01CABNC03	7/21/2016	NA	2	NA	NA	260	NA	NA	44.633	-112.9758
MDEQ_WQ_WQX-M01CABNC03	8/12/2016	NA	2	NA	NA	240	NA	NA	44.633	-112.9758
MDEQ_WQ_WQX-M01CABNC03	6/5/2017	23	2	0.11	1	180	0.074	1.9	44.633	-112.9758
MDEQ_WQ_WQX-M01CABNC03	7/13/2017	12	2	NA	0.69	425	0.0945	2.25	44.633	-112.9758
MDEQ_WQ_WQX-M01CABNC03	8/15/2017	104	2	0.02	0.78	530	0.12	1.4	44.633	-112.9758
MDEQ_WQ_WQX-M01CABNC03	9/12/2017	NA	3	NA	0.83	520	NA	2.6	44.633	-112.9758
MDEQ_WQ_WQX-M01FISHC01	9/28/2016	23	1	NA	NA	230	0.6	NA	44.70028	-111.91
MDEQ_WQ_WQX-M01FISHC01	6/6/2017	21	2	0.05	2	970	1.4	5.7	44.70028	-111.91
MDEQ_WQ_WQX-M01FISHC01	7/18/2017	15	2	0.02	0.78	170	0.26	2.2	44.70028	-111.91
MDEQ_WQ_WQX-M01FISHC01	7/28/2017	182	1.5	0.025	0.935	430	0.65	2.6	44.70028	-111.91
MDEQ_WQ_WQX-M01FISHC01	8/16/2017	179	2	0.02	0.72	230	0.4	1.6	44.70028	-111.91
MDEQ_WQ_WQX-M01FISHC01	8/24/2017	142.5	1	0.02	0.68	160	0.1	2	44.70028	-111.91
MDEQ_WQ_WQX-M01FISHC01	9/7/2017	246.5	2	0.12	0.9	230	0.6	3.2	44.70028	-111.91
MDEQ_WQ_WQX-M01FISHC01	9/28/2017	228.5	0.79	0.03	0.98	240	0.4	2.4	44.70028	-111.91
MDEQ_WQ_WQX-M01FISHC01	6/6/2018	596	2	0.04	2	860	1.1	5	44.70028	-111.91
MDEQ_WQ_WQX-M01FISHC20	6/6/2017	16	2	0.05	1	920	1.2	4.8	44.70303	-111.9325
MDEQ_WQ_WQX-M01FISHC20	7/18/2017	14	2	0.02	0.8	190	0.3	2.9	44.70303	-111.9325
MDEQ_WQ_WQX-M01FISHC20	7/28/2017	120	1	0.02	0.76	350	0.5	2.4	44.70303	-111.9325
MDEQ_WQ_WQX-M01FISHC20	8/16/2017	181.5	2	0.02	2	250	0.4	2.7	44.70303	-111.9325
MDEQ_WQ_WQX-M01FISHC20	8/24/2017	141	1	0.04	0.69	180	0.098	2.4	44.70303	-111.9325
MDEQ_WQ_WQX-M01FISHC20	9/7/2017	168.5	2	0.12	1	200	0.5	2.7	44.70303	-111.9325
MDEQ_WQ_WQX-M01FISHC20	9/28/2017	195	0.77	0.02	0.84	220	0.3	3	44.70303	-111.9325
MDEQ_WQ_WQX-M01LONGC04	6/6/2017	15	1	0.05	1	530	0.5	3.1	44.71361	-112.077

B.1 Reference Data

Table B-1. Water Quality Data at Reference Sites (see Section 5.6.1)

Monitoring Location	Activity Date	Aluminum	Arsenic	Cadmium	Copper	Iron	Lead	Zinc	Latitude	Longitude
MDEQ_WQ_WQX-M01LONGC04	7/18/2017	NA	0.84	0.02	0.39	90	0.086	1.9	44.71361	-112.077
MDEQ_WQ_WQX-M01LONGC04	7/27/2017	27	0.76	0.02	0.43	19	0.036	1.5	44.71361	-112.077
MDEQ_WQ_WQX-M01LONGC04	8/16/2017	NA	0.8	0.02	0.5	70	0.039	0.6	44.71361	-112.077
MDEQ_WQ_WQX-M01LONGC04	8/23/2017	36	0.85	0.02	0.55	80	0.11	1	44.71361	-112.077
MDEQ_WQ_WQX-M01LONGC04	9/5/2017	22.7	0.91	0.02	0.5	80	0.1	3.9	44.71361	-112.077
MDEQ_WQ_WQX-M01LONGC04	9/27/2017	39.5	0.55	0.03	2	80	0.18	3.4	44.71361	-112.077
MDEQ_WQ_WQX-M01LONGC04	6/6/2018	191.5	0.83	0.03	0.8	350	0.3	3	44.71361	-112.077
MDEQ_WQ_WQX-M01LONGC30	7/27/2017	10	0.84	0.02	0.47	110	0.11	0.7	44.70042	-112.0937
MDEQ_WQ_WQX-M01LONGC30	8/23/2017	47	1	0.02	0.67	100	0.28	2.8	44.70042	-112.0937
MDEQ_WQ_WQX-M01LONGC30	9/27/2017	27.95	0.64	0.02	0.6	80	0.1	1	44.70042	-112.0937
MDEQ_WQ_WQX-M01PRICC01	6/23/2012	15	2	NA	NA	245	NA	NA	44.57417	-112.125
MDEQ_WQ_WQX-M01PRICC01	7/12/2012	15	2	NA	NA	210	NA	NA	44.57417	-112.125
MDEQ_WQ_WQX-M01PRICC01	7/9/2013	NA	3	0.04	1	630	0.6	NA	44.57417	-112.125
MDEQ_WQ_WQX-M01PRICC01	8/28/2017	7.8	1.25	NA	NA	322.5	NA	NA	44.57417	-112.125
MDEQ_WQ_WQX-M01RDRKC60	7/28/2017	42	0.83	0.01	0.64	260	0.16	0.9	44.61847	-111.6066
MDEQ_WQ_WQX-M01RDRKC60	8/24/2017	43	0.64	NA	0.37	90	0.066	1	44.61847	-111.6066
MDEQ_WQ_WQX-M01RDRKC60	9/28/2017	59.5	0.61	NA	0.64	120	0.11	1.1	44.61847	-111.6066
MDEQ_WQ_WQX-M06BLNSC03	6/12/2013	NA	4	NA	NA	NA	NA	6	45.21528	-111.7917
MDEQ_WQ_WQX-M06BLNSC03	7/11/2013	NA	4.5	NA	NA	NA	NA	NA	45.21528	-111.7917
MDEQ_WQ_WQX-M06BLNSC03	8/16/2013	NA	4	NA	NA	NA	NA	7	45.21528	-111.7917
MDEQ_WQ_WQX-M06BLNSC03	9/18/2013	NA	4	NA	NA	NA	NA	7.85	45.21528	-111.7917
MDEQ_WQ_WQX-M06MDWFR04	7/31/2012	NA	NA	NA	NA	390	NA	NA	44.76842	-111.9043
MDEQ_WQ_WQX-M06ODLSC03	6/19/2012	NA	20.5	NA	NA	NA	NA	NA	45.26034	-111.7314
MDEQ_WQ_WQX-M06ODLSC03	7/26/2012	NA	20	NA	NA	NA	NA	NA	45.26034	-111.7314
MDEQ_WQ_WQX-M06ODLSC03	8/27/2012	NA	19.5	NA	NA	NA	NA	NA	45.26034	-111.7314
MDEQ_WQ_WQX-M06ODLSC03	9/17/2013	NA	22	NA	NA	NA	NA	NA	45.26034	-111.7314

B.1 Reference Data

Table B-1. Water Quality Data at Reference Sites (see Section 5.6.1)

Monitoring Location	Activity Date	Aluminum	Arsenic	Cadmium	Copper	Iron	Lead	Zinc	Latitude	Longitude
MTVOLWQM_WQX-OD-RST	7/28/2012	NA	34	NA	NA	60	NA	NA	45.26057	-111.7324
MTVOLWQM_WQX-OD-RST	8/26/2012	NA	34	NA	NA	40	NA	NA	45.26057	-111.7324
MTVOLWQM_WQX-OD-RST	9/23/2012	NA	38	NA	NA	50	NA	NA	45.26057	-111.7324
MTVOLWQM_WQX-OD-RST	7/14/2013	NA	36	NA	NA	NA	NA	NA	45.26057	-111.7324
MTVOLWQM_WQX-OD-RST	8/23/2013	NA	37	NA	NA	NA	NA	NA	45.26057	-111.7324
MTVOLWQM_WQX-OD-RST	9/22/2013	NA	34	NA	NA	NA	NA	NA	45.26057	-111.7324

B.2 TMDL Allocations-Data

Table B-2. Water Quality Data used in Assessment and Development of TMDLs

Monitoring LocationIdentifier	Subwatershed	Date	Latitude	Longitude	Stream Flow (cfs)	Hardness (mg/L)	TSS (mg/L)	Aluminum (µg/L)	Arsenic (µg/L)	Cadmium (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Zinc (µg/L)
MDEQ_WQ_WQX-M02GHPRC02	Grasshopper	7/28/2014	45.493	-113.106	0.37	19	4	NA	1	0.05	4	620	0.9	0.018
MDEQ_WQ_WQX-M02GHPRC03	Grasshopper	7/30/2014	45.426	-113.115	5.1	21	<4	11	1	NA	2	170	<.3	0.008
MDEQ_WQ_WQX-M02GHPRC04	Grasshopper	7/31/2014	45.139	-112.959	41.09	91	7	NA	3	NA	NA	310	<.3	NA
MDEQ_WQ_WQX-M02GHPRC06	Grasshopper	9/9/2014	45.11	-112.802	56.45	118	6	NA	4	NA	1	310	0.4	NA
MDEQ_WQ_WQX-M02GHPRC07	Grasshopper	9/8/2014	45.216	-113.04	18.61	88	<4	NA	4	NA	NA	150	<.3	NA
MTWTRSHD_WQX-BVD-GHC-1	Grasshopper	6/3/2009	45.374	-113.122	160.37	18.7	6	NA	NA	NA	2.1	360	0.4	NA
MTWTRSHD_WQX-BVD-GHC-2	Grasshopper	6/3/2009	45.283	-113.119	182.51	28.2	6	NA	NA	NA	1.7	320	0.3	NA
MTWTRSHD_WQX-BVD-GHC-3	Grasshopper	6/2/2009	45.167	-113.012	1121.23	63.6	24	NA	NA	NA	2.1	800	0.5	NA
MTWTRSHD_WQX-BVD-GHC-4	Grasshopper	6/2/2009	45.145	-112.968	7.18	66.8	35	NA	NA	NA	2.8	1000	1.1	0.006
MTWTRSHD_WQX-BVD-GHC-5	Grasshopper	6/3/2009	45.103	-112.78	332.72	93.4	87.9	NA	NA	0.1	5.4	2100	4.2	0.012
MDEQ_WQ_WQX-M02RATSC04	Lower Rattlesnake	5/27/2015	45.233	-112.782	26.32	54	17	NA	2	0.27	3	560	12.2	0.022
MDEQ_WQ_WQX-M02RATSC04	Lower Rattlesnake	8/24/2015	45.233	-112.782	18.55	13	5	NA	2	0.06	52	190	1.5	0.077
MDEQ_WQ_WQX-M02RATSC08	Lower Rattlesnake	8/21/2014	45.198	-112.751	2.24	89	4	NA	3	0.09	2	240	3.7	0.009
MDEQ_WQ_WQX-M02RATSC08	Lower Rattlesnake	5/27/2015	45.198	-112.751	14.86	53	30	NA	3	0.29	5	830	14.8	0.029

B.2 TMDL Allocations-Data

Table B-2. Water Quality Data used in Assessment and Development of TMDLs

Monitoring Location Identifier	Subwatershed	Date	Latitude	Longitude	Stream Flow (cfs)	Hardness (mg/L)	TSS (mg/L)	Aluminum (µg/L)	Arsenic (µg/L)	Cadmium (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Zinc (µg/L)
MDEQ_WQ_WQX-M02RATSC08	Lower Rattlesnake	7/8/2015	45.198	-112.751	3.62	64	17	NA	3	0.29	2	390	7.6	0.018
MDEQ_WQ_WQX-M02RATSC08	Lower Rattlesnake	8/24/2015	45.198	-112.751	1.61	82	<4	NA	2	0.04	1	150	1.4	NA
MDEQ_WQ_WQX-M02RATSC09	Lower Rattlesnake	9/9/2014	45.182	-112.701	0.04	179	23	NA	3	NA	NA	150	0.4	NA
MDEQ_WQ_WQX-M02RATSC09	Lower Rattlesnake	5/27/2015	45.182	-112.701	0.6	102	12	21	5	0.04	3	590	2.1	0.012
MTWTRSHD_WQX-BVD-RSC-3	Lower Rattlesnake	6/2/2009	45.196	-112.75	20.94	51.2	22	NA	NA	0.2	2.9	390	10	0.016
MDEQ_WQ_WQX-M02STONC01	Lower Stone	9/10/2014	45.322	-112.527	5.64	379	<4	NA	3	NA	1	30	NA	NA
MDEQ_WQ_WQX-M02STONC01	Lower Stone	5/27/2015	45.322	-112.527	2.96	369	6	NA	3	NA	1	160	NA	NA
MDEQ_WQ_WQX-M02STONC01	Lower Stone	7/23/2015	45.322	-112.527	3.97	378	8	NA	3	NA	1	140	NA	NA
MDEQ_WQ_WQX-M02STONC01	Lower Stone	8/26/2015	45.322	-112.527	3.21	364	<4	NA	3	NA	<1	20	NA	NA
MDEQ_WQ_WQX-M02STONC01	Lower Stone	4/20/2017	45.322	-112.527	4.45	344	45	NA	2	0.03	8	300	0.4	0.007
MDEQ_WQ_WQX-M02STONC06	Lower Stone	8/6/2014	45.274	-112.446	0.1	211	<5	16	2	0.03	2	110	NA	NA
MDEQ_WQ_WQX-M02STONC06	Lower Stone	7/14/2015	45.274	-112.446	0.03	199	<4	NA	2	NA	2	90	NA	NA
MDEQ_WQ_WQX-M02STONC06	Lower Stone	4/20/2017	45.274	-112.446	0.96	244	290	183	4	0.2	20	9960	5	0.03
MDEQ_WQ_WQX-M02SPRGC03	Spring	8/19/2014	45.26	-112.357	0.38	171	8	NA	NA	NA	2	290	NA	NA
MDEQ_WQ_WQX-M02SPRGC04	Spring	8/19/2014	45.291	-112.405	1.08	189	<2	NA	2	NA	1	40	NA	NA

B.2 TMDL Allocations-Data

Table B-2. Water Quality Data used in Assessment and Development of TMDLs

Monitoring Location Identifier	Subwatershed	Date	Latitude	Longitude	Stream Flow (cfs)	Hardness (mg/L)	TSS (mg/L)	Aluminum (µg/L)	Arsenic (µg/L)	Cadmium (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Zinc (µg/L)
MDEQ_WQ_WQX-M02SPRGC04	Spring	5/28/2015	45.291	-112.405	1.12	208	30	NA	1	NA	2	690	0.6	NA
MDEQ_WQ_WQX-M02SPRGC05	Spring	8/21/2014	45.38	-112.449	0.58	553	<4	NA	10	NA	2	60	NA	NA
MDEQ_WQ_WQX-M02SPRGC05	Spring	5/28/2015	45.38	-112.449	0.06	526	<4	NA	9	NA	2	30	NA	NA
MDEQ_WQ_WQX-M02SPRGC05	Spring	7/6/2015	45.38	-112.449	0.91	427	18	NA	7	NA	1	340	NA	NA
MDEQ_WQ_WQX-M02SPRGC06	Spring	8/21/2014	45.335	-112.449	2.99	328	<4	NA	4	NA	1	50	NA	NA
MDEQ_WQ_WQX-M02SPRGC06	Spring	5/28/2015	45.335	-112.449	3.56	329	64	NA	3	0.03	3	1460	1.1	0.008
MDEQ_WQ_WQX-M02STELC01	Steel	7/13/2004	45.334	-113.1	0.05	230	3820	NA	22	0.5	15	35680	3.8	0.1
MTWTRSHD_WQX-BVD-STL-1	Steel	6/4/2009	45.334	-113.106	NA	NA	38.2	NA	1.6	NA	NA	NA	NA	NA
MDEQ_WQ_WQX-M02RATSC05	Upper Rattlesnake	7/31/2014	45.278	-112.85	33.06	59	26	NA	3	0.24	4	360	19.8	0.035
MDEQ_WQ_WQX-M02RATSC06	Upper Rattlesnake	8/20/2014	45.249	-112.801	13.53	82	4	NA	2	0.12	2	140	4.1	0.011
MDEQ_WQ_WQX-M02RATSC06	Upper Rattlesnake	8/24/2015	45.249	-112.801	15.51	68	<4	NA	2	0.1	1	130	2.9	0.008
MDEQ_WQ_WQX-M02RATSC07	Upper Rattlesnake	8/20/2014	45.347	-112.945	10.34	25	<4	NA	NA	NA	NA	70	<.3	NA
MDEQ_WQ_WQX-M02RATSC11	Upper Rattlesnake	8/24/2015	45.322	-112.942	14.59	24	<4	NA	NA	NA	NA	100	<.3	NA
MTWTRSHD_WQX-BVD-RSC-1	Upper Rattlesnake	6/3/2009	45.321	-112.941	63.48	12.1	2.8	NA	NA	NA	0.7	190	0.1	NA
MTWTRSHD_WQX-BVD-RSC-2	Upper Rattlesnake	6/22/2009	45.284	-112.871	134.17	37.2	7	NA	NA	NA	0.8	310	2.8	NA

B.2 TMDL Allocations-Data

Table B-2. Water Quality Data used in Assessment and Development of TMDLs

Monitoring Location Identifier	Subwatershed	Date	Latitude	Longitude	Stream Flow (cfs)	Hardness (mg/L)	TSS (mg/L)	Aluminum (µg/L)	Arsenic (µg/L)	Cadmium (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Zinc (µg/L)
MDEQ_WQ_WQX-M02STONC03	Upper Stone	8/6/2014	45.257	-112.416	0.65	230	8	NA	2	NA	1	420	NA	NA
MDEQ_WQ_WQX-M02STONC03	Upper Stone	5/27/2015	45.257	-112.416	1.71	226	101	NA	2	0.05	8	4080	1.8	0.014
MDEQ_WQ_WQX-M02STONC03	Upper Stone	7/22/2015	45.257	-112.416	0.27	245	11	NA	2	0.03	1	320	NA	NA
MDEQ_WQ_WQX-M02STONC03	Upper Stone	8/25/2015	45.257	-112.416	0.21	231	6	NA	2	NA	1	220	NA	NA
MDEQ_WQ_WQX-M02STONC04	Upper Stone	8/6/2014	45.217	-112.369	1.42	213	20	NA	1	NA	2	860	NA	NA
MDEQ_WQ_WQX-M02STONC04	Upper Stone	5/27/2015	45.217	-112.369	2.04	191	31	NA	2	NA	3	1730	0.5	NA
MDEQ_WQ_WQX-M02STONC04	Upper Stone	7/22/2015	45.217	-112.369	2.04	222	10	NA	1	0.03	1	350	NA	NA
MDEQ_WQ_WQX-M02STONC04	Upper Stone	8/25/2015	45.217	-112.369	0.71	227	36	NA	2	NA	2	1280	0.4	NA
MDEQ_WQ_WQX-M02STONC05	Upper Stone	8/6/2014	45.242	-112.398	1.77	230	26	NA	2	0.03	2	1030	0.4	NA
MDEQ_WQ_WQX-M02STONC05	Upper Stone	7/16/2015	45.242	-112.398	0.95	225	20	NA	2	NA	4	780	0.4	NA
MDEQ_WQ_WQX-M02STONC05	Upper Stone	8/25/2015	45.242	-112.398	0.58	237	6	NA	2	NA	NA	250	NA	NA
MDEQ_WQ_WQX-M02WLMNC01	Wellman	7/29/2014	45.451	-113.08	1	97	14	35	1	0.12	3	120	0.8	0.047
MDEQ_WQ_WQX-M02WLMNC01	Wellman	5/27/2015	45.451	-113.08	0.2	72	4	NA	1	0.12	4	150	0.9	0.041
MDEQ_WQ_WQX-M02WLMNC02	Wellman	7/29/2014	45.444	-113.086	0.02	80	<4	34	2	0.23	13	70	NA	0.126
MDEQ_WQ_WQX-M02WLMNC02	Wellman	5/27/2015	45.444	-113.086	0.3	62	<4	166	6	0.58	48	740	3.3	0.219

B.2 TMDL Allocations-Data

Table B-2. Water Quality Data used in Assessment and Development of TMDLs

Monitoring Location Identifier	Subwatershed	Date	Latitude	Longitude	Stream Flow (cfs)	Hardness (mg/L)	TSS (mg/L)	Aluminum (µg/L)	Arsenic (µg/L)	Cadmium (µg/L)	Copper (µg/L)	Iron (µg/L)	Lead (µg/L)	Zinc (µg/L)
MDEQ_WQ_WQX-M02WLMNC02	Wellman	7/6/2015	45.444	-113.086	0.8	85	<4	50	2	0.28	16	130	0.4	0.132
MDEQ_WQ_WQX-M02WLMNC03	Wellman	7/29/2014	45.436	-113.094	1	72	<4	NA	3	0.21	10	60	0.4	0.082
MDEQ_WQ_WQX-M02WLMNC03	Wellman	5/27/2015	45.436	-113.094	0.21	60	11	67	2	0.29	22	320	1.9	0.121
MDEQ_WQ_WQX-M02WLMNC03	Wellman	7/6/2015	45.436	-113.094	0.1	83	<4	NA	3	0.26	13	60	NA	0.091
MTWTRSHD_WQX-BVD-WFBTDC-1	West Fork Blacktail	6/1/2009	44.7811	-112.307	23.6	NA	51	NA	1.3	NA	NA	NA	NA	NA
MTWTRSHD_WQX-BVD-WFBTDC-2	West Fork Blacktail	6/1/2009	44.8653	-112.351	41.15	280	88.5	NA	12	0.2	1.5	NA	1.2	0.013
MDEQ_WQ_WQX-M02BDWFC02	West Fork Blacktail	8/5/2014	44.86533	-112.351	8.59	383	NA	NA	16	NA	NA	80	NA	NA
MDEQ_WQ_WQX-M02BDWFC04	West Fork Blacktail	8/5/2014	44.79064	-112.315	7.34	264	NA	NA	2	0.04	4	60	0.3	NA
MDEQ_WQ_WQX-M02BDWFC05	West Fork Blacktail	8/5/2014	44.83523	-112.333	10.89	369	NA	NA	16	NA	NA	70	NA	NA