APPENDIX 11-Y

COTTONWOOD ARROYO POST-MINING HYDROLOGY & SEDIMENTOLOGY

(2 YR-6 HR, 10 YR-6 HR, 25 YR-6 HR, & 100 YR-6 HR STORM EVENTS)

References to Area 4 North within this Appendix have been redacted.

OCTOBER 2006

General Information

Storm Information:

Storm Type:	Type II-60
Design Storm:	2 yr - 6 hr
Rainfall Depth:	0.800 inches

Particle Size Distribution:

Size (mm)	PostMine-LoamySand	PreMine-LoamySand	PreMine-Badlands	LoamySand Postmining
2.0000	100.000%	100.000%	100.000%	0.000%
0.1000	26.500%	30.000%	83.500%	0.000%
0.0500	14.000%	17.000%	77.000%	0.000%
0.0020	11.000%	11.000%	56.000%	0.000%
0.0010	0.000%	0.000%	0.000%	0.000%

References to Area 4 North within this Appendix have been redacted.

#30
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Stru #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#3	**Muskingum K:**					**0.000**
#4	8. Large gullies, diversions, and low flowing streams	0.53	30.00	5,637.00	2.18	0.718
#4	**Muskingum K:**					**0.718**
#5	8. Large gullies, diversions, and low flowing streams	1.17	165.00	14,065.00	3.24	1.205
#5	**Muskingum K:**					**1.205**
#6	8. Large gullies, diversions, and low flowing streams	0.78	14.00	1,799.25	2.84	0.189
#6	**Muskingum K:**					**0.189**
#8	8. Large gullies, diversions, and low flowing streams	0.72	65.00	9,046.00	2.54	0.989
#8	**Muskingum K:**					**0.989**
#11	8. Large gullies, diversions, and low flowing streams	30.00	8,801.00	29,336.66	16.43	0.495
#11	**Muskingum K:**					**0.495**
#12	8. Large gullies, diversions, and low flowing streams	1.21	11.00	906.00	3.30	0.076
#12	**Muskingum K:**					**0.076**
#13	8. Large gullies, diversions, and low flowing streams	0.92	363.00	39,301.00	2.88	3.790
#13	**Muskingum K:**					**3.790**
#14	8. Large gullies, diversions, and low flowing streams	0.59	77.00	13,075.22	2.30	1.579
#14	**Muskingum K:**					**1.579**
#15	8. Large gullies, diversions, and low flowing streams	0.59	77.00	13,075.00	2.30	1.579
#15	**Muskingum K:**					**1.579**
#16	8. Large gullies, diversions, and low flowing streams	0.00	0.00	0.00	0.00	0.000
#16	**Muskingum K:**					**0.000**
#19	8. Large gullies, diversions, and low flowing streams	0.33	19.00	5,699.00	1.73	0.915
#19	**Muskingum K:**					**0.915**
#22	8. Large gullies, diversions, and low flowing streams	0.38	33.00	8,713.00	1.84	1.315
#22	**Muskingum K:**					**1.315**
#23	8. Large gullies, diversions, and low flowing streams	0.53	25.00	4,680.00	2.19	0.593
#23	**Muskingum K:**					**0.593**
#24	8. Large gullies, diversions, and low flowing streams	1.46	184.00	12,568.00	3.62	0.964
#24	**Muskingum K:**					**0.964**
#25	8. Large gullies, diversions, and low flowing streams	1.28	228.00	17,755.00	3.39	1.454
#25	**Muskingum K:**					**1.454**
#26	8. Large gullies, diversions, and low flowing streams	1.28	228.00	17,755.62	3.39	1.454

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Structure Summary:

	Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc. (ml/l)	24VW (ml/l)
#30	476.400	476.400	0.20	0.04	0.1	3,489	2.23	1.76
#28	1,217.900	1,217.900	127.50	21.24	835.0	55,232	0.00	0.00
#26	2,486.400	2,486.400	5.44	2.30	8.0	4,125	2.21	1.71
#24	8,061.800	8,061.800	6.64	4.91	10.9	2,959	1.50	0.83
#25	1,015.700	9,077.500	25.38	9.08	42.9	12,163	6.59	2.22
#27	1,783.700	13,347.600	51.42	18.56	137.5	15,735	7.87	3.16
#29	966.000	15,531.500	173.24	56.11	1,685.8	54,091	2.34	1.21
#32	293.700	16,301.600	178.81	63.51	1,820.6	49,624	0.00	0.00
#31	957.100	957.100	135.01	21.90	696.1	44,322	0.36	0.27
#33	0.000	17,258.700	243.60	85.41	2,516.7	45,965	0.10	0.06
#34	1,020.000	18,278.700	249.26	91.86	2,562.3	40,798	0.12	0.08
#5	2,023.000	2,023.000	171.21	25.48	525.7	36,251	4.57	2.35
#6	1,743.200	3,766.200	212.42	50.66	1,043.3	32,875	0.14	0.09
#7	2,395.300	6,161.500	387.09	107.77	3,278.7	43,897	0.02	0.01
#8	0.000	6,161.500	387.09	107.77	3,278.7	43,897	0.02	0.01
#10	1,053.200	7,214.700	408.0[illegible]	127.09	3,317.5	40,841	0.02	0.01
#1	2,411.100	2,411.100	107.40	39.83	476.0	29,702	2.79	1.87
#2	1,497.000	3,908.100	165.97	52.28	878.5	25,017	0.11	0.07
#3	862.700	4,770.800	217.82	65.55	1,019.7	20,174	0.09	0.07
#4	0.000	4,770.800	217.82	65.55	1,019.7	20,174	0.09	0.07
#9	445.600	5,216.400	220.1[illegible]	69.39	1,052.5	19,640	0.41	0.30
#11	0.000	12,431.100	361.70	196.48	4,369.9	34,091	0.18	0.12
#21	900.800	13,331.900	373.17	203.34	4,400.7	33,926	0.15	0.09
#35	160.400	160.400	24.45	4.02	28.0	8,923	0.00	0.00
#15	1,992.700	1,992.700	132.09	26.73	728.7	39,320	1.81	1.15
#12	3,494.500	3,494.500	29.47	7.70	70.0	11,169	5.66	4.05
#13	2,720.700	6,215.200	61.66	14.45	155.8	13,100	6.78	4.67
#14	5,096.800	11,312.000	166.07	70.54	1,409.1	70,149	0.51	0.14
#16	1,022.000	14,336.700	306.00	121.37	2,638.0	41,646	0.88	0.43
#23	0.000	14,487.100	310.83	125.39	2,666.0	40,274	0.84	0.41
#18	848.500	848.500	63.40	12.69	114.4	15,153	0.00	0.00
#17	182.200	182.200	46.10	4.57	42.5	12,532	0.29	0.20
#19	0.000	1,030.700	106.20	17.26	156.9	13,552	0.09	0.06
#20	271.100	15,788.900	330.16	146.74	2,850.1	34,761	0.69	0.36
#22	0.000	29,120.800	852.02	350.08	7,250.8	32,913	0.34	0.21
#36	1,704.400	49,103.900	1,049.74	446.16	9,790.4	32,845	0.35	0.22
#37	2,069.330	51,173.230	1,042.20	459.90	9,872.1	32,771	0.26	0.17

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Size (mm)	In/Out
0.0010	0.000%

Structure #25:

Size (mm)	In/Out
2.0000	100.000%
0.1000	67.534%
0.0500	38.270%
0.0020	24.763%
0.0010	0.000%

Structure #27:

Size (mm)	In/Out
2.0000	100.000%
0.1000	74.181%
0.0500	42.036%
0.0020	27.200%
0.0010	0.000%

Structure #29:

Size (mm)	In/Out
2.0000	100.000%
0.1000	97.910%
0.0500	95.289%
0.0020	93.701%
0.0010	0.000%

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Structure #32:

Size (mm)	In/Out
2.0000	100.000%
0.1000	100.000%
0.0500	100.000%
0.0020	100.000%
0.0010	0.000%

Structure #31:

Size (mm)	In/Out
0.0010	0.000%

Structure #7:

Size (mm)	In/Out
2.0000	100.000%
0.1000	100.000%
0.0500	100.000%
0.0020	99.884%
0.0010	0.000%

Structure #8:

Size (mm)	In/Out
2.0000	100.000%
0.1000	100.000%
0.0500	100.000%
0.0020	99.884%
0.0010	0.000%

Structure #10:

Size (mm)	In/Out
2.0000	100.000%
0.1000	100.000%
0.0500	100.000%
0.0020	99.861%
0.0010	0.000%

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Structure #1:

Size (mm)	In/Out
2.0000	100.000%
0.1000	96.864%
0.0500	89.757%
0.0020	86.391%
0.0010	0.000%

Structure #2:

Size (mm)	In/Out
0.0010	0.000%

Structure #21 (End of South Fork):

Size (mm)	In/Out
2.0000	100.000%
0.1000	99.882%
0.0500	99.688%
0.0020	99.163%
0.0010	0.000%

Structure #35:

Size (mm)	In/Out
2.0000	100.000%
0.1000	100.000%
0.0500	100.000%
0.0020	100.000%
0.0010	0.000%

Structure #15:

Size (mm)	In/Out
2.0000	100.000%
0.1000	100.000%
0.0500	95.316%
0.0020	92.912%
0.0010	0.000%

Structure #12:

Size (mm)	In/Out
2.0000	100.000%
0.1000	76.847%
0.0500	43.547%
0.0020	28.177%
0.0010	0.000%

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Structure #13:

Size (mm)	In/Out
0.0010	0.000%

Structure #17:

Size (mm)	In/Out
2.0000	100.000%
0.1000	100.000%
0.0500	100.000%
0.0020	93.383%
0.0010	0.000%

Structure #19:

Size (mm)	In/Out
2.0000	100.000%
0.1000	100.000%
0.0500	100.000%
0.0020	98.206%
0.0010	0.000%

Structure #20 (End of Middle Fork):

Size (mm)	In/Out
2.0000	100.000%
0.1000	100.000%
0.0500	98.823%
0.0020	95.879%
0.0010	0.000%

Structure #22:

Size (mm)	In/Out
2.0000	100.000%
0.1000	100.000%
0.0500	99.348%
0.0020	97.872%
0.0010	0.000%

Structure #36:

References to Area 4 North within this Appendix have been redacted.

Subwatershed Hydrology Detail:

Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#30	1	476.400	1.131	0.000	0.000	73.100	M	0.20	0.043
	Σ	**476.400**						**0.20**	**0.043**
#28	1	772.300	0.657	0.523	0.334	90.400	M	106.00	13.472
	2	445.600	0.587	0.000	0.000	90.400	M	65.74	7.773
	Σ	**1,217.900**						**127.50**	**21.244**
#26	1	447.600	2.192	0.000	0.000	74.200	M	0.34	0.114
	2	2,038.800	3.000	0.000	0.000	77.000	M	5.10	2.186
	Σ	**2,486.400**						**5.44**	**2.300**
#24	1	2,607.500	5.367	2.377	0.305	75.200	M	2.02	1.246
	2	2,331.900	4.813	2.431	0.304	74.700	M	1.48	0.833
	3	1,758.500	2.231	1.788	0.297	76.200	M	3.66	1.366
	4	1,363.900	2.618	0.000	0.000	77.000	M	3.63	1.463
	Σ	**8,061.800**						**6.64**	**4.907**
#25	1	515.200	0.990	0.342	0.357	78.200	M	3.32	0.833
	2	130.500	0.787	0.342	0.357	78.100	M	0.89	0.204
	3	370.000	0.516	0.000	0.000	85.700	M	25.34	3.140
	Σ	**9,077.500**						**25.38**	**9.084**
#27	1	354.400	0.612	1.233	0.337	83.100	M	11.81	1.882
	2	305.200	0.529	1.054	0.328	84.000	M	14.02	1.922
	3	289.800	0.692	0.551	0.328	75.500	M	0.59	0.162
	4	253.000	0.361	0.651	0.328	79.400	M	3.26	0.579
	5	581.300	0.980	0.000	0.000	82.300	M	12.58	2.629
	Σ	**13,347.600**						**51.42**	**18.559**
#29	1	508.800	0.409	0.416	0.312	89.500	M	80.63	7.795
	2	233.200	0.521	0.291	0.312	91.600	M	44.78	4.818
	3	224.000	0.467	0.000	0.000	90.000	M	35.63	3.690
	Σ	**15,531.500**						**173.24**	**56.106**
#32	1	293.700	0.576	0.000	0.000	93.000	M	65.60	7.363
	Σ	**16,301.600**						**178.81**	**63.512**
#31	1	431.100	0.588	0.450	0.336	91.500	M	75.71	8.782
	2	325.800	0.432	0.149	0.327	93.000	M	85.40	8.167
	3	200.200	0.373	0.000	0.000	92.900	M	55.57	4.950
	Σ	**957.100**						**135.01**	**21.900**

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Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UH5	Peak Discharge (cfs)	Runoff Volume (ac-ft)
#1	1	557.400	0.941	0.000	0.000	83.600	M	16.72	3.258
	2	169.600	1.616	0.677	0.333	93.000	M	18.75	4.252
	3	636.400	1.842	0.729	0.333	81.000	M	6.98	2.169
	4	223.400	0.846	1.005	0.336	84.100	M	7.97	1.433
	5	77.700	0.330	1.392	0.341	81.400	M	2.25	0.290
	6	746.600	0.678	1.392	0.341	88.200	M	69.45	9.430
	Σ	**2,411.100**						**102.40**	**20.831**
#2	1	257.000	0.423	0.000	0.000	93.000	M	68.09	6.443
	2	180.500	0.562	0.478	0.281	91.800	M	34.14	3.834
	3	200.700	0.687	0.574	0.283	93.000	M	40.21	5.031
	4	438.600	0.811	0.574	0.283	93.000	M	78.94	10.995
	5	420.200	1.247	0.801	0.293	88.000	M	25.21	5.148
	Σ	**3,908.100**						**165.97**	**52.283**
#3	1	172.600	0.443	0.000	0.000	93.000	M	44.66	4.327
	2	311.200	0.890	0.000	0.000	88.900	M	27.49	4.365
	3	378.900	0.632	0.209	0.304	87.900	M	34.90	4.572
	Σ	**4,770.800**						**217.82**	**65.547**
#4	Σ	**4,770.800**						**217.82**	**65.547**
#9	1	445.600	0.987	0.000	0.000	85.800	M	20.71	3.845
	Σ	**5,216.400**						**220.11**	**69.393**
#11	Σ	**12,431.100**						**561.70**	**196.479**
#21	1	249.600	0.657	0.000	0.000	84.100	M	10.27	1.601
	2	185.400	0.618	0.723	0.264	79.700	M	2.39	0.460
	3	181.100	0.289	0.877	0.256	91.300	M	44.96	3.588
	4	284.700	0.499	0.931	0.259	82.000	M	7.86	1.209
	Σ	**13,331.900**						**573.17**	**203.336**
#35	1	160.400	1.039	0.000	0.000	93.000	M	24.45	4.021
	Σ	**160.400**						**24.45**	**4.021**
#15	1	437.400	0.803	0.000	0.000	91.300	M	60.86	8.665
	2	549.000	0.637	0.654	0.327	91.300	M	88.81	10.876
	3	1,006.300	1.023	0.768	0.331	84.700	M	36.49	7.189
	Σ	**1,992.700**						**132.09**	**26.730**
#12	1	517.800	0.791	0.000	0.000	81.900	M	11.30	2.153
	2	229.000	0.571	0.043	0.418	80.100	M	3.43	0.629
	3	592.700	0.706	0.044	0.417	81.500	M	12.26	2.261
	4	1,806.900	1.542	0.487	0.362	76.700	M	5.34	1.726
	5	348.100	0.618	0.487	0.362	80.000	4.94	0.932	

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Stru #	SWS #	SWS Area (ac)	Time of Conc (hrs)	Musk K (hrs)	Musk X	Curve Number	UHS	Peak Discharge (cfs)	Runoff Volume (ac-ft)
	5	93.800	0.576	0.000	0.000	79.700	M	1.24	0.233
	6	249.700	0.708	0.000	0.000	79.700	M	3.07	0.619
	Σ	**49,103.900**						**1,049.74**	**446.163**
#37	1	744.000	1.756	0.000	0.000	84.800	M	19.52	5.410
	2	303.330	0.416	1.859	0.242	87.800	M	35.36	3.604
	3	242.400	0.330	1.649	0.246	84.200	M	15.61	1.583
	4	244.900	0.364	1.783	0.295	80.000	M	3.87	0.656
	5	139.500	0.828	2.381	0.251	80.500	M	2.04	0.423
	6	142.900	0.300	1.991	0.254	83.500	M	8.19	0.820
	7	252.300	0.561	1.487	0.252	82.700	M	7.93	1.238
	Σ	**51,173.230**						**1,042.20**	**459.897**

Subwatershed Sedimentology Detail:

Stru #	SWS #	Soil K	L (ft)	S (%)	C	P	PS #	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc (ml/l)	24VW (ml/l)
#30	1	0.095	200.00	3.80	0.3720	1.0000	2	0.1	3,489	2.23	1.76
	Σ							**0.1**	**3,489**	**2.23**	**1.76**
#28	1	0.187	100.00	10.10	0.3750	1.0000	3	555.9	52,723	0.00	0.00
	2	0.196	100.00	10.20	0.3910	1.0000	3	348.4	58,373	0.00	0.00
	Σ							**835.0**	**55,232**	**0.00**	**0.00**
#26	1	0.155	400.00	1.40	0.3480	1.0000	2	0.2	2,448	1.53	1.18
	2	0.155	300.00	2.40	0.3340	1.0000	2	7.8	4,238	2.26	1.74
	Σ							**8.0**	**4,125**	**2.21**	**1.71**
#24	1	0.128	300.00	2.30	0.3360	1.0000	2	2.7	2,661	1.33	1.00
	2	0.136	300.00	2.70	0.3440	1.0000	2	2.3	3,360	1.86	1.39
	3	0.107	300.00	2.30	0.3330	1.0000	2	3.3	2,811	1.56	1.23
	4	0.163	400.08	1.60	0.3210	1.0000	2	3.9	3,194	1.73	1.35
	Σ							**10.9**	**2,959**	**1.50**	**0.83**
#25	1	0.125	400.00	1.90	0.3440	1.0000	2	2.6	3,677	1.96	1.55
	2	0.124	300.00	2.60	0.3280	1.0000	2	0.7	3,754	2.08	1.63
	3	0.122	175.00	4.90	0.2660	1.0000	2	28.7	12,170	6.76	4.66
	Σ							**42.9**	**12,153**	**6.59**	**2.22**
#27	1	0.127	175.00	5.90	0.3160	1.0000	2	20.7	13,801	7.09	5.20
	2	0.122	150.00	7.50	0.2920	1.0000	2	23.8	15,793	8.49	6.12
	3	0.070	125.00	8.40	0.3270	1.0000	2	0.7	4,438	2.66	2.32

References to Area 4 North within this Appendix have been redacted.

Stru #	SWS #	Soil K	L (ft)	S (%)	C	P	PS #	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc (ml/l)	24VW (ml/l)
	3	0.210	150.00	6.70	0.3990	1.0000	3	205.7	38,872	0.00	0.00
	4	0.210	100.00	11.50	0.3990	1.0000	3	122.7	79,219	5.29	3.71
	5	0.210	150.00	7.10	0.3990	1.0000	3	156.1	51,819	2.96	2.08
	6	0.209	150.00	7.90	0.3990	1.0000	3	107.1	54,958	3.37	2.37
	7	0.206	75.00	15.50	0.3990	1.0000	3	201.7	96,052	5.25	3.72
	8	0.202	75.00	14.50	0.3980	1.0000	3	669.7	85,902	0.00	0.00
	Σ							**3,278.7**	**43,897**	**0.02**	**0.01**
#8	1	0.000	0.00	0.00	0.0000	1.0000	0	0.0	1	0.00	0.00
	Σ							**3,278.7**	**43,897**	**0.02**	**0.01**
#10	1	0.190	300.00	2.70	0.1930	1.0000	3	46.3	6,587	0.00	0.00
	2	0.153	200.00	3.50	0.3610	1.0000	2	10.6	7,825	3.48	2.62
	3	0.189	200.00	3.70	0.3190	1.0000	3	27.9	10,906	0.00	0.00
	4	0.190	300.00	2.10	0.1940	1.0000	3	15.6	6,459	0.00	0.00
	5	0.201	300.00	2.00	0.3030	1.0000	3	17.5	7,554	0.00	0.00
	Σ							**3,317.5**	**40,841**	**0.02**	**0.01**
#1	1	0.157	150.00	6.80	0.3830	1.0000	2	54.3	20,582	9.89	7.35
	2	0.210	150.00	6.60	0.3990	1.0000	3	91.1	26,615	0.00	0.00
	3	0.149	200.00	3.90	0.3870	1.0000	2	14.2	7,833	3.10	2.38
	4	0.169	175.00	4.70	0.3950	1.0000	2	19.1	16,624	8.23	6.06
	5	0.157	100.00	10.10	0.3940	1.0000	2	6.6	28,074	15.42	11.39
	6	0.175	75.00	12.60	0.2840	1.0000	3	290.9	39,015	0.00	0.00
	Σ							**476.0**	**29,702**	**2.79**	**1.87**
#2	1	0.190	150.00	7.90	0.1930	1.0000	3	123.1	25,644	0.82	0.56
	2	0.184	175.00	4.80	0.2010	1.0000	3	42.3	14,436	0.00	0.00
	3	0.202	200.00	3.90	0.3220	1.0000	3	68.3	17,482	0.00	0.00
	4	0.203	150.00	7.40	0.2220	1.0000	3	301.9	34,875	0.00	0.00
	5	0.181	175.00	5.10	0.3710	1.0000	3	81.0	19,571	0.00	0.00
	Σ							**878.5**	**25,017**	**0.11**	**0.07**
#3	1	0.190	175.00	5.20	0.1930	1.0000	3	56.3	17,538	0.48	0.33
	2	0.177	175.00	4.20	0.2560	1.0000	3	43.6	12,816	0.00	0.00
	3	0.166	175.00	4.30	0.2290	1.0000	3	43.8	12,524	0.00	0.00
	Σ							**1,019.7**	**20,174**	**0.09**	**0.07**
#4	Σ							**1,019.7**	**20,174**	**0.09**	**0.07**
#9	1	0.212	175.00	4.17	0.2490	1.0000	2	40.1	13,069	6.46	4.74
	Σ							**1,052.5**	**19,640**	**0.41**	**0.30**
#11	Σ							**4,369.9**	**34,091**	**0.18**	**0.12**

References to Area 4 North within this Appendix have been redacted.

Stru #	SWS #	Soil K	L (ft)	S (%)	C	P	PS #	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc (ml/l)	24VW (ml/l)
	Σ							**2,638.0**	**41,646**	**0.88**	**0.43**
#23	Σ							**2,666.0**	**40,274**	**0.84**	**0.41**
#18	1	0.193	300.00	2.80	0.2200	1.0000	3	59.6	10,362	0.00	0.00
	2	0.173	175.00	4.70	0.3880	1.0000	3	86.9	21,485	0.00	0.00
	Σ							**114.4**	**15,153**	**0.00**	**0.00**
#17	1	0.196	300.00	2.60	0.2600	1.0000	3	42.5	12,532	0.29	0.20
	Σ							**42.5**	**12,532**	**0.29**	**0.20**
#19	Σ							**156.9**	**13,552**	**0.09**	**0.06**
#20	1	0.192	200.00	3.19	0.2430	1.0000	3	27.4	8,570	0.00	0.00
	Σ							**2,850.1**	**34,761**	**0.69**	**0.36**
#22	Σ							**7,250.8**	**32,913**	**0.34**	**0.21**
#36	1	0.214	200.00	3.60	0.3120	1.0000	1	3.7	9,199	4.97	3.78
	2	0.222	200.00	3.62	0.3060	1.0000	1	8.0	10,313	5.63	4.30
	3	0.242	200.00	3.23	0.3150	1.0000	1	9.6	9,968	5.25	4.02
	4	0.242	200.00	3.80	0.3150	1.0000	1	7.8	11,798	6.38	4.83
	5	0.242	150.00	6.41	0.3150	1.0000	1	3.5	18,098	9.88	7.45
	6	0.214	175.00	4.45	0.3090	1.0000	1	6.6	12,909	6.91	5.24
	Σ							**9,790.4**	**32,845**	**0.35**	**0.22**
#37	1	0.196	200.00	3.80	0.3980	1.0000	2	55.5	12,520	5.18	3.91
	2	0.193	175.00	5.60	0.4020	1.0000	3	101.3	35,181	0.00	0.00
	3	0.189	150.00	6.87	0.2780	1.0000	2	30.8	24,312	14.07	10.27
	4	0.214	200.00	4.09	0.3150	1.0000	1	6.9	12,687	7.04	5.36
	5	0.196	175.00	5.22	0.3320	1.0000	2	4.8	13,663	6.59	5.08
	6	0.199	125.00	8.15	0.2690	1.0000	2	17.6	26,702	15.48	11.38
	7	0.214	175.00	4.83	0.3150	1.0000	2	18.2	18,206	9.42	6.98
	Σ							**9,872.1**	**32,771**	**0.26**	**0.17**

References to Area 4 North within this Appendix have been redacted.

Subwatershed Time of Concentration Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	1	5. Nearly bare and untilled, and alluvial valley fans	3.65	50.00	1,369.00	1.910	0.199
		8. Large gullies, diversions, and low flowing streams	1.57	157.00	10,030.00	3.750	0.742
#1	**1**	**Time of Concentration:**					**0.941**

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#2	**5**	**Time of Concentration:**					**1.247**
#3	1	5. Nearly bare and untilled, and alluvial valley fans	1.24	10.00	805.00	1.110	0.201
		8. Large gullies, diversions, and low flowing streams	1.33	40.00	3,017.00	3.450	0.242
#3	**1**	**Time of Concentration:**					**0.443**
#3	2	5. Nearly bare and untilled, and alluvial valley fans	0.68	10.00	1,478.00	0.820	0.500
		8. Large gullies, diversions, and low flowing streams	1.78	100.00	5,622.00	4.000	0.390
#3	**2**	**Time of Concentration:**					**0.890**
#3	3	5. Nearly bare and untilled, and alluvial valley fans	4.66	70.00	1,501.00	2.150	0.193
		8. Large gullies, diversions, and low flowing streams	1.17	60.00	5,126.00	3.240	0.439
#3	**3**	**Time of Concentration:**					**0.632**
#5	1	5. Nearly bare and untilled, and alluvial valley fans	19.06	285.00	1,495.00	4.360	0.095
		8. Large gullies, diversions, and low flowing streams	2.64	242.00	9,174.00	4.870	0.523
#5	**1**	**Time of Concentration:**					**0.618**
#5	2	5. Nearly bare and untilled, and alluvial valley fans	14.27	195.00	736.00	3.770	0.054
		8. Large gullies, diversions, and low flowing streams	4.08	297.00	7,279.00	6.050	0.334
#5	**2**	**Time of Concentration:**					**0.388**
#5	3	5. Nearly bare and untilled, and alluvial valley fans	8.27	35.00	423.00	2.870	0.040
		8. Large gullies, diversions, and low flowing streams	3.44	208.00	6,049.00	5.560	0.302
#5	**3**	**Time of Concentration:**					**0.342**
#5	4	5. Nearly bare and untilled, and alluvial valley fans	14.58	85.00	583.00	3.810	0.042
		8. Large gullies, diversions, and low flowing streams	4.53	248.00	5,473.00	6.380	0.238
#5	**4**	**Time of Concentration:**					**0.280**
#5	5	5. Nearly bare and untilled, and alluvial valley fans	5.07	70.00	1,382.00	2.250	0.170
		8. Large gullies, diversions, and low flowing streams	3.89	170.00	4,375.00	5.910	0.205
#5	**5**	**Time of Concentration:**					**0.375**
#5	6	5. Nearly bare and untilled, and alluvial valley fans	12.48	90.00	721.00	3.530	0.056
		8. Large gullies, diversions, and low flowing streams	5.16	274.00	5,308.02	6.810	0.216
#5	**6**	**Time of Concentration:**					**0.272**
#6	1	5. Nearly bare and untilled, and alluvial valley fans	5.36	75.00	1,399.00	2.310	0.168

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Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#7	4	5. Nearly bare and untilled, and alluvial valley fans	19.23	80.00	416.00	4.380	0.026
		8. Large gullies, diversions, and low flowing streams	2.45	100.00	4,083.00	4.690	0.241
#7	**4**	**Time of Concentration:**					**0.267**
#7	5	5. Nearly bare and untilled, and alluvial valley fans	6.09	67.00	1,101.00	2.460	0.124
		8. Large gullies, diversions, and low flowing streams	2.51	80.00	3,184.00	4.750	0.186
#7	**5**	**Time of Concentration:**					**0.310**
#7	6	5. Nearly bare and untilled, and alluvial valley fans	5.93	63.00	1,062.00	2.430	0.121
		8. Large gullies, diversions, and low flowing streams	2.74	82.00	2,998.00	4.960	0.167
#7	**6**	**Time of Concentration:**					**0.288**
#7	7	5. Nearly bare and untilled, and alluvial valley fans	7.97	65.00	816.00	2.820	0.080
		8. Large gullies, diversions, and low flowing streams	3.48	153.00	4,400.00	5.590	0.218
#7	**7**	**Time of Concentration:**					**0.298**
#7	8	5. Nearly bare and untilled, and alluvial valley fans	6.60	50.00	758.00	2.560	0.082
		8. Large gullies, diversions, and low flowing streams	4.66	473.00	10,157.00	6.470	0.436
#7	**8**	**Time of Concentration:**					**0.518**
#9	1	5. Nearly bare and untilled, and alluvial valley fans	3.91	55.00	1,829.00	1.730	0.293
		8. Large gullies, diversions, and low flowing streams	0.76	50.00	6,548.00	2.620	0.694
#9	**1**	**Time of Concentration:**					**0.987**
#10	1	5. Nearly bare and untilled, and alluvial valley fans	1.24	41.00	3,317.00	1.110	0.830
		8. Large gullies, diversions, and low flowing streams	0.70	29.00	4,125.00	2.510	0.456
#10	**1**	**Time of Concentration:**					**1.286**
#10	2	5. Nearly bare and untilled, and alluvial valley fans	2.25	125.00	5,554.00	1.500	1.028
		8. Large gullies, diversions, and low flowing streams	2.13	85.00	3,997.00	4.370	0.254
#10	**2**	**Time of Concentration:**					**1.282**
#10	3	5. Nearly bare and untilled, and alluvial valley fans	1.39	68.00	4,904.00	1.170	1.164
		8. Large gullies, diversions, and low flowing streams	4.73	90.00	1,904.00	6.520	0.081
#10	**3**	**Time of Concentration:**					**1.245**
#10	4	5. Nearly bare and untilled, and alluvial valley fans	3.76	51.00	1,357.00	1.930	0.195
		8. Large gullies, diversions, and low flowing streams	0.65	22.00	3,385.00	2.410	0.390

References to Area 4 North within this Appendix have been redacted.

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#13	5	5. Nearly bare and untilled, and alluvial valley fans	3.10	70.00	2,255.00	1.760	0.355
		8. Large gullies, diversions, and low flowing streams	1.23	140.00	11,392.00	3.320	0.953
#13	**5**	**Time of Concentration:**					**1.308**
#14	1	5. Nearly bare and untilled, and alluvial valley fans	10.59	63.00	595.00	3.250	0.050
		8. Large gullies, diversions, and low flowing streams	2.60	151.00	5,808.00	4.830	0.334
#14	**1**	**Time of Concentration:**					**0.384**
#14	2	5. Nearly bare and untilled, and alluvial valley fans	7.28	67.00	920.00	2.690	0.095
		8. Large gullies, diversions, and low flowing streams	2.17	123.00	5,670.00	4.410	0.357
#14	**2**	**Time of Concentration:**					**0.452**
#14	3	5. Nearly bare and untilled, and alluvial valley fans	21.46	150.00	699.00	4.630	0.041
		8. Large gullies, diversions, and low flowing streams	3.10	364.00	11,728.00	5.280	0.617
#14	**3**	**Time of Concentration:**					**0.658**
#14	4	5. Nearly bare and untilled, and alluvial valley fans	3.39	35.00	1,032.00	1.840	0.155
		8. Large gullies, diversions, and low flowing streams	2.97	103.00	3,470.00	5.160	0.186
#14	**4**	**Time of Concentration:**					**0.341**
#14	5	5. Nearly bare and untilled, and alluvial valley fans	28.13	125.00	444.00	5.300	0.023
		8. Large gullies, diversions, and low flowing streams	4.18	246.00	5,886.00	6.130	0.266
#14	**5**	**Time of Concentration:**					**0.289**
#14	6	5. Nearly bare and untilled, and alluvial valley fans	3.18	40.00	1,257.00	1.780	0.196
		8. Large gullies, diversions, and low flowing streams	2.29	228.00	9,963.00	4.530	0.610
#14	**6**	**Time of Concentration:**					**0.806**
#14	7	5. Nearly bare and untilled, and alluvial valley fans	16.72	100.00	598.00	4.080	0.040
		8. Large gullies, diversions, and low flowing streams	2.81	243.00	8,649.00	5.020	0.478
#14	**7**	**Time of Concentration:**					**0.518**
#14	8	5. Nearly bare and untilled, and alluvial valley fans	1.70	47.00	2,765.00	1.300	0.590
		8. Large gullies, diversions, and low flowing streams	2.44	274.00	11,208.00	4.690	0.663
#14	**8**	**Time of Concentration:**					**1.253**
#14	9	5. Nearly bare and untilled, and alluvial valley fans	2.87	105.00	3,657.00	1.690	0.601
		8. Large gullies, diversions, and low flowing streams	2.43	194.00	7,991.00	4.670	0.475

References to Area 4 North within this Appendix have been redacted.

Stru #	SW5 #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
		8. Large gullies, diversions, and low flowing streams	2.01	164.00	8,154.00	4.250	0.532
#18	**2**	**Time of Concentration:**					**0.768**
#20	1	5. Nearly bare and untilled, and alluvial valley fans	2.64	47.00	1,783.00	1.620	0.305
		8. Large gullies, diversions, and low flowing streams	0.56	30.00	5,405.00	2.230	0.673
#20	**1**	**Time of Concentration:**					**0.978**
#21	1	5. Nearly bare and untilled, and alluvial valley fans	1.39	15.00	1,076.00	1.180	0.253
		8. Large gullies, diversions, and low flowing streams	2.00	123.00	6,165.00	4.230	0.404
#21	**1**	**Time of Concentration:**					**0.657**
#21	2	5. Nearly bare and untilled, and alluvial valley fans	0.92	15.00	1,639.00	0.950	0.479
		8. Large gullies, diversions, and low flowing streams	3.61	103.00	2,856.00	5.690	0.139
#21	**2**	**Time of Concentration:**					**0.618**
#21	3	5. Nearly bare and untilled, and alluvial valley fans	1.70	15.00	881.00	1.300	0.188
		9. Small streams flowing bankfull	1.49	60.00	4,014.00	11.000	0.101
#21	**3**	**Time of Concentration:**					**0.289**
#21	4	5. Nearly bare and untilled, and alluvial valley fans	2.07	15.00	724.00	1.430	0.140
		8. Large gullies, diversions, and low flowing streams	1.91	100.00	5,249.00	4.140	0.352
#21	**4**	**Time of Concentration:**					**0.492**
#24	1	5. Nearly bare and untilled, and alluvial valley fans	1.71	430.00	25,118.00	1.300	5.367
#24	**1**	**Time of Concentration:**					**5.367**
#24	2	5. Nearly bare and untilled, and alluvial valley fans	1.84	430.00	23,393.00	1.350	4.813
#24	**2**	**Time of Concentration:**					**4.813**
#24	3	5. Nearly bare and untilled, and alluvial valley fans	1.82	155.00	8,498.00	1.350	1.748
		8. Large gullies, diversions, and low flowing streams	0.84	40.00	4,771.00	2.740	0.483
#24	**3**	**Time of Concentration:**					**2.231**
#24	4	5. Nearly bare and untilled, and alluvial valley fans	1.24	50.00	4,042.00	1.110	1.011
		8. Large gullies, diversions, and low flowing streams	0.49	60.00	12,150.00	2.100	1.607
#24	**4**	**Time of Concentration:**					**2.618**
#25	1	5. Nearly bare and untilled, and alluvial valley fans	0.51	10.00	1,950.00	0.710	0.762
		8. Large gullies, diversions, and low flowing streams	1.81	60.00	3,322.00	4.030	0.228
#25	**1**	**Time of Concentration:**					**0.990**

References to Area 4 North within this Appendix have been redacted.

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#28	2	5. Nearly bare and untilled, and alluvial valley fans	25.86	105.00	406.00	5.080	0.022
		8. Large gullies, diversions, and low flowing streams	2.96	310.00	10,479.34	5.150	0.565
#28	**2**	**Time of Concentration:**					**0.587**
#29	1	5. Nearly bare and untilled, and alluvial valley fans	11.58	30.00	259.00	3.400	0.021
		8. Large gullies, diversions, and low flowing streams	3.61	288.00	7,976.00	5.700	0.388
#29	**1**	**Time of Concentration:**					**0.409**
#29	2	5. Nearly bare and untilled, and alluvial valley fans	8.06	40.00	496.00	2.830	0.048
		8. Large gullies, diversions, and low flowing streams	2.90	252.00	8,693.35	5.100	0.473
#29	**2**	**Time of Concentration:**					**0.521**
#29	3	5. Nearly bare and untilled, and alluvial valley fans	7.25	25.00	345.00	2.690	0.035
		8. Large gullies, diversions, and low flowing streams	2.26	158.00	7,001.00	4.500	0.432
#29	**3**	**Time of Concentration:**					**0.467**
#30	1	5. Nearly bare and untilled, and alluvial valley fans	4.93	35.00	710.00	2.220	0.088
		8. Large gullies, diversions, and low flowing streams	1.67	243.00	14,540.00	3.870	1.043
#30	**1**	**Time of Concentration:**					**1.131**
#31	1	5. Nearly bare and untilled, and alluvial valley fans	2.91	15.00	515.00	1.700	0.084
		8. Large gullies, diversions, and low flowing streams	2.74	247.00	9,006.00	4.960	0.504
#31	**1**	**Time of Concentration:**					**0.588**
#31	2	5. Nearly bare and untilled, and alluvial valley fans	7.46	25.00	335.00	2.730	0.034
		8. Large gullies, diversions, and low flowing streams	2.18	138.00	6,335.00	4.420	0.398
#31	**2**	**Time of Concentration:**					**0.432**
#31	3	5. Nearly bare and untilled, and alluvial valley fans	3.84	20.00	521.00	1.950	0.074
		8. Large gullies, diversions, and low flowing streams	2.24	108.00	4,826.00	4.480	0.299
#31	**3**	**Time of Concentration:**					**0.373**
#32	1	5. Nearly bare and untilled, and alluvial valley fans	3.48	22.00	632.00	1.860	0.094
		8. Large gullies, diversions, and low flowing streams	1.56	101.00	6,494.00	3.740	0.482
#32	**1**	**Time of Concentration:**					**0.576**
#34	1	5. Nearly bare and untilled, and alluvial valley fans	2.28	35.00	1,538.00	1.500	0.284
		8. Large gullies, diversions, and low flowing streams	2.89	74.00	2,560.00	5.100	0.139

References to Area 4 North within this Appendix have been redacted.

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
		8. Large gullies, diversions, and low flowing streams	1.41	53.00	3,753.00	3.560	0.292
#36	**6**	**Time of Concentration:**					**0.708**
#37	1	5. Nearly bare and untilled, and alluvial valley fans	4.68	129.00	2,754.05	2.160	0.354
		8. Large gullies, diversions, and low flowing streams	0.16	10.00	6,108.73	1.210	1.402
#37	**1**	**Time of Concentration:**					**1.756**
#37	2	5. Nearly bare and untilled, and alluvial valley fans	5.17	45.00	870.00	2.270	0.106
		8. Large gullies, diversions, and low flowing streams	2.01	95.00	4,737.00	4.240	0.310
#37	**2**	**Time of Concentration:**					**0.416**
#37	3	5. Nearly bare and untilled, and alluvial valley fans	5.08	55.00	1,068.00	2.250	0.133
		8. Large gullies, diversions, and low flowing streams	3.68	150.00	4,080.00	5.750	0.197
#37	**3**	**Time of Concentration:**					**0.330**
#37	4	5. Nearly bare and untilled, and alluvial valley fans	3.18	35.00	1,099.00	1.780	0.171
		8. Large gullies, diversions, and low flowing streams	1.49	98.00	2,544.00	3.660	0.193
#37	**4**	**Time of Concentration:**					**0.364**
#37	5	5. Nearly bare and untilled, and alluvial valley fans	3.76	86.00	2,285.00	1.940	0.327
		8. Large gullies, diversions, and low flowing streams	0.35	11.00	3,175.00	1.760	0.501
#37	**5**	**Time of Concentration:**					**0.828**
#37	6	5. Nearly bare and untilled, and alluvial valley fans	1.70	15.00	883.00	1.300	0.188
		8. Large gullies, diversions, and low flowing streams	5.60	160.00	2,859.00	7.090	0.112
#37	**6**	**Time of Concentration:**					**0.300**
#37	7	5. Nearly bare and untilled, and alluvial valley fans	7.23	80.00	1,106.00	2.680	0.114
		8. Large gullies, diversions, and low flowing streams	1.05	52.00	4,950.00	3.070	0.447
#37	**7**	**Time of Concentration:**					**0.561**

References to Area 4 North within this Appendix have been redacted.

Subwatershed Muskingum Routing Details:

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#1	2	8. Large gullies, diversions, and low flowing streams	1.29	107.00	8,294.00	3.400	0.677
#1	**2**	**Muskingum K:**					**0.677**
#1	3	8. Large gullies, diversions, and low flowing streams	1.27	113.00	8,880.00	3.380	0.729

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#7	**2**	**Muskingum K:**					**0.000**
#7	4	8. Large gullies, diversions, and low flowing streams	1.16	140.00	12,037.00	3.230	1.035
#7	**4**	**Muskingum K:**					**1.035**
#7	5	8. Large gullies, diversions, and low flowing streams	1.14	140.00	12,307.69	3.190	1.071
#7	**5**	**Muskingum K:**					**1.071**
#7	6	8. Large gullies, diversions, and low flowing streams	1.17	158.00	13,546.00	3.230	1.164
#7	**6**	**Muskingum K:**					**1.164**
#7	7	8. Large gullies, diversions, and low flowing streams	1.18	187.00	15,784.00	3.260	1.344
#7	**7**	**Muskingum K:**					**1.344**
#7	8	8. Large gullies, diversions, and low flowing streams	1.18	187.00	15,784.00	3.260	1.344
#7	**8**	**Muskingum K:**					**1.344**
#10	3	8. Large gullies, diversions, and low flowing streams	0.76	37.00	4,861.00	2.610	0.517
#10	**3**	**Muskingum K:**					**0.517**
#10	4	8. Large gullies, diversions, and low flowing streams	0.76	37.00	4,861.00	2.610	0.517
#10	**4**	**Muskingum K:**					**0.517**
#10	5	8. Large gullies, diversions, and low flowing streams	0.79	47.00	5,956.00	2.660	0.621
#10	**5**	**Muskingum K:**					**0.621**
#12	2	8. Large gullies, diversions, and low flowing streams	8.24	111.00	1,347.00	8.610	0.043
#12	**2**	**Muskingum K:**					**0.043**
#12	3	8. Large gullies, diversions, and low flowing streams	8.01	109.00	1,360.00	8.490	0.044
#12	**3**	**Muskingum K:**					**0.044**
#12	4	8. Large gullies, diversions, and low flowing streams	2.24	176.00	7,866.00	4.480	0.487
#12	**4**	**Muskingum K:**					**0.487**
#12	5	8. Large gullies, diversions, and low flowing streams	2.24	176.00	7,866.00	4.480	0.487
#12	**5**	**Muskingum K:**					**0.487**
#13	2	8. Large gullies, diversions, and low flowing streams	1.34	54.00	4,025.00	3.470	0.322
#13	**2**	**Muskingum K:**					**0.322**
#13	3	8. Large gullies, diversions, and low flowing streams	0.98	72.00	7,333.00	2.970	0.685
#13	**3**	**Muskingum K:**					**0.685**
#13	4	8. Large gullies, diversions, and low flowing streams	1.18	127.00	10,806.00	3.250	0.923
#13	**4**	**Muskingum K:**					**0.923**
#13	5	8. Large gullies, diversions, and low flowing streams	1.18	127.00	10,806.00	3.250	0.923

References to Area 4 North within this Appendix have been redacted.

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#18	**1**	**Muskingum K:**					**0.000**
#18	2	8. Large gullies, diversions, and low flowing streams	1.02	62.00	6,103.00	3.020	0.561
#18	**2**	**Muskingum K:**					**0.561**
#21	1	8. Large gullies, diversions, and low flowing streams	0.00	0.00	0.00	0.000	0.000
#21	**1**	**Muskingum K:**					**0.000**
#21	2	8. Large gullies, diversions, and low flowing streams	0.40	20.00	4,946.00	1.900	0.723
#21	**2**	**Muskingum K:**					**0.723**
#21	3	8. Large gullies, diversions, and low flowing streams	0.36	20.00	5,626.00	1.780	0.877
#21	**3**	**Muskingum K:**					**0.877**
#21	4	8. Large gullies, diversions, and low flowing streams	0.37	23.00	6,135.00	1.830	0.931
#21	**4**	**Muskingum K:**					**0.931**
#24	1	8. Large gullies, diversions, and low flowing streams	0.79	180.00	22,769.00	2.660	2.377
#24	**1**	**Muskingum K:**					**2.377**
#24	2	8. Large gullies, diversions, and low flowing streams	0.78	180.00	23,111.00	2.640	2.431
#24	**2**	**Muskingum K:**					**2.431**
#24	4	8. Large gullies, diversions, and low flowing streams	0.00	0.00	0.00	0.000	0.000
#24	**4**	**Muskingum K:**					**0.000**
#25	1	8. Large gullies, diversions, and low flowing streams	1.99	104.00	5,220.00	4.230	0.342
#25	**1**	**Muskingum K:**					**0.342**
#25	2	8. Large gullies, diversions, and low flowing streams	1.99	104.00	5,220.00	4.230	0.342
#25	**2**	**Muskingum K:**					**0.342**
#25	3	8. Large gullies, diversions, and low flowing streams	0.00	0.00	0.00	0.000	0.000
#25	**3**	**Muskingum K:**					**0.000**
#27	1	8. Large gullies, diversions, and low flowing streams	1.38	216.00	15,629.00	3.520	1.233
#27	**1**	**Muskingum K:**					**1.233**
#27	2	8. Large gullies, diversions, and low flowing streams	1.17	144.00	12,301.00	3.240	1.054
#27	**2**	**Muskingum K:**					**1.054**
#27	3	8. Large gullies, diversions, and low flowing streams	1.18	76.00	6,454.00	3.250	0.551
#27	**3**	**Muskingum K:**					**0.551**
#27	4	8. Large gullies, diversions, and low flowing streams	1.18	76.00	6,454.00	3.250	0.551
#27	**4**	**Muskingum K:**					**0.551**
#28	1	8. Large gullies, diversions, and low flowing streams	1.30	84.00	6,445.17	3.420	0.523

References to Area 4 North within this Appendix have been redacted.

Stru #	SWS #	Land Flow Condition	Slope (%)	Vert. Dist. (ft)	Horiz. Dist. (ft)	Velocity (fps)	Time (hrs)
#37	**6**	**Muskingum K:**					**1.991**
#37	7	8. Large gullies, diversions, and low flowing streams	0.33	31.00	9,266.00	1.730	1.487
#37	**7**	**Muskingum K:**					**1.487**

References to Area 4 North within this Appendix have been redacted.

Structure Summary:

	Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc. (ml/l)	24VW (ml/l)
#30	476.400	476.400	12.85	2.98	14.2	5,823	2.63	1.99
#28	1,217.900	1,217.900	348.89	55.85	2,523.5	62,288	0.15	0.11
#26	2,486.400	2,486.400	65.87	26.07	120.8	5,585	1.83	1.40
#24	8,061.800	8,061.800	94.58	74.22	230.2	4,450	0.94	0.63
#25	1,015.700	9,077.500	103.41	93.53	318.0	14,973	4.39	0.98
#27	1,783.700	13,347.600	236.67	153.83	991.6	20,940	9.20	2.46
#29	966.000	15,531.500	535.73	253.00	5,701.3	62,577	5.53	1.88
#32	293.700	16,301.600	553.89	272.97	6,197.3	56,019	2.91	1.09
#31	957.100	957.100	333.75	52.17	1,885.7	48,387	1.13	0.87
#33	0.000	17,258.700	646.50	325.16	8,083.6	50,209	2.27	1.07
#34	1,020.000	18,278.700	664.99	349.04	8,049.1	46,073	1.39	0.67
#5	2,023.000	2,023.000	506.93	74.88	1,865.9	42,293	7.10	3.81
#6	1,743.200	3,766.200	630.69	145.20	3,523.1	37,902	0.66	0.41
#7	2,395.300	6,161.500	1,047.30	279.30	9,564.4	49,059	0.35	0.24
#8	0.000	6,161.500	1,047.30	279.30	9,564.4	49,059	0.35	0.24
#10	1,053.200	7,214.700	1,090.14	327.89	9,682.3	45,852	0.08	0.05
#1	2,411.100	2,411.100	349.94	59.75	1,801.7	33,350	5.15	3.43
#2	1,497.000	3,908.100	424.36	146.48	2,640.6	27,235	0.18	0.12
#3	862.700	4,770.800	559.86	182.72	3,083.2	21,895	0.16	0.12
#4	0.000	4,770.800	559.86	182.72	3,083.2	21,895	0.16	0.12
#9	445.600	5,216.400	573.82	196.01	3,183.6	20,911	0.60	0.45
#11	0.000	12,431.100	1,505.26	523.90	12,865.9	38,001	0.32	0.20
#21	900.800	13,331.900	1,536.57	547.84	13,028.5	38,285	0.42	0.25
#35	160.400	160.400	58.34	9.28	72.9	10,039	0.00	0.00
#15	1,992.700	1,992.700	386.36	75.98	2,270.9	44,345	3.76	2.31
#12	3,494.500	3,494.500	193.05	50.42	599.6	16,055	7.95	5.41
#13	2,720.700	6,215.200	371.99	90.19	1,206.7	16,565	8.59	5.98
#14	5,096.800	11,312.000	509.48	261.94	4,722.7	77,966	2.13	0.45
#16	1,022.000	14,326.700	833.40	394.77	8,306.9	47,954	2.16	0.87
#23	0.000	14,487.100	843.93	404.06	8,379.8	46,619	2.08	0.85
#18	848.500	848.500	169.02	34.58	389.3	20,552	0.10	0.06
#17	182.200	182.200	108.99	10.55	110.0	13,892	0.66	0.46
#19	0.000	1,030.700	255.08	45.13	499.3	18,671	0.27	0.18
#20	271.100	15,788.900	889.57	460.53	8,967.5	40,778	1.73	0.77
#22	0.000	29,120.800	2,302.10	1,008.37	21,996.0	37,199	0.88	0.49
#36	1,704.400	49,103.900	2,880.10	1,384.01	30,408.8	37,032	1.18	0.68
#37	2,069.330	51,173.230	2,831.28	1,436.45	30,585.6	36,245	0.87	0.49

References to Area 4 North within this Appendix have been redacted

Structure Summary:

	Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc. (ml/l)	24VW (ml/l)
#30	476.400	476.400	30.89	6.52	36.1	6,848	3.20	2.38
#28	1,217.900	1,217.900	503.94	79.78	3,785.9	64,830	0.47	0.33
#26	2,486.400	2,486.400	129.71	49.77	252.2	6,132	2.13	1.63
#24	8,061.800	8,061.800	187.84	146.37	496.8	4,962	1.10	0.72
#25	1,015.700	9,077.500	192.60	178.46	630.7	15,775	4.34	0.96
#27	1,783.700	13,347.600	390.94	285.23	1,879.5	22,553	9.85	2.51
#29	966.000	15,531.500	811.81	427.10	8,961.2	64,027	7.06	2.14
#32	293.700	16,301.600	841.49	456.97	9,765.4	58,352	4.76	1.61
#31	957.100	957.100	468.62	72.36	2,769.5	49,912	1.43	1.11
#33	0.000	17,258.700	933.80	529.88	12,534.9	52,484	3.67	1.56
#34	1,020.000	18,278.700	961.80	567.23	12,494.6	48,074	2.42	1.06
#5	2,023.000	2,023.000	759.22	110.62	2,932.3	44,396	8.02	4.36
#6	1,743.200	3,766.200	937.84	318.01	9,461.3	39,588	0.96	0.60
#7	2,395.300	6,161.500	1,511.91	398.19	14,212.4	50,892	0.57	0.38
#8	0.000	6,161.500	1,511.91	398.19	14,212.4	50,892	0.57	0.38
#10	1,053.200	7,214.700	1,570.00	466.38	14,398.1	47,738	0.30	0.18
#1	2,411.100	2,411.100	539.70	117.13	2,889.3	34,591	5.99	4.00
#2	1,497.000	3,908.100	639.70	214.44	4,165.5	27,962	0.19	0.13
#3	862.700	4,770.800	796.58	266.87	4,723.0	22,166	0.06	0.04
#4	0.000	4,770.800	796.58	266.87	4,723.0	22,166	0.06	0.04
#9	445.600	5,216.400	819.55	287.32	4,883.4	21,101	0.67	0.51
#11	0.000	12,431.100	2,170.49	754.30	19,281.5	39,490	0.50	0.31
#21	900.800	13,311.900	2,203.87	791.55	19,468.5	39,504	0.50	0.30
#35	160.400	160.400	80.69	12.75	104.4	10,453	0.00	0.00
#15	1,992.700	1,992.700	573.85	111.38	3,464.8	46,177	4.79	2.91
#12	3,494.500	3,494.500	342.58	89.19	1,127.7	17,435	8.75	5.92
#13	2,720.700	6,215.200	652.52	158.89	2,263.5	17,685	9.32	6.50
#14	5,096.800	11,312.000	855.51	416.05	7,583.6	80,737	4.22	0.86
#16	1,022.000	14,336.700	1,207.11	606.03	12,934.5	50,061	3.26	1.25
#23	0.000	14,487.100	1,221.18	618.79	13,038.9	48,744	3.15	1.23
#18	848.500	848.500	254.46	50.10	629.1	22,480	0.17	0.11
#17	182.200	182.200	150.01	14.49	157.1	14,384	0.80	0.55
#19	0.000	1,030.700	355.05	64.59	786.2	20,520	0.35	0.23
#20	271.100	15,788.900	1,283.67	699.84	13,960.4	42,886	2.63	1.12
#22	0.000	29,120.800	3,329.40	1,491.39	33,428.9	38,582	1.27	0.69
#36	1,704.400	49,103.900	4,195.63	2,105.05	46,628.6	38,370	1.76	0.97
#37	2,069.330	51,173.230	4,118.04	2,187.96	46,904.2	37,624	1.33	0.72

References to Area 4 North within this Appendix have been redacted

Structure Summary:

	Immediate Contributing Area (ac)	Total Contributing Area (ac)	Peak Discharge (cfs)	Total Runoff Volume (ac-ft)	Sediment (tons)	Peak Sediment Conc. (mg/l)	Peak Settleable Conc. (ml/l)	24VW (ml/l)
#30	476.400	476.400	65.84	12.83	80.6	7,897	3.88	2.84
#28	1,217.900	1,217.900	724.22	113.81	5,661.4	67,335	0.79	0.57
#26	2,486.400	2,486.400	239.85	89.42	491.1	6,676	2.47	1.87
#24	8,061.800	8,061.800	347.67	268.91	989.6	5,442	1.32	0.85
#25	1,015.700	9,077.500	355.36	321.00	1,205.4	16,4[illegible]	4.43	0.99
#27	1,783.700	13,347.600	632.57	503.04	3,430.7	23,010	10.45	2.60
#29	966.000	15,531.500	1,224.41	705.70	14,034.2	67,171	8.70	2.38
#32	293.700	16,301.600	1,271.84	750.71	15,388.5	60,689	6.75	2.11
#31	957.100	957.100	658.11	100.59	4,029.6	51,481	1.68	1.31
#33	0.000	17,258.700	1,380.10	851.31	19,418.[illegible]	54,967	5.21	2.04
#34	1,020.000	18,278.700	1,392.62	910.66	19,272.6	50,672	3.58	1.42
#5	2,023.000	2,023.000	1,134.33	162.68	4,633.8	46,042	9.29	5.15
#6	1,743.200	3,766.200	1,388.71	321.34	8,463.0	41,364	1.61	1.00
#7	2,395.300	6,161.500	2,178.26	567.73	21,139.2	52,813	0.89	0.60
#8	0.000	6,161.500	2,178.26	567.73	21,139.2	52,813	0.89	0.60
#10	1,053.200	7,214.700	2,258.7[illegible]	665.39	21,434.0	49,680	0.62	0.39
#1	2,411.100	2,411.100	823.47	179.06	4,586.2	35,752	6.80	4.55
#2	1,497.000	3,908.100	957.23	313.42	6,458.5	28,518	0.20	0.13
#3	862.700	4,770.800	1,132.66	389.11	7,079.3	22,325	0.06	0.05
#4	0.000	4,770.800	1,132.66	389.11	7,079.3	22,325	0.06	0.05
#9	445.600	5,216.400	1,170.08	420.23	7,338.2	21,194	0.74	0.57
#11	0.000	12,431.100	3,131.48	1,085.51	28,772.2	40,930	0.74	0.46
#21	900.800	13,331.900	3,279.46	1,142.87	29,095.9	40,611	0.77	0.46
#35	160.400	160.400	111.85	17.57	150.0	10,899	0.00	0.00
#15	1,992.700	1,992.700	849.14	162.79	5,262.2	48,014	5.90	3.57
#12	3,494.500	3,494.500	584.36	151.76	2,044.5	18,768	9.60	6.47
#13	2,720.700	6,215.200	1,103.87	269.77	4,088.5	18,975	10.18	7.04
#14	5,096.800	11,312.000	1,402.27	652.61	12,213.4	83,135	7.75	1.54
#16	1,022.000	14,336.700	1,744.40	924.36	20,186.6	52,101	4.96	1.85
#23	0.000	14,487.100	1,763.29	941.93	20,336.5	50,748	4.80	1.81
#18	848.500	848.500	380.92	72.50	1,005.9	24,282	0.23	0.15
#17	182.200	182.200	206.29	19.96	224.8	14,878	0.93	0.64
#19	0.000	1,030.700	494.85	92.45	1,230.7	22,297	0.42	0.27
#20	271.100	15,788.900	1,850.79	1,058.19	21,773.0	44,854	4.01	1.65
#22	0.000	29,120.800	4,810.80	2,201.06	50,869.0	39,885	1.96	1.06
#36	1,704.400	49,103.900	6,106.15	3,189.88	71,387.4	39,567	2.56	1.37
#37	2,069.330	51,173.230	5,987.72	3,318.99	71,844.5	38,780	2.07	1.09

References to Area 4 North within this Appendix have been redacted