

Haul Truck Exhaust Emissions Summary

Table K-635. Maximum Daily Haul Truck Emissions (Southern Water Control Structure)

Phase	ROG lbs/day	NOx lbs/day	CO lbs/day	SO2 lbs/day	PM10 lbs/day	PM2.5 lbs/day
02 - Relocations	0.58	17.02	3.59	0.07	2.00	0.61
09 - Channels and Canals	3.47	101.20	21.34	0.44	11.91	3.63
11 - Levees and Floodwalls	4.93	143.94	30.35	0.62	16.94	5.16
15 - Floodway Control and Diversion Structures	0.13	3.80	0.80	0.02	0.45	0.14
19 - Buildings, Grounds, and Utilities	0.07	2.17	0.46	0.01	0.26	0.08
20 -Permanent Operating Equipment	0.01	0.33	0.07	0.00	0.04	0.01
Peak Day Construction Exhaust Emissions Total	8.53	248.95	52.48	1.08	29.30	8.92

Notes:

Construction total will not add to the sum of each phase because not all tasks overlap on the same day.

PM10 and PM2.5 emissions include exhaust, tire wear, brake wear, and paved road dust.

Table K-636. Annual Haul Truck Emissions (Southern Water Control Structure)

Phase	ROG tpy	NOx tpy	CO tpy	SO2 tpy	PM10 tpy	PM2.5 tpy	CO2e MT/yr
02 - Relocations	0.00	0.05	0.01	0.00	0.01	0.00	21.24
09 - Channels and Canals	0.13	3.70	0.78	0.02	0.44	0.13	1,530.96
11 - Levees and Floodwalls	0.23	6.84	1.44	0.03	0.80	0.25	2,826.53
15 - Floodway Control and Diversion Structures	0.00	0.01	0.00	0.00	0.00	0.00	5.26
19 - Buildings, Grounds, and Utilities	0.00	0.00	0.00	0.00	0.00	0.00	1.19
20 -Permanent Operating Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.13
Annual Construction Exhaust Emissions Total	0.36	10.61	2.24	0.05	1.25	0.38	4,385.31

Notes:

Total may not add exactly because of rounding.

PM10 and PM2.5 emissions include exhaust, tire wear, brake wear, and paved road dust.

Table K-637. ROG Emissions from Haul Trucks (Southern Water Control Structure)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximu														
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul		
02 - Relocations																						
1	Mobilization and Demobilization	-	-	4	21	2	0.1207	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Levee O&M Road Regrading (6" AB)	218,000	SF	506		6	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3	Temporary Electrical Power	100	F	n/a		1	0.1207	n/a	--	--	--	--	--	--	--	--	--	--	--	--	--	
02 - Relocations Total								0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals																						
4	Mobilization and Demobilization	-	-	40 ²⁶	21	2	0.1207	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	
5	Clearing and Grubbing	67	ACR	670 ^{n/a}	22	17	0.1207	--	0.23	0.23	0.23	--	--	--	--	--	--	--	--	--	--	
6	Excavation/Grading (Dry Conditions)	133,580	CY	n/a	n/a	30	0.1207	--	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
7	Riprap - Class 2	153,590	TN	14,222	66	72	0.1207	--	--	--	--	--	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.47	
8	Erosion Control Seeding	24	ACR	n/a		13	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals Total								0.11	0.23	0.23							3.47	3.47	3.47	3.47	3.47	
11 - Levees and Floodwalls																						
9	Mobilization and Demobilization	-	-	10		2	0.1207	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	
10	Berm/Levee Fill	213,520	CY	26,690 ^{n/a}	66	95	0.1207	--	--	--	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	
11 - Levees and Floodwalls Total								--	--	0.03	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93
15 - Floodway Control and Diversion Structures																						
11	Mobilization and Demobilization	-	-	26 ²¹		2	0.1207	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	
12	Construction Site Dewatering (Pumping)	93,000	SF	n/a		78	0.1207	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	
13	Construction Site Dewatering (Pumping)	-	-	n/a	n/a	54	0.1207	--	--	--	--	--	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
14	Excavation (Wet Conditions)	25,960	CY	n/a		15	0.1207	--	--	--	--	n/a	n/a	--	--	--	--	--	--	--	--	
15	Sheet Pile Wall	1,840	SF	n/a ²¹		2	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
16	Culvert Headwall	110	CY	22 ^{n/a}	35	2	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	0.10	--	
17	Precast Box Culvert 10'x8' 30'	30	F	n/a		1	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a	
18	Water Control Structure	280	CY	56 ^{n/a}	35	4	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
19	Inflatable Obermeyer Gates	3	EA	n/a ^{n/a}	n/a	24	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
15 - Floodway Control and Diversion Structures Total								--	--	--	--	0.07	--	--	--	--	--	--	--	--	0.10	
19 - Buildings, Grounds, and Utilities																						
20	Mobilization and Demobilization	-	-	22	21	2	0.1207	0.06	--	--	--	--	--	0.06	--	--	--	--	--	--	--	
21	CMU Building and Earthwork Pad Constructi		EA	n/a		30	0.1207	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	
22	Concrete Duct Bank	40	CY	8		1	0.1207	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	
19 - Buildings, Grounds, and Utilities Total								0.06	--	--	--	0.07	--	0.06	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment																						
23	Mobilization and Demobilization	-	-	4 ^{n/a}		2	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
24	Power, Electrical, & Mechanical Equipment	-	-	n/a ³⁵	n/a	30	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
25	Communication Equipment	-	-	n/a	n/a	12	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment Total								--	--	--	--	--	--	--	--	--	--	--	--	--		
GRAND TOTAL								21	0.18	0.23	0.26	4.93	5.08	4.93	5.00	4.93	4.93	8.40	8.40	8.51	8.40	

n/a

Table K-637. ROG Emissions from Haul Tr

#	Activity	Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	0.0000
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	0.58	--	--	--	--	--	--	0.0018
3	Temporary Electrical Power	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
		--	--	--	--	--	--	--	--	0.58	0.01	--	--	--	--	--	0.0018
09 - Channels and Canals																	
4	Mobilization and Demobilization	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	0.0001
5	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0020
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
7	Riprap - Class 2	3.47	3.47	3.47	3.47	3.47	3.47	--	--	--	--	--	--	--	--	--	0.1249
8	Erosion Control Seeding	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	--	n/a
		3.47	3.47	3.47	3.47	3.47	3.47	--	0.11	--	--	--	--	--	--	--	0.1270
11 - Levees and Floodwalls																	
9	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.03	--	--	--	--	--	--	0.0000
10	Berm/Levee Fill	4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	--	--	--	--	--	--	--	0.2344
		4.93	4.93	4.93	4.93	4.93	4.93	4.93	4.93	0.03	--	--	--	--	--	--	0.2344
15 - Floodway Control and Diversion Structures																	
11	Mobilization and Demobilization	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	0.0001
12	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
13	Construction Site Dewatering (Pumping)	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0001
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
18	Water Control Structure	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0003
19	Inflatable Obermeyer Gates	--	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
		0.13	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	0.0004
19 - Buildings, Grounds, and Utilities																	
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0001
21	CMU Building and Earthwork Pad Constructi	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0001
20 - Permanent Operating Equipment																	
23	Mobilization and Demobilization	--	--	0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	0.0000
24	Power, Electrical, & Mechanical Equipment	--	--	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
25	Communication Equipment	--	--	--	--	--	--	n/a	n/a	--	--	--	--	--	--	--	n/a
		--	--	0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	0.0000
GRAND TOTAL		8.53	8.40	8.41	8.40	8.48	8.40	4.93	5.05	0.62	0.01	--	--	--	--	--	0.3636

Table K-638. NOx Emissions from Haul Trucks (Southern Water Control Structure)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximum														
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul		
02 - Relocations																						
1	Mobilization and Demobilization	-	-	4	21	2	3.5212	0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Levee O&M Road Regrading (6" AB)	218,000	SF	506		6	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3	Temporary Electrical Power	100	F	n/a		1	3.5212	n/a	--	--	--	--	--	--	--	--	--	--	--	--	--	
02 - Relocations Total								0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals																						
4	Mobilization and Demobilization	-	-	40 ²⁶	21	2	3.5212	3.26	--	--	--	--	--	--	--	--	--	--	--	--	--	
5	Clearing and Grubbing	67	ACR	670 ^{n/a}	22	17	3.5212	--	6.73	6.73	6.73	--	--	--	--	--	--	--	--	--	--	
6	Excavation/Grading (Dry Conditions)	133,580	CY	n/a	n/a	30	3.5212	--	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	--	--	
7	Riprap - Class 2	153,590	TN	14,222	66	72	3.5212	--	--	--	--	--	101.20	101.20	101.20	101.20	101.20	101.20	101.20	101.20	101.20	
8	Erosion Control Seeding	24	ACR	n/a		13	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals Total								3.26	6.73	6.73					101.20	101.20	101.20	101.20	101.20	101.20	101.20	
11 - Levees and Floodwalls																						
9	Mobilization and Demobilization	-	-	10		2	3.5212	--	--	0.82	--	--	--	--	--	--	--	--	--	--	--	
10	Berm/Levee Fill	213,520	CY	26,690 ^{n/a}	66	95	3.5212	--	--	--	143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94	
11 - Levees and Floodwalls Total								--	--	0.82	143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94
15 - Floodway Control and Diversion Structures																						
11	Mobilization and Demobilization	-	-	26 ²¹		2	3.5212	--	--	--	--	2.12	--	--	--	--	--	--	--	--	--	
12	Construction Site Dewatering (Pumping)	93,000	SF	n/a	n/a	78	3.5212	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	
13	Construction Site Dewatering (Pumping)	-	-	n/a	n/a	54	3.5212	--	--	--	--	--	--	--	n/a	--	--	--	--	--	--	
14	Excavation (Wet Conditions)	25,960	CY	n/a	n/a	15	3.5212	--	--	--	--	n/a	n/a	--	--	--	--	--	--	--	--	
15	Sheet Pile Wall	1,840	SF	n/a ²¹		2	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
16	Culvert Headwall	110	CY	22 ^{n/a}	35	2	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	2.99	--	
17	Precast Box Culvert 10'x8' 30'	30	F	n/a		1	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a	
18	Water Control Structure	280	CY	56 ^{n/a}	35	4	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
19	Inflatable Obermeyer Gates	3	EA	n/a ^{n/a}	n/a	24	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
15 - Floodway Control and Diversion Structures Total								--	--	--	--	2.12	--	--	--	--	--	--	--	--	2.99	--
19 - Buildings, Grounds, and Utilities																						
20	Mobilization and Demobilization	-	-	22	21	2	3.5212	1.79	--	--	--	--	--	1.79	--	--	--	--	--	--	--	
21	CMU Building and Earthwork Pad Constructi		EA	n/a		30	3.5212	--	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	
22	Concrete Duct Bank	40	CY	8		1	3.5212	--	--	--	2.17	--	--	--	--	--	--	--	--	--	--	
19 - Buildings, Grounds, and Utilities Total								1.79	--	--	--	2.17	--	1.79	--	--	--	--	--	--	--	--
20 -Permanent Operating Equipment																						
23	Mobilization and Demobilization	-	-	4 ^{n/a}		2	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
24	Power, Electrical, & Mechanical Equipment	-	-	n/a ³⁵	n/a	30	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
25	Communication Equipment	-	-	n/a	n/a	12	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment Total								--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GRAND TOTAL								5.38	6.73	7.55	143.94	148.23	143.94	145.73	143.94	143.94	245.14	245.14	248.13	245.14		

n/a

Table K-638. NOx Emissions from Haul Tru

#	Activity	m Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	0.33	--	--	--	--	--	0.0003
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	17.02	--	--	--	--	--	--	0.0511
3	Temporary Electrical Power	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
		--	--	--	--	--	--	--	--	17.02	0.33	--	--	--	--	--	0.0514
09 - Channels and Canals																	
4	Mobilization and Demobilization	--	--	--	--	--	--	--	3.26	--	--	--	--	--	--	--	0.0033
5	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0572
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
7	Riprap - Class 2	101.20	101.20	101.20	101.20	101.20	101.20	--	--	--	--	--	--	--	--	--	3.6432
8	Erosion Control Seeding	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	--	n/a
		101.20	101.20	101.20	101.20	101.20	101.20	--	3.26	--	--	--	--	--	--	--	3.7037
11 - Levees and Floodwalls																	
9	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.82	--	--	--	--	--	--	0.0008
10	Berm/Levee Fill	143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94	--	--	--	--	--	--	--	6.8372
		143.94	143.94	143.94	143.94	143.94	143.94	143.94	143.94	0.82	--	--	--	--	--	--	6.8380
15 - Floodway Control and Diversion Structures																	
11	Mobilization and Demobilization	--	--	--	--	2.12	--	--	--	--	--	--	--	--	--	--	0.0021
12	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
13	Construction Site Dewatering (Pumping)	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0030
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
18	Water Control Structure	3.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0076
19	Inflatable Obermeyer Gates	--	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
		3.80	--	--	--	2.12	--	--	--	--	--	--	--	--	--	--	0.0127
19 - Buildings, Grounds, and Utilities																	
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0018
21	CMU Building and Earthwork Pad Constructi	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0011
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0029
20 - Permanent Operating Equipment																	
23	Mobilization and Demobilization	--	--	0.33	--	--	--	--	--	0.33	--	--	--	--	--	--	0.0003
24	Power, Electrical, & Mechanical Equipment	--	--	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
25	Communication Equipment	--	--	--	--	--	--	n/a	n/a	--	--	--	--	--	--	--	n/a
		--	--	0.33	--	--	--	--	--	0.33	--	--	--	--	--	--	0.0003
GRAND TOTAL		248.95	245.14	245.47	245.14	247.26	245.14	143.94	147.20	18.16	0.33	--	--	--	--	--	10.6090

Table K-639. CO Emissions from Haul Trucks (Southern Water Control Structure)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximu															
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul			
02 - Relocations																							
1	Mobilization and Demobilization	-	-	4	21	2	0.7423	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Levee O&M Road Regrading (6" AB)	218,000	SF	506		6	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3	Temporary Electrical Power	100	F	n/a		1	0.7423	n/a	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
02 - Relocations Total								0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals																							
4	Mobilization and Demobilization	-	-	40 ²⁶	21	2	0.7423	0.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5	Clearing and Grubbing	67	ACR	670 ^{n/a}	22	17	0.7423	--	1.42	1.42	1.42	--	--	--	--	--	--	--	--	--	--	--	
6	Excavation/Grading (Dry Conditions)	133,580	CY	n/a	n/a	30	0.7423	--	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	--	--	
7	Riprap - Class 2	153,590	TN	14,222	66	72	0.7423	--	--	--	--	--	--	21.34	21.34	21.34	21.34	21.34	21.34	21.34	21.34	21.34	
8	Erosion Control Seeding	24	ACR	n/a		13	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals Total								0.69	1.42	1.42							21.34	21.34	21.34	21.34	21.34	21.34	
11 - Levees and Floodwalls																							
9	Mobilization and Demobilization	-	-	10		2	0.7423	--	--	0.17	--	--	--	--	--	--	--	--	--	--	--	--	
10	Berm/Levee Fill	213,520	CY	26,690 ^{n/a}	66	95	0.7423	--	--	--	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	
11 - Levees and Floodwalls Total								--	--	0.17	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35
15 - Floodway Control and Diversion Structures																							
11	Mobilization and Demobilization	-	-	26 ²¹		2	0.7423	--	--	--	--	0.45	--	--	--	--	--	--	--	--	--	--	
12	Construction Site Dewatering (Pumping)	93,000	SF	n/a	n/a	78	0.7423	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	--	
13	Construction Site Dewatering (Pumping)	-	-	n/a		54	0.7423	--	--	--	--	--	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
14	Excavation (Wet Conditions)	25,960	CY	n/a		15	0.7423	--	--	--	--	n/a	n/a	--	--	--	--	--	--	--	--	--	
15	Sheet Pile Wall	1,840	SF	n/a ²¹		2	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	n/a	--	--	
16	Culvert Headwall	110	CY	22	35	2	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	--	0.63	--	
17	Precast Box Culvert 10'x8' 30'	30	F	n/a ^{n/a}		1	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a	
18	Water Control Structure	280	CY	56 ^{n/a}	35	4	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
19	Inflatable Obermeyer Gates	3	EA	n/a ^{n/a}	n/a	24	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
15 - Floodway Control and Diversion Structures Total								--	--	--	--	0.45	--	--	--	--	--	--	--	--	--	0.63	--
19 - Buildings, Grounds, and Utilities																							
20	Mobilization and Demobilization	-	-	22	21	2	0.7423	0.38	--	--	--	--	--	0.38	--	--	--	--	--	--	--	--	
21	CMU Building and Earthwork Pad Constructi		EA	n/a		30	0.7423	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	
22	Concrete Duct Bank	40	CY	8		1	0.7423	--	--	--	--	0.46	--	--	--	--	--	--	--	--	--	--	
19 - Buildings, Grounds, and Utilities Total								0.38	--	--	--	0.46	--	0.38	--	--	--	--	--	--	--	--	--
20 -Permanent Operating Equipment																							
23	Mobilization and Demobilization	-	-	4 ^{n/a}		2	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
24	Power, Electrical, & Mechanical Equipment	-	-	n/a ³⁵	n/a	30	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
25	Communication Equipment	-	-	n/a	n/a	12	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment Total								--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GRAND TOTAL								21	1.13	1.42	1.59	30.35	31.25	30.35	30.72	30.35	30.35	51.68	51.68	52.31	51.68		

n/a

Table K-639. CO Emissions from Haul Truc

#	Activity	Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	0.0001
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	3.59	--	--	--	--	--	--	0.0108
3	Temporary Electrical Power	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
		--	--	--	--	--	--	--	--	3.59	0.07	--	--	--	--	--	0.0108
09 - Channels and Canals																	
4	Mobilization and Demobilization	--	--	--	--	--	--	--	0.69	--	--	--	--	--	--	--	0.0007
5	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0121
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
7	Riprap - Class 2	21.34	21.34	21.34	21.34	21.34	21.34	--	--	--	--	--	--	--	--	--	0.7681
8	Erosion Control Seeding	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	--	n/a
		21.34	21.34	21.34	21.34	21.34	21.34	--	0.69	--	--	--	--	--	--	--	0.7808
11 - Levees and Floodwalls																	
9	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	0.0002
10	Berm/Levee Fill	30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	--	--	--	--	--	--	--	1.4414
		30.35	30.35	30.35	30.35	30.35	30.35	30.35	30.35	0.17	--	--	--	--	--	--	1.4416
15 - Floodway Control and Diversion Structures																	
11	Mobilization and Demobilization	--	--	--	--	0.45	--	--	--	--	--	--	--	--	--	--	0.0004
12	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
13	Construction Site Dewatering (Pumping)	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0006
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
18	Water Control Structure	0.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0016
19	Inflatable Obermeyer Gates	--	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
		0.80	--	--	--	0.45	--	--	--	--	--	--	--	--	--	--	0.0027
19 - Buildings, Grounds, and Utilities																	
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0004
21	CMU Building and Earthwork Pad Constructi	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0006
20 - Permanent Operating Equipment																	
23	Mobilization and Demobilization	--	--	0.07	--	--	--	--	--	0.07	--	--	--	--	--	--	0.0001
24	Power, Electrical, & Mechanical Equipment	--	--	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
25	Communication Equipment	--	--	--	--	--	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
		--	--	0.07	--	--	--	--	--	0.07	--	--	--	--	--	--	0.0001
GRAND TOTAL		52.48	51.68	51.75	51.68	52.13	51.68	30.35	31.03	3.83	0.07	--	--	--	--	--	2.2366

Table K-640. SOx Emissions from Haul Trucks (Southern Water Control Structure)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximu															
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul			
02 - Relocations																							
1	Mobilization and Demobilization	-	-	4	21	2	0.0152	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--		
2	Levee O&M Road Regrading (6" AB)	218,000	SF	506		6	0.0152	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
3	Temporary Electrical Power	100	F	n/a		1	0.0152	n/a	--	--	--	--	--	--	--	--	--	--	--	--	--		
02 - Relocations Total								0.00	--	--	--	--	--	--	--	--	--	--	--	--	--		
09 - Channels and Canals																							
4	Mobilization and Demobilization	-	-	40 ²⁶	21	2	0.0152	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--		
5	Clearing and Grubbing	67	ACR	670 ^{n/a}	22	17	0.0152	--	0.03	0.03	0.03	--	--	--	--	--	--	--	--	--	--		
6	Excavation/Grading (Dry Conditions)	133,580	CY	n/a	n/a	30	0.0152	--	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	--	--		
7	Riprap - Class 2	153,590	TN	14,222	66	72	0.0152	--	--	--	--	--	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44		
8	Erosion Control Seeding	24	ACR	n/a		13	0.0152	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
09 - Channels and Canals Total								0.01	0.03	0.03							0.44	0.44	0.44	0.44	0.44	0.44	
11 - Levees and Floodwalls																							
9	Mobilization and Demobilization	-	-	10		2	0.0152	--	--	0.00	--	--	--	--	--	--	--	--	--	--	--		
10	Berm/Levee Fill	213,520	CY	26,690 ^{n/a}	66	95	0.0152	--	--	--	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62		
11 - Levees and Floodwalls Total								--	--	0.00	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
15 - Floodway Control and Diversion Structures																							
11	Mobilization and Demobilization	-	-	26 ²¹		2	0.0152	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--		
12	Construction Site Dewatering (Pumping)	93,000	SF	n/a	n/a	78	0.0152	--	--	--	--	--	n/a	--	--	--	--	--	--	--	--		
13	Construction Site Dewatering (Pumping)	-	-	n/a		54	0.0152	--	--	--	--	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a		
14	Excavation (Wet Conditions)	25,960	CY	n/a		15	0.0152	--	--	--	--	n/a	n/a	--	--	--	--	--	--	--	--		
15	Sheet Pile Wall	1,840	SF	n/a ²¹		2	0.0152	--	--	--	--	--	--	--	--	--	--	--	n/a	--	--		
16	Culvert Headwall	110	CY	22	35	2	0.0152	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--		
17	Precast Box Culvert 10'x8' 30'	30	F	n/a ^{n/a}		1	0.0152	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a		
18	Water Control Structure	280	CY	56 ^{n/a}	35	4	0.0152	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
19	Inflatable Obermeyer Gates	3	EA	n/a ^{n/a}	n/a	24	0.0152	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
15 - Floodway Control and Diversion Structures Total								--	--	--	--	0.01	--	--	--	--	--	--	--	--	0.01	--	
19 - Buildings, Grounds, and Utilities																							
20	Mobilization and Demobilization	-	-	22	21	2	0.0152	0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	--		
21	CMU Building and Earthwork Pad Constructi		EA	n/a		30	0.0152	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--		
22	Concrete Duct Bank	40	CY	8		1	0.0152	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--		
19 - Buildings, Grounds, and Utilities Total								0.01	--	--	--	0.01	--	0.01	--	--	--	--	--	--	--	--	--
20 - Permanent Operating Equipment																							
23	Mobilization and Demobilization	-	-	4 ^{n/a}		2	0.0152	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
24	Power, Electrical, & Mechanical Equipment	-	-	n/a ³⁵	n/a	30	0.0152	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
25	Communication Equipment	-	-	n/a	n/a	12	0.0152	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
20 - Permanent Operating Equipment Total								--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GRAND TOTAL								21	0.02	0.03	0.03	0.62	0.64	0.62	0.63	0.62	0.62	1.06	1.06	1.07	1.06		

n/a

Table K-640. SOx Emissions from Haul Tru

#	Activity	Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	--	0.0000
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	0.0002
3	Temporary Electrical Power	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
		--	--	--	--	--	--	--	--	0.07	0.00	--	--	--	--	--	0.0002
09 - Channels and Canals																	
4	Mobilization and Demobilization	--	--	--	--	--	--	--	0.01	--	--	--	--	--	--	--	0.0000
5	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0002
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
7	Riprap - Class 2	0.44	0.44	0.44	0.44	0.44	0.44	--	--	--	--	--	--	--	--	--	0.0157
8	Erosion Control Seeding	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	--	n/a
		0.44	0.44	0.44	0.44	0.44	0.44	--	0.01	--	--	--	--	--	--	--	0.0160
11 - Levees and Floodwalls																	
9	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	0.0000
10	Berm/Levee Fill	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	--	--	--	--	--	--	--	0.0296
		0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.00	--	--	--	--	--	--	0.0296
15 - Floodway Control and Diversion Structures																	
11	Mobilization and Demobilization	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	0.0000
12	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
13	Construction Site Dewatering (Pumping)	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0000
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
18	Water Control Structure	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0000
19	Inflatable Obermeyer Gates	--	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
		0.02	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	0.0001
19 - Buildings, Grounds, and Utilities																	
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0000
21	CMU Building and Earthwork Pad Constructi	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0000
20 - Permanent Operating Equipment																	
23	Mobilization and Demobilization	--	--	0.00	--	--	--	--	--	0.00	--	--	--	--	--	--	0.0000
24	Power, Electrical, & Mechanical Equipment	--	--	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
25	Communication Equipment	--	--	--	--	--	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
		--	--	0.00	--	--	--	--	--	0.00	--	--	--	--	--	--	0.0000
GRAND TOTAL		1.08	1.06	1.06	1.06	1.07	1.06	0.62	0.64	0.08	0.00	--	--	--	--	--	0.0459

Table K-641. PM10 Emissions from Haul Trucks (Southern Water Control Structure)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)													Maximum									
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul									
02 - Relocations																													
1	Mobilization and Demobilization	-	-	4	21	2	0.4144	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
2	Levee O&M Road Regrading (6" AB)	218,000	SF	506		6	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
3	Temporary Electrical Power	100	F	n/a		1	0.4144	n/a	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
02 - Relocations Total								0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
09 - Channels and Canals																													
4	Mobilization and Demobilization	-	-	40 ²⁶	21	2	0.4144	0.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
5	Clearing and Grubbing	67	ACR	670 ^{n/a}	22	17	0.4144	--	0.79	0.79	0.79	--	--	--	--	--	--	--	--	--	--	--	--	--					
6	Excavation/Grading (Dry Conditions)	133,580	CY	n/a	n/a	30	0.4144	--	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	--	--	--					
7	Riprap - Class 2	153,590	TN	14,222	66	72	0.4144	--	--	--	--	--	--	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91	11.91					
8	Erosion Control Seeding	24	ACR	n/a		13	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
09 - Channels and Canals Total								0.38	0.79	0.79								11.91	11.91	11.91	11.91	11.91	11.91	11.91					
11 - Levees and Floodwalls																													
9	Mobilization and Demobilization	-	-	10		2	0.4144	--	--	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
10	Berm/Levee Fill	213,520	CY	26,690 ^{n/a}	66	95	0.4144	--	--	--	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94					
11 - Levees and Floodwalls Total								--	--	0.10	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94				
15 - Floodway Control and Diversion Structures																													
11	Mobilization and Demobilization	-	-	26 ²¹		2	0.4144	--	--	--	--	0.25	--	--	--	--	--	--	--	--	--	--	--	--					
12	Construction Site Dewatering (Pumping)	93,000	SF	n/a	n/a	78	0.4144	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	--	--	--					
13	Construction Site Dewatering (Pumping)	-	-	n/a		54	0.4144	--	--	--	--	--	--	--	n/a	--	--	--	--	n/a	n/a	n/a	n/a	n/a					
14	Excavation (Wet Conditions)	25,960	CY	n/a		15	0.4144	--	--	--	--	n/a	n/a	--	--	--	--	--	--	n/a	--	--	--	--					
15	Sheet Pile Wall	1,840	SF	n/a ²¹		2	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	n/a	--	--	--	--					
16	Culvert Headwall	110	CY	22	35	2	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.35	--	--					
17	Precast Box Culvert 10'x8' 30'	30	F	n/a ^{n/a}		1	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a	--					
18	Water Control Structure	280	CY	56 ^{n/a}	35	4	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
19	Inflatable Obermeyer Gates	3	EA	n/a ^{n/a}	n/a	24	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
15 - Floodway Control and Diversion Structures Total								--	--	--	--	0.25	--	--	--	--	--	--	--	--	--	--	0.35	--					
19 - Buildings, Grounds, and Utilities																													
20	Mobilization and Demobilization	-	-	22	21	2	0.4144	0.21	--	--	--	--	--	0.21	--	--	--	--	--	--	--	--	--	--					
21	CMU Building and Earthwork Pad Constructi	-	EA	n/a		30	0.4144	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--					
22	Concrete Duct Bank	40	CY	8		1	0.4144	--	--	--	--	0.26	--	--	--	--	--	--	--	--	--	--	--	--					
19 - Buildings, Grounds, and Utilities Total								0.21	--	--	--	0.26	--	0.21	--	--	--	--	--	--	--	--	--	--					
20 - Permanent Operating Equipment																													
23	Mobilization and Demobilization	-	-	4 ^{n/a}		2	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
24	Power, Electrical, & Mechanical Equipment	-	-	n/a ³⁵	n/a	30	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
25	Communication Equipment	-	-	n/a	n/a	12	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--					
20 - Permanent Operating Equipment Total								--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--						
GRAND TOTAL				21				0.63	0.79	0.89	16.94	17.44	16.94	17.15	16.94	16.94	28.85	28.85	29.20	28.85									

n/a

Table K-641. PM10 Emissions from Haul Tr

#	Activity	Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--	--	0.0000
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	2.00	--	--	--	--	--	--	0.0060
3	Temporary Electrical Power	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
		--	--	--	--	--	--	--	--	2.00	0.04	--	--	--	--	--	0.0060
09 - Channels and Canals																	
4	Mobilization and Demobilization	--	--	--	--	--	--	--	0.38	--	--	--	--	--	--	--	0.0004
5	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0067
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
7	Riprap - Class 2	11.91	11.91	11.91	11.91	11.91	11.91	--	--	--	--	--	--	--	--	--	0.4287
8	Erosion Control Seeding	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	--	n/a
		11.91	11.91	11.91	11.91	11.91	11.91	--	0.38	--	--	--	--	--	--	--	0.4359
11 - Levees and Floodwalls																	
9	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.10	--	--	--	--	--	--	0.0001
10	Berm/Levee Fill	16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	--	--	--	--	--	--	--	0.8046
		16.94	16.94	16.94	16.94	16.94	16.94	16.94	16.94	0.10	--	--	--	--	--	--	0.8047
15 - Floodway Control and Diversion Structures																	
11	Mobilization and Demobilization	--	--	--	--	0.25	--	--	--	--	--	--	--	--	--	--	0.0002
12	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
13	Construction Site Dewatering (Pumping)	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0004
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
18	Water Control Structure	0.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0009
19	Inflatable Obermeyer Gates	--	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
		0.45	--	--	--	0.25	--	--	--	--	--	--	--	--	--	--	0.0015
19 - Buildings, Grounds, and Utilities																	
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0002
21	CMU Building and Earthwork Pad Constructi	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0003
20 - Permanent Operating Equipment																	
23	Mobilization and Demobilization	--	--	0.04	--	--	--	--	--	0.04	--	--	--	--	--	--	0.0000
24	Power, Electrical, & Mechanical Equipment	--	--	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
25	Communication Equipment	--	--	--	--	--	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
		--	--	0.04	--	--	--	--	--	0.04	--	--	--	--	--	--	0.0000
GRAND TOTAL		29.30	28.85	28.89	28.85	29.10	28.85	16.94	17.32	2.14	0.04	--	--	--	--	--	1.2485

Table K-642. PM2.5 Emissions from Haul Trucks (Southern Water Control Structure)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximu														
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul		
02 - Relocations																						
1	Mobilization and Demobilization	-	-	4	21	2	0.1262	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Levee O&M Road Regrading (6" AB)	218,000	SF	506		6	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3	Temporary Electrical Power	100	F	n/a		1	0.1262	n/a	--	--	--	--	--	--	--	--	--	--	--	--	--	
02 - Relocations Total								0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals																						
4	Mobilization and Demobilization	-	-	40 ²⁶	21	2	0.1262	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	
5	Clearing and Grubbing	67	ACR	670 ^{n/a}	22	17	0.1262	--	0.24	0.24	0.24	--	--	--	--	--	--	--	--	--	--	
6	Excavation/Grading (Dry Conditions)	133,580	CY	n/a	n/a	30	0.1262	--	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
7	Riprap - Class 2	153,590	TN	14,222	66	72	0.1262	--	--	--	--	--	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	3.63	
8	Erosion Control Seeding	24	ACR	n/a		13	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals Total								0.12	0.24	0.24							3.63	3.63	3.63	3.63	3.63	
11 - Levees and Floodwalls																						
9	Mobilization and Demobilization	-	-	10		2	0.1262	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	
10	Berm/Levee Fill	213,520	CY	26,690 ^{n/a}	66	95	0.1262	--	--	--	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	
11 - Levees and Floodwalls Total								--	--	0.03	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16
15 - Floodway Control and Diversion Structures																						
11	Mobilization and Demobilization	-	-	26 ²¹		2	0.1262	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	
12	Construction Site Dewatering (Pumping)	93,000	SF	n/a	n/a	78	0.1262	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	
13	Construction Site Dewatering (Pumping)	-	-	n/a		54	0.1262	--	--	--	--	--	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
14	Excavation (Wet Conditions)	25,960	CY	n/a		15	0.1262	--	--	--	--	n/a	n/a	--	--	n/a	--	--	--	--	--	
15	Sheet Pile Wall	1,840	SF	n/a ²¹		2	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
16	Culvert Headwall	110	CY	22	35	2	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	0.11	--	
17	Precast Box Culvert 10'x8' 30'	30	F	n/a ^{n/a}		1	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a	
18	Water Control Structure	280	CY	56 ^{n/a}	35	4	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
19	Inflatable Obermeyer Gates	3	EA	n/a ^{n/a}	n/a	24	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
15 - Floodway Control and Diversion Structures Total								--	--	--	--	0.08	--	--	--	--	--	--	--	--	0.11	--
19 - Buildings, Grounds, and Utilities																						
20	Mobilization and Demobilization	-	-	22	21	2	0.1262	0.06	--	--	--	--	--	0.06	--	--	--	--	--	--	--	
21	CMU Building and Earthwork Pad Constructi	-	EA	n/a		30	0.1262	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	
22	Concrete Duct Bank	40	CY	8		1	0.1262	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	
19 - Buildings, Grounds, and Utilities Total								0.06	--	--	--	0.08	--	0.06	--	--	--	--	--	--	--	--
20 -Permanent Operating Equipment																						
23	Mobilization and Demobilization	-	-	4 ^{n/a}		2	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
24	Power, Electrical, & Mechanical Equipment	-	-	n/a ³⁵	n/a	30	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
25	Communication Equipment	-	-	n/a	n/a	12	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment Total								--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GRAND TOTAL								21	0.19	0.24	0.27	5.16	5.31	5.16	5.22	5.16	5.16	8.78	8.78	8.89	8.78	

n/a

Table K-642. PM2.5 Emissions from Haul T

#	Activity	Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	0.0000
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	0.61	--	--	--	--	--	--	0.0018
3	Temporary Electrical Power	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
		--	--	--	--	--	--	--	--	0.61	0.01	--	--	--	--	--	0.0018
09 - Channels and Canals																	
4	Mobilization and Demobilization	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	0.0001
5	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0020
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
7	Riprap - Class 2	3.63	3.63	3.63	3.63	3.63	3.63	--	--	--	--	--	--	--	--	--	0.1305
8	Erosion Control Seeding	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	--	n/a
		3.63	3.63	3.63	3.63	3.63	3.63	--	0.12	--	--	--	--	--	--	--	0.1327
11 - Levees and Floodwalls																	
9	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.03	--	--	--	--	--	--	0.0000
10	Berm/Levee Fill	5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	--	--	--	--	--	--	--	0.2450
		5.16	5.16	5.16	5.16	5.16	5.16	5.16	5.16	0.03	--	--	--	--	--	--	0.2450
15 - Floodway Control and Diversion Structures																	
11	Mobilization and Demobilization	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	0.0001
12	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
13	Construction Site Dewatering (Pumping)	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0001
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
18	Water Control Structure	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0003
19	Inflatable Obermeyer Gates	--	n/a	n/a	n/a	--	--	--	--	--	--	--	--	--	--	--	n/a
		0.14	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	0.0005
19 - Buildings, Grounds, and Utilities																	
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0001
21	CMU Building and Earthwork Pad Constructi	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	n/a
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0001
20 - Permanent Operating Equipment																	
23	Mobilization and Demobilization	--	--	0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	0.0000
24	Power, Electrical, & Mechanical Equipment	--	--	--	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
25	Communication Equipment	--	--	--	--	--	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
		--	--	0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	0.0000
GRAND TOTAL		8.92	8.78	8.80	8.78	8.86	8.78	5.16	5.27	0.65	0.01	--	--	--	--	--	0.3801

Table K-643. GHG Emissions from Haul Trucks (Southern Water Control Structure)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	CO2 Emission Factor (g/mi)	Annual Emissions, MTCO2e/yr
02 - Relocations								
1	Mobilization and Demobilization	-	-	4		2	1,604.39	0.13
2	Levee O&M Road Regrading (6" AB)	218,000	SF	506		6	1,604.39	21.11
3	Temporary Electrical Power	100	F	n/a	n/a	1	1,604.39	n/a
02 - Relocations Total								21.24
09 - Channels and Canals								
4	Mobilization and Demobilization	-	-	40 ²⁶		2	1,604.39	1.35
5	Clearing and Grubbing	67	ACR	670	22	17	1,604.39	23.65
6	Excavation/Grading (Dry Conditions)	133,580	CY	n/a	n/a	30	1,604.39	n/a
7	Riprap - Class 2	153,590	TN	14,222	66	72	1,604.39	1,505.96
8	Erosion Control Seeding	24	ACR	n/a ²¹	n/a	13	1,604.39	n/a
09 - Channels and Canals Total								1,530.96
11 - Levees and Floodwalls								
9	Mobilization and Demobilization	-	-	10		2	1,604.39	0.34
10	Berm/Levee Fill	213,520	CY	26,690	66	95	1,604.39	2,826.20
11 - Levees and Floodwalls Total								2,826.53
15 - Floodway Control and Diversion Structures								
11	Mobilization and Demobilization	-	-	26 ²¹		2	1,604.39	0.88
12	Construction Site Dewatering(Pumping)	93,000	SF	n/a	n/a	78	1,604.39	n/a
13	Construction Site Dewatering (Pumping)	-	-	n/a	n/a	54	1,604.39	n/a
14	Excavation (Wet Conditions)	25,960	CY	n/a	n/a	15	1,604.39	n/a
15	Sheet Pile Wall	1,840	SF	n/a ²¹	n/a	2	1,604.39	n/a
16	Culvert Headwall	110	CY	22	35	2	1,604.39	1.24
17	Precast Box Culvert 10'x8' 30'	30	F	n/a	n/a	1	1,604.39	n/a
18	Water Control Structure	280	CY	56	35	4	1,604.39	3.14
19	Inflatable Obermeyer Gates	3	EA	n/a	n/a	24	1,604.39	n/a
15 - Floodway Control and Diversion Structures Total								5.26
19 - Buildings, Grounds, and Utilities								
20	Mobilization and Demobilization	-	-	22		2	1,604.39	0.74
21	CMU Building and Earthwork Pad Constructi		EA	n/a	n/a	30	1,604.39	n/a
22	Concrete Duct Bank	40	CY	8	35	1	1,604.39	0.45
19 - Buildings, Grounds, and Utilities Total								1.19
20 -Permanent Operating Equipment								
23	Mobilization and Demobilization	-	-	4		2	1,604.39	0.13
24	Power, Electrical, & Mechanical Equipment	-	-	n/a	n/a	30	1,604.39	n/a
25	Communication Equipment	-	-	n/a	n/a	12	1,604.39	n/a
20 -Permanent Operating Equipment Total								0.13
GRAND TOTAL				21				4,385.31

Table K-644. PM10 Emissions Summary from Fugitive Dust (Southern Water Control Structure)

#	Activity	PM10 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
02 - Relocations																				
1	Mobilization and Demobilization	n/a																		
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
	Levee O&M Road Regrading (6" AB) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Temporary Electrical Power	n/a																		
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust																			
	Temporary Electrical Power Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	02 - Relocations Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals																				
4	Mobilization and Demobilization	n/a																		
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing																			
	Material Handling	n/a	n/a	n/a																
	Grading		1.06	1.06	1.06															
	Bulldozing	n/a	n/a	n/a																
	Unpaved Road Dust	n/a	n/a	n/a																
	Paved Road Dust																			
	Clearing and Grubbing Subtotal	--	1.06	1.06	1.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Excavation/Grading (Dry Conditions)																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
	Excavation/Grading (Dry Conditions) Subtotal	--	--	--	--	7.65	7.65	7.65	7.65	7.65	7.65	7.65	--	--	--	--	--	--	--	--

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Table K-644. PM10 Emissions Summary from Fugitive D

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
02 - Relocations											
1	Mobilization and Demobilization										
	Material Handling				n/a						
	Grading				n/a						
	Bulldozing				n/a						
	Unpaved Road Dust				n/a						
	Paved Road Dust										
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)										
	Material Handling			n/a							n/a
	Grading			0.53							0.00
	Bulldozing			n/a							n/a
	Unpaved Road Dust			n/a							n/a
	Paved Road Dust										
	Levee O&M Road Regrading (6" AB) Subtotal	--	--	0.53	--	--	--	--	--	--	0.00
3	Temporary Electrical Power										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										
	Temporary Electrical Power Subtotal	--	--	--	--	--	--	--	--	--	--
	02 - Relocations Total	--	--	0.53	n/a	--	--	--	--	--	0.00
09 - Channels and Canals											
4	Mobilization and Demobilization										
	Material Handling		n/a		n/a						n/a
	Grading		n/a		n/a						n/a
	Bulldozing		n/a								n/a
	Unpaved Road Dust		n/a								n/a
	Paved Road Dust										
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing										
	Material Handling										n/a
	Grading										0.01
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										
	Clearing and Grubbing Subtotal	--	--	--	--	--	--	--	--	--	0.01
6	Excavation/Grading (Dry Conditions)										
	Material Handling										n/a
	Grading										0.08
	Bulldozing										0.04
	Unpaved Road Dust										n/a
	Paved Road Dust										
	Excavation/Grading (Dry Conditions) Subtotal	--	--	--	--	--	--	--	--	--	0.11

Table K-644. PM10 Emissions Summary from Fugitive Dust (Southern Water Control Structure)

#	Activity	PM10 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
7	Riprap - Class 2																			
	Material Handling							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading							1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
	Bulldozing							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
Riprap - Class 2 Subtotal		--	--	--	--	--	--	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
8	Erosion Control Seeding																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Erosion Control Seeding Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals Total		--	1.06	1.06	1.06	7.65	7.65	8.71	8.71	8.71	8.71	8.71	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
11 - Levees and Floodwalls																				
9	Mobilization and Demobilization																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Mobilization and Demobilization Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Berm/Levee Fill																			
	Material Handling							4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12
	Grading							1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
	Bulldozing							4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70
	Unpaved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
Berm/Levee Fill Subtotal		--	--	--	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88
11 - Levees and Floodwalls Total		--	--	--	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88
15 - Floodway Control and Diversion Structures																				
11	Mobilization and Demobilization																			
	Material Handling																			n/a
	Grading																			n/a
	Bulldozing																			n/a
	Unpaved Road Dust																			n/a
	Paved Road Dust																			
Mobilization and Demobilization Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12	Construction Site Dewatering (Temporary Cofferdam)																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Construction Site Dewatering (Temporary Cofferdam) Sub		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-644. PM10 Emissions Summary from Fugitive D

#	Activity										Annual Emissions, tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
7	Riprap - Class 2 Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust										n/a 0.04 n/a n/a
	Riprap - Class 2 Subtotal	--	--	--	--	--	--	--	--	--	0.04
8	Erosion Control Seeding Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust	n/a n/a n/a n/a									n/a n/a n/a n/a
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	--	--	--	--	--	--	--	--	--	0.16
11 - Levees and Floodwalls											
9	Mobilization and Demobilization Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust			n/a n/a n/a n/a							n/a n/a n/a n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
10	Berm/Levee Fill Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust	4.12 1.06 4.70 n/a	4.12 1.06 4.70 n/a								0.20 0.05 0.22 n/a
	Berm/Levee Fill Subtotal	9.88	9.88	--	--	--	--	--	--	--	0.47
	11 - Levees and Floodwalls Total	9.88	9.88	--	--	--	--	--	--	--	0.47
15 - Floodway Control and Diversion Structures											
11	Mobilization and Demobilization Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust										n/a n/a n/a n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
12	Construction Site Dewatering (Temporary Cofferdam) Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust										n/a n/a n/a n/a
	Construction Site Dewatering (Temporary Cofferdam) Sub	--	--	--	--	--	--	--	--	--	--

Table K-644. PM10 Emissions Summary from Fugitive Dust (Southern Water Control Structure)

#	Activity	PM10 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
13	Construction Site Dewatering (Pumping)																			
	Material Handling									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Bulldozing									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
	Construction Site Dewatering (Pumping) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14	Excavation (Wet Conditions)																			
	Material Handling						n/a	n/a				n/a								
	Grading						n/a	n/a				n/a								
	Bulldozing						n/a	n/a				n/a								
	Unpaved Road Dust						112.65	112.65				112.65								
	Paved Road Dust																			
	Excavation (Wet Conditions) Subtotal	--	--	--	--	--	112.65	112.65	--	--	112.65	--	--	--	--	--	--	--	--	--
15	Sheet Pile Wall																			
	Material Handling											n/a								
	Grading											n/a								
	Bulldozing											n/a								
	Unpaved Road Dust											n/a								
	Paved Road Dust																			
	Sheet Pile Wall Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16	Culvert Headwall																			
	Material Handling											n/a								
	Grading											n/a								
	Bulldozing											n/a								
	Unpaved Road Dust											n/a								
	Paved Road Dust																			
	Culvert Headwall Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Precast Box Culvert 10'x8' 30'																			
	Material Handling												n/a							
	Grading												n/a							
	Bulldozing												n/a							
	Unpaved Road Dust												n/a							
	Paved Road Dust																			
	Precast Box Culvert 10'x8' 30' Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18	Water Control Structure																			
	Material Handling													n/a						
	Grading													n/a						
	Bulldozing													n/a						
	Unpaved Road Dust													n/a						
	Paved Road Dust																			
	Water Control Structure Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Inflatable Obermeyer Gates																			
	Material Handling														n/a	n/a	n/a			
	Grading														n/a	n/a	n/a			
	Bulldozing														n/a	n/a	n/a			
	Unpaved Road Dust														n/a	n/a	n/a			
	Paved Road Dust																			
	Inflatable Obermeyer Gates Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15 - Floodway Control and Diversion Structures Total	--	--	--	--	--	112.65	112.65	--	--	112.65	--	--	--	--	--	--	--	--	--

Table K-644. PM10 Emissions Summary from Fugitive D

#	Activity										Annual Emissions, tpy	
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct		
13	Construction Site Dewatering (Pumping)											
	Material Handling											n/a
	Grading											n/a
	Bulldozing											n/a
	Unpaved Road Dust											n/a
	Paved Road Dust											n/a
	Construction Site Dewatering (Pumping) Subtotal	--	--	--	--	--	--	--	--	--	--	--
14	Excavation (Wet Conditions)											
	Material Handling											n/a
	Grading											n/a
	Bulldozing											n/a
	Unpaved Road Dust											0.80
	Paved Road Dust											
	Excavation (Wet Conditions) Subtotal	--	--	--	--	--	--	--	--	--	--	0.80
15	Sheet Pile Wall											
	Material Handling											n/a
	Grading											n/a
	Bulldozing											n/a
	Unpaved Road Dust											n/a
	Paved Road Dust											n/a
	Sheet Pile Wall Subtotal	--	--	--	--	--	--	--	--	--	--	--
16	Culvert Headwall											
	Material Handling											n/a
	Grading											n/a
	Bulldozing											n/a
	Unpaved Road Dust											n/a
	Paved Road Dust											n/a
	Culvert Headwall Subtotal	--	--	--	--	--	--	--	--	--	--	--
17	Precast Box Culvert 10'x8' 30'											
	Material Handling											n/a
	Grading											n/a
	Bulldozing											n/a
	Unpaved Road Dust											n/a
	Paved Road Dust											n/a
	Precast Box Culvert 10'x8' 30' Subtotal	--	--	--	--	--	--	--	--	--	--	--
18	Water Control Structure											
	Material Handling											n/a
	Grading											n/a
	Bulldozing											n/a
	Unpaved Road Dust											n/a
	Paved Road Dust											n/a
	Water Control Structure Subtotal	--	--	--	--	--	--	--	--	--	--	--
19	Inflatable Obermeyer Gates											
	Material Handling											n/a
	Grading											n/a
	Bulldozing											n/a
	Unpaved Road Dust											n/a
	Paved Road Dust											n/a
	Inflatable Obermeyer Gates Subtotal	--	--	--	--	--	--	--	--	--	--	--
	15 - Floodway Control and Diversion Structures Total	--	--	--	--	--	--	--	--	--	--	0.80

Table K-644. PM10 Emissions Summary from Fugitive Dust (Southern Water Control Structure)

#	Activity	PM10 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
19 - Buildings, Grounds, and Utilities																				
20	Mobilization and Demobilization																			
	Material Handling	n/a						n/a												
	Grading	n/a						n/a												
	Bulldozing	n/a						n/a												
	Unpaved Road Dust	n/a						n/a												
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21	CMU Building and Earthwork Pad Construction																			
	Material Handling		n/a	n/a	n/a	n/a	n/a	n/a												
	Grading		2.12	2.12	2.12	2.12	2.12	2.12												
	Bulldozing		2.35	2.35	2.35	2.35	2.35	2.35												
	Unpaved Road Dust		n/a	n/a	n/a	n/a	n/a	n/a												
	Paved Road Dust																			
	CMU Building and Earthwork Pad Construction Subtotal	--	4.47	4.47	4.47	4.47	4.47	4.47	--	--	--	--	--	--	--	--	--	--	--	--
22	Concrete Duct Bank																			
	Material Handling							n/a												
	Grading							n/a												
	Bulldozing							n/a												
	Unpaved Road Dust							n/a												
	Paved Road Dust																			
	Concrete Duct Bank Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	19 - Buildings, Grounds, and Utilities Total	--	4.47	4.47	4.47	4.47	4.47	4.47	--	--	--	--	--	--	--	--	--	--	--	--
20 -Permanent Operating Equipment																				
23	Mobilization and Demobilization																			
	Material Handling																		n/a	
	Grading																		n/a	
	Bulldozing																		n/a	
	Unpaved Road Dust																		n/a	
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	Power, Electrical, & Mechanical Equipment																			
	Material Handling																		n/a	n/a
	Grading																		n/a	n/a
	Bulldozing																		n/a	n/a
	Unpaved Road Dust																		n/a	n/a
	Paved Road Dust																		n/a	n/a
	Power, Electrical, & Mechanical Equipment Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25	Communication Equipment																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
	Communication Equipment Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20 -Permanent Operating Equipment Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GRAND TOTAL		--	5.53	5.53	15.41	22.00	134.65	131.24	18.59	18.59	131.24	18.59	10.94	10.94	10.94	10.94	10.94	10.94	10.94	10.94

Table K-644. PM10 Emissions Summary from Fugitive D

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
19 - Buildings, Grounds, and Utilities											
20	Mobilization and Demobilization										n/a
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
21	CMU Building and Earthwork Pad Construction										n/a
	Material Handling										0.03
	Grading										0.04
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	CMU Building and Earthwork Pad Construction Subtotal	--	--	--	--	--	--	--	--	--	0.07
22	Concrete Duct Bank										n/a
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Concrete Duct Bank Subtotal	--	--	--	--	--	--	--	--	--	--
	19 - Buildings, Grounds, and Utilities Total	--	--	--	--	--	--	--	--	--	0.07
20 -Permanent Operating Equipment											
23	Mobilization and Demobilization										
	Material Handling			n/a							
	Grading			n/a							
	Bulldozing			n/a							
	Unpaved Road Dust			n/a							
	Paved Road Dust										
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
24	Power, Electrical, & Mechanical Equipment										
	Material Handling	n/a	n/a								n/a
	Grading	n/a									n/a
	Bulldozing	n/a									n/a
	Unpaved Road Dust	n/a									n/a
	Paved Road Dust	n/a									n/a
	Power, Electrical, & Mechanical Equipment Subtotal	--	--	--	--	--	--	--	--	--	--
25	Communication Equipment										
	Material Handling	n/a	n/a								n/a
	Grading	n/a									n/a
	Bulldozing	n/a									n/a
	Unpaved Road Dust	n/a									n/a
	Paved Road Dust	n/a									n/a
	Communication Equipment Subtotal	--	--	--	--	--	--	--	--	--	--
	20 -Permanent Operating Equipment Total	--	--	--	--	--	--	--	--	--	--
GRAND TOTAL		9.88	9.88	0.53	--	--	--	--	--	--	1.50

n/a
n/a
n/a
n/a

Table K-645. PM2.5 Emissions Summary from Fugitive Dust (Southern Water Control Structure)

#	Activity	PM2.5 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
02 - Relocations																				
1	Mobilization and Demobilization	n/a																		
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
	Levee O&M Road Regrading (6" AB) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Temporary Electrical Power	n/a																		
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust																			
	Temporary Electrical Power Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	02 - Relocations Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals																				
4	Mobilization and Demobilization	n/a																		
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing																			
	Material Handling	n/a	n/a	n/a																
	Grading		0.11	0.11	0.11															
	Bulldozing	n/a	n/a	n/a																
	Unpaved Road Dust	n/a	n/a	n/a																
	Paved Road Dust																			
	Clearing and Grubbing Subtotal	--	0.11	0.11	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Excavation/Grading (Dry Conditions)																			
	Material Handling				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading					0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
	Bulldozing					1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29
	Unpaved Road Dust				n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
	Excavation/Grading (Dry Conditions) Subtotal	--	--	--	--	1.86	1.86	1.86	1.86	1.86	1.86	1.86	--	--	--	--	--	--	--	--

Table K-645. PM2.5 Emissions Summary from Fugitive

#	Activity										Annual Emissions, tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations											
1	Mobilization and Demobilization										
	Material Handling				n/a						
	Grading				n/a						
	Bulldozing				n/a						
	Unpaved Road Dust				n/a						
	Paved Road Dust										
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)										
	Material Handling			n/a							n/a
	Grading			0.06							0.00
	Bulldozing			n/a							n/a
	Unpaved Road Dust			n/a							n/a
	Paved Road Dust										
	Levee O&M Road Regrading (6" AB) Subtotal	--	--	0.06	--	--	--	--	--	--	0.00
3	Temporary Electrical Power										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										
	Temporary Electrical Power Subtotal	--	--	--	--	--	--	--	--	--	--
	02 - Relocations Total	--	--	0.06	n/a	--	--	--	--	--	0.00
09 - Channels and Canals											
4	Mobilization and Demobilization										
	Material Handling		n/a		n/a						n/a
	Grading		n/a		n/a						n/a
	Bulldozing		n/a								n/a
	Unpaved Road Dust		n/a								n/a
	Paved Road Dust										
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing										
	Material Handling										n/a
	Grading										0.00
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										
	Clearing and Grubbing Subtotal	--	--	--	--	--	--	--	--	--	0.00
6	Excavation/Grading (Dry Conditions)										
	Material Handling										n/a
	Grading										0.01
	Bulldozing										0.02
	Unpaved Road Dust										n/a
	Paved Road Dust										
	Excavation/Grading (Dry Conditions) Subtotal	--	--	--	--	--	--	--	--	--	0.03

Table K-645. PM2.5 Emissions Summary from Fugitive Dust (Southern Water Control Structure)

#	Activity	PM2.5 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
7	Riprap - Class 2																			
	Material Handling							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading							0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
	Bulldozing							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
Riprap - Class 2 Subtotal		--	--	--	--	--	--	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
8	Erosion Control Seeding																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Erosion Control Seeding Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals Total		--	0.11	0.11	0.11	1.86	1.86	1.98	1.98	1.98	1.98	1.98	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
11 - Levees and Floodwalls																				
9	Mobilization and Demobilization																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Mobilization and Demobilization Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Berm/Levee Fill																			
	Material Handling							0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
	Grading							0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
	Bulldozing							2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58
	Unpaved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
Berm/Levee Fill Subtotal		--	--	--	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
11 - Levees and Floodwalls Total		--	--	--	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
15 - Floodway Control and Diversion Structures																				
11	Mobilization and Demobilization																			
	Material Handling																			n/a
	Grading																			n/a
	Bulldozing																			n/a
	Unpaved Road Dust																			n/a
	Paved Road Dust																			
Mobilization and Demobilization Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12	Construction Site Dewatering (Temporary Cofferdam)																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Construction Site Dewatering (Temporary Cofferdam) Sub		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-645. PM2.5 Emissions Summary from Fugitive

#	Activity										Annual Emissions, tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
7	Riprap - Class 2 Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust										n/a 0.00 n/a n/a
	Riprap - Class 2 Subtotal	--	--	--	--	--	--	--	--	--	0.00
8	Erosion Control Seeding Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust	n/a n/a n/a n/a									n/a n/a n/a n/a
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	--	--	--	--	--	--	--	--	--	0.03
11 - Levees and Floodwalls											
9	Mobilization and Demobilization Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust			n/a n/a n/a n/a							n/a n/a n/a n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
10	Berm/Levee Fill Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust	0.62 0.11 2.58 n/a	0.62 0.11 2.58 n/a								0.03 0.01 0.12 n/a
	Berm/Levee Fill Subtotal	3.32	3.32	--	--	--	--	--	--	--	0.16
	11 - Levees and Floodwalls Total	3.32	3.32	--	--	--	--	--	--	--	0.16
15 - Floodway Control and Diversion Structures											
11	Mobilization and Demobilization Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust										n/a n/a n/a n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
12	Construction Site Dewatering (Temporary Cofferdam) Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust										n/a n/a n/a n/a
	Construction Site Dewatering (Temporary Cofferdam) Sub	--	--	--	--	--	--	--	--	--	--

Table K-645. PM2.5 Emissions Summary from Fugitive Dust (Southern Water Control Structure)

#	Activity	PM2.5 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
13	Construction Site Dewatering (Pumping)																			
	Material Handling									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Bulldozing									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
	Construction Site Dewatering (Pumping) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14	Excavation (Wet Conditions)																			
	Material Handling						n/a	n/a				n/a								
	Grading						n/a	n/a				n/a								
	Bulldozing						n/a	n/a				n/a								
	Unpaved Road Dust							11.27	11.27				11.27							
	Paved Road Dust																			
	Excavation (Wet Conditions) Subtotal	--	--	--	--	--	11.27	11.27	--	--	11.27	--	--	--	--	--	--	--	--	--
15	Sheet Pile Wall																			
	Material Handling											n/a								
	Grading											n/a								
	Bulldozing											n/a								
	Unpaved Road Dust											n/a								
	Paved Road Dust																			
	Sheet Pile Wall Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16	Culvert Headwall																			
	Material Handling											n/a								
	Grading											n/a								
	Bulldozing											n/a								
	Unpaved Road Dust											n/a								
	Paved Road Dust																			
	Culvert Headwall Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Precast Box Culvert 10'x8' 30'																			
	Material Handling												n/a							
	Grading												n/a							
	Bulldozing												n/a							
	Unpaved Road Dust												n/a							
	Paved Road Dust																			
	Precast Box Culvert 10'x8' 30' Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18	Water Control Structure																			
	Material Handling													n/a						
	Grading													n/a						
	Bulldozing													n/a						
	Unpaved Road Dust													n/a						
	Paved Road Dust																			
	Water Control Structure Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Inflatable Obermeyer Gates																			
	Material Handling														n/a	n/a	n/a			
	Grading														n/a	n/a	n/a			
	Bulldozing														n/a	n/a	n/a			
	Unpaved Road Dust														n/a	n/a	n/a			
	Paved Road Dust																			
	Inflatable Obermeyer Gates Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15 - Floodway Control and Diversion Structures Total	--	--	--	--	--	11.27	11.27	--	--	11.27	--	--	--	--	--	--	--	--	--

Table K-645. PM2.5 Emissions Summary from Fugitive

#	Activity										Annual Emissions, tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
13	Construction Site Dewatering (Pumping)										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Construction Site Dewatering (Pumping) Subtotal	--	--	--	--	--	--	--	--	--	--
14	Excavation (Wet Conditions)										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										0.08
	Paved Road Dust										
	Excavation (Wet Conditions) Subtotal	--	--	--	--	--	--	--	--	--	0.08
15	Sheet Pile Wall										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Sheet Pile Wall Subtotal	--	--	--	--	--	--	--	--	--	--
16	Culvert Headwall										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Culvert Headwall Subtotal	--	--	--	--	--	--	--	--	--	--
17	Precast Box Culvert 10'x8' 30'										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Precast Box Culvert 10'x8' 30' Subtotal	--	--	--	--	--	--	--	--	--	--
18	Water Control Structure										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Water Control Structure Subtotal	--	--	--	--	--	--	--	--	--	--
19	Inflatable Obermeyer Gates										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Inflatable Obermeyer Gates Subtotal	--	--	--	--	--	--	--	--	--	--
	15 - Floodway Control and Diversion Structures Total	--	--	--	--	--	--	--	--	--	0.08

Table K-645. PM2.5 Emissions Summary from Fugitive Dust (Southern Water Control Structure)

#	Activity	PM2.5 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
19 - Buildings, Grounds, and Utilities																				
20	Mobilization and Demobilization																			
	Material Handling	n/a						n/a												
	Grading	n/a						n/a												
	Bulldozing	n/a						n/a												
	Unpaved Road Dust	n/a						n/a												
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21	CMU Building and Earthwork Pad Construction																			
	Material Handling		n/a	n/a	n/a	n/a	n/a	n/a												
	Grading		0.23	0.23	0.23	0.23	0.23	0.23												
	Bulldozing		1.29	1.29	1.29	1.29	1.29	1.29												
	Unpaved Road Dust		n/a	n/a	n/a	n/a	n/a	n/a												
	Paved Road Dust																			
	CMU Building and Earthwork Pad Construction Subtotal	--	1.52	1.52	1.52	1.52	1.52	1.52	--	--	--	--	--	--	--	--	--	--	--	--
22	Concrete Duct Bank																			
	Material Handling							n/a												
	Grading							n/a												
	Bulldozing							n/a												
	Unpaved Road Dust							n/a												
	Paved Road Dust																			
	Concrete Duct Bank Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	19 - Buildings, Grounds, and Utilities Total	--	1.52	1.52	1.52	1.52	1.52	1.52	--	--	--	--	--	--	--	--	--	--	--	--
20 -Permanent Operating Equipment																				
23	Mobilization and Demobilization																			
	Material Handling																		n/a	
	Grading																		n/a	
	Bulldozing																		n/a	
	Unpaved Road Dust																		n/a	
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	Power, Electrical, & Mechanical Equipment																			
	Material Handling																		n/a	n/a
	Grading																		n/a	n/a
	Bulldozing																		n/a	n/a
	Unpaved Road Dust																		n/a	n/a
	Paved Road Dust																		n/a	n/a
	Power, Electrical, & Mechanical Equipment Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25	Communication Equipment																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
	Communication Equipment Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20 -Permanent Operating Equipment Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GRAND TOTAL		--	1.63	1.63	4.96	6.70	17.97	16.56	5.30	5.30	16.56	5.30	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44

Table K-645. PM2.5 Emissions Summary from Fugitive

#	Activity										Annual Emissions, tpy	
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct		
19 - Buildings, Grounds, and Utilities												
20	Mobilization and Demobilization											n/a
	Material Handling											n/a
	Grading											n/a
	Bulldozing											n/a
	Unpaved Road Dust											n/a
	Paved Road Dust											n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--
21	CMU Building and Earthwork Pad Construction											n/a
	Material Handling											0.00
	Grading											0.02
	Bulldozing											n/a
	Unpaved Road Dust											n/a
	Paved Road Dust											n/a
	CMU Building and Earthwork Pad Construction Subtotal	--	--	--	--	--	--	--	--	--	--	0.02
22	Concrete Duct Bank											n/a
	Material Handling											n/a
	Grading											n/a
	Bulldozing											n/a
	Unpaved Road Dust											n/a
	Paved Road Dust											n/a
	Concrete Duct Bank Subtotal	--	--	--	--	--	--	--	--	--	--	--
	19 - Buildings, Grounds, and Utilities Total	--	--	--	--	--	--	--	--	--	--	0.02
20 -Permanent Operating Equipment												
23	Mobilization and Demobilization											
	Material Handling			n/a								
	Grading			n/a								
	Bulldozing			n/a								
	Unpaved Road Dust			n/a								
	Paved Road Dust											
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--
24	Power, Electrical, & Mechanical Equipment											
	Material Handling	n/a	n/a									n/a
	Grading	n/a										n/a
	Bulldozing	n/a										n/a
	Unpaved Road Dust	n/a										n/a
	Paved Road Dust	n/a										n/a
	Power, Electrical, & Mechanical Equipment Subtotal	--	--	--	--	--	--	--	--	--	--	--
25	Communication Equipment											
	Material Handling	n/a	n/a									n/a
	Grading	n/a										n/a
	Bulldozing	n/a										n/a
	Unpaved Road Dust	n/a										n/a
	Paved Road Dust	n/a										n/a
	Communication Equipment Subtotal	--	--	--	--	--	--	--	--	--	--	--
	20 -Permanent Operating Equipment Total	--	--	--	--	--	--	--	--	--	--	--
GRAND TOTAL		3.32	3.32	0.06	--	--	--	--	--	--	--	0.29

n/a
n/a
n/a
n/a

**Southern Water Control Structure
Fugitive Dust Emissions - Material Handling (Truck Loading/Unloading)**

Equation (AP-42, Chapter 13.2.4):

$$E = k(0.0032) \frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

where:

- E = emission factor, pound per ton
- k = particle size multiplier
- U = mean wind speed, miles per hour
- M = material moisture content, %

Average Wind Speed 8.59 mph

Source: MesoWest, Station KSMF (Sacramento International Airport), 2015 data. Site accessed October 27, 2016. mesowest.utah.edu.

k values

PM10 0.35
PM2.5 0.053

Material Moisture Content (%)

Spoils 12 Source: CalEEMod 2016.3.1 User's Guide; default values
Limestone 2.1 Source: AP-42, Table 13.2.4-1; various limestone products
Demolition 2 Source: CalEEMod 2016.3.1 User's Guide; default values

Table K-646. Material Handling Emissions (Southern Water Control Structure)

Activity	Total Daily		Total Daily		Type	PM10 EF, PM2.5 EF,		PM10, PM2.5,		PM10, PM2.5,	
	Output, cy/day	Quantity, cy/year	Output, ton/day	Quantity, ton/year		lb/ton	lb/ton	lbs/day	lbs/day	tpy	tpy
09 - Channels and Grading											
Excavation/Grading (Dry Conditions)	3,500	104,380	130,475		Spoils	1.84E-04	2.79E-05	0.6	0.1	0.01	0.00
Riprap - Class 2	n/a	n/a	2,000	143,000	Limestone	2.11E-03	3.20E-04	3.3	0.5	0.12	0.02
09 - Channels and Grading Total	3,500	104,380	6,375	273,475				3.9	0.6	0.13	0.02
11 - Levees and Floodwalls											
Berm/Levee Fill	2,000	189,280	2,500	236,600	Limestone	2.11E-03	3.20E-04	4.1	0.6	0.20	0.03

Source: HDR. 2016. Draft Technical Memorandum: Constructability and Construction Considerations. Yolo Bypass Salmonid Habitat Restoration & Fish Passage Project - 10% Design. August 31.

Appendix K1
Air Quality Emission Calculations

Note:
Emissions assume that standard construction practice of watering is used.
Fremont weir demolition emissions assume that there is an additional "drop" from the mechanical dismemberment of the structure; method is consistent with CalEEMod 2016.3.1.
No emissions assumed to occur with wet excavation activities because spoils would be waterlogged.

Density

1.25 tons per cubic yard

Note: CalEEMod assumes haul trucks can handle 20 tons or 16 cy.

Number of Drops

2 drops per truck *(one drop at borrow site and one drop at dam site)*

Dust Control

61% reduction from watering at least 3 times per day

Source: CalEEMod

Conversion

2,000 pounds per ton

**Southern Water Control Structure
Fugitive Dust Emissions - Grading**

Equations (AP-42, Chapter 11.9):

$$TSP = 0.040(S)^{2.5} \quad \text{and} \quad PM15 = 0.051(S)^{2.0}$$

where:

S = mean vehicle speed, miles per hour

Scaling Factors

PM10 0.60 (multiply the 15-micron equation by this fraction to determine emissions)
PM2.5 0.031 (multiply the TSP equation by this fraction to determine emissions)

Emission Factors

PM10 1.54 lb/VMT
PM2.5 0.17 lb/VMT

Mileage Calculation (CalEEMod 2016.3.1 User's Guide, Appendix A):

$$VMT = As/Wb \times 43,560 \left(\frac{sqft}{acre} \right) / 5,280 \left(\frac{ft}{mile} \right)$$

Table K-647. Maximum Daily Disturbed Area

Equipment Type	Acres/8hr-day
Crawler Tractors	0.5
Graders	
Rubber Tired Dozers	0.5
Scrapers	1

Table K-648. Grading Emissions (Southern Water Control Structure)

Activity	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Crew/ Equipment Quantity	Estimated Duration, Days	Graded Acres per Day	Total Graded Area (As)	VMT per year	PM10, lb/day	PM2.5, lb/day	PM10, tpy	PM2.5, tpy
02 - Relocations												
Levee O&M Road Regrading (6" AB)	12' Blade Grader	Graders	1	1	6	0.5	3.0	2.1	0.5	0.1	0.0	0.0
	4000 gallon Water Truck	n/a - onroad	1	1	6	--	--	--	--	--	--	--
	Pickup Truck Conventional	n/a - onroad	1	1	6	--	--	--	--	--	--	--
	16 CY 3 Axle Dump Truck	n/a - onroad	5	1	6	--	--	--	--	--	--	--
						Levee O&M Road Regrading (6" AB) Total	0.5	3.0	2.1	0.5	0.1	0.0
09 - Channels and Canals												
Clearing and Grubbing	1.5 CY Front End Loader Crawler	Crawler Tractors	1	2	17	1.0	17.0	11.7	1.1	0.1	0.0	0.0
	Trailer Mounted Brush Chipper	Shredders	1	2	17	--	--	--	--	--	--	--
	Chainsaw	Chainsaws	1	2	17	--	--	--	--	--	--	--
	4000 gallon Water Truck	n/a - onroad	1	2	17	--	--	--	--	--	--	--
	Pickup Truck Conventional	n/a - onroad	6	2	17	--	--	--	--	--	--	--
	16 CY 3 Axle Dump Truck	n/a - onroad	1	2	17	--	--	--	--	--	--	--
						Clearing and Grubbing Total	1.0	17.0	11.7	1.1	0.1	0.0

Table K-648. Grading Emissions (Southern Water Control Structure)

Activity	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Crew/ Equipment Quantity	Estimated Duration, Days	Graded Acres per Day	Total Graded Area (As)	VMT per year	PM10, lb/day	PM2.5, lb/day	PM10, tpy	PM2.5, tpy
Excavation/Grading (Dry Conditions)	300 HP Dozer	Rubber Tired Dozers	1	1	30	0.5	15.0	10.3	0.5	0.1	0.0	0.0
	21 CY Scrapers	Scrapers	4	1	30	4.0	120.0	82.5	4.2	0.5	0.1	0.0
	12' Blade Grader	Graders	1	1	30	0.5	15.0	10.3	0.5	0.1	0.0	0.0
	4000 gallon Water Truck	n/a - onroad	1	1	30	--	--	--	--	--	--	--
	Pickup Truck Conventional	n/a - onroad	7	1	30	--	--	--	--	--	--	--
Excavation/Grading (Dry Conditions) Total						5.0	150.0	103.1	5.3	0.6	0.1	0.0
Riprap - Class 2	2.5 CY Hydraulic Excavator	Excavators	2	2	72	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	300 HP Dozer Crawler	Crawler Tractors	1	2	72	1.0	72.0	49.5	1.1	0.1	0.0	0.0
	16 CY 3 Axle Dump Truck	n/a - onroad	23	2	72	--	--	--	--	--	--	--
	Pickup Truck Conventional	n/a - onroad	5	2	72	--	--	--	--	--	--	--
Riprap - Class 2 Total						1.0	72.0	49.5	1.1	0.1	0.0	0.0
11 - Levees and Floodwalls												
Berm/Levee Fill	300 HP Dozer	Rubber Tired Dozers	1	2	95	1.0	95.0	65.3	1.1	0.1	0.1	0.0
	4000 gallon Water Truck	n/a - onroad	1	2	95	--	--	--	--	--	--	--
	10 TN Smooth Roller	Rollers	1	2	95	--	--	--	--	--	--	--
	Pickup Truck Conventional	n/a - onroad	3	2	95	--	--	--	--	--	--	--
Berm/Levee Fill Total						1.0	95.0	65.3	1.1	0.1	0.1	0.0
19 - Buildings, Grounds, and Utilities												
CMU Building and Earthwork Pad Constructi	165 HP Dozer	Rubber Tired Dozers	1	1	30	0.5	15.0	10.3	0.5	0.1	0.0	0.0
	Scraper	Scrapers	1	1	30	1.0	30.0	20.6	1.1	0.1	0.0	0.0
	Motor Grader	Graders	1	1	30	0.5	15.0	10.3	0.5	0.1	0.0	0.0
	Compactor	Rollers	1	1	30	--	--	--	--	--	--	--
	4000 gallon Water Truck	n/a - onroad	1	1	30	--	--	--	--	--	--	--
	10 TN Smooth Roller	Rollers	1	1	30	--	--	--	--	--	--	--
	Pickup Truck Conventional	n/a - onroad	7	1	30	--	--	--	--	--	--	--
	Concrete Pump Boom Truck Mounted	Pumps	1	1	30	--	--	--	--	--	--	--
	2.5" Dia. Concrete Vibrator	Plate Compactors	1	1	30	--	--	--	--	--	--	--
	Extended Boom Pallet Loader	Rough Terrain Forklifts	1	1	30	--	--	--	--	--	--	--
	Concrete Mixer Truck	n/a - onroad	1	1	30	--	--	--	--	--	--	--
CMU Building and Earthwork Pad Construction Total						2.0	60.0	41.3	2.1	0.2	0.0	0.0

Blade Width

12 feet

Scraper Speed

7.1 mph (AP-42 default)

Conversions

43,560 square feet per acre

5,280 feet per mile

2,000 pounds per ton

Dust Control

61% reduction from watering at least 3 times per day

Source: CalEEMod

Southern Water Control Structure Fugitive Dust Emissions - Bulldozing

Equations (AP-42, Chapter 11.9):

$$\text{TSP} = \frac{5.7(s)^{1.2}}{M^{1.3}} \quad \text{and} \quad \text{PM15} = \frac{1.0(s)^{1.5}}{M^{1.4}}$$

where:

s = silt content 6.9 % (AP-42, Table 11.9-3, Overburden)
M = material moisture content 7.9 % (AP-42, Table 11.9-3, Overburden)

Scaling Factors

PM10 0.75 (multiply the 15-micron equation by this fraction to determine emissions)
PM2.5 0.105 (multiply the TSP equation by this fraction to determine emissions)

Emission Factors

PM10 0.75 lb/hr
PM2.5 0.41 lb/hr

Table K-649. Bulldozing Emissions (Southern Water Control Structure)

Activity	Crew / Equipment	Equipment Quantity per Crew	Crew/ Equipment Quantity	Estimated Duration, Days	PM10, lb/day	PM2.5, lb/day	PM10, tpy	PM2.5, tpy
09 - Channels and Canals								
Excavation/Grading (Dry Conditions)	300 HP Dozer	1	1		2.35	1.29	0.04	0.02
11 - Levees and Floodwalls								
Berm/Levee Fill	300 HP Dozer	1	2	95	4.70	2.58	0.22	0.12
19 - Buildings, Grounds, and Utilities								
CMU Building and Earthwork Pad Construct	165 HP Dozer	1	1	30	2.35	1.29	0.04	0.02

Operating Schedule

8 hr/day

Conversion

2,000 pounds per ton

30

Dust Control

61% reduction from watering at least 3 times per day

Source: CalEEMod

**Southern Water Control Structure
Fugitive Dust Emissions - Unpaved Road Dust (Haul Roads)**

Equation (AP-42, Chapter 13.2.2):

$$E = k(s/12)^a (W/3)^b$$

where:

- E = size-specific emission factor (lb/VMT)
- s = surface material silt content (%)
- W = mean vehicle weight (tons)

Variables

k (PM10)	1.5
k (PM2.5)	0.15
a	0.9
b	0.45
s, %	4.3 (CalEEMod default)
W, tons	180 loaded 74 unloaded

Table K-650. Unpaved Road Dust Emission Factors (lb/VMT)

Weight	PM10	PM2.5
Loaded	3.76	0.38
Unloaded		0.25
Average	3.14	0.31

2.52

Table K-651. Unpaved Road Dust Emissions (Southern Water Control Structure)

Activity	Total Daily Output	Total Quantity	Unit	Estimated Duration, Days	VMT per Day	VMT per Year	PM10, lb/day	PM2.5, lb/day	PM10, tpy	PM2.5, tpy
15 - Floodway Control and Diversion Structures										
Excavation (Wet Conditions)	1,800	25,960	CY	15	92	1,300	112.7		0.8	0.08

11.3

Notes:

Assumes payload of each truck is 100 tons.

Half of truck trips will be loaded and other half will be unloaded.

Only includes materials that will be transported to spoil site by dump trucks.

Distance to borrow area

2 miles (spoils site located within a 1-mile radius of the project access point(s); average of 1 mile travel distance from point of excavation)

Density

1.25 tons/cy

Note: CalEEMod assumes haul trucks can handle 20 tons or 16 cy.

Dust Control

61% reduction from watering at least 3 times per day

Source: CalEEMod

Mitigated Offroad Exhaust Emissions Summary

Table K-652. Maximum Daily Mitigated Offroad Construction Equipment Emissions (Southern Water Control Structure)

Phase	ROG lbs/day	NOx lbs/day	CO lbs/day	SO2 lbs/day	PM10 lbs/day	PM2.5 lbs/day
02 - Relocations	0.60	13.08	5.43	0.04	0.21	0.09
09 - Channels and Canals	21.53	115.82	75.14	0.44	1.83	0.92
11 - Levees and Floodwalls	0.64	4.03	17.42	0.07	0.22	0.13
15 - Floodway Control and Diversion Structures	1.84	25.06	31.64	0.13	0.49	0.26
19 - Buildings, Grounds, and Utilities	1.30	11.64	34.58	0.11	0.46	0.26
20 -Permanent Operating Equipment	0.19	2.08	4.97	0.01	0.09	0.04
Peak Day Construction Exhaust Emissions Total	23.06	145.45	124.19	0.63	2.55	1.31
<i>Percent Reduction (Compared to Unmitigated)</i>	<i>-17%</i>	<i>-52%</i>	<i>-19%</i>	<i>-1%</i>	<i>-71%</i>	<i>-81%</i>

Notes:

Construction total will not add to the sum of each phase because not all tasks overlap on the same day.

Table K-653. Annual Mitigated Offroad Construction Equipment Emissions (Southern Water Control Structure)

Phase	ROG tpy	NOx tpy	CO tpy	SO2 tpy	PM10 tpy	PM2.5 tpy	CO2e MT/yr
02 - Relocations	0.00	0.04	0.02	0.00	0.00	0.00	14.52
09 - Channels and Canals	0.39	4.17	2.65	0.01	0.06	0.03	1,558.10
11 - Levees and Floodwalls	0.03	0.19	0.83	0.00	0.01	0.01	306.95
15 - Floodway Control and Diversion Structures	0.03	0.34	0.57	0.00	0.01	0.01	274.98
19 - Buildings, Grounds, and Utilities	0.01	0.12	0.44	0.00	0.00	0.00	128.99
20 -Permanent Operating Equipment	0.00	0.02	0.07	0.00	0.00	0.00	17.96
Annual Construction Exhaust Emissions Total	0.47	4.88	4.58	0.02	0.09	0.05	2,301.49
<i>Percent Reduction (Compared to Unmitigated)</i>	<i>-40%</i>	<i>-49%</i>	<i>-15%</i>	<i>-1%</i>	<i>-66%</i>	<i>-78%</i>	<i>-3%</i>

Notes:

Total may not add exactly because of rounding.

Table K-654. ROG Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
02 - Relocations													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 2 1	MHDT 100 LDT2 n/a	-	1	1	2	2.0565 0.0255 1.3847 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	
2	Levee O&M Road Regrading (6" AB)	218,000	SF	12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Graders n/a - onroad n/a - onroad n/a - onroad	1 1 1 5	187 MHDT LDT2 HHDT	39,400	1	39,400	6	0.0246 2.0565 1.3847 5.1968	g/hp-hr g/hr g/hr g/hr
												Levee O&M Road Regrading (6" AB) Subtotal	
3	Temporary Electrical Power	100	LF	Flatbed Truck Pickup Truck Conventional	n/a - onroad n/a - onroad	1 2	MHDT LDT2	1,500	1	1,500	1	2.0565 1.3847	g/hr g/hr
												Temporary Electrical Power Subtotal	
												02 - Relocations Total	
09 - Channels and Canals													
4	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	2.0565 0.0255 1.3847 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	
5	Clearing and Grubbing	67	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	2	2	4	17	0.0337 0.0754 72.5633 2.0565 1.3847 5.1968	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
6	Excavation/Grading (Dry Conditions)	133,580	CY	300 HP Dozer 21 CY Scrapers 12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional	Rubber Tired Dozers Scrapers Graders n/a - onroad n/a - onroad	1 4 1 1 7	300 407 187 MHDT LDT2	3,500	1	3,500	30	0.0304 0.0282 0.0246 2.0565 1.3847	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation/Grading (Dry Conditions) Subtotal	
7	Riprap - Class 2	153,590	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	2	2,000	72	0.0226 0.0241 5.1968 1.3847	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Class 2 Subtotal	
8	Erosion Control Seeding	24	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	13	0.0311 1.3847	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
11 - Levees and Floodwalls													
9	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 3 1	MHDT 100 LDT2 n/a	-	1	-	2	2.0565 0.0255 1.3847 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	

Table K-654. ROG Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
02 - Relocations																					
1	Mobilization and Demobilization	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Temporary Electrical Power	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals																					
4	Mobilization and Demobilization	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing	--	0.13	0.13	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.37	0.37	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	20.48	20.48	20.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.07	0.07	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.29	0.29	0.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.18	0.18	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	21.53	21.53	21.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Excavation/Grading (Dry Conditions)	--	--	--	--	0.16	0.16	0.16	0.16	0.16	0.16	0.16	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.81	0.81	0.81	0.81	0.81	0.81	0.81	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.08	0.08	0.08	0.08	0.08	0.08	0.08	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.17	0.17	0.17	0.17	0.17	0.17	0.17	--	--	--	--	--	--	--	--	--
		--	--	--	--	1.26	1.26	1.26	1.26	1.26	1.26	1.26	--	--	--	--	--	--	--	--	--
7	Riprap - Class 2	--	--	--	--	--	--	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	--
		--	--	--	--	--	--	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	--
		--	--	--	--	--	--	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22	--
		--	--	--	--	--	--	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	--
		--	--	--	--	--	--	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	--
8	Erosion Control Seeding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.15
		0.11	21.53	21.53	21.53	1.26	1.26	6.38	6.38	6.38	6.38	6.38	5.12	5.12	5.12	5.12	5.12	5.12	5.12	5.12	0.15
11 - Levees and Floodwalls																					
9	Mobilization and Demobilization	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-654. ROG Exhaust Emissions from Of

#	Activity									Annual Emissions , tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations										
1	Mobilization and Demobilization	--	--	0.04	--	--	--	--	--	0.0000
		--	--	0.05	--	--	--	--	--	0.0000
		--	--	0.05	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	0.13	--	--	--	--	0.0001	
2	Levee O&M Road Regrading (6" AB)	--	0.08	--	--	--	--	--	0.0002	
		--	0.04	--	--	--	--	--	0.0001	
		--	0.02	--	--	--	--	--	0.0001	
		--	0.46	--	--	--	--	--	0.0014	
		--	0.60	--	--	--	--	0.0018		
3	Temporary Electrical Power	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0000	
		--	0.60	0.13	--	--	--	0.0020		
09 - Channels and Canals										
4	Mobilization and Demobilization	0.04	--	--	--	--	--	--	0.0000	
		0.05	--	--	--	--	--	--	0.0000	
		0.02	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	
		0.11	--	--	--	--	--	0.0001		
5	Clearing and Grubbing	--	--	--	--	--	--	--	0.0011	
		--	--	--	--	--	--	--	0.0032	
		--	--	--	--	--	--	--	0.1740	
		--	--	--	--	--	--	--	0.0006	
		--	--	--	--	--	--	--	0.0025	
		--	--	--	--	--	--	0.0016		
		--	--	--	--	--	--	0.1830		
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	0.0024	
		--	--	--	--	--	--	--	0.0122	
		--	--	--	--	--	--	--	0.0012	
		--	--	--	--	--	--	--	0.0005	
		--	--	--	--	--	--	--	0.0026	
		--	--	--	--	--	--	0.0189		
7	Riprap - Class 2	--	--	--	--	--	--	--	0.0147	
		--	--	--	--	--	--	--	0.0092	
		--	--	--	--	--	--	--	0.1518	
		--	--	--	--	--	--	--	0.0088	
		--	--	--	--	--	--	0.1845		
8	Erosion Control Seeding	--	--	--	--	--	--	--	0.0003	
		--	--	--	--	--	--	--	0.0006	
		--	--	--	--	--	--	--	0.0010	
		0.11	--	--	--	--	--	0.3874		
11 - Levees and Floodwalls										
9	Mobilization and Demobilization	--	0.04	--	--	--	--	--	0.0000	
		--	0.05	--	--	--	--	--	0.0000	
		--	0.07	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	--	
		--	0.15	--	--	--	--	0.0002		

Table K-654. ROG Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
10	Berm/Levee Fill	213,520	CY	300 HP Dozer	Rubber Tired Dozers	1	300	1,000	2	2,000	95	0.0304	g/hp-hr
				4000 gallon Water Truck	n/a - onroad	1	MHDT					2.0565	g/hr
				10 TN Smooth Roller	Rollers	1	157					0.0178	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	3	LDT2					1.3847	g/hr
Berm/Levee Fill Subtotal													
11 - Levees and Floodwalls Total													
15 - Floodway Control and Diversion Structures													
11	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	2.0565	g/hr
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100					0.0255	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	1	LDT2					1.3847	g/hr
				Temp. Mobile Office Building	n/a - onroad	1	n/a					0.0000	g/hr
Mobilization and Demobilization Subtotal													
12	Construction Site Dewatering (Temporary Cofferdam)	93,000	SF	Flatbed Truck	n/a - onroad	1	MHDT	1,200	1	1,200	78	2.0565	g/hr
				75 TN Crane Crawler Pile Hammer	Bore/Drill Rigs	1	221					0.0266	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					1.3847	g/hr
Construction Site Dewatering (Temporary Cofferdam) Subtotal													
13	Construction Site Dewatering (Pumping)	-	-	6" Dia. Pump Engine Drive	Pumps	1	84	-	1	1	54	0.0818	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	3	LDT2					1.3847	g/hr
Construction Site Dewatering (Pumping) Subtotal													
14	Excavation (Wet Conditions)	25,960	CY	4.5 CY Hydraulic Excavator	Excavators	1	429	1,800	1	1,800	15	0.0226	g/hp-hr
				300 HP Dozer	Rubber Tired Dozers	2	300					0.0304	g/hp-hr
				3.5 CY Front End Loader Wheel	Rubber Tired Loaders	2	164					0.0280	g/hp-hr
				16 CY 3 Axle Dump Truck	n/a - onroad	9	HHDT					5.1968	g/hr
				Pickup Truck Conventional	n/a - onroad	7	LDT2					1.3847	g/hr
Excavation (Wet Conditions) Subtotal													
15	Sheet Pile Wall	1,840	SF	Flatbed Truck	n/a - onroad	1	MHDT	1,200	1	1,200	2	2.0565	g/hr
				75 TN Crane Crawler Pile Hammer	Bore/Drill Rigs	1	221					0.0266	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					1.3847	g/hr
Sheet Pile Wall Subtotal													
16	Culvert Headwall	110	CY	2.5" Dia. Concrete Vibrator	Plate Compactors	1	8	60	1	60	2	0.2845	g/hp-hr
				Concrete Mixer Truck	n/a - onroad	2	MHDT					2.0565	g/hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					1.3847	g/hr
Culvert Headwall Subtotal													
17	Precast Box Culvert 10'x8' 30'	30	LF	90 TN Truck-mounted Hydraulic Crane	Cranes	1	450	100	1	100	1	0.0158	g/hp-hr
				Flatbed Truck	n/a - onroad	2	MHDT					2.0565	g/hr
				Pickup Truck Conventional	n/a - onroad	4	LDT2					1.3847	g/hr
Precast Box Culvert 10'x8' 30' Subtotal													
18	Water Control Structure	280	CY	2.5" Dia. Concrete Vibrator	Plate Compactors	1	8	70	1	70	4	0.2845	g/hp-hr
				Concrete Mixer Truck	n/a - onroad	2	MHDT					2.0565	g/hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					1.3847	g/hr
Water Control Structure Subtotal													
19	Inflatable Obermeyer Gates	3	EA	90 TN Truck-mounted Hydraulic Crane	Cranes	1	450	0.1	1	0.1	24	0.0158	g/hp-hr
				Haul Truck Oversize Transport	n/a - onroad	1	HHDT					5.1968	g/hr
				Pickup Truck Conventional	n/a - onroad	4	LDT2					1.3847	g/hr
Inflatable Obermeyer Gates Subtotal													
15 - Floodway Control and Diversion Structures Total													
19 - Buildings, Grounds, and Utilities													
20	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	2.0565	g/hr
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100					0.0255	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	1	LDT2					1.3847	g/hr
				Temp. Mobile Office Building	n/a - onroad	1	n/a					0.0000	g/hr
Mobilization and Demobilization Subtotal													

Table K-654. ROG Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																				
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	
10	Berm/Levee Fill	--	--	--	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
		--	--	--	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
		--	--	--	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
		--	--	--	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
		--	--	--	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	
		--	--	0.15	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	
15 - Floodway Control and Diversion Structures																						
11	Mobilization and Demobilization	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	--	--
		--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05	--	--
		--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	--	0.11	--	--	
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	0.29	--	--	--	--	--	--	--	--	--	--	--	--	--	
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	--	--	
		--	--	--	--	--	--	--	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	--	--	
		--	--	--	--	--	--	--	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	--	--	
14	Excavation (Wet Conditions)	--	--	--	--	--	0.17	0.17	--	--	0.17	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.32	0.32	--	--	0.32	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.16	0.16	--	--	0.16	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.82	0.82	--	--	0.82	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.17	0.17	--	--	0.17	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	1.65	1.65	--	--	1.65	--	--	--	--	--	--	--	--	--	--	
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.10	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	0.29	--	--	--	--	--	--	--	--	--	--	
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	0.26	--	--	--	--	--	--	--	--	--	--	
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.10	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	0.30	--	--	--	--	--	--	--	--	--	--	
18	Water Control Structure	--	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	0.26	--	--	--	--	--	--	--	--	--	--	
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	--	--	0.13	0.13	0.13	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.09	0.09	0.09	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.10	0.10	0.10	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	0.31	0.31	0.31	--	--	--	--	--	--	--	--	
		--	--	--	--	0.11	1.65	1.65	0.29	0.19	1.84	0.48	0.45	0.49	0.45	0.51	0.51	0.51	0.11	--	--	
19 - Buildings, Grounds, and Utilities																						
20	Mobilization and Demobilization	0.04	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.05	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.02	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.11	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table K-654. ROG Exhaust Emissions from Of

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions , tpy
10	Berm/Levee Fill	0.32	--	--	--	--	--	--	--	0.0153
		0.07	--	--	--	--	--	--	--	0.0034
		0.10	--	--	--	--	--	--	--	0.0047
		0.15	--	--	--	--	--	--	--	0.0070
		0.64	--	--	--	--	--	--	--	0.0304
		0.64	0.15	--	--	--	--	--	--	0.0305
15 - Floodway Control and Diversion Structures										
11	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0001
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	--	0.0014
		--	--	--	--	--	--	--	--	0.0040
		--	--	--	--	--	--	--	--	0.0057
		--	--	--	--	--	--	--	--	0.0112
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	0.0033
		--	--	--	--	--	--	--	--	0.0020
		--	--	--	--	--	--	--	--	0.0053
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	0.0013
		--	--	--	--	--	--	--	--	0.0024
		--	--	--	--	--	--	--	--	0.0012
		--	--	--	--	--	--	--	--	0.0062
		--	--	--	--	--	--	--	--	0.0013
		--	--	--	--	--	--	--	--	0.0124
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0003
16	Culvert Headwall	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0003
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
18	Water Control Structure	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0005
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	0.0015
		--	--	--	--	--	--	--	--	0.0011
		--	--	--	--	--	--	--	--	0.0012
		--	--	--	--	--	--	--	--	0.0038
		--	--	--	--	--	--	--	--	0.0339
19 - Buildings, Grounds, and Utilities										
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0001

Table K-654. ROG Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units			
21	CMU Building and Earthwork Pad Construction	1	EA	165 HP Dozer	Rubber Tired Dozers	1	165	-	1	1	30	0.0328	g/hp-hr			
				Scraper	Scrapers	1								0.0282	g/hp-hr	
				Motor Grader	Graders	1	187							0.0246	g/hp-hr	
				Compactor	Rollers	1	80							0.0259	g/hp-hr	
				4000 gallon Water Truck	n/a - onroad	1367	MHDT							2.0565	g/hr	
				10 TN Smooth Roller	Rollers	1	157							0.0178	g/hp-hr	
				Pickup Truck Conventional	Rollers	7	LDT2							1.3847	g/hp-hr	
				Concrete Pump Boom Truck Mounted	n/a - onroad	1	84							0.0818	g/hr	
				2.5" Dia. Concrete Vibrator	Pumps	1	8							0.2845	g/hp-hr	
				Extended Boom Pallet Loader	Plate Compactors	1	100							0.0255	g/hp-hr	
				Concrete Mixer Truck	Rough Terrain Forklifts	1	MHDT							2.0565	g/hp-hr	
					n/a - onroad										g/hr	
				CMU Building and Earthwork Pad Construction Subtotal												
				22	Concrete Duct Bank	40	CY	Concrete Pump Boom Truck Mounted	Pumps	1	84	60	1	60	1	0.0818
2.5" Dia. Concrete Vibrator	Plate Compactors	1	8											0.2845	g/hp-hr	
Concrete Mixer Truck	n/a - onroad	2												2.0565	g/hr	
Pickup Truck Conventional	n/a - onroad	7	LDT2											1.3847	g/hr	
Concrete Duct Bank Subtotal																
						MHDT						19 - Buildings, Grounds, and Utilities Total				
20 -Permanent Operating Equipment																
23	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	2.0565	g/hr			
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100							0.0255	g/hp-hr	
				Pickup Truck Conventional	n/a - onroad	1	LDT2							1.3847	g/hr	
				Temp. Mobile Office Building	n/a - onroad	1								0.0000	g/hr	
Mobilization and Demobilization Subtotal																
24	Power, Electrical, & Mechanical Equipment	-	-	Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100	-	1	1	30	0.0255	g/hp-hr			
				Pickup Truck Conventional	n/a - onroad	3	LDT2							1.3847	g/hr	
Power, Electrical, & Mechanical Equipment Subtotal																
25	Communication Equipment	-	-	Pickup Truck Conventional	n/a - onroad	3	LDT2	-	1	1	12	1.3847	g/hr			
Communication Equipment Subtotal																
20 -Permanent Operating Equipment Total																
GRAND TOTAL																

Table K-654. ROG Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																				
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	
21	CMU Building and Earthwork Pad Construction	--	0.10	0.10	0.10	0.10	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	0.18	0.18	0.18	0.18	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.08	0.08	0.08	0.08	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.04	0.04	0.04	0.04	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.04	0.04	0.04	0.04	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.05	0.05	0.05	0.05	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.17	0.17	0.17	0.17	0.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.12	0.12	0.12	0.12	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.04	0.04	0.04	0.04	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.05	0.05	0.05	0.05	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.90	0.90	0.90	0.90	0.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
22	Concrete Duct Bank	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.11	0.90	0.90	0.90	1.30	0.90	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment																						
23	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	
24	Power, Electrical, & Mechanical Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05	0.05	0.05	0.05	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.07	0.07	0.07	0.07	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.12	0.12	0.12	0.12	
25	Communication Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.07	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.07	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.11	0.12	0.12	0.12	0.19
GRAND TOTAL		0.43	22.42	22.58	23.06	3.30	4.44	8.78	7.31	7.22	8.87	7.50	6.22	6.25	6.22	6.27	6.38	6.39	5.99	5.88	0.98	

Table K-654. ROG Exhaust Emissions from Of

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions , tpy	
21	CMU Building and Earthwork Pad Construction	--	--	--	--	--	--	--	--	0.0014	
		--	--	--	--	--	--	--	--	--	0.0027
		--	--	--	--	--	--	--	--	--	0.0012
		--	--	--	--	--	--	--	--	--	0.0005
		--	--	--	--	--	--	--	--	--	0.0005
		--	--	--	--	--	--	--	--	--	0.0007
		--	--	--	--	--	--	--	--	--	0.0026
		--	--	--	--	--	--	--	--	--	0.0018
		--	--	--	--	--	--	--	--	--	0.0006
		--	--	--	--	--	--	--	--	--	0.0007
		--	--	--	--	--	--	--	--	0.0005	
		--	--	--	--	--	--	--	--	0.0134	
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	--	0.0002	
		--	--	--	--	--	--	--	--	0.0137	
20 -Permanent Operating Equipment											
23	Mobilization and Demobilization	--	0.04	--	--	--	--	--	--	0.0000	
		--	0.05	--	--	--	--	--	--	0.0000	
		--	0.02	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	--	--
		--	0.11	--	--	--	--	--	--	0.0001	
24	Power, Electrical, & Mechanical Equipment	0.05	--	--	--	--	--	--	--	0.0007	
		0.07	--	--	--	--	--	--	--	0.0011	
		0.12	--	--	--	--	--	--	--	0.0018	
25	Communication Equipment	0.07	--	--	--	--	--	--	--	0.0004	
		0.07	--	--	--	--	--	--	--	0.0004	
		0.19	0.11	--	--	--	--	--	--	0.0023	
GRAND TOTAL		0.94	0.86	0.13	--	--	--	--	--	0.4699	

Table K-655. NOx Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
02 - Relocations													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 2 1	MHDT 100 LDT2 n/a	-	1	1	2	62.8403 0.5411 1.2324 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	
2	Levee O&M Road Regrading (6" AB)	218,000	SF	12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Graders n/a - onroad n/a - onroad n/a - onroad	1 1 1 5	187 MHDT LDT2 HHDT	39,400	1	39,400	6	0.1067 62.8403 1.2324 131.5280	g/hp-hr g/hr g/hr g/hr
												Levee O&M Road Regrading (6" AB) Subtotal	
3	Temporary Electrical Power	100	LF	Flatbed Truck Pickup Truck Conventional	n/a - onroad n/a - onroad	1 2	MHDT LDT2	1,500	1	1,500	1	62.8403 1.2324	g/hr g/hr
												Temporary Electrical Power Subtotal	
												02 - Relocations Total	
09 - Channels and Canals													
4	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	62.8403 0.5411 1.2324 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	
5	Clearing and Grubbing	67	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	2	2	4	17	0.5867 0.7727 1.2873 62.8403 1.2324 131.5280	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
6	Excavation/Grading (Dry Conditions)	133,580	CY	300 HP Dozer 21 CY Scrapers 12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional	Rubber Tired Dozers Scrapers Graders n/a - onroad n/a - onroad	1 4 1 1 7	300 407 187 MHDT LDT2	3,500	1	3,500	30	0.1077 0.1282 0.1067 62.8403 1.2324	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation/Grading (Dry Conditions) Subtotal	
7	Riprap - Class 2	153,590	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	2	2,000	72	0.1016 0.1129 131.5280 1.2324	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Class 2 Subtotal	
8	Erosion Control Seeding	24	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	13	0.5090 1.2324	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
11 - Levees and Floodwalls													
9	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 3 1	MHDT 100 LDT2 n/a	-	1	-	2	62.8403 0.5411 1.2324 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	

Table K-655. NOx Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
02 - Relocations																					
1	Mobilization and Demobilization	1.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		2.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Temporary Electrical Power	1.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		3.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals																					
4	Mobilization and Demobilization	1.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		2.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing	--	2.28	2.28	2.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	3.82	3.82	3.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.36	0.36	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	2.22	2.22	2.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.26	0.26	0.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	4.64	4.64	4.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	13.57	13.57	13.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Excavation/Grading (Dry Conditions)	--	--	--	--	0.57	0.57	0.57	0.57	0.57	0.57	0.57	--	--	--	--	--	--	--	--	--
		--	--	--	--	3.68	3.68	3.68	3.68	3.68	3.68	3.68	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.35	0.35	0.35	0.35	0.35	0.35	0.35	--	--	--	--	--	--	--	--	--
		--	--	--	--	1.11	1.11	1.11	1.11	1.11	1.11	1.11	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.15	0.15	0.15	0.15	0.15	0.15	0.15	--	--	--	--	--	--	--	--	--
		--	--	--	--	5.86	5.86	5.86	5.86	5.86	5.86	5.86	--	--	--	--	--	--	--	--	--
7	Riprap - Class 2	--	--	--	--	--	--	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84
		--	--	--	--	--	--	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19
		--	--	--	--	--	--	106.71	106.71	106.71	106.71	106.71	106.71	106.71	106.71	106.71	106.71	106.71	106.71	106.71	106.71
		--	--	--	--	--	--	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22
		--	--	--	--	--	--	109.96	109.96	109.96	109.96	109.96	109.96	109.96	109.96	109.96	109.96	109.96	109.96	109.96	109.96
8	Erosion Control Seeding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.87
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.09
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.96
		2.08	13.57	13.57	13.57	5.86	5.86	115.82	115.82	115.82	115.82	115.82	109.96	109.96	109.96	109.96	109.96	109.96	109.96	109.96	0.96
11 - Levees and Floodwalls																					
9	Mobilization and Demobilization	--	--	1.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	2.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-655. NOx Exhaust Emissions from Of

#	Activity									Annual Emissions , tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations										
1	Mobilization and Demobilization	--	--	1.11	--	--	--	--	--	0.0011
		--	--	0.95	--	--	--	--	--	0.0010
		--	--	0.04	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	2.11	--	--	--	--	0.0021	
2	Levee O&M Road Regrading (6" AB)	--	0.35	--	--	--	--	--	0.0011	
		--	1.11	--	--	--	--	--	0.0033	
		--	0.02	--	--	--	--	--	0.0001	
		--	11.60	--	--	--	--	--	0.0348	
		--	13.08	--	--	--	--	0.0392		
3	Temporary Electrical Power	--	--	--	--	--	--	--	0.0006	
		--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	0.0006		
		--	13.08	2.11	--	--	--	--	0.0419	
09 - Channels and Canals										
4	Mobilization and Demobilization	1.11	--	--	--	--	--	--	0.0011	
		0.95	--	--	--	--	--	--	0.0010	
		0.02	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	
		2.08	--	--	--	--	--	0.0021		
5	Clearing and Grubbing	--	--	--	--	--	--	--	0.0193	
		--	--	--	--	--	--	--	0.0324	
		--	--	--	--	--	--	--	0.0031	
		--	--	--	--	--	--	--	0.0188	
		--	--	--	--	--	--	--	0.0022	
		--	--	--	--	--	--	0.0394		
		--	--	--	--	--	--	0.1154		
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	0.0086	
		--	--	--	--	--	--	--	0.0552	
		--	--	--	--	--	--	--	0.0053	
		--	--	--	--	--	--	--	0.0166	
		--	--	--	--	--	--	--	0.0023	
		--	--	--	--	--	--	0.0879		
7	Riprap - Class 2	--	--	--	--	--	--	--	0.0663	
		--	--	--	--	--	--	--	0.0430	
		--	--	--	--	--	--	--	3.8415	
		--	--	--	--	--	--	--	0.0078	
		--	--	--	--	--	--	3.9586		
8	Erosion Control Seeding	--	--	--	--	--	--	--	0.0057	
		--	--	--	--	--	--	--	0.0006	
		--	--	--	--	--	--	0.0062		
		2.08	--	--	--	--	--	--	4.1702	
11 - Levees and Floodwalls										
9	Mobilization and Demobilization	--	1.11	--	--	--	--	--	0.0011	
		--	0.95	--	--	--	--	--	0.0010	
		--	0.07	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	--	
		--	2.13	--	--	--	--	0.0021		

Table K-655. NOx Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
10	Berm/Levee Fill	213,520	CY	300 HP Dozer 4000 gallon Water Truck 10 TN Smooth Roller Pickup Truck Conventional	Rubber Tired Dozers n/a - onroad Rollers n/a - onroad	1 1 1 3	300 MHDT 157 LDT2	1,000	2	2,000	95	0.1077 62.8403 0.0977 1.2324	g/hp-hr g/hr g/hp-hr g/hr
Berm/Levee Fill Subtotal													
11 - Levees and Floodwalls Total													
15 - Floodway Control and Diversion Structures													
11	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	62.8403 0.5411 1.2324 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													
12	Construction Site Dewatering (Temporary Cofferdam)	93,000	SF	Flatbed Truck 75 TN Crane Crawler Pile Hammer Pickup Truck Conventional	n/a - onroad Bore/Drill Rigs n/a - onroad	1 1 6	MHDT 221 LDT2	1,200	1	1,200	78	62.8403 0.1311 1.2324	g/hr g/hp-hr g/hr
Construction Site Dewatering (Temporary Cofferdam) Subtotal													
13	Construction Site Dewatering (Pumping)	-	-	6" Dia. Pump Engine Drive Pickup Truck Conventional	Pumps n/a - onroad	1 3	84 LDT2	-	1	1	54	0.9989 1.2324	g/hp-hr g/hr
Construction Site Dewatering (Pumping) Subtotal													
14	Excavation (Wet Conditions)	25,960	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 9 7	429 300 164 HHDT LDT2	1,800	1	1,800	15	0.1016 0.1077 0.0989 131.5280 1.2324	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
Excavation (Wet Conditions) Subtotal													
15	Sheet Pile Wall	1,840	SF	Flatbed Truck 75 TN Crane Crawler Pile Hammer Pickup Truck Conventional	n/a - onroad Bore/Drill Rigs n/a - onroad	1 1 6	MHDT 221 LDT2	1,200	1	1,200	2	62.8403 0.1311 1.2324	g/hr g/hp-hr g/hr
Sheet Pile Wall Subtotal													
16	Culvert Headwall	110	CY	2.5" Dia. Concrete Vibrator Concrete Mixer Truck Pickup Truck Conventional	Plate Compactors n/a - onroad n/a - onroad	1 2 6	8 MHDT LDT2	60	1	60	2	1.7813 62.8403 1.2324	g/hp-hr g/hr g/hr
Culvert Headwall Subtotal													
17	Precast Box Culvert 10'x8' 30'	30	LF	90 TN Truck-mounted Hydraulic Crane Flatbed Truck Pickup Truck Conventional	Cranes n/a - onroad n/a - onroad	1 2 4	450 MHDT LDT2	100	1	100	1	0.0772 62.8403 1.2324	g/hp-hr g/hr g/hr
Precast Box Culvert 10'x8' 30' Subtotal													
18	Water Control Structure	280	CY	2.5" Dia. Concrete Vibrator Concrete Mixer Truck Pickup Truck Conventional	Plate Compactors n/a - onroad n/a - onroad	1 2 6	8 MHDT LDT2	70	1	70	4	1.7813 62.8403 1.2324	g/hp-hr g/hr g/hr
Water Control Structure Subtotal													
19	Inflatable Obermeyer Gates	3	EA	90 TN Truck-mounted Hydraulic Crane Haul Truck Oversize Transport Pickup Truck Conventional	Cranes n/a - onroad n/a - onroad	1 1 4	450 HHDT LDT2	0.1	1	0.1	24	0.0772 131.5280 1.2324	g/hp-hr g/hr g/hr
Inflatable Obermeyer Gates Subtotal													
15 - Floodway Control and Diversion Structures Total													
19 - Buildings, Grounds, and Utilities													
20	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	62.8403 0.5411 1.2324 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													

Table K-655. NOx Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
10	Berm/Levee Fill	--	--	--	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	
		--	--	--	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	2.22	
		--	--	--	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	
		--	--	--	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
		--	--	--	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	
		--	--	2.13	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	
15 - Floodway Control and Diversion Structures																					
11	Mobilization and Demobilization	--	--	--	--	1.11	--	--	--	--	--	--	--	--	--	--	--	--	1.11	--	
		--	--	--	--	0.95	--	--	--	--	--	--	--	--	--	--	--	--	0.95	--	
		--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	2.08	--	--	--	--	--	--	--	--	--	--	--	2.08	--		
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	1.11	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	0.51	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	1.75	--	--	--	--	--	--	--	--	--	--	--	--	
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	--	--	
		--	--	--	--	--	--	--	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	--	--	--
		--	--	--	--	--	--	--	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.55	--	--	--	
14	Excavation (Wet Conditions)	--	--	--	--	--	0.77	0.77	--	--	0.77	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	1.14	1.14	--	--	1.14	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	0.57	0.57	--	--	0.57	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	20.88	20.88	--	--	20.88	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.15	0.15	--	--	0.15	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	23.51	23.51	--	--	23.51	--	--	--	--	--	--	--	--	--	--	
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	1.11	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	0.51	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	1.75	--	--	--	--	--	--	--	--	--	--	--	
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	0.25	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	2.22	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	2.60	--	--	--	--	--	--	--	--	--	--	--	
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	0.61	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	2.22	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	2.92	--	--	--	--	--	--	--	--	--	--	--	
18	Water Control Structure	--	--	--	--	--	--	--	--	--	0.25	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	2.22	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	2.60	--	--	--	--	--	--	--	--	--	--	--	
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	--	0.61	0.61	0.61	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	2.32	2.32	2.32	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	0.09	0.09	0.09	--	--	--	--	--	--	--	
		--	--	--	--	2.08	23.51	23.51	1.75	1.55	25.06	3.29	4.14	4.46	4.14	4.56	4.56	4.56	2.08	--	
19 - Buildings, Grounds, and Utilities																					
20	Mobilization and Demobilization	1.11	--	--	--	--	--	1.11	--	--	--	--	--	--	--	--	--	--	--	--	
		0.95	--	--	--	--	--	0.95	--	--	--	--	--	--	--	--	--	--	--	--	
		0.02	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		2.08	--	--	--	--	2.08	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table K-655. NOx Exhaust Emissions from Of

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions , tpy
10	Berm/Levee Fill	1.14 --	--	--	--	--	--	--	--	0.0542
		2.22 --	--	--	--	--	--	--	--	0.1053
		0.54 --	--	--	--	--	--	--	--	0.0257
		0.13 --	--	--	--	--	--	--	--	0.0062
		4.03	--	--	--	--	--	--	--	0.1913
		4.03	2.13	--	--	--	--	--	--	0.1935
15 - Floodway Control and Diversion Structures										
11	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.0011
		--	--	--	--	--	--	--	--	0.0010
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0021
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	--	0.0432
		--	--	--	--	--	--	--	--	0.0199
		--	--	--	--	--	--	--	--	0.0051
		--	--	--	--	--	--	--	--	0.0682
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	0.0400
		--	--	--	--	--	--	--	--	0.0018
		--	--	--	--	--	--	--	--	0.0417
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	0.0058
		--	--	--	--	--	--	--	--	0.0086
		--	--	--	--	--	--	--	--	0.0043
		--	--	--	--	--	--	--	--	0.1566
		--	--	--	--	--	--	--	--	0.0011
		--	--	--	--	--	--	--	--	0.1763
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	0.0011
		--	--	--	--	--	--	--	--	0.0005
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0017
16	Culvert Headwall	--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0022
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0026
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0011
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0015
18	Water Control Structure	--	--	--	--	--	--	--	--	0.0005
		--	--	--	--	--	--	--	--	0.0044
		--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0052
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	0.0073
		--	--	--	--	--	--	--	--	0.0278
		--	--	--	--	--	--	--	--	0.0010
		--	--	--	--	--	--	--	--	0.0362
		--	--	--	--	--	--	--	--	0.3356
19 - Buildings, Grounds, and Utilities										
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.0011
		--	--	--	--	--	--	--	--	0.0010
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0021

Table K-655. NOx Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units			
21	CMU Building and Earthwork Pad Construction	1	EA	165 HP Dozer	Rubber Tired Dozers	1	165	-	1	1	30	0.1098	g/hp-hr			
				Scraper	Scrapers	1								0.1282	g/hp-hr	
				Motor Grader	Graders	1	187							0.1067	g/hp-hr	
				Compactor	Rollers	1	80							0.5088	g/hp-hr	
				4000 gallon Water Truck	n/a - onroad	1367	MHDT							62.8403	g/hr	
				10 TN Smooth Roller	Rollers	1	157							0.0977	g/hr	
				Pickup Truck Conventional	Rollers	7	LDT2							1.2324	g/hp-hr	
				Concrete Pump Boom Truck Mounted	n/a - onroad	1	84							0.9989	g/hr	
				2.5" Dia. Concrete Vibrator	Pumps	1	8							1.7813	g/hp-hr	
				Extended Boom Pallet Loader	Plate Compactors	1	100							0.5411	g/hp-hr	
				Concrete Mixer Truck	Rough Terrain Forklifts	1	MHDT							62.8403	g/hp-hr	
					n/a - onroad											g/hr
				CMU Building and Earthwork Pad Construction Subtotal												
22	Concrete Duct Bank	40	CY	Concrete Pump Boom Truck Mounted	Pumps	1	84	60	1	60	1	0.9989	g/hp-hr			
				2.5" Dia. Concrete Vibrator	Plate Compactors	1	8							1.7813	g/hp-hr	
				Concrete Mixer Truck	n/a - onroad	2								62.8403	g/hr	
				Pickup Truck Conventional	n/a - onroad	7	LDT2							1.2324	g/hr	
Concrete Duct Bank Subtotal																
						MHDT						19 - Buildings, Grounds, and Utilities Total				
20 -Permanent Operating Equipment																
23	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	62.8403	g/hr			
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100							0.5411	g/hp-hr	
				Pickup Truck Conventional	n/a - onroad	1	LDT2							1.2324	g/hr	
				Temp. Mobile Office Building	n/a - onroad	1								0.0000	g/hr	
Mobilization and Demobilization Subtotal																
24	Power, Electrical, & Mechanical Equipment	-	-	Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100	-	1	1	30	0.5411	g/hp-hr			
				Pickup Truck Conventional	n/a - onroad	3	LDT2							1.2324	g/hr	
Power, Electrical, & Mechanical Equipment Subtotal																
25	Communication Equipment	-	-	Pickup Truck Conventional	n/a - onroad	3	LDT2	-	1	1	12	1.2324	g/hr			
Communication Equipment Subtotal																
20 -Permanent Operating Equipment Total																
GRAND TOTAL																

Table K-655. NOx Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																				
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	
21	CMU Building and Earthwork Pad Construction	--	0.32	0.32	0.32	0.32	0.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	0.83	0.83	0.83	0.83	0.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.35	0.35	0.35	0.35	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.72	0.72	0.72	0.72	0.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	1.11	1.11	1.11	1.11	1.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.27	0.27	0.27	0.27	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.15	0.15	0.15	0.15	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	1.48	1.48	1.48	1.48	1.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.25	0.25	0.25	0.25	0.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.95	0.95	0.95	0.95	0.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	7.54	7.54	7.54	7.54	7.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
22	Concrete Duct Bank	--	--	--	--	1.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	2.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	4.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		2.08	7.54	7.54	7.54	11.64	7.54	2.08	--	--	--	--	--	--	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment																						
23	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.11	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.95	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.08	--	--	--	--	--	
24	Power, Electrical, & Mechanical Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.95	0.95	0.95	0.95	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.07	0.07	0.07	0.07	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.02	1.02	1.02	1.02	
25	Communication Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.07	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.07	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.08	1.02	1.02	1.02	1.02	1.08	
GRAND TOTAL		7.43	21.12	23.24	25.14	23.62	40.95	145.45	121.60	121.40	144.91	123.15	118.13	118.45	118.13	118.55	120.64	119.57	117.09	115.01	6.07	

Table K-655. NOx Exhaust Emissions from Of

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy	
21	CMU Building and Earthwork Pad Construction	--	--	--	--	--	--	--	--	0.0048	
		--	--	--	--	--	--	--	--	--	0.0124
		--	--	--	--	--	--	--	--	--	0.0053
		--	--	--	--	--	--	--	--	--	0.0108
		--	--	--	--	--	--	--	--	--	0.0166
		--	--	--	--	--	--	--	--	--	0.0041
		--	--	--	--	--	--	--	--	--	0.0023
		--	--	--	--	--	--	--	--	--	0.0222
		--	--	--	--	--	--	--	--	--	0.0038
		--	--	--	--	--	--	--	--	--	0.0143
		--	--	--	--	--	--	--	--	0.0166	
		--	--	--	--	--	--	--	--	0.1132	
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	0.0007	
		--	--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	--	0.0011	
		--	--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	--	0.0020	
		--	--	--	--	--	--	--	--	0.1173	
20 -Permanent Operating Equipment											
23	Mobilization and Demobilization	--	1.11	--	--	--	--	--	--	0.0011	
		--	0.95	--	--	--	--	--	--	0.0010	
		--	0.02	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	--	--
		--	2.08	--	--	--	--	--	--	0.0021	
24	Power, Electrical, & Mechanical Equipment	0.95	--	--	--	--	--	--	--	0.0143	
		0.07	--	--	--	--	--	--	--	0.0010	
		1.02	--	--	--	--	--	--	--	0.0153	
25	Communication Equipment	0.07	--	--	--	--	--	--	--	0.0004	
		0.07	--	--	--	--	--	--	--	0.0004	
		1.08	2.08	--	--	--	--	--	--	0.0178	
GRAND TOTAL		7.20	17.29	2.11	--	--	--	--	--	4.8763	

Table K-656. CO Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
02 - Relocations													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 2 1	MHDT 100 LDT2 n/a	-	1	1	2	10.5648 2.0693 12.4711 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	
2	Levee O&M Road Regrading (6" AB)	218,000	SF	12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Graders n/a - onroad n/a - onroad n/a - onroad	1 1 1 5	187 MHDT LDT2 HHDT	39,400	1	39,400	6	0.6411 10.5648 12.4711 33.0182	g/hp-hr g/hr g/hr g/hr
												Levee O&M Road Regrading (6" AB) Subtotal	
3	Temporary Electrical Power	100	LF	Flatbed Truck Pickup Truck Conventional	n/a - onroad n/a - onroad	1 2	MHDT LDT2	1,500	1	1,500	1	10.5648 12.4711	g/hr g/hr
												Temporary Electrical Power Subtotal	
												02 - Relocations Total	
09 - Channels and Canals													
4	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	10.5648 2.0693 12.4711 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	
5	Clearing and Grubbing	67	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	2	2	4	17	2.2674 1.1116 146.1724 10.5648 12.4711 33.0182	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
6	Excavation/Grading (Dry Conditions)	133,580	CY	300 HP Dozer 21 CY Scrapers 12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional	Rubber Tired Dozers Scrapers Graders n/a - onroad n/a - onroad	1 4 1 1 7	300 407 187 MHDT LDT2	3,500	1	3,500	30	0.6274 0.7376 0.6411 10.5648 12.4711	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation/Grading (Dry Conditions) Subtotal	
7	Riprap - Class 2	153,590	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	2	2,000	72	0.5975 0.6597 33.0182 12.4711	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Class 2 Subtotal	
8	Erosion Control Seeding	24	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	13	1.9153 12.4711	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
11 - Levees and Floodwalls													
9	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 3 1	MHDT 100 LDT2 n/a	-	1	-	2	10.5648 2.0693 12.4711 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	

Table K-656. CO Exhaust Emissions from Offr

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
02 - Relocations																					
1	Mobilization and Demobilization	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		3.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		4.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Temporary Electrical Power	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		4.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals																					
4	Mobilization and Demobilization	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		3.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		4.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing	--	8.80	8.80	8.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	5.49	5.49	5.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	41.25	41.25	41.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.37	0.37	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	2.64	2.64	2.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	1.16	1.16	1.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	59.71	59.71	59.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Excavation/Grading (Dry Conditions)	--	--	--	--	3.32	3.32	3.32	3.32	3.32	3.32	3.32	--	--	--	--	--	--	--	--	--
		--	--	--	--	21.18	21.18	21.18	21.18	21.18	21.18	21.18	--	--	--	--	--	--	--	--	--
		--	--	--	--	2.11	2.11	2.11	2.11	2.11	2.11	2.11	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.19	0.19	0.19	0.19	0.19	0.19	0.19	--	--	--	--	--	--	--	--	--
		--	--	--	--	1.54	1.54	1.54	1.54	1.54	1.54	1.54	--	--	--	--	--	--	--	--	--
		--	--	--	--	28.34	28.34	28.34	28.34	28.34	28.34	28.34	--	--	--	--	--	--	--	--	--
7	Riprap - Class 2	--	--	--	--	--	--	10.83	10.83	10.83	10.83	10.83	10.83	10.83	10.83	10.83	10.83	10.83	10.83	10.83	--
		--	--	--	--	--	--	6.98	6.98	6.98	6.98	6.98	6.98	6.98	6.98	6.98	6.98	6.98	6.98	6.98	--
		--	--	--	--	--	--	26.79	26.79	26.79	26.79	26.79	26.79	26.79	26.79	26.79	26.79	26.79	26.79	26.79	--
		--	--	--	--	--	--	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	2.20	--
		--	--	--	--	--	--	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	--
8	Erosion Control Seeding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.28
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.88
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.16
		4.06	59.71	59.71	59.71	28.34	28.34	75.14	75.14	75.14	75.14	75.14	46.80	46.80	46.80	46.80	46.80	46.80	46.80	46.80	4.16
11 - Levees and Floodwalls																					
9	Mobilization and Demobilization	--	--	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	3.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	4.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-656. CO Exhaust Emissions from Offr

#	Activity									Annual Emissions , tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations										
1	Mobilization and Demobilization	--	--	0.19	--	--	--	--	--	0.0002
		--	--	3.65	--	--	--	--	--	0.0036
		--	--	0.44	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	--
		--	--	4.28	--	--	--	--	0.0043	
2	Levee O&M Road Regrading (6" AB)	--	2.11	--	--	--	--	--	0.0063	
		--	0.19	--	--	--	--	--	0.0006	
		--	0.22	--	--	--	--	--	0.0007	
		--	2.91	--	--	--	--	--	0.0087	
		--	5.43	--	--	--	--	0.0163		
3	Temporary Electrical Power	--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	0.0002	
		--	--	--	--	--	--	--	0.0003	
		--	5.43	4.28	--	--	--	--	0.0209	
09 - Channels and Canals										
4	Mobilization and Demobilization	0.19	--	--	--	--	--	--	0.0002	
		3.65	--	--	--	--	--	--	0.0036	
		0.22	--	--	--	--	--	--	0.0002	
		--	--	--	--	--	--	--	--	
		4.06	--	--	--	--	--	0.0041		
5	Clearing and Grubbing	--	--	--	--	--	--	--	0.0748	
		--	--	--	--	--	--	--	0.0467	
		--	--	--	--	--	--	--	0.3506	
		--	--	--	--	--	--	--	0.0032	
		--	--	--	--	--	--	--	0.0224	
		--	--	--	--	--	--	0.0099		
		--	--	--	--	--	--	--	0.5075	
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	0.0498	
		--	--	--	--	--	--	--	0.3177	
		--	--	--	--	--	--	--	0.0317	
		--	--	--	--	--	--	--	0.0028	
		--	--	--	--	--	--	--	0.0231	
		--	--	--	--	--	--	0.4251		
7	Riprap - Class 2	--	--	--	--	--	--	--	0.3900	
		--	--	--	--	--	--	--	0.2513	
		--	--	--	--	--	--	--	0.9643	
		--	--	--	--	--	--	--	0.0792	
		--	--	--	--	--	--	1.6848		
8	Erosion Control Seeding	--	--	--	--	--	--	--	0.0213	
		--	--	--	--	--	--	--	0.0057	
		--	--	--	--	--	--	--	0.0270	
		4.06	--	--	--	--	--	--	2.6485	
11 - Levees and Floodwalls										
9	Mobilization and Demobilization	--	0.19	--	--	--	--	--	0.0002	
		--	3.65	--	--	--	--	--	0.0036	
		--	0.66	--	--	--	--	--	0.0007	
		--	--	--	--	--	--	--	--	
		--	4.50	--	--	--	--	0.0045		

Table K-656. CO Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
10	Berm/Levee Fill	213,520	CY	300 HP Dozer	Rubber Tired Dozers	1	300	1,000	2	2,000	95	0.6274	g/hp-hr
				4000 gallon Water Truck	n/a - onroad	1	MHDT					10.5648	g/hr
				10 TN Smooth Roller	Rollers	1	157					1.6405	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	3	LDT2					12.4711	g/hr
Berm/Levee Fill Subtotal													
11 - Levees and Floodwalls Total													
15 - Floodway Control and Diversion Structures													
11	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	10.5648	g/hr
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100					2.0693	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	1	LDT2					12.4711	g/hr
				Temp. Mobile Office Building	n/a - onroad	1	n/a					0.0000	g/hr
Mobilization and Demobilization Subtotal													
12	Construction Site Dewatering (Temporary Cofferdam)	93,000	SF	Flatbed Truck	n/a - onroad	1	MHDT	1,200	1	1,200	78	10.5648	g/hr
				75 TN Crane Crawler Pile Hammer	Bore/Drill Rigs	1	221					0.7660	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					12.4711	g/hr
Construction Site Dewatering (Temporary Cofferdam) Subtotal													
13	Construction Site Dewatering (Pumping)	-	-	6" Dia. Pump Engine Drive	Pumps	1	84	-	1	1	54	2.3329	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	3	LDT2					12.4711	g/hr
Construction Site Dewatering (Pumping) Subtotal													
14	Excavation (Wet Conditions)	25,960	CY	4.5 CY Hydraulic Excavator	Excavators	1	429	1,800	1	1,800	15	0.5975	g/hp-hr
				300 HP Dozer	Rubber Tired Dozers	2	300					0.6274	g/hp-hr
				3.5 CY Front End Loader Wheel	Rubber Tired Loaders	2	164					1.6565	g/hp-hr
				16 CY 3 Axle Dump Truck	n/a - onroad	9	HHDT					33.0182	g/hr
				Pickup Truck Conventional	n/a - onroad	7	LDT2					12.4711	g/hr
Excavation (Wet Conditions) Subtotal													
15	Sheet Pile Wall	1,840	SF	Flatbed Truck	n/a - onroad	1	MHDT	1,200	1	1,200	2	10.5648	g/hr
				75 TN Crane Crawler Pile Hammer	Bore/Drill Rigs	1	221					0.7660	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					12.4711	g/hr
Sheet Pile Wall Subtotal													
16	Culvert Headwall	110	CY	2.5" Dia. Concrete Vibrator	Plate Compactors	1	8	60	1	60	2	1.4921	g/hp-hr
				Concrete Mixer Truck	n/a - onroad	2	MHDT					10.5648	g/hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					12.4711	g/hr
Culvert Headwall Subtotal													
17	Precast Box Culvert 10'x8' 30'	30	LF	90 TN Truck-mounted Hydraulic Crane	Cranes	1	450	100	1	100	1	0.4386	g/hp-hr
				Flatbed Truck	n/a - onroad	2	MHDT					10.5648	g/hr
				Pickup Truck Conventional	n/a - onroad	4	LDT2					12.4711	g/hr
Precast Box Culvert 10'x8' 30' Subtotal													
18	Water Control Structure	280	CY	2.5" Dia. Concrete Vibrator	Plate Compactors	1	8	70	1	70	4	1.4921	g/hp-hr
				Concrete Mixer Truck	n/a - onroad	2	MHDT					10.5648	g/hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					12.4711	g/hr
Water Control Structure Subtotal													
19	Inflatable Obermeyer Gates	3	EA	90 TN Truck-mounted Hydraulic Crane	Cranes	1	450	0.1	1	0.1	24	0.4386	g/hp-hr
				Haul Truck Oversize Transport	n/a - onroad	1	HHDT					33.0182	g/hr
				Pickup Truck Conventional	n/a - onroad	4	LDT2					12.4711	g/hr
Inflatable Obermeyer Gates Subtotal													
15 - Floodway Control and Diversion Structures Total													
19 - Buildings, Grounds, and Utilities													
20	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	10.5648	g/hr
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100					2.0693	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	1	LDT2					12.4711	g/hr
				Temp. Mobile Office Building	n/a - onroad	1	n/a					0.0000	g/hr
Mobilization and Demobilization Subtotal													

Table K-656. CO Exhaust Emissions from Offr

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
10	Berm/Levee Fill	--	--	--	6.64	6.64	6.64	6.64	6.64	6.64	6.64	6.64	6.64	6.64	6.64	6.64	6.64	6.64	6.64	6.64	6.64
		--	--	--	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
		--	--	--	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08	9.08
		--	--	--	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32
		--	--	--	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	
		--	--	4.50	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	17.42	
15 - Floodway Control and Diversion Structures																					
11	Mobilization and Demobilization	--	--	--	--	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	0.19	--
		--	--	--	--	3.65	--	--	--	--	--	--	--	--	--	--	--	--	--	3.65	--
		--	--	--	--	0.22	--	--	--	--	--	--	--	--	--	--	--	--	--	0.22	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	4.06	--	--	--	--	--	--	--	--	--	--	--	--	4.06	--	
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	0.19	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	2.99	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	1.32	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	4.49	--	--	--	--	--	--	--	--	--	--	--	--	
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	3.46	--	--
		--	--	--	--	--	--	--	--	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	--	--
		--	--	--	--	--	--	--	--	--	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	--	--	
14	Excavation (Wet Conditions)	--	--	--	--	--	4.52	4.52	--	--	4.52	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	6.64	6.64	--	--	6.64	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	9.58	9.58	--	--	9.58	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	5.24	5.24	--	--	5.24	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	1.54	1.54	--	--	1.54	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	27.52	27.52	--	--	27.52	--	--	--	--	--	--	--	--	--	
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	0.19	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	2.99	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	1.32	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	4.49	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	0.21	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.37	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	1.32	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	1.90	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	--	3.48	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	0.37	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	0.88	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	4.73	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
18	Water Control Structure	--	--	--	--	--	--	--	--	--	--	--	0.21	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	0.37	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	1.32	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	1.90	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	--	--	--	--	--	3.48	3.48	3.48	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.58	0.58	0.58	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.88	0.88	0.88	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.94	4.94	4.94	--	--	--
		--	--	--	--	4.06	27.52	27.52	4.49	4.12	31.64	8.61	6.02	8.85	6.02	9.06	9.06	9.06	4.06	--	
19 - Buildings, Grounds, and Utilities																					
20	Mobilization and Demobilization	0.19	--	--	--	--	--	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
		3.65	--	--	--	--	--	3.65	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.22	--	--	--	--	--	0.22	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		4.06	--	--	--	--	4.06	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table K-656. CO Exhaust Emissions from Offr

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions , tpy
10	Berm/Levee Fill	6.64	--	--	--	--	--	--	--	0.3153
		0.37	--	--	--	--	--	--	--	0.0177
		9.08	--	--	--	--	--	--	--	0.4315
		1.32	--	--	--	--	--	--	--	0.0627
		17.42	--	--	--	--	--	--	--	0.8272
		17.42	4.50	--	--	--	--	--	--	0.8317
15 - Floodway Control and Diversion Structures										
11	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0036
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0041
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	--	0.0073
		--	--	--	--	--	--	--	--	0.1164
		--	--	--	--	--	--	--	--	0.0515
		--	--	--	--	--	--	--	--	0.1752
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	0.0933
		--	--	--	--	--	--	--	--	0.0178
		--	--	--	--	--	--	--	--	0.1111
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	0.0339
		--	--	--	--	--	--	--	--	0.0498
		--	--	--	--	--	--	--	--	0.0719
		--	--	--	--	--	--	--	--	0.0393
		--	--	--	--	--	--	--	--	0.0115
		--	--	--	--	--	--	--	--	0.2064
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0030
		--	--	--	--	--	--	--	--	0.0013
		--	--	--	--	--	--	--	--	0.0045
16	Culvert Headwall	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	0.0013
		--	--	--	--	--	--	--	--	0.0019
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	0.0017
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	0.0024
18	Water Control Structure	--	--	--	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	0.0007
		--	--	--	--	--	--	--	--	0.0026
		--	--	--	--	--	--	--	--	0.0038
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	0.0418
		--	--	--	--	--	--	--	--	0.0070
		--	--	--	--	--	--	--	--	0.0106
		--	--	--	--	--	--	--	--	0.0593
		--	--	--	--	--	--	--	--	0.5687
19 - Buildings, Grounds, and Utilities										
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0036
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0041

Table K-656. CO Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units			
21	CMU Building and Earthwork Pad Construction	1	EA	165 HP Dozer	Rubber Tired Dozers	1	165	-	1	1	30	1.9690	g/hp-hr			
				Scraper	Scrapers	1								0.7376	g/hp-hr	
				Motor Grader	Graders	1	187							0.6411	g/hp-hr	
				Compactor	Rollers	1	80							1.8537	g/hp-hr	
				4000 gallon Water Truck	n/a - onroad	1367	MHDT							10.5648	g/hr	
				10 TN Smooth Roller	Rollers	1	157							1.6405	g/hr	
				Pickup Truck Conventional	Rollers	7	LDT2							12.4711	g/hp-hr	
				Concrete Pump Boom Truck Mounted	n/a - onroad	1	84							2.3329	g/hr	
				2.5" Dia. Concrete Vibrator	Pumps	1	8							1.4921	g/hp-hr	
				Extended Boom Pallet Loader	Plate Compactors	1	100							2.0693	g/hp-hr	
				Concrete Mixer Truck	Rough Terrain Forklifts	1	MHDT							10.5648	g/hp-hr	
					n/a - onroad										g/hr	
				CMU Building and Earthwork Pad Construction Subtotal												
22	Concrete Duct Bank	40	CY	Concrete Pump Boom Truck Mounted	Pumps	1	84	60	1	60	1	2.3329	g/hp-hr			
				2.5" Dia. Concrete Vibrator	Plate Compactors	1	8							1.4921	g/hp-hr	
				Concrete Mixer Truck	n/a - onroad	2								10.5648	g/hr	
				Pickup Truck Conventional	n/a - onroad	7	LDT2							12.4711	g/hr	
Concrete Duct Bank Subtotal																
						MHDT						19 - Buildings, Grounds, and Utilities Total				
20 -Permanent Operating Equipment																
23	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	10.5648	g/hr			
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100							2.0693	g/hp-hr	
				Pickup Truck Conventional	n/a - onroad	1	LDT2							12.4711	g/hr	
				Temp. Mobile Office Building	n/a - onroad	1								0.0000	g/hr	
Mobilization and Demobilization Subtotal																
24	Power, Electrical, & Mechanical Equipment	-	-	Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100	-	1	1	30	2.0693	g/hp-hr			
				Pickup Truck Conventional	n/a - onroad	3	LDT2							12.4711	g/hr	
Power, Electrical, & Mechanical Equipment Subtotal																
25	Communication Equipment	-	-	Pickup Truck Conventional	n/a - onroad	3	LDT2	-	1	1	12	12.4711	g/hr			
Communication Equipment Subtotal																
20 -Permanent Operating Equipment Total																
GRAND TOTAL																

Table K-656. CO Exhaust Emissions from Offr

#	Activity	Maximum Daily Emissions, lbs/day																				
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	
21	CMU Building and Earthwork Pad Construction	--	5.73	5.73	5.73	5.73	5.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	4.77	4.77	4.77	4.77	4.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	2.11	2.11	2.11	2.11	2.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	2.62	2.62	2.62	2.62	2.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.19	0.19	0.19	0.19	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	4.54	4.54	4.54	4.54	4.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	1.54	1.54	1.54	1.54	1.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	3.46	3.46	3.46	3.46	3.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.21	0.21	0.21	0.21	0.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	3.65	3.65	3.65	3.65	3.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	29.01	29.01	29.01	29.01	29.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
22	Concrete Duct Bank	--	--	--	--	3.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	1.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	5.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		4.06	29.01	29.01	29.01	34.58	29.01	4.06	--	--	--	--	--	--	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment																						
23	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.19	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.65	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.22	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.06	--	--	--	--		
24	Power, Electrical, & Mechanical Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.65	3.65	3.65	3.65	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.66	0.66	0.66	0.66	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.31	4.31	4.31	4.31	
25	Communication Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.66	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.66	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.06	4.31	4.31	4.31	4.31	4.97	
GRAND TOTAL		13.01	88.72	93.21	106.13	84.40	102.28	124.13	97.05	96.67	124.19	101.16	70.23	73.07	70.23	73.27	77.33	77.58	72.58	68.53	26.54	

Table K-656. CO Exhaust Emissions from Offr

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions , tpy
21	CMU Building and Earthwork Pad Construction	--	--	--	--	--	--	--	--	0.0859
		--	--	--	--	--	--	--	--	0.0716
		--	--	--	--	--	--	--	--	0.0317
		--	--	--	--	--	--	--	--	0.0392
		--	--	--	--	--	--	--	--	0.0028
		--	--	--	--	--	--	--	--	0.0681
		--	--	--	--	--	--	--	--	0.0231
		--	--	--	--	--	--	--	--	0.0518
		--	--	--	--	--	--	--	--	0.0032
		--	--	--	--	--	--	--	--	0.0547
		--	--	--	--	--	--	--	0.0028	
		--	--	--	--	--	--	--	0.4351	
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	0.0017
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0008
		--	--	--	--	--	--	--	0.0028	
		--	--	--	--	--	--	--	0.4419	
20 -Permanent Operating Equipment										
23	Mobilization and Demobilization	--	0.19	--	--	--	--	--	--	0.0002
		--	3.65	--	--	--	--	--	--	0.0036
		--	0.22	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	--
		--	4.06	--	--	--	--	--	--	0.0041
24	Power, Electrical, & Mechanical Equipment	3.65	--	--	--	--	--	--	--	0.0547
		0.66	--	--	--	--	--	--	--	0.0099
		4.31	--	--	--	--	--	--	--	0.0646
25	Communication Equipment	0.66	--	--	--	--	--	--	--	0.0040
		0.66	--	--	--	--	--	--	--	0.0040
		4.97	4.06	--	--	--	--	--	--	0.0727
GRAND TOTAL		26.44	13.98	4.28	--	--	--	--	--	4.5844

Table K-657. SO2 Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
02 - Relocations													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 2 1	MHDT 100 LDT2 n/a	-	1	1	2	0.1718 0.0040 0.0468 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													
2	Levee O&M Road Regrading (6" AB)	218,000	SF	12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Graders n/a - onroad n/a - onroad n/a - onroad	1 1 1 5	187 MHDT LDT2 HHDT	39,400	1	39,400	6	0.0039 0.1718 0.0468 0.2206	g/hp-hr g/hr g/hr g/hr
Levee O&M Road Regrading (6" AB) Subtotal													
3	Temporary Electrical Power	100	LF	Flatbed Truck Pickup Truck Conventional	n/a - onroad n/a - onroad	1 2	MHDT LDT2	1,500	1	1,500	1	0.1718 0.0468	g/hr g/hr
Temporary Electrical Power Subtotal													
02 - Relocations Total													
09 - Channels and Canals													
4	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	0.1718 0.0040 0.0468 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													
5	Clearing and Grubbing	67	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	2	2	4	17	0.0043 0.0026 0.0163 0.1718 0.0468 0.2206	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
Clearing and Grubbing Subtotal													
6	Excavation/Grading (Dry Conditions)	133,580	CY	300 HP Dozer 21 CY Scrapers 12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional	Rubber Tired Dozers Scrapers Graders n/a - onroad n/a - onroad	1 4 1 1 7	300 407 187 MHDT LDT2	3,500	1	3,500	30	0.0033 0.0040 0.0039 0.1718 0.0468	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
Excavation/Grading (Dry Conditions) Subtotal													
7	Riprap - Class 2	153,590	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	2	2,000	72	0.0032 0.0036 0.2206 0.0468	g/hp-hr g/hp-hr g/hr g/hr
Riprap - Class 2 Subtotal													
8	Erosion Control Seeding	24	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	13	0.0037 0.0468	g/hp-hr g/hr
Erosion Control Seeding Subtotal													
09 - Channels and Canals Total													
11 - Levees and Floodwalls													
9	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 3 1	MHDT 100 LDT2 n/a	-	1	-	2	0.1718 0.0040 0.0468 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													

Table K-657. SO2 Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
02 - Relocations																					
1	Mobilization and Demobilization	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Temporary Electrical Power	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals																					
4	Mobilization and Demobilization	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing	--	0.02	0.02	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.00	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.06	0.06	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Excavation/Grading (Dry Conditions)	--	--	--	--	0.02	0.02	0.02	0.02	0.02	0.02	0.02	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.12	0.12	0.12	0.12	0.12	0.12	0.12	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.15	0.15	0.15	0.15	0.15	0.15	0.15	--	--	--	--	--	--	--	--	--
7	Riprap - Class 2	--	--	--	--	--	--	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	--
		--	--	--	--	--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	--
		--	--	--	--	--	--	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	--
		--	--	--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--
		--	--	--	--	--	--	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	--
8	Erosion Control Seeding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01
		0.01	0.06	0.06	0.06	0.15	0.15	0.44	0.44	0.44	0.44	0.44	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.01
11 - Levees and Floodwalls																					
9	Mobilization and Demobilization	--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-657. SO2 Exhaust Emissions from Of

#	Activity									Annual Emissions , tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations										
1	Mobilization and Demobilization	--	--	0.00	--	--	--	--	--	0.0000
		--	--	0.01	--	--	--	--	--	0.0000
		--	--	0.00	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	0.01	--	--	--	--	0.0000	
2	Levee O&M Road Regrading (6" AB)	--	0.01	--	--	--	--	--	0.0000	
		--	0.00	--	--	--	--	--	0.0000	
		--	0.00	--	--	--	--	--	0.0000	
		--	0.02	--	--	--	--	--	0.0001	
		--	0.04	--	--	--	--	0.0001		
3	Temporary Electrical Power	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0000	
		--	0.04	0.01	--	--	--	0.0001		
09 - Channels and Canals										
4	Mobilization and Demobilization	0.00	--	--	--	--	--	--	0.0000	
		0.01	--	--	--	--	--	--	0.0000	
		0.00	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	
		0.01	--	--	--	--	--	0.0000		
5	Clearing and Grubbing	--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	0.0005		
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	0.0003	
		--	--	--	--	--	--	--	0.0017	
		--	--	--	--	--	--	--	0.0002	
		--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	0.0023		
7	Riprap - Class 2	--	--	--	--	--	--	--	0.0021	
		--	--	--	--	--	--	--	0.0014	
		--	--	--	--	--	--	--	0.0064	
		--	--	--	--	--	--	--	0.0003	
		--	--	--	--	--	--	0.0102		
8	Erosion Control Seeding	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0001	
		0.01	--	--	--	--	--	0.0131		
11 - Levees and Floodwalls										
9	Mobilization and Demobilization	--	0.00	--	--	--	--	--	0.0000	
		--	0.01	--	--	--	--	--	0.0000	
		--	0.00	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	
		--	0.01	--	--	--	--	0.0000		

Table K-657. SO2 Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
10	Berm/Levee Fill	213,520	CY	300 HP Dozer	Rubber Tired Dozers	1	300	1,000	2	2,000	95	0.0033	g/hp-hr
				4000 gallon Water Truck	n/a - onroad	1	MHDT					0.1718	g/hr
				10 TN Smooth Roller	Rollers	1	157					0.0036	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	3	LDT2					0.0468	g/hr
Berm/Levee Fill Subtotal													
11 - Levees and Floodwalls Total													
15 - Floodway Control and Diversion Structures													
11	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	0.1718	g/hr
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100					0.0040	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	1	LDT2					0.0468	g/hr
				Temp. Mobile Office Building	n/a - onroad	1	n/a					0.0000	g/hr
Mobilization and Demobilization Subtotal													
12	Construction Site Dewatering (Temporary Cofferdam)	93,000	SF	Flatbed Truck	n/a - onroad	1	MHDT	1,200	1	1,200	78	0.1718	g/hr
				75 TN Crane Crawler Pile Hammer	Bore/Drill Rigs	1	221					0.0048	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					0.0468	g/hr
Construction Site Dewatering (Temporary Cofferdam) Subtotal													
13	Construction Site Dewatering (Pumping)	-	-	6" Dia. Pump Engine Drive	Pumps	1	84	-	1	1	54	0.0049	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	3	LDT2					0.0468	g/hr
Construction Site Dewatering (Pumping) Subtotal													
14	Excavation (Wet Conditions)	25,960	CY	4.5 CY Hydraulic Excavator	Excavators	1	429	1,800	1	1,800	15	0.0032	g/hp-hr
				300 HP Dozer	Rubber Tired Dozers	2	300					0.0033	g/hp-hr
				3.5 CY Front End Loader Wheel	Rubber Tired Loaders	2	164					0.0035	g/hp-hr
				16 CY 3 Axle Dump Truck	n/a - onroad	9	HHDT					0.2206	g/hr
				Pickup Truck Conventional	n/a - onroad	7	LDT2					0.0468	g/hr
				Excavation (Wet Conditions) Subtotal									
15	Sheet Pile Wall	1,840	SF	Flatbed Truck	n/a - onroad	1	MHDT	1,200	1	1,200	2	0.1718	g/hr
				75 TN Crane Crawler Pile Hammer	Bore/Drill Rigs	1	221					0.0048	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					0.0468	g/hr
Sheet Pile Wall Subtotal													
16	Culvert Headwall	110	CY	2.5" Dia. Concrete Vibrator	Plate Compactors	1	8	60	1	60	2	0.0038	g/hp-hr
				Concrete Mixer Truck	n/a - onroad	2	MHDT					0.1718	g/hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					0.0468	g/hr
Culvert Headwall Subtotal													
17	Precast Box Culvert 10'x8' 30'	30	LF	90 TN Truck-mounted Hydraulic Crane	Cranes	1	450	100	1	100	1	0.0024	g/hp-hr
				Flatbed Truck	n/a - onroad	2	MHDT					0.1718	g/hr
				Pickup Truck Conventional	n/a - onroad	4	LDT2					0.0468	g/hr
Precast Box Culvert 10'x8' 30' Subtotal													
18	Water Control Structure	280	CY	2.5" Dia. Concrete Vibrator	Plate Compactors	1	8	70	1	70	4	0.0038	g/hp-hr
				Concrete Mixer Truck	n/a - onroad	2	MHDT					0.1718	g/hr
				Pickup Truck Conventional	n/a - onroad	6	LDT2					0.0468	g/hr
Water Control Structure Subtotal													
19	Inflatable Obermeyer Gates	3	EA	90 TN Truck-mounted Hydraulic Crane	Cranes	1	450	0.1	1	0.1	24	0.0024	g/hp-hr
				Haul Truck Oversize Transport	n/a - onroad	1	HHDT					0.2206	g/hr
				Pickup Truck Conventional	n/a - onroad	4	LDT2					0.0468	g/hr
Inflatable Obermeyer Gates Subtotal													
15 - Floodway Control and Diversion Structures Total													
19 - Buildings, Grounds, and Utilities													
20	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	0.1718	g/hr
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100					0.0040	g/hp-hr
				Pickup Truck Conventional	n/a - onroad	1	LDT2					0.0468	g/hr
				Temp. Mobile Office Building	n/a - onroad	1	n/a					0.0000	g/hr
Mobilization and Demobilization Subtotal													

Table K-657. SO2 Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																				
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	
10	Berm/Levee Fill	--	--	--	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
		--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
		--	--	--	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
		--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		--	--	--	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	
		--	--	0.01	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	
15 - Floodway Control and Diversion Structures																						
11	Mobilization and Demobilization	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	--	
		--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--
		--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	--	
		--	--	--	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	--	--
		--	--	--	--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	--	--	--	
14	Excavation (Wet Conditions)	--	--	--	--	--	0.02	0.02	--	--	0.02	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	0.03	0.03	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.02	0.02	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.04	0.04	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.01	0.01	--	--	0.01	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	0.12	0.12	--	--	0.12	--	--	--	--	--	--	--	--	--	--	
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	0.03	--	--	--	--	--	--	--	--	--	--	
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.03	--	--	--	--	--	--	--	--	--	
18	Water Control Structure	--	--	--	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	--	--	--	--	0.02	0.02	0.02	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.01	0.12	0.12	0.03	0.01	0.13	0.04	0.02	0.04	0.02	0.04	0.04	0.04	0.01	--	
		--	--	--	--	--	0.01	0.12	0.12	0.03	0.01	0.13	0.04	0.02	0.04	0.02	0.04	0.04	0.04	0.01	--	
19 - Buildings, Grounds, and Utilities																						
20	Mobilization and Demobilization	0.00	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.00	--	--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table K-657. SO2 Exhaust Emissions from Of

#	Activity										Annual Emissions , tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct		
10	Berm/Levee Fill	0.03	--	--	--	--	--	--	--	--	0.0017
		0.01	--	--	--	--	--	--	--	--	0.0003
		0.02	--	--	--	--	--	--	--	--	0.0009
		0.00	--	--	--	--	--	--	--	--	0.0002
		0.07	--	--	--	--	--	--	--	--	0.0031
		0.07	0.01	--	--	--	--	--	--	0.0031	
15 - Floodway Control and Diversion Structures											
11	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	0.0000
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	--	0.0007
		--	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	--	0.0010
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	--	0.0003
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0009	
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
18	Water Control Structure	--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0026	
19 - Buildings, Grounds, and Utilities											
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0000	

Table K-657. SO2 Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units			
21	CMU Building and Earthwork Pad Construction	1	EA	165 HP Dozer	Rubber Tired Dozers	1	165	-	1	1	30	0.0039	g/hp-hr			
				Scraper	Scrapers	1								0.0040	g/hp-hr	
				Motor Grader	Graders	1	187							0.0039	g/hp-hr	
				Compactor	Rollers	1	80							0.0037	g/hp-hr	
				4000 gallon Water Truck	n/a - onroad	1367	MHDT							0.1718	g/hr	
				10 TN Smooth Roller	Rollers	1	157							0.0036	g/hp-hr	
				Pickup Truck Conventional	Rollers	7	LDT2							0.0468	g/hp-hr	
				Concrete Pump Boom Truck Mounted	n/a - onroad	1	84							0.0049	g/hr	
				2.5" Dia. Concrete Vibrator	Pumps	1	8							0.0038	g/hp-hr	
				Extended Boom Pallet Loader	Plate Compactors	1	100							0.0040	g/hp-hr	
				Concrete Mixer Truck	Rough Terrain Forklifts	1	MHDT							0.1718	g/hp-hr	
					n/a - onroad											g/hr
				CMU Building and Earthwork Pad Construction Subtotal												
22	Concrete Duct Bank	40	CY	Concrete Pump Boom Truck Mounted	Pumps	1	84	60	1	60	1	0.0049	g/hp-hr			
				2.5" Dia. Concrete Vibrator	Plate Compactors	1	8						0.0038	g/hp-hr		
				Concrete Mixer Truck	n/a - onroad	2							0.1718	g/hr		
				Pickup Truck Conventional	n/a - onroad	7	LDT2						0.0468	g/hr		
Concrete Duct Bank Subtotal																
						MHDT						19 - Buildings, Grounds, and Utilities Total				
20 -Permanent Operating Equipment																
23	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	0.1718	g/hr			
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100						0.0040	g/hp-hr		
				Pickup Truck Conventional	n/a - onroad	1	LDT2						0.0468	g/hr		
				Temp. Mobile Office Building	n/a - onroad	1							0.0000	g/hr		
Mobilization and Demobilization Subtotal																
24	Power, Electrical, & Mechanical Equipment	-	-	Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100	-	1	1	30	0.0040	g/hp-hr			
				Pickup Truck Conventional	n/a - onroad	3	LDT2						0.0468	g/hr		
Power, Electrical, & Mechanical Equipment Subtotal																
25	Communication Equipment	-	-	Pickup Truck Conventional	n/a - onroad	3	LDT2	-	1	1	12	0.0468	g/hr			
Communication Equipment Subtotal																
20 -Permanent Operating Equipment Total																
GRAND TOTAL																

Table K-657. SO2 Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																				
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	
21	CMU Building and Earthwork Pad Construction	--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	0.03	0.03	0.03	0.03	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.00	0.00	0.00	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.00	0.00	0.00	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.09	0.09	0.09	0.09	0.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
22	Concrete Duct Bank	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.01	0.09	0.09	0.09	0.11	0.09	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment																						
23	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--		
24	Power, Electrical, & Mechanical Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	0.01	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	0.00	0.00	0.00	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	0.01		
25	Communication Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.00	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	0.01	0.01	
GRAND TOTAL		0.04	0.15	0.16	0.22	0.34	0.43	0.63	0.53	0.51	0.63	0.54	0.37	0.39	0.37	0.38	0.40	0.39	0.37	0.36	0.09	

Table K-657. SO2 Exhaust Emissions from Of

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
21	CMU Building and Earthwork Pad Construction	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0014	
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0014
20 -Permanent Operating Equipment										
23	Mobilization and Demobilization	--	0.00	--	--	--	--	--	--	0.0000
		--	0.01	--	--	--	--	--	--	0.0000
		--	0.00	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	0.01	--	--	--	--	--	--	0.0000
24	Power, Electrical, & Mechanical Equipment	0.01	--	--	--	--	--	--	--	0.0001
		0.00	--	--	--	--	--	--	--	0.0000
		0.01	--	--	--	--	--	--	--	0.0001
25	Communication Equipment	0.00	--	--	--	--	--	--	--	0.0000
		0.00	--	--	--	--	--	--	--	0.0000
		0.01	0.01	--	--	--	--	--	--	0.0002
GRAND TOTAL		0.09	0.06	0.01	--	--	--	--	--	0.0205

Table K-658. PM10 Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
02 - Relocations													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 2 1	MHDT 100 LDT2 n/a	-	1	1	2	2.2051 0.0038 0.7714 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	
2	Levee O&M Road Regrading (6" AB)	218,000	SF	12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Graders n/a - onroad n/a - onroad n/a - onroad	1 1 1 5	187 MHDT LDT2 HHDT	39,400	1	39,400	6	0.0038 2.2051 0.7714 1.5952	g/hp-hr g/hr g/hr g/hr
												Levee O&M Road Regrading (6" AB) Subtotal	
3	Temporary Electrical Power	100	LF	Flatbed Truck Pickup Truck Conventional	n/a - onroad n/a - onroad	1 2	MHDT LDT2	1,500	1	1,500	1	2.2051 0.7714	g/hr g/hr
												Temporary Electrical Power Subtotal	
												02 - Relocations Total	
09 - Channels and Canals													
4	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	2.2051 0.0038 0.7714 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	
5	Clearing and Grubbing	67	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	2	2	4	17	0.0045 0.0303 0.2300 2.2051 0.7714 1.5952	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
6	Excavation/Grading (Dry Conditions)	133,580	CY	300 HP Dozer 21 CY Scrapers 12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional	Rubber Tired Dozers Scrapers Graders n/a - onroad n/a - onroad	1 4 1 1 7	300 407 187 MHDT LDT2	3,500	1	3,500	30	0.0040 0.0045 0.0038 2.2051 0.7714	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation/Grading (Dry Conditions) Subtotal	
7	Riprap - Class 2	153,590	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	2	2,000	72	0.0036 0.0040 1.5952 0.7714	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Class 2 Subtotal	
8	Erosion Control Seeding	24	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	13	0.0040 0.7714	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
11 - Levees and Floodwalls													
9	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 3 1	MHDT 100 LDT2 n/a	-	1	-	2	2.2051 0.0038 0.7714 0.0000	g/hr g/hp-hr g/hr g/hr
												Mobilization and Demobilization Subtotal	

Table K-658. PM10 Exhaust Emissions from O

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
02 - Relocations																					
1	Mobilization and Demobilization	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Temporary Electrical Power	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals																					
4	Mobilization and Demobilization	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing	--	0.02	0.02	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.15	0.15	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.06	0.06	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.08	0.08	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.16	0.16	0.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.06	0.06	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.53	0.53	0.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Excavation/Grading (Dry Conditions)	--	--	--	--	0.02	0.02	0.02	0.02	0.02	0.02	0.02	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.13	0.13	0.13	0.13	0.13	0.13	0.13	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.10	0.10	0.10	0.10	0.10	0.10	0.10	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.30	0.30	0.30	0.30	0.30	0.30	0.30	--	--	--	--	--	--	--	--	--
7	Riprap - Class 2	--	--	--	--	--	--	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	--
		--	--	--	--	--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	--
		--	--	--	--	--	--	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	--
		--	--	--	--	--	--	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	--
		--	--	--	--	--	--	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	--
8	Erosion Control Seeding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.06
		0.06	0.53	0.53	0.53	0.30	0.30	1.83	1.83	1.83	1.83	1.83	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	0.06
11 - Levees and Floodwalls																					
9	Mobilization and Demobilization	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-658. PM10 Exhaust Emissions from O

#	Activity									Annual Emissions, tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations										
1	Mobilization and Demobilization	--	--	0.04	--	--	--	--	--	0.0000
		--	--	0.01	--	--	--	--	--	0.0000
		--	--	0.03	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	0.07	--	--	--	--	0.0001	
2	Levee O&M Road Regrading (6" AB)	--	0.01	--	--	--	--	--	0.0000	
		--	0.04	--	--	--	--	--	0.0001	
		--	0.01	--	--	--	--	--	0.0000	
		--	0.14	--	--	--	--	--	0.0004	
		--	0.21	--	--	--	--	0.0006		
3	Temporary Electrical Power	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	0.0000		
		--	0.21	0.07	--	--	--	--	0.0007	
09 - Channels and Canals										
4	Mobilization and Demobilization	0.04	--	--	--	--	--	--	0.0000	
		0.01	--	--	--	--	--	--	0.0000	
		0.01	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	
		0.06	--	--	--	--	--	0.0001		
5	Clearing and Grubbing	--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	0.0013	
		--	--	--	--	--	--	--	0.0006	
		--	--	--	--	--	--	--	0.0007	
		--	--	--	--	--	--	--	0.0014	
		--	--	--	--	--	--	0.0005		
		--	--	--	--	--	--	0.0045		
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	0.0003	
		--	--	--	--	--	--	--	0.0019	
		--	--	--	--	--	--	--	0.0002	
		--	--	--	--	--	--	--	0.0006	
		--	--	--	--	--	--	--	0.0014	
		--	--	--	--	--	--	0.0045		
7	Riprap - Class 2	--	--	--	--	--	--	--	0.0023	
		--	--	--	--	--	--	--	0.0015	
		--	--	--	--	--	--	--	0.0466	
		--	--	--	--	--	--	--	0.0049	
		--	--	--	--	--	--	0.0553		
8	Erosion Control Seeding	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0004	
		--	--	--	--	--	--	0.0004		
		0.06	--	--	--	--	--	--	0.0648	
11 - Levees and Floodwalls										
9	Mobilization and Demobilization	--	0.04	--	--	--	--	--	0.0000	
		--	0.01	--	--	--	--	--	0.0000	
		--	0.04	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	
		--	0.09	--	--	--	--	0.0001		

Table K-658. PM10 Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
10	Berm/Levee Fill	213,520	CY	300 HP Dozer 4000 gallon Water Truck 10 TN Smooth Roller Pickup Truck Conventional	Rubber Tired Dozers n/a - onroad Rollers n/a - onroad	1 1 1 3	300 MHDT 157 LDT2	1,000	2	2,000	95	0.0040 2.2051 0.0034 0.7714	g/hp-hr g/hr g/hp-hr g/hr
Berm/Levee Fill Subtotal													
11 - Levees and Floodwalls Total													
15 - Floodway Control and Diversion Structures													
11	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	2.2051 0.0038 0.7714 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													
12	Construction Site Dewatering (Temporary Cofferdam)	93,000	SF	Flatbed Truck 75 TN Crane Crawler Pile Hammer Pickup Truck Conventional	n/a - onroad Bore/Drill Rigs n/a - onroad	1 1 6	MHDT 221 LDT2	1,200	1	1,200	78	2.2051 0.0046 0.7714	g/hr g/hp-hr g/hr
Construction Site Dewatering (Temporary Cofferdam) Subtotal													
13	Construction Site Dewatering (Pumping)	-	-	6" Dia. Pump Engine Drive Pickup Truck Conventional	Pumps n/a - onroad	1 3	84 LDT2	-	1	1	54	0.0071 0.7714	g/hp-hr g/hr
Construction Site Dewatering (Pumping) Subtotal													
14	Excavation (Wet Conditions)	25,960	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 9 7	429 300 164 HHDT LDT2	1,800	1	1,800	15	0.0036 0.0040 0.0038 1.5952 0.7714	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
Excavation (Wet Conditions) Subtotal													
15	Sheet Pile Wall	1,840	SF	Flatbed Truck 75 TN Crane Crawler Pile Hammer Pickup Truck Conventional	n/a - onroad Bore/Drill Rigs n/a - onroad	1 1 6	MHDT 221 LDT2	1,200	1	1,200	2	2.2051 0.0046 0.7714	g/hr g/hp-hr g/hr
Sheet Pile Wall Subtotal													
16	Culvert Headwall	110	CY	2.5" Dia. Concrete Vibrator Concrete Mixer Truck Pickup Truck Conventional	Plate Compactors n/a - onroad n/a - onroad	1 2 6	8 MHDT LDT2	60	1	60	2	0.0696 2.2051 0.7714	g/hp-hr g/hr g/hr
Culvert Headwall Subtotal													
17	Precast Box Culvert 10'x8' 30'	30	LF	90 TN Truck-mounted Hydraulic Crane Flatbed Truck Pickup Truck Conventional	Cranes n/a - onroad n/a - onroad	1 2 4	450 MHDT LDT2	100	1	100	1	0.0027 2.2051 0.7714	g/hp-hr g/hr g/hr
Precast Box Culvert 10'x8' 30' Subtotal													
18	Water Control Structure	280	CY	2.5" Dia. Concrete Vibrator Concrete Mixer Truck Pickup Truck Conventional	Plate Compactors n/a - onroad n/a - onroad	1 2 6	8 MHDT LDT2	70	1	70	4	0.0696 2.2051 0.7714	g/hp-hr g/hr g/hr
Water Control Structure Subtotal													
19	Inflatable Obermeyer Gates	3	EA	90 TN Truck-mounted Hydraulic Crane Haul Truck Oversize Transport Pickup Truck Conventional	Cranes n/a - onroad n/a - onroad	1 1 4	450 HHDT LDT2	0.1	1	0.1	24	0.0027 1.5952 0.7714	g/hp-hr g/hr g/hr
Inflatable Obermeyer Gates Subtotal													
15 - Floodway Control and Diversion Structures Total													
19 - Buildings, Grounds, and Utilities													
20	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	2.2051 0.0038 0.7714 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													

Table K-658. PM10 Exhaust Emissions from O

#	Activity	Maximum Daily Emissions, lbs/day																				
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	
10	Berm/Levee Fill	--	--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	
		--	--	--	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	
		--	--	--	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	
		--	--	--	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		--	--	--	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	
		--	--	0.09	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	0.22	
15 - Floodway Control and Diversion Structures																						
11	Mobilization and Demobilization	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	--	
		--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	
		--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	0.06	--	--	
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	--	
		--	--	--	--	--	--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	--	--	
		--	--	--	--	--	--	--	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14	Excavation (Wet Conditions)	--	--	--	--	--	0.03	0.03	--	--	0.03	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	0.04	0.04	--	--	0.04	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	0.02	0.02	--	--	0.02	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	0.25	0.25	--	--	0.25	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	0.10	0.10	--	--	0.10	--	--	--	--	--	--	--	--	--		
		--	--	--	--	--	0.44	0.44	--	--	0.44	--	--	--	--	--	--	--	--	--	--	
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	--	--
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--	--	--	--
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--
18	Water Control Structure	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	0.02	0.02	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	0.03	0.03	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.05	0.05	0.05	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10	0.10	0.10	--	--	--	--
		--	--	--	--	0.06	0.44	0.44	0.14	0.05	0.49	0.19	0.22	0.20	0.22	0.16	0.16	0.16	0.06	--	--	
19 - Buildings, Grounds, and Utilities																						
20	Mobilization and Demobilization	0.04	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.06	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table K-658. PM10 Exhaust Emissions from O

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions , tpy
10	Berm/Levee Fill	0.04	--	--	--	--	--	--	--	0.0020
		0.08	--	--	--	--	--	--	--	0.0037
		0.02	--	--	--	--	--	--	--	0.0009
		0.08	--	--	--	--	--	--	--	0.0039
		0.22	--	--	--	--	--	--	--	0.0105
		0.22	0.09	--	--	--	--	--	--	0.0106
15 - Floodway Control and Diversion Structures										
11	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0001
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	--	0.0015
		--	--	--	--	--	--	--	--	0.0007
		--	--	--	--	--	--	--	--	0.0032
		--	--	--	--	--	--	--	--	0.0054
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0011
		--	--	--	--	--	--	--	--	0.0014
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0019
		--	--	--	--	--	--	--	--	0.0007
		--	--	--	--	--	--	--	--	0.0033
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
16	Culvert Headwall	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0002
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
18	Water Control Structure	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0003
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0007
		--	--	--	--	--	--	--	--	0.0012
		--	--	--	--	--	--	--	--	0.0121
19 - Buildings, Grounds, and Utilities										
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0001

Table K-658. PM10 Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units			
21	CMU Building and Earthwork Pad Construction	1	EA	165 HP Dozer	Rubber Tired Dozers	1	165	-	1	1	30	0.0043	g/hp-hr			
				Scraper	Scrapers	1								0.0045	g/hp-hr	
				Motor Grader	Graders	1	187							0.0038	g/hp-hr	
				Compactor	Rollers	1	80							0.0037	g/hp-hr	
				4000 gallon Water Truck	n/a - onroad	1367	MHDT							2.2051	g/hr	
				10 TN Smooth Roller	Rollers	1	157							0.0034	g/hr	
				Pickup Truck Conventional	Rollers	7	LDT2							0.7714	g/hp-hr	
				Concrete Pump Boom Truck Mounted	n/a - onroad	1	84							0.0071	g/hr	
				2.5" Dia. Concrete Vibrator	Pumps	1	8							0.0696	g/hp-hr	
				Extended Boom Pallet Loader	Plate Compactors	1	100							0.0038	g/hp-hr	
				Concrete Mixer Truck	Rough Terrain Forklifts	1	MHDT							2.2051	g/hp-hr	
					n/a - onroad											g/hr
				CMU Building and Earthwork Pad Construction Subtotal												
22	Concrete Duct Bank	40	CY	Concrete Pump Boom Truck Mounted	Pumps	1	84	60	1	60	1	0.0071	g/hp-hr			
				2.5" Dia. Concrete Vibrator	Plate Compactors	1	8						0.0696	g/hp-hr		
				Concrete Mixer Truck	n/a - onroad	2							2.2051	g/hr		
				Pickup Truck Conventional	n/a - onroad	7	LDT2						0.7714	g/hr		
Concrete Duct Bank Subtotal																
						MHDT						19 - Buildings, Grounds, and Utilities Total				
20 -Permanent Operating Equipment																
23	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	2.2051	g/hr			
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100						0.0038	g/hp-hr		
				Pickup Truck Conventional	n/a - onroad	1	LDT2						0.7714	g/hr		
				Temp. Mobile Office Building	n/a - onroad	1							0.0000	g/hr		
Mobilization and Demobilization Subtotal																
24	Power, Electrical, & Mechanical Equipment	-	-	Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100	-	1	1	30	0.0038	g/hp-hr			
				Pickup Truck Conventional	n/a - onroad	3	LDT2						0.7714	g/hr		
Power, Electrical, & Mechanical Equipment Subtotal																
25	Communication Equipment	-	-	Pickup Truck Conventional	n/a - onroad	3	LDT2	-	1	1	12	0.7714	g/hr			
Communication Equipment Subtotal																
20 -Permanent Operating Equipment Total																
GRAND TOTAL																

Table K-658. PM10 Exhaust Emissions from O

#	Activity	Maximum Daily Emissions, lbs/day																				
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	
21	CMU Building and Earthwork Pad Construction	--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	0.03	0.03	0.03	0.03	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.04	0.04	0.04	0.04	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.10	0.10	0.10	0.10	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.04	0.04	0.04	0.04	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.27	0.27	0.27	0.27	0.27	--	--	--	--	--	--	--	--	--	--	--	--	--		
22	Concrete Duct Bank	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.06	0.27	0.27	0.27	0.46	0.27	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment																						
23	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	
24	Power, Electrical, & Mechanical Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	0.01	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	0.04	0.04	0.04	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.05	0.05	0.05	0.05	
25	Communication Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.06	0.05	0.05	0.05	0.05	0.09	
GRAND TOTAL		0.26	0.80	0.89	1.02	1.04	1.23	2.55	2.19	2.11	2.55	2.24	1.98	1.96	1.98	1.91	1.97	1.96	1.86	1.81	0.37	

Table K-658. PM10 Exhaust Emissions from O

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy	
21	CMU Building and Earthwork Pad Construction	--	--	--	--	--	--	--	--	0.0002	
		--	--	--	--	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	--	0.0006
		--	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	--	0.0014
		--	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0006	
		--	--	--	--	--	--	--	--	0.0040	
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	--	0.0042	
20 -Permanent Operating Equipment											
23	Mobilization and Demobilization	--	0.04	--	--	--	--	--	--	0.0000	
		--	0.01	--	--	--	--	--	--	0.0000	
		--	0.01	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	--	--
		--	0.06	--	--	--	--	--	--	0.0001	
24	Power, Electrical, & Mechanical Equipment	0.01	--	--	--	--	--	--	--	0.0001	
		0.04	--	--	--	--	--	--	--	0.0006	
		0.05	--	--	--	--	--	--	--	0.0007	
25	Communication Equipment	0.04	--	--	--	--	--	--	--	0.0002	
		0.04	--	--	--	--	--	--	--	0.0002	
		0.09	0.06	--	--	--	--	--	--	0.0010	
GRAND TOTAL		0.37	0.35	0.07	--	--	--	--	--	0.0934	

Table K-659. PM2.5 Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
02 - Relocations													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 2 1	MHDT 100 LDT2 n/a	-	1	1	2	0.9499 0.0035 0.3620 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													
2	Levee O&M Road Regrading (6" AB)	218,000	SF	12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Graders n/a - onroad n/a - onroad n/a - onroad	1 1 1 5	187 MHDT LDT2 HHDT	39,400	1	39,400	6	0.0035 0.9499 0.3620 0.6688	g/hp-hr g/hr g/hr g/hr
Levee O&M Road Regrading (6" AB) Subtotal													
3	Temporary Electrical Power	100	LF	Flatbed Truck Pickup Truck Conventional	n/a - onroad n/a - onroad	1 2	MHDT LDT2	1,500	1	1,500	1	0.9499 0.3620	g/hr g/hr
Temporary Electrical Power Subtotal													
02 - Relocations Total													
09 - Channels and Canals													
4	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	0.9499 0.0035 0.3620 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													
5	Clearing and Grubbing	67	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	2	2	4	17	0.0041 0.0279 0.2116 0.9499 0.3620 0.6688	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
Clearing and Grubbing Subtotal													
6	Excavation/Grading (Dry Conditions)	133,580	CY	300 HP Dozer 21 CY Scrapers 12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional	Rubber Tired Dozers Scrapers Graders n/a - onroad n/a - onroad	1 4 1 1 7	300 407 187 MHDT LDT2	3,500	1	3,500	30	0.0037 0.0042 0.0035 0.9499 0.3620	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
Excavation/Grading (Dry Conditions) Subtotal													
7	Riprap - Class 2	153,590	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	2	2,000	72	0.0033 0.0036 0.6688 0.3620	g/hp-hr g/hp-hr g/hr g/hr
Riprap - Class 2 Subtotal													
8	Erosion Control Seeding	24	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	13	0.0037 0.3620	g/hp-hr g/hr
Erosion Control Seeding Subtotal													
09 - Channels and Canals Total													
11 - Levees and Floodwalls													
9	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 3 1	MHDT 100 LDT2 n/a	-	1	-	2	0.9499 0.0035 0.3620 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													

Table K-659. PM2.5 Exhaust Emissions from

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
02 - Relocations																					
1	Mobilization and Demobilization	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Temporary Electrical Power	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals																					
4	Mobilization and Demobilization	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing	--	0.02	0.02	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.14	0.14	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.06	0.06	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.03	0.03	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.08	0.08	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.02	0.02	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.35	0.35	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Excavation/Grading (Dry Conditions)	--	--	--	--	0.02	0.02	0.02	0.02	0.02	0.02	0.02	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.12	0.12	0.12	0.12	0.12	0.12	0.12	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.02	0.02	0.02	0.02	0.02	0.02	0.02	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.21	0.21	0.21	0.21	0.21	0.21	0.21	--	--	--	--	--	--	--	--	--
7	Riprap - Class 2	--	--	--	--	--	--	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	--
		--	--	--	--	--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	--
		--	--	--	--	--	--	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	--
		--	--	--	--	--	--	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	--
		--	--	--	--	--	--	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	--
8	Erosion Control Seeding	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03
		0.03	0.35	0.35	0.35	0.21	0.21	0.92	0.92	0.92	0.92	0.92	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.03
11 - Levees and Floodwalls																					
9	Mobilization and Demobilization	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-659. PM2.5 Exhaust Emissions from

#	Activity									Annual Emissions, tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
02 - Relocations										
1	Mobilization and Demobilization	--	--	0.02	--	--	--	--	--	0.0000
		--	--	0.01	--	--	--	--	--	0.0000
		--	--	0.01	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	0.04	--	--	--	--	0.0000	
2	Levee O&M Road Regrading (6" AB)	--	0.01	--	--	--	--	--	0.0000	
		--	0.02	--	--	--	--	--	0.0001	
		--	0.01	--	--	--	--	--	0.0000	
		--	0.06	--	--	--	--	--	0.0002	
		--	0.09	--	--	--	--	0.0003		
3	Temporary Electrical Power	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	0.0000		
		--	0.09	0.04	--	--	--	--	0.0003	
09 - Channels and Canals										
4	Mobilization and Demobilization	0.02	--	--	--	--	--	--	0.0000	
		0.01	--	--	--	--	--	--	0.0000	
		0.01	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	
		0.03	--	--	--	--	--	0.0000		
5	Clearing and Grubbing	--	--	--	--	--	--	--	0.0001	
		--	--	--	--	--	--	--	0.0012	
		--	--	--	--	--	--	--	0.0005	
		--	--	--	--	--	--	--	0.0003	
		--	--	--	--	--	--	--	0.0007	
		--	--	--	--	--	--	0.0002		
		--	--	--	--	--	--	0.0030		
6	Excavation/Grading (Dry Conditions)	--	--	--	--	--	--	--	0.0003	
		--	--	--	--	--	--	--	0.0018	
		--	--	--	--	--	--	--	0.0002	
		--	--	--	--	--	--	--	0.0003	
		--	--	--	--	--	--	--	0.0007	
		--	--	--	--	--	--	0.0007		
		--	--	--	--	--	--	0.0032		
7	Riprap - Class 2	--	--	--	--	--	--	--	0.0022	
		--	--	--	--	--	--	--	0.0014	
		--	--	--	--	--	--	--	0.0195	
		--	--	--	--	--	--	--	0.0023	
		--	--	--	--	--	--	0.0254		
8	Erosion Control Seeding	--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0002	
		--	--	--	--	--	--	0.0002		
		0.03	--	--	--	--	--	--	0.0317	
11 - Levees and Floodwalls										
9	Mobilization and Demobilization	--	0.02	--	--	--	--	--	0.0000	
		--	0.01	--	--	--	--	--	0.0000	
		--	0.02	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	--	
		--	0.04	--	--	--	--	0.0000		

Table K-659. PM2.5 Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
10	Berm/Levee Fill	213,520	CY	300 HP Dozer 4000 gallon Water Truck 10 TN Smooth Roller Pickup Truck Conventional	Rubber Tired Dozers n/a - onroad Rollers n/a - onroad	1 1 1 3	300 MHDT 157 LDT2	1,000	2	2,000	95	0.0037 0.9499 0.0031 0.3620	g/hp-hr g/hr g/hp-hr g/hr
Berm/Levee Fill Subtotal													
11 - Levees and Floodwalls Total													
15 - Floodway Control and Diversion Structures													
11	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	0.9499 0.0035 0.3620 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													
12	Construction Site Dewatering (Temporary Cofferdam)	93,000	SF	Flatbed Truck 75 TN Crane Crawler Pile Hammer Pickup Truck Conventional	n/a - onroad Bore/Drill Rigs n/a - onroad	1 1 6	MHDT 221 LDT2	1,200	1	1,200	78	0.9499 0.0042 0.3620	g/hr g/hp-hr g/hr
Construction Site Dewatering (Temporary Cofferdam) Subtotal													
13	Construction Site Dewatering (Pumping)	-	-	6" Dia. Pump Engine Drive Pickup Truck Conventional	Pumps n/a - onroad	1 3	84 LDT2	-	1	1	54	0.0066 0.3620	g/hp-hr g/hr
Construction Site Dewatering (Pumping) Subtotal													
14	Excavation (Wet Conditions)	25,960	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 9 7	429 300 164 HHDT LDT2	1,800	1	1,800	15	0.0033 0.0037 0.0035 0.6688 0.3620	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
Excavation (Wet Conditions) Subtotal													
15	Sheet Pile Wall	1,840	SF	Flatbed Truck 75 TN Crane Crawler Pile Hammer Pickup Truck Conventional	n/a - onroad Bore/Drill Rigs n/a - onroad	1 1 6	MHDT 221 LDT2	1,200	1	1,200	2	0.9499 0.0042 0.3620	g/hr g/hp-hr g/hr
Sheet Pile Wall Subtotal													
16	Culvert Headwall	110	CY	2.5" Dia. Concrete Vibrator Concrete Mixer Truck Pickup Truck Conventional	Plate Compactors n/a - onroad n/a - onroad	1 2 6	8 MHDT LDT2	60	1	60	2	0.0640 0.9499 0.3620	g/hp-hr g/hr g/hr
Culvert Headwall Subtotal													
17	Precast Box Culvert 10'x8' 30'	30	LF	90 TN Truck-mounted Hydraulic Crane Flatbed Truck Pickup Truck Conventional	Cranes n/a - onroad n/a - onroad	1 2 4	450 MHDT LDT2	100	1	100	1	0.0025 0.9499 0.3620	g/hp-hr g/hr g/hr
Precast Box Culvert 10'x8' 30' Subtotal													
18	Water Control Structure	280	CY	2.5" Dia. Concrete Vibrator Concrete Mixer Truck Pickup Truck Conventional	Plate Compactors n/a - onroad n/a - onroad	1 2 6	8 MHDT LDT2	70	1	70	4	0.0640 0.9499 0.3620	g/hp-hr g/hr g/hr
Water Control Structure Subtotal													
19	Inflatable Obermeyer Gates	3	EA	90 TN Truck-mounted Hydraulic Crane Haul Truck Oversize Transport Pickup Truck Conventional	Cranes n/a - onroad n/a - onroad	1 1 4	450 HHDT LDT2	0.1	1	0.1	24	0.0025 0.6688 0.3620	g/hp-hr g/hr g/hr
Inflatable Obermeyer Gates Subtotal													
15 - Floodway Control and Diversion Structures Total													
19 - Buildings, Grounds, and Utilities													
20	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	0.9499 0.0035 0.3620 0.0000	g/hr g/hp-hr g/hr g/hr
Mobilization and Demobilization Subtotal													

Table K-659. PM2.5 Exhaust Emissions from

#	Activity	Maximum Daily Emissions, lbs/day																				
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	
10	Berm/Levee Fill	--	--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	
		--	--	--	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	
		--	--	--	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	
		--	--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
		--	--	--	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
		--	--	0.04	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
15 - Floodway Control and Diversion Structures																						
11	Mobilization and Demobilization	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
		--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	
		--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	0.03	--	--	
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	--	
		--	--	--	--	--	--	--	--	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	--	--	
		--	--	--	--	--	--	--	--	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14	Excavation (Wet Conditions)	--	--	--	--	--	0.03	0.03	--	--	0.03	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	0.04	0.04	--	--	0.04	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	0.02	0.02	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.11	0.11	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	0.04	0.04	--	--	0.04	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	0.23	0.23	--	--	0.23	--	--	--	--	--	--	--	--	--	--	
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--
16	Culvert Headwall	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.03	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	0.03	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	0.03	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--
18	Water Control Structure	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	0.02	0.02	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	0.03	0.03	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	0.06	0.06	0.06	--	--	--	--	--
		--	--	--	--	0.03	0.23	0.23	0.07	0.03	0.26	0.10	0.11	0.11	0.11	0.09	0.09	0.09	0.03	--	--	
19 - Buildings, Grounds, and Utilities																						
20	Mobilization and Demobilization	0.02	--	--	--	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.03	--	--	--	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table K-659. PM2.5 Exhaust Emissions from

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions , tpy
10	Berm/Levee Fill	0.04	--	--	--	--	--	--	--	0.0018
		0.03	--	--	--	--	--	--	--	0.0016
		0.02	--	--	--	--	--	--	--	0.0008
		0.04	--	--	--	--	--	--	--	0.0018
		0.13	--	--	--	--	--	--	--	0.0061
		0.13	0.04	--	--	--	--	--	--	0.0061
15 - Floodway Control and Diversion Structures										
11	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0000
12	Construction Site Dewatering (Temporary Cofferdam)	--	--	--	--	--	--	--	--	0.0007
		--	--	--	--	--	--	--	--	0.0006
		--	--	--	--	--	--	--	--	0.0015
		--	--	--	--	--	--	--	--	0.0028
13	Construction Site Dewatering (Pumping)	--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0005
		--	--	--	--	--	--	--	--	0.0008
14	Excavation (Wet Conditions)	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0008
		--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0018
15	Sheet Pile Wall	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
16	Culvert Headwall	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
17	Precast Box Culvert 10'x8' 30'	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
18	Water Control Structure	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0002
19	Inflatable Obermeyer Gates	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0007
		--	--	--	--	--	--	--	--	0.0064
19 - Buildings, Grounds, and Utilities										
20	Mobilization and Demobilization	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	0.0000

Table K-659. PM2.5 Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units			
21	CMU Building and Earthwork Pad Construction	1	EA	165 HP Dozer	Rubber Tired Dozers	1	165	-	1	1	30	0.0040	g/hp-hr			
				Scraper	Scrapers	1								0.0042	g/hp-hr	
				Motor Grader	Graders	1	187							0.0035	g/hp-hr	
				Compactor	Rollers	1	80							0.0034	g/hp-hr	
				4000 gallon Water Truck	n/a - onroad	1367	MHDT							0.9499	g/hr	
				10 TN Smooth Roller	Rollers	1	157							0.0031	g/hp-hr	
				Pickup Truck Conventional	Rollers	7	LDT2							0.3620	g/hp-hr	
				Concrete Pump Boom Truck Mounted	n/a - onroad	1	84							0.0066	g/hr	
				2.5" Dia. Concrete Vibrator	Pumps	1	8							0.0640	g/hp-hr	
				Extended Boom Pallet Loader	Plate Compactors	1	100							0.0035	g/hp-hr	
				Concrete Mixer Truck	Rough Terrain Forklifts	1	MHDT							0.9499	g/hp-hr	
					n/a - onroad										g/hr	
				CMU Building and Earthwork Pad Construction Subtotal												
22	Concrete Duct Bank	40	CY	Concrete Pump Boom Truck Mounted	Pumps	1	84	60	1	60	1	0.0066	g/hp-hr			
				2.5" Dia. Concrete Vibrator	Plate Compactors	1	8						0.0640	g/hp-hr		
				Concrete Mixer Truck	n/a - onroad	2							0.9499	g/hr		
				Pickup Truck Conventional	n/a - onroad	7	LDT2						0.3620	g/hr		
Concrete Duct Bank Subtotal																
						MHDT						19 - Buildings, Grounds, and Utilities Total				
20 -Permanent Operating Equipment																
23	Mobilization and Demobilization	-	-	Flatbed Truck	n/a - onroad	1	MHDT	-	1	1	2	0.9499	g/hr			
				Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100						0.0035	g/hp-hr		
				Pickup Truck Conventional	n/a - onroad	1	LDT2						0.3620	g/hr		
				Temp. Mobile Office Building	n/a - onroad	1							0.0000	g/hr		
Mobilization and Demobilization Subtotal																
24	Power, Electrical, & Mechanical Equipment	-	-	Extended Boom Pallet Loader	Rough Terrain Forklifts	1	100	-	1	1	30	0.0035	g/hp-hr			
				Pickup Truck Conventional	n/a - onroad	3	LDT2						0.3620	g/hr		
Power, Electrical, & Mechanical Equipment Subtotal																
25	Communication Equipment	-	-	Pickup Truck Conventional	n/a - onroad	3	LDT2	-	1	1	12	0.3620	g/hr			
Communication Equipment Subtotal																
20 -Permanent Operating Equipment Total																
GRAND TOTAL																

Table K-659. PM2.5 Exhaust Emissions from

#	Activity	Maximum Daily Emissions, lbs/day																				
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	
21	CMU Building and Earthwork Pad Construction	--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	0.03	0.03	0.03	0.03	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.00	0.00	0.00	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.02	0.02	0.02	0.02	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.04	0.04	0.04	0.04	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	0.01	0.01	0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.02	0.02	0.02	0.02	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.17	0.17	0.17	0.17	0.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
22	Concrete Duct Bank	--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.03	0.17	0.17	0.17	0.26	0.17	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	
20 -Permanent Operating Equipment																						
23	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	--	--	--	--	
24	Power, Electrical, & Mechanical Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	0.01	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	0.02	0.02	0.02	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	0.03	0.03	0.03	
25	Communication Equipment	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	0.03	0.03	0.03	0.04
GRAND TOTAL		0.12	0.51	0.56	0.64	0.63	0.74	1.31	1.12	1.07	1.31	1.15	0.94	0.94	0.94	0.92	0.95	0.94	0.89	0.86	0.20	

Table K-659. PM2.5 Exhaust Emissions from

#	Activity	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
21	CMU Building and Earthwork Pad Construction	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0007
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	--	--	--	0.0025	
22	Concrete Duct Bank	--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	0.0000	
		--	--	--	--	--	--	--	0.0026	
20 -Permanent Operating Equipment										
23	Mobilization and Demobilization	--	0.02	--	--	--	--	--	--	0.0000
		--	0.01	--	--	--	--	--	--	0.0000
		--	0.01	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	--
		--	0.03	--	--	--	--	--	--	0.0000
24	Power, Electrical, & Mechanical Equipment	0.01	--	--	--	--	--	--	--	0.0001
		0.02	--	--	--	--	--	--	--	0.0003
		0.03	--	--	--	--	--	--	--	0.0004
25	Communication Equipment	0.02	--	--	--	--	--	--	--	0.0001
		0.02	--	--	--	--	--	--	--	0.0001
		0.04	0.03	--	--	--	--	--	--	0.0005
GRAND TOTAL		0.20	0.17	0.04	--	--	--	--	--	0.0477

Table K-660. GHG Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factors					Annual Emissions, MTCO2e/yr
												CO2	CH4	N2O	CO2e	Units	
02 - Relocations																	
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 2 1	MHDT 100 LDT2 n/a	-	1	1	2	24535.8 340.989 8626.38 0	0 0.01013 0 0	0 0 0 0	24535.8 341.242 8626.38 0	g/hr g/hp-hr g/hr g/hr	0.39 0.55 0.28 0.00
												Mobilization and Demobilization Subtotal			1.21		
2	Levee O&M Road Regrading (6" AB)	218,000	SF	12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Graders n/a - onroad n/a - onroad n/a - onroad	1 1 1 5	187 MHDT LDT2 HHDT	39,400	1	39,400	6	346.665 24535.8 8626.38 34432	0.00749 0 0 0	0 0 0 0	346.853 24535.8 8626.38 34432	g/hp-hr g/hr g/hr g/hr	3.11 1.18 0.41 8.26
												Levee O&M Road Regrading (6" AB) Subtotal			12.97		
3	Temporary Electrical Power	100	LF	Flatbed Truck Pickup Truck Conventional	n/a - onroad n/a - onroad	1 2	MHDT LDT2	1,500	1	1,500	1	24535.8 8626.38	0 0	0 0	24535.8 8626.38	g/hr g/hr	0.20 0.14
												Temporary Electrical Power Subtotal			0.33		
												02 - Relocations Total			14.52		
09 - Channels and Canals																	
4	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	24535.8 340.989 8626.38 0	0 0.01013 0 0	0 0 0 0	24535.8 341.242 8626.38 0	g/hr g/hp-hr g/hr g/hr	0.39 0.55 0.14 0.00
												Mobilization and Demobilization Subtotal			1.08		
5	Clearing and Grubbing	67	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	2	2	4	17	363.734 227.324 395.092 24535.8 8626.38 34432	0.01221 0.0068 0 0 0	0 0 0 0 0	364.039 227.494 395.092 24535.8 8626.38 34432	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr	10.89 8.66 0.86 6.67 14.08 9.37
												Clearing and Grubbing Subtotal			50.53		
6	Excavation/Grading (Dry Conditions)	133,580	CY	300 HP Dozer 21 CY Scrapers 12' Blade Grader 4000 gallon Water Truck Pickup Truck Conventional	Rubber Tired Dozers Scrapers Graders n/a - onroad n/a - onroad	1 4 1 1 7	300 407 187 MHDT LDT2	3,500	1	3,500	30	335.255 409.124 346.665 24535.8 8626.38	0.0091 0.00916 0.00749 0 0	0 0 0 0 0	335.483 409.353 346.853 24535.8 8626.38	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr	24.15 159.94 15.57 5.89 14.49
												Excavation/Grading (Dry Conditions) Subtotal			220.04		
7	Riprap - Class 2	153,590	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	2	2,000	72	323.905 363.751 34432 8626.38	0.00819 0.00842 0 0	0 0 0 0	324.11 363.962 34432 8626.38	g/hp-hr g/hp-hr g/hr g/hr	191.91 125.79 912.31 49.69
												Riprap - Class 2 Subtotal			1,279.70		
8	Erosion Control Seeding	24	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	13	312.57 8626.38	0.00972 0	0 0	312.814 8626.38	g/hp-hr g/hr	3.16 3.59
												Erosion Control Seeding Subtotal			6.74		
												09 - Channels and Canals Total			1,558.10		
11 - Levees and Floodwalls																	
9	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 3 1	MHDT 100 LDT2 n/a	-	1	-	2	24535.8 340.989 8626.38 0	0 0.01013 0 0	0 0 0 0	24535.8 341.242 8626.38 0	g/hr g/hp-hr g/hr g/hr	0.39 0.55 0.41 0.00
												Mobilization and Demobilization Subtotal			1.35		
10	Berm/Levee Fill	213,520	CY	300 HP Dozer 4000 gallon Water Truck 10 TN Smooth Roller Pickup Truck Conventional	Rubber Tired Dozers n/a - onroad Rollers n/a - onroad	1 1 1 3	300 MHDT 157 LDT2	1,000	2	2,000	95	335.255 24535.8 318.273 8626.38	0.0091 0 0.00532 0	0 0 0 0	335.483 24535.8 318.406 8626.38	g/hp-hr g/hr g/hp-hr g/hr	152.98 37.29 75.98 39.34
												Berm/Levee Fill Subtotal			305.60		
												11 - Levees and Floodwalls Total			306.95		
15 - Floodway Control and Diversion Structures																	
11	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1 1 1 1	MHDT 100 LDT2 n/a	-	1	1	2	24535.8 340.989 8626.38 0	0 0.01013 0 0	0 0 0 0	24535.8 341.242 8626.38 0	g/hr g/hp-hr g/hr g/hr	0.39 0.55 0.14 0.00
												Mobilization and Demobilization Subtotal			1.08		
12	Construction Site Dewatering (Temporary Cofferdam)	93,000	SF	Flatbed Truck 75 TN Crane Crawler Pile Hammer Pickup Truck Conventional	n/a - onroad Bore/Drill Rigs n/a - onroad	1 1 6	MHDT 221 LDT2	1,200	1	1,200	78	24535.8 426.943 8626.38	0 0.00799 0	0 0 0	24535.8 427.142 8626.38	g/hr g/hp-hr g/hr	15.31 58.90 32.30
												Construction Site Dewatering (Temporary Cofferdam) Subtotal			106.51		

Table K-660. GHG Exhaust Emissions from Offroad Construction Equipment (Southern Water Control Structure) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factors					Annual Emissions, MTCO2e/yr						
												CO2	CH4	N2O	CO2e	Units							
13	Construction Site Dewatering (Pumping)			6" Dia. Pump Engine Drive Pickup Truck Conventional	Pumps n/a - onroad	1	84	-	1	1	54	420.626	0.00738	0	420.811	g/hp-hr	15.27						
						3	LDT2	-			8626.38	0	0	8626.38	g/hr	11.18							
Construction Site Dewatering (Pumping) Subtotal																	26.45						
14	Excavation (Wet Conditions)	25,960	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad Pickup Truck Conventional	1	429	1,800	1	1,800	15	323.905	0.00819	0	324.11	g/hp-hr	16.69						
						2	300				335.255	0.0091	0	335.483	g/hp-hr	24.15							
						2	164				306.881	0.00646	0	307.043	g/hp-hr	12.09							
						9	HHDT				34432	0	0	34432	g/hr	37.19							
						7	LDT2				8626.38	0	0	8626.38	g/hr	7.25							
Excavation (Wet Conditions) Subtotal																	97.36						
15	Sheet Pile Wall	1,840	SF	Flatbed Truck 75 TN Crane Crawler Pile Hammer Pickup Truck Conventional	n/a - onroad Bore/Drill Rigs n/a - onroad	1	MHDT	1,200	1	1,200	2	24535.8	0	0	24535.8	g/hr	0.39						
						1	221				426.943	0.00799	0	427.142	g/hp-hr	1.51							
						6	LDT2				8626.38	0	0	8626.38	g/hr	0.83							
Sheet Pile Wall Subtotal																	2.73						
16	Culvert Headwall	110	CY	2.5" Dia. Concrete Vibrator Concrete Mixer Truck Pickup Truck Conventional	Plate Compactors n/a - onroad n/a - onroad	1	8	60	1	60	2	244.363	0.02567	0	245.004	g/hp-hr	0.03						
						2	MHDT				24535.8	0	0	24535.8	g/hr	0.79							
						6	LDT2				8626.38	0	0	8626.38	g/hr	0.83							
Culvert Headwall Subtotal																	1.64						
17	Precast Box Culvert 10'x8' 30'	30	LF	90 TN Truck-mounted Hydraulic Crane Flatbed Truck Pickup Truck Conventional	Cranes n/a - onroad n/a - onroad	1	450	100	1	100	1	244.429	0.00533	0	244.562	g/hp-hr	0.88						
						2	MHDT				24535.8	0	0	24535.8	g/hr	0.39							
						4	LDT2				8626.38	0	0	8626.38	g/hr	0.28							
Precast Box Culvert 10'x8' 30' Subtotal																	1.55						
18	Water Control Structure	280	CY	2.5" Dia. Concrete Vibrator Concrete Mixer Truck Pickup Truck Conventional	Plate Compactors n/a - onroad n/a - onroad	1	8	70	1	70	4	244.363	0.02567	0	245.004	g/hp-hr	0.06						
						2	MHDT				24535.8	0	0	24535.8	g/hr	1.57							
						6	LDT2				8626.38	0	0	8626.38	g/hr	1.66							
Water Control Structure Subtotal																	3.29						
19	Inflatable Obermeyer Gates	3	EA	90 TN Truck-mounted Hydraulic Crane Haul Truck Oversize Transport Pickup Truck Conventional	Cranes n/a - onroad n/a - onroad	1	450	0.1	1	0.1	24	244.429	0.00533	0	244.562	g/hp-hr	21.13						
						1	HHDT				34432	0	0	34432	g/hr	6.61							
						4	LDT2				8626.38	0	0	8626.38	g/hr	6.63							
Inflatable Obermeyer Gates Subtotal																	34.37						
15 - Floodway Control and Diversion Structures Total																	274.98						
19 - Buildings, Grounds, and Utilities																							
20	Mobilization and Demobilization			Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1	MHDT	-	1	1	2	24535.8	0	0	24535.8	g/hr	0.39						
						1	100				340.989	0.01013	0	341.242	g/hp-hr	0.55							
						1	LDT2				8626.38	0	0	8626.38	g/hr	0.14							
						1	n/a				0	0	0	0	g/hr	0.00							
Mobilization and Demobilization Subtotal																	1.08						
21	CMU Building and Earthwork Pad Construction	1	EA	165 HP Dozer Scraper Motor Grader Compactor 4000 gallon Water Truck 10 TN Smooth Roller Pickup Truck Conventional Concrete Pump Boom Truck Mounted 2.5" Dia. Concrete Vibrator Extended Boom Pallet Loader Concrete Mixer Truck	Rubber Tired Dozers Scrapers Graders Rollers n/a - onroad Rollers n/a - onroad Pumps Plate Compactors Rough Terrain Forklifts n/a - onroad	1	165	-	1	1	30	342.96	0.00931	0	343.193	g/hp-hr	13.59						
						1	367				409.124	0.00916	0	409.353	g/hp-hr	36.06							
						1	187				346.665	0.00749	0	346.853	g/hp-hr	15.57							
						1	80				318.262	0.00765	0	318.453	g/hp-hr	6.11							
						1	MHDT				24535.8	0	0	24535.8	g/hr	5.89							
						1	157				318.273	0.00532	0	318.406	g/hp-hr	12.00							
						7	LDT2				8626.38	0	0	8626.38	g/hr	14.49							
						1	84				420.626	0.00738	0	420.811	g/hp-hr	8.48							
						1	8				244.363	0.02567	0	245.004	g/hp-hr	0.47							
						1	100				340.989	0.01013	0	341.242	g/hp-hr	8.19							
						1	MHDT				24535.8	0	0	24535.8	g/hr	5.89							
						CMU Building and Earthwork Pad Construction Subtotal																	126.74
						22	Concrete Duct Bank	40	CY	Concrete Pump Boom Truck Mounted 2.5" Dia. Concrete Vibrator Concrete Mixer Truck Pickup Truck Conventional	Pumps Plate Compactors n/a - onroad n/a - onroad	1	84	60	1	60	1	420.626	0.00738	0	420.811	g/hp-hr	0.28
1	8				244.363							0.02567	0	245.004	g/hp-hr	0.02							
2	MHDT				24535.8							0	0	24535.8	g/hr	0.39							
7	LDT2				8626.38							0	0	8626.38	g/hr	0.48							
Concrete Duct Bank Subtotal																	1.17						
19 - Buildings, Grounds, and Utilities Total																	128.99						
20 - Permanent Operating Equipment																							
23	Mobilization and Demobilization			Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad	1	MHDT	-	1	1	2	24535.8	0	0	24535.8	g/hr	0.39						
						1	100				340.989	0.01013	0	341.242	g/hp-hr	0.55							
						1	LDT2				8626.38	0	0	8626.38	g/hr	0.14							
						1	n/a				0	0	0	0	g/hr	0.00							
Mobilization and Demobilization Subtotal																	1.08						
24	Power, Electrical, & Mechanical Equipment			Extended Boom Pallet Loader Pickup Truck Conventional	Rough Terrain Forklifts n/a - onroad	1	100	-	1	1	30	340.989	0.01013	0	341.242	g/hp-hr	8.19						
						3	LDT2				8626.38	0	0	8626.38	g/hr	6.21							
Power, Electrical, & Mechanical Equipment Subtotal																	14.40						
25	Communication Equipment			Pickup Truck Conventional	n/a - onroad	3	LDT2	-	1	1	12	8626.38	0	0	8626.38	g/hr	2.48						
						Communication Equipment Subtotal																	2.48
20 - Permanent Operating Equipment Total																	17.96						
GRAND TOTAL																	2,301.49						

Table K-661. PM10 Emissions Summary from Fugitive Dust (Southern Water Control Structure) - Mitigated

#	Activity	PM10 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
02 - Relocations																				
1	Mobilization and Demobilization																			
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust	n/a																		
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
	Levee O&M Road Regrading (6" AB) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Temporary Electrical Power																			
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust	n/a																		
	Temporary Electrical Power Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	02 - Relocations Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals																				
4	Mobilization and Demobilization																			
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust	n/a																		
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing																			
	Material Handling	n/a	n/a	n/a																
	Grading		1.06	1.06	1.06															
	Bulldozing	n/a	n/a	n/a																
	Unpaved Road Dust	n/a	n/a	n/a																
	Paved Road Dust	n/a	n/a	n/a																
	Clearing and Grubbing Subtotal	--	1.06	1.06	1.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Excavation/Grading (Dry Conditions)																			
	Material Handling					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading						5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30	5.30
	Bulldozing						2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35
	Unpaved Road Dust					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust					--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Excavation/Grading (Dry Conditions) Subtotal	--	--	--	--	7.65	7.65	7.65	7.65	7.65	7.65	7.65	7.65	--	--	--	--	--	--	--

Table K-661. PM10 Emissions Summary from Fugitive D

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
02 - Relocations											
1	Mobilization and Demobilization										
	Material Handling				n/a						
	Grading				n/a						
	Bulldozing				n/a						
	Unpaved Road Dust				n/a						
	Paved Road Dust				n/a						
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)										
	Material Handling			n/a							n/a
	Grading			0.53							0.00
	Bulldozing			n/a							n/a
	Unpaved Road Dust			n/a							n/a
	Paved Road Dust			n/a							n/a
	Levee O&M Road Regrading (6" AB) Subtotal	--	--	0.53	--	--	--	--	--	--	0.00
3	Temporary Electrical Power										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Temporary Electrical Power Subtotal	--	--	--	--	--	--	--	--	--	--
	02 - Relocations Total	--	--	0.53	n/a	--	--	--	--	--	0.00
09 - Channels and Canals											
4	Mobilization and Demobilization										
	Material Handling		n/a		n/a						n/a
	Grading		n/a		n/a						n/a
	Bulldozing		n/a		n/a						n/a
	Unpaved Road Dust		n/a		n/a						n/a
	Paved Road Dust		n/a		n/a						n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing										
	Material Handling										n/a
	Grading										0.01
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Clearing and Grubbing Subtotal	--	--	--	--	--	--	--	--	--	0.01
6	Excavation/Grading (Dry Conditions)										
	Material Handling										n/a
	Grading										0.08
	Bulldozing										0.04
	Unpaved Road Dust										n/a
	Paved Road Dust										--
	Excavation/Grading (Dry Conditions) Subtotal	--	--	--	--	--	--	--	--	--	0.11

Table K-661. PM10 Emissions Summary from Fugitive Dust (Southern Water Control Structure) - Mitigated

#	Activity	PM10 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
7	Riprap - Class 2																			
	Material Handling							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading							1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
	Bulldozing							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Riprap - Class 2 Subtotal		--	--	--	--	--	--	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
8	Erosion Control Seeding																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Erosion Control Seeding Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals Total		--	1.06	1.06	1.06	7.65	7.65	8.71	8.71	8.71	8.71	8.71	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
11 - Levees and Floodwalls																				
9	Mobilization and Demobilization																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Mobilization and Demobilization Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Berm/Levee Fill																			
	Material Handling							4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12
	Grading							1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
	Bulldozing							4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70	4.70
	Unpaved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Berm/Levee Fill Subtotal		--	--	--	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88
11 - Levees and Floodwalls Total		--	--	--	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88	9.88
15 - Floodway Control and Diversion Structures																				
11	Mobilization and Demobilization																			
	Material Handling																			n/a
	Grading																			n/a
	Bulldozing																			n/a
	Unpaved Road Dust																			n/a
	Paved Road Dust																			n/a
Mobilization and Demobilization Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12	Construction Site Dewatering (Temporary Cofferdam)																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Construction Site Dewatering (Temporary Cofferdam) Sub		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-661. PM10 Emissions Summary from Fugitive D

#	Activity										Annual Emissions, tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
7	Riprap - Class 2										n/a
	Material Handling										0.04
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Riprap - Class 2 Subtotal	--	--	--	--	--	--	--	--	--	0.04
8	Erosion Control Seeding										n/a
	Material Handling	n/a									n/a
	Grading	n/a									n/a
	Bulldozing	n/a									n/a
	Unpaved Road Dust	n/a									n/a
	Paved Road Dust	n/a									n/a
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	--	--	--	--	--	--	--	--	--	0.16
11 - Levees and Floodwalls											
9	Mobilization and Demobilization										n/a
	Material Handling			n/a							n/a
	Grading			n/a							n/a
	Bulldozing			n/a							n/a
	Unpaved Road Dust			n/a							n/a
	Paved Road Dust			n/a							n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
10	Berm/Levee Fill										0.20
	Material Handling	4.12	4.12								0.05
	Grading	1.06	1.06								0.22
	Bulldozing	4.70	4.70								n/a
	Unpaved Road Dust	n/a	n/a								n/a
	Paved Road Dust	n/a	n/a								n/a
	Berm/Levee Fill Subtotal	9.88	9.88	--	--	--	--	--	--	--	0.47
	11 - Levees and Floodwalls Total	9.88	9.88	--	--	--	--	--	--	--	0.47
15 - Floodway Control and Diversion Structures											
11	Mobilization and Demobilization										n/a
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
12	Construction Site Dewatering (Temporary Cofferdam)										n/a
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Construction Site Dewatering (Temporary Cofferdam) Sub	--	--	--	--	--	--	--	--	--	--

Table K-661. PM10 Emissions Summary from Fugitive Dust (Southern Water Control Structure) - Mitigated

#	Activity	PM10 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
13	Construction Site Dewatering (Pumping)																			
	Material Handling									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Bulldozing									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Construction Site Dewatering (Pumping) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14	Excavation (Wet Conditions)																			
	Material Handling						n/a	n/a				n/a								
	Grading						n/a	n/a				n/a								
	Bulldozing						n/a	n/a				n/a								
	Unpaved Road Dust							46.27	46.27				46.27							
	Paved Road Dust							--	--				--							
	Excavation (Wet Conditions) Subtotal	--	--	--	--	--	46.27	46.27	--	--	46.27	--	--	--	--	--	--	--	--	--
15	Sheet Pile Wall																			
	Material Handling											n/a								
	Grading											n/a								
	Bulldozing											n/a								
	Unpaved Road Dust											n/a								
	Paved Road Dust											n/a								
	Sheet Pile Wall Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16	Culvert Headwall																			
	Material Handling											n/a								
	Grading											n/a								
	Bulldozing											n/a								
	Unpaved Road Dust											n/a								
	Paved Road Dust											n/a								
	Culvert Headwall Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Precast Box Culvert 10'x8' 30'																			
	Material Handling												n/a							
	Grading												n/a							
	Bulldozing												n/a							
	Unpaved Road Dust												n/a							
	Paved Road Dust												n/a							
	Precast Box Culvert 10'x8' 30' Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18	Water Control Structure																			
	Material Handling													n/a						
	Grading													n/a						
	Bulldozing													n/a						
	Unpaved Road Dust													n/a						
	Paved Road Dust													n/a						
	Water Control Structure Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Inflatable Obermeyer Gates																			
	Material Handling														n/a	n/a	n/a			
	Grading														n/a	n/a	n/a			
	Bulldozing														n/a	n/a	n/a			
	Unpaved Road Dust														n/a	n/a	n/a			
	Paved Road Dust														n/a	n/a	n/a			
	Inflatable Obermeyer Gates Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15 - Floodway Control and Diversion Structures Total	--	--	--	--	--	46.27	46.27	--	--	46.27	--	--	--	--	--	--	--	--	--

Table K-661. PM10 Emissions Summary from Fugitive D

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
13	Construction Site Dewatering (Pumping)										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Construction Site Dewatering (Pumping) Subtotal	--	--	--	--	--	--	--	--	--	--
14	Excavation (Wet Conditions)										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										0.33
	Paved Road Dust										--
	Excavation (Wet Conditions) Subtotal	--	--	--	--	--	--	--	--	--	0.33
15	Sheet Pile Wall										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Sheet Pile Wall Subtotal	--	--	--	--	--	--	--	--	--	--
16	Culvert Headwall										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Culvert Headwall Subtotal	--	--	--	--	--	--	--	--	--	--
17	Precast Box Culvert 10'x8' 30'										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Precast Box Culvert 10'x8' 30' Subtotal	--	--	--	--	--	--	--	--	--	--
18	Water Control Structure										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Water Control Structure Subtotal	--	--	--	--	--	--	--	--	--	--
19	Inflatable Obermeyer Gates										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Inflatable Obermeyer Gates Subtotal	--	--	--	--	--	--	--	--	--	--
	15 - Floodway Control and Diversion Structures Total	--	--	--	--	--	--	--	--	--	0.33

Table K-661. PM10 Emissions Summary from Fugitive Dust (Southern Water Control Structure) - Mitigated

#	Activity	PM10 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
19 - Buildings, Grounds, and Utilities																				
20	Mobilization and Demobilization																			
	Material Handling	n/a						n/a												
	Grading	n/a						n/a												
	Bulldozing	n/a						n/a												
	Unpaved Road Dust	n/a						n/a												
	Paved Road Dust	n/a						n/a												
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21	CMU Building and Earthwork Pad Construction																			
	Material Handling		n/a	n/a	n/a	n/a	n/a	n/a												
	Grading		2.12	2.12	2.12	2.12	2.12	2.12												
	Bulldozing		2.35	2.35	2.35	2.35	2.35	2.35												
	Unpaved Road Dust		n/a	n/a	n/a	n/a	n/a	n/a												
	Paved Road Dust		n/a	n/a	n/a	n/a	n/a	n/a												
	CMU Building and Earthwork Pad Construction Subtotal	--	4.47	4.47	4.47	4.47	4.47	4.47	--	--	--	--	--	--	--	--	--	--	--	--
22	Concrete Duct Bank																			
	Material Handling							n/a												
	Grading							n/a												
	Bulldozing							n/a												
	Unpaved Road Dust							n/a												
	Paved Road Dust							n/a												
	Concrete Duct Bank Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	19 - Buildings, Grounds, and Utilities Total	--	4.47	4.47	4.47	4.47	4.47	4.47	--	--	--	--	--	--	--	--	--	--	--	--
20 -Permanent Operating Equipment																				
23	Mobilization and Demobilization																			
	Material Handling																		n/a	
	Grading																		n/a	
	Bulldozing																		n/a	
	Unpaved Road Dust																		n/a	
	Paved Road Dust																		n/a	
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	Power, Electrical, & Mechanical Equipment																			
	Material Handling																		n/a	n/a
	Grading																		n/a	n/a
	Bulldozing																		n/a	n/a
	Unpaved Road Dust																		n/a	n/a
	Paved Road Dust																		n/a	n/a
	Power, Electrical, & Mechanical Equipment Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25	Communication Equipment																			
	Material Handling																		n/a	
	Grading																		n/a	
	Bulldozing																		n/a	
	Unpaved Road Dust																		n/a	
	Paved Road Dust																		n/a	
	Communication Equipment Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20 -Permanent Operating Equipment Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GRAND TOTAL		--	5.53	5.53	15.41	22.00	68.27	64.86	18.59	18.59	64.86	18.59	10.94	10.94	10.94	10.94	10.94	10.94	10.94	10.94
	<i>Percent Reduction (Compared to Unmitigated)</i>	n/a	0%	0%	0%	0%	-49%	-51%	0%	0%	-51%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table K-661. PM10 Emissions Summary from Fugitive D

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
19 - Buildings, Grounds, and Utilities											
20	Mobilization and Demobilization										n/a
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
21	CMU Building and Earthwork Pad Construction										n/a
	Material Handling										0.03
	Grading										0.04
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	CMU Building and Earthwork Pad Construction Subtotal	--	--	--	--	--	--	--	--	--	0.07
22	Concrete Duct Bank										n/a
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Concrete Duct Bank Subtotal	--	--	--	--	--	--	--	--	--	--
	19 - Buildings, Grounds, and Utilities Total	--	--	--	--	--	--	--	--	--	0.07
20 -Permanent Operating Equipment											
23	Mobilization and Demobilization										
	Material Handling			n/a							
	Grading			n/a							
	Bulldozing			n/a							
	Unpaved Road Dust			n/a							
	Paved Road Dust			n/a							
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
24	Power, Electrical, & Mechanical Equipment										
	Material Handling	n/a									n/a
	Grading	n/a									n/a
	Bulldozing	n/a									n/a
	Unpaved Road Dust	n/a	n/a								n/a
	Paved Road Dust	n/a	n/a								n/a
	Power, Electrical, & Mechanical Equipment Subtotal	n/a	--	--	--	--	--	--	--	--	--
25	Communication Equipment										
	Material Handling	n/a									n/a
	Grading	n/a									n/a
	Bulldozing	n/a									n/a
	Unpaved Road Dust	n/a	n/a								n/a
	Paved Road Dust	n/a	n/a								n/a
	Communication Equipment Subtotal	n/a	--	--	--	--	--	--	--	--	--
	20 -Permanent Operating Equipment Total	n/a	--	--	--	--	--	--	--	--	--
GRAND TOTAL		9.88	9.88	0.53	--	--	--	--	--	--	1.03
	<i>Percent Reduction (Compared to Unmitigated)</i>	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a	-31%

n/a
n/a
n/a
n/a
n/a

Table K-662. PM2.5 Emissions Summary from Fugitive Dust (Southern Water Control Structure) - Mitigated

#	Activity	PM2.5 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
02 - Relocations																				
1	Mobilization and Demobilization																			
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust	n/a																		
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
	Levee O&M Road Regrading (6" AB) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Temporary Electrical Power																			
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust	n/a																		
	Temporary Electrical Power Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	02 - Relocations Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals																				
4	Mobilization and Demobilization																			
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust	n/a																		
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing																			
	Material Handling	n/a	n/a	n/a																
	Grading		0.11	0.11	0.11															
	Bulldozing	n/a	n/a	n/a																
	Unpaved Road Dust	n/a	n/a	n/a																
	Paved Road Dust	n/a	n/a	n/a																
	Clearing and Grubbing Subtotal	--	0.11	0.11	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Excavation/Grading (Dry Conditions)																			
	Material Handling					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading						0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
	Bulldozing						1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29
	Unpaved Road Dust					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust					--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Excavation/Grading (Dry Conditions) Subtotal	--	--	--	--	1.86	1.86	1.86	1.86	1.86	1.86	1.86	--	--	--	--	--	--	--	--

Table K-662. PM2.5 Emissions Summary from Fugitive

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
02 - Relocations											
1	Mobilization and Demobilization										
	Material Handling				n/a						
	Grading				n/a						
	Bulldozing				n/a						
	Unpaved Road Dust				n/a						
	Paved Road Dust				n/a						
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
2	Levee O&M Road Regrading (6" AB)										
	Material Handling			n/a							n/a
	Grading			0.06							0.00
	Bulldozing			n/a							n/a
	Unpaved Road Dust			n/a							n/a
	Paved Road Dust			n/a							n/a
	Levee O&M Road Regrading (6" AB) Subtotal	--	--	0.06	--	--	--	--	--	--	0.00
3	Temporary Electrical Power										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Temporary Electrical Power Subtotal	--	--	--	--	--	--	--	--	--	--
	02 - Relocations Total	--	--	0.06	n/a	--	--	--	--	--	0.00
09 - Channels and Canals											
4	Mobilization and Demobilization										
	Material Handling		n/a		n/a						n/a
	Grading		n/a		n/a						n/a
	Bulldozing		n/a		n/a						n/a
	Unpaved Road Dust		n/a		n/a						n/a
	Paved Road Dust		n/a		n/a						n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
5	Clearing and Grubbing										
	Material Handling										n/a
	Grading										0.00
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Clearing and Grubbing Subtotal	--	--	--	--	--	--	--	--	--	0.00
6	Excavation/Grading (Dry Conditions)										
	Material Handling										n/a
	Grading										0.01
	Bulldozing										0.02
	Unpaved Road Dust										n/a
	Paved Road Dust										--
	Excavation/Grading (Dry Conditions) Subtotal	--	--	--	--	--	--	--	--	--	0.03

Table K-662. PM2.5 Emissions Summary from Fugitive Dust (Southern Water Control Structure) - Mitigated

#	Activity	PM2.5 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
7	Riprap - Class 2																			
	Material Handling							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading							0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
	Bulldozing							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Riprap - Class 2 Subtotal		--	--	--	--	--	--	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
8	Erosion Control Seeding																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Erosion Control Seeding Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals Total		--	0.11	0.11	0.11	1.86	1.86	1.98	1.98	1.98	1.98	1.98	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
11 - Levees and Floodwalls																				
9	Mobilization and Demobilization																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Mobilization and Demobilization Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10	Berm/Levee Fill																			
	Material Handling							0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
	Grading							0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
	Bulldozing							2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58	2.58
	Unpaved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust							n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Berm/Levee Fill Subtotal		--	--	--	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
11 - Levees and Floodwalls Total		--	--	--	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
15 - Floodway Control and Diversion Structures																				
11	Mobilization and Demobilization																			
	Material Handling																			n/a
	Grading																			n/a
	Bulldozing																			n/a
	Unpaved Road Dust																			n/a
	Paved Road Dust																			n/a
Mobilization and Demobilization Subtotal		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12	Construction Site Dewatering (Temporary Cofferdam)																			
	Material Handling																			
	Grading																			
	Bulldozing																			
	Unpaved Road Dust																			
	Paved Road Dust																			
Construction Site Dewatering (Temporary Cofferdam) Sub		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-662. PM2.5 Emissions Summary from Fugitive

#	Activity										Annual Emissions, tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
7	Riprap - Class 2 Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust										n/a 0.00 n/a n/a n/a
	Riprap - Class 2 Subtotal	--	--	--	--	--	--	--	--	--	0.00
8	Erosion Control Seeding Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust	n/a n/a n/a n/a n/a									n/a n/a n/a n/a n/a
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	--	--	--	--	--	--	--	--	--	0.03
11 - Levees and Floodwalls											
9	Mobilization and Demobilization Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust			n/a n/a n/a n/a n/a							n/a n/a n/a n/a n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
10	Berm/Levee Fill Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust	0.62 0.11 2.58 n/a n/a	0.62 0.11 2.58 n/a n/a								0.03 0.01 0.12 n/a n/a
	Berm/Levee Fill Subtotal	3.32	3.32	--	--	--	--	--	--	--	0.16
	11 - Levees and Floodwalls Total	3.32	3.32	--	--	--	--	--	--	--	0.16
15 - Floodway Control and Diversion Structures											
11	Mobilization and Demobilization Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust										n/a n/a n/a n/a n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
12	Construction Site Dewatering (Temporary Cofferdam) Material Handling Grading Bulldozing Unpaved Road Dust Paved Road Dust										n/a n/a n/a n/a n/a
	Construction Site Dewatering (Temporary Cofferdam) Sub	--	--	--	--	--	--	--	--	--	--

Table K-662. PM2.5 Emissions Summary from Fugitive Dust (Southern Water Control Structure) - Mitigated

#	Activity	PM2.5 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
13	Construction Site Dewatering (Pumping)																			
	Material Handling									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Bulldozing									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust									n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Construction Site Dewatering (Pumping) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14	Excavation (Wet Conditions)																			
	Material Handling						n/a	n/a				n/a								
	Grading						n/a	n/a				n/a								
	Bulldozing						n/a	n/a				n/a								
	Unpaved Road Dust							4.63	4.63				4.63							
	Paved Road Dust							--	--				--							
	Excavation (Wet Conditions) Subtotal	--	--	--	--	--	4.63	4.63	--	--	4.63	--	--	--	--	--	--	--	--	--
15	Sheet Pile Wall																			
	Material Handling											n/a								
	Grading											n/a								
	Bulldozing											n/a								
	Unpaved Road Dust											n/a								
	Paved Road Dust											n/a								
	Sheet Pile Wall Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16	Culvert Headwall																			
	Material Handling											n/a								
	Grading											n/a								
	Bulldozing											n/a								
	Unpaved Road Dust											n/a								
	Paved Road Dust											n/a								
	Culvert Headwall Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17	Precast Box Culvert 10'x8' 30'																			
	Material Handling												n/a							
	Grading												n/a							
	Bulldozing												n/a							
	Unpaved Road Dust												n/a							
	Paved Road Dust												n/a							
	Precast Box Culvert 10'x8' 30' Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18	Water Control Structure																			
	Material Handling													n/a						
	Grading													n/a						
	Bulldozing													n/a						
	Unpaved Road Dust													n/a						
	Paved Road Dust													n/a						
	Water Control Structure Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19	Inflatable Obermeyer Gates																			
	Material Handling														n/a	n/a	n/a			
	Grading														n/a	n/a	n/a			
	Bulldozing														n/a	n/a	n/a			
	Unpaved Road Dust														n/a	n/a	n/a			
	Paved Road Dust														n/a	n/a	n/a			
	Inflatable Obermeyer Gates Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15 - Floodway Control and Diversion Structures Total	--	--	--	--	--	4.63	4.63	--	--	4.63	--	--	--	--	--	--	--	--	--

Table K-662. PM2.5 Emissions Summary from Fugitive

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
13	Construction Site Dewatering (Pumping)										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Construction Site Dewatering (Pumping) Subtotal	--	--	--	--	--	--	--	--	--	--
14	Excavation (Wet Conditions)										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										0.03
	Paved Road Dust										--
	Excavation (Wet Conditions) Subtotal	--	--	--	--	--	--	--	--	--	0.03
15	Sheet Pile Wall										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Sheet Pile Wall Subtotal	--	--	--	--	--	--	--	--	--	--
16	Culvert Headwall										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Culvert Headwall Subtotal	--	--	--	--	--	--	--	--	--	--
17	Precast Box Culvert 10'x8' 30'										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Precast Box Culvert 10'x8' 30' Subtotal	--	--	--	--	--	--	--	--	--	--
18	Water Control Structure										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Water Control Structure Subtotal	--	--	--	--	--	--	--	--	--	--
19	Inflatable Obermeyer Gates										
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Inflatable Obermeyer Gates Subtotal	--	--	--	--	--	--	--	--	--	--
	15 - Floodway Control and Diversion Structures Total	--	--	--	--	--	--	--	--	--	0.03

Table K-662. PM2.5 Emissions Summary from Fugitive Dust (Southern Water Control Structure) - Mitigated

#	Activity	PM2.5 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
19 - Buildings, Grounds, and Utilities																				
20	Mobilization and Demobilization																			
	Material Handling	n/a						n/a												
	Grading	n/a						n/a												
	Bulldozing	n/a						n/a												
	Unpaved Road Dust	n/a						n/a												
	Paved Road Dust	n/a						n/a												
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
21	CMU Building and Earthwork Pad Construction																			
	Material Handling		n/a	n/a	n/a	n/a	n/a	n/a												
	Grading		0.23	0.23	0.23	0.23	0.23	0.23												
	Bulldozing		1.29	1.29	1.29	1.29	1.29	1.29												
	Unpaved Road Dust		n/a	n/a	n/a	n/a	n/a	n/a												
	Paved Road Dust		n/a	n/a	n/a	n/a	n/a	n/a												
	CMU Building and Earthwork Pad Construction Subtotal	--	1.52	1.52	1.52	1.52	1.52	1.52	--	--	--	--	--	--	--	--	--	--	--	--
22	Concrete Duct Bank																			
	Material Handling							n/a												
	Grading							n/a												
	Bulldozing							n/a												
	Unpaved Road Dust							n/a												
	Paved Road Dust							n/a												
	Concrete Duct Bank Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	19 - Buildings, Grounds, and Utilities Total	--	1.52	1.52	1.52	1.52	1.52	1.52	--	--	--	--	--	--	--	--	--	--	--	--
20 -Permanent Operating Equipment																				
23	Mobilization and Demobilization																			
	Material Handling																		n/a	
	Grading																		n/a	
	Bulldozing																		n/a	
	Unpaved Road Dust																		n/a	
	Paved Road Dust																		n/a	
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
24	Power, Electrical, & Mechanical Equipment																			
	Material Handling																		n/a	n/a
	Grading																		n/a	n/a
	Bulldozing																		n/a	n/a
	Unpaved Road Dust																		n/a	n/a
	Paved Road Dust																		n/a	n/a
	Power, Electrical, & Mechanical Equipment Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
25	Communication Equipment																			
	Material Handling																		n/a	
	Grading																		n/a	
	Bulldozing																		n/a	
	Unpaved Road Dust																		n/a	
	Paved Road Dust																		n/a	
	Communication Equipment Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20 -Permanent Operating Equipment Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GRAND TOTAL		--	1.63	1.63	4.96	6.70	11.33	9.93	5.30	5.30	9.93	5.30	3.44	3.44	3.44	3.44	3.44	3.44	3.44	3.44
	<i>Percent Reduction (Compared to Unmitigated)</i>	n/a	0%	0%	0%	0%	-37%	-40%	0%	0%	-40%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table K-662. PM2.5 Emissions Summary from Fugitive

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
19 - Buildings, Grounds, and Utilities											
20	Mobilization and Demobilization										n/a
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
21	CMU Building and Earthwork Pad Construction										n/a
	Material Handling										0.00
	Grading										0.02
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	CMU Building and Earthwork Pad Construction Subtotal	--	--	--	--	--	--	--	--	--	0.02
22	Concrete Duct Bank										n/a
	Material Handling										n/a
	Grading										n/a
	Bulldozing										n/a
	Unpaved Road Dust										n/a
	Paved Road Dust										n/a
	Concrete Duct Bank Subtotal	--	--	--	--	--	--	--	--	--	--
	19 - Buildings, Grounds, and Utilities Total	--	--	--	--	--	--	--	--	--	0.02
20 -Permanent Operating Equipment											
23	Mobilization and Demobilization										
	Material Handling			n/a							
	Grading			n/a							
	Bulldozing			n/a							
	Unpaved Road Dust			n/a							
	Paved Road Dust			n/a							
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
24	Power, Electrical, & Mechanical Equipment										
	Material Handling	n/a									n/a
	Grading	n/a									n/a
	Bulldozing	n/a									n/a
	Unpaved Road Dust	n/a	n/a								n/a
	Paved Road Dust	n/a	n/a								n/a
	Power, Electrical, & Mechanical Equipment Subtotal	n/a	--	--	--	--	--	--	--	--	--
25	Communication Equipment										
	Material Handling	n/a									n/a
	Grading	n/a									n/a
	Bulldozing	n/a									n/a
	Unpaved Road Dust	n/a	n/a								n/a
	Paved Road Dust	n/a	n/a								n/a
	Communication Equipment Subtotal	n/a	--	--	--	--	--	--	--	--	--
	20 -Permanent Operating Equipment Total	n/a	--	--	--	--	--	--	--	--	--
GRAND TOTAL		3.32	3.32	0.06	--	--	--	--	--	--	0.25
	<i>Percent Reduction (Compared to Unmitigated)</i>	0%	0%	0%	n/a	n/a	n/a	n/a	n/a	n/a	-16%

n/a
n/a
n/a
n/a
n/a

**Southern Water Control Structure
Fugitive Dust Emissions - Unpaved Road Dust (Haul Roads)**

Equation (AP-42, Chapter 13.2.2):

$$E = k(s/12)^a (W/3)^b$$

where:

E = size-specific emission factor (lb/VMT)

s = surface material silt content (%)

W = mean vehicle weight (tons)

Variables

k (PM10)	1.5
k (PM2.5)	0.15
a	0.9
b	0.45
s, %	1.6 crushed limestone (AP-42, Table 13.2.4-1)
W, tons	180 loaded 74 unloaded

Table K-663. Mitigated Unpaved Road Dust Emission Factors (lb/VMT)

Weight	PM10	PM2.5
Loaded	1.54	0.15
Unloaded		0.10
Average	1.29	0.13

Table K-664. Mitigated Unpaved Road Dust Emissions (Southern Water Control Structure)

Activity	Total Daily Output	Total Quantity	Unit	Estimated Duration, Days	VMT per Day	VMT per Year	PM10, lb/day	PM2.5, lb/day	PM10, tpy	PM2.5, tpy
15 - Floodway Control and Diversion Structures							lb/day			
Excavation (Wet Conditions)	1,800	25,960	CY	15	92	1,300	46.3	4.6	0.3	0.03

Notes:

Assumes payload of each truck is 100 tons.

Half of truck trips will be loaded and other half will be unloaded.

Only includes materials that will be transported to spoil site by dump trucks.

Appendix K1
Air Quality Emission Calculations

Distance to borrow area

2 miles (spoils site located within a 1-mile radius of the project access point(s); average of 1 mile travel distance from point of excavation)

Density

1.25 tons/cy

Note: CalEEMod assumes haul trucks can handle 20 tons or 16 cy.

Dust Control

61% reduction from watering at least 3 times per day

Source: CalEEMod

Offroad Exhaust Emissions Summary

Table K-665. Maximum Daily Offroad Construction Equipment Emissions (River Grading Site)

Phase	ROG lbs/day	NOx lbs/day	CO lbs/day	SO2 lbs/day	PM10 lbs/day	PM2.5 lbs/day
09 - Channels and Canals	12.62	105.29	52.24	0.24	2.34	1.63
Peak Day Construction Exhaust Emissions Total	12.62	105.29	52.24	0.24	2.34	1.63

Notes:

Construction total will not add to the sum of each phase because not all tasks overlap on the same day.

Table K-666. Annual Offroad Construction Equipment Emissions (River Grading Site)

Phase	ROG tpy	NOx tpy	CO tpy	SO2 tpy	PM10 tpy	PM2.5 tpy	CO2e MT/yr
09 - Channels and Canals	0.11	1.22	0.86	0.00	0.04	0.03	417.33
Annual Construction Exhaust Emissions Total	0.11	1.22	0.86	0.00	0.04	0.03	417.33

Notes:

Total may not add exactly because of rounding.

Table K-667. ROG Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Unmitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	3.1225 0.0580 1.4797 0.0000 0.0451	g/hr g/hp-hr g/hr g/hr g/hp-hr
											Mobilization and Demobilization Subtotal		
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	0.2384 0.0754 72.5631 3.1225 1.4797 6.9998	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
											Clearing and Grubbing Subtotal		
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.0451 0.1608 0.1035 6.9998 1.4797	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
											Excavation (From Bank) Subtotal		
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.0451 1.4797	g/hp-hr g/hr
											Excavation/Dredging (From Barge) Subtotal		
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.0451 0.1004 6.9998 1.4797	g/hp-hr g/hp-hr g/hr g/hr
											Riprap - Graded Stone 'C' Subtotal		
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	0.0901 1.4797	g/hp-hr g/hr
											Erosion Control Seeding Subtotal		
											09 - Channels and Canals Total		
GRAND TOTAL													

Table K-667. ROG Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																							
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep		
09 - Channels and Canals																									
1	Mobilization and Demobilization	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
2	Clearing and Grubbing	0.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	10.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	0.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.65	10.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
3	Excavation (From Bank)	--	0.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	1.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	--	0.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.60	--		
		--	--	0.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.74	--		
		--	--	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.18	--		
		--	2.04	1.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.52	--		
4	Excavation/Dredging (From Barge)	--	--	0.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.40	--		
		--	--	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10	--		
		--	--	0.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.50	--		
5	Riprap - Graded Stone 'C'	--	--	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	--		
		--	--	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	--		
		--	--	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	--		
		--	--	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	--		
		--	--	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	3.91	--		
6	Erosion Control Seeding	--	--	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	--		
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10	0.10		
		--	--	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.26	0.10		
GRAND TOTAL		1.23	12.62	6.09	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	6.19	0.10		

Table K-667. ROG Exhaust Emissions from Of

#	Activity							Annual Emissions, tpy
		16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals								
1	Mobilization and Demobilization	--	--	0.06	--	--	--	0.0001
		--	--	0.10	--	--	--	0.0001
		--	--	0.03	--	--	--	0.0000
		--	--	--	--	--	--	0.0000
		--	--	0.40	--	--	--	0.0004
		--	--	0.58	--	--	--	0.0006
2	Clearing and Grubbing	--	--	0.46	--	--	--	0.0009
		--	--	0.19	--	--	--	0.0004
		--	--	--	--	--	--	0.0205
		--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	0.0003
		--	--	0.65	--	--	--	0.0224
3	Excavation (From Bank)	--	--	--	--	--	--	0.0017
		--	--	--	--	--	--	0.0085
		--	--	--	--	--	--	0.0030
		--	--	--	--	--	--	0.0037
		--	--	--	--	--	--	0.0009
		--	--	--	--	--	--	0.0178
4	Excavation/Dredging (From Barge)	--	--	--	--	--	--	0.0220
		--	--	--	--	--	--	0.0058
		--	--	--	--	--	--	0.0278
5	Riprap - Graded Stone 'C'	--	--	--	--	--	--	0.0037
		--	--	--	--	--	--	0.0048
		--	--	--	--	--	--	0.0256
		--	--	--	--	--	--	0.0012
		--	--	--	--	--	--	0.0352
6	Erosion Control Seeding	--	--	--	--	--	--	0.0012
		0.10	--	--	--	--	--	0.0008
		0.10	--	--	--	--	--	0.0021
		0.10	--	1.23	--	--	--	0.1059
GRAND TOTAL		0.10	0.00	1.23	0.00	0.00	0.00	0.1059

Table K-668. NOx Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Unmitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	73.7154 0.9187 1.6515 0.0000 0.5086	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1 - - - - -	1	1	4	2.4260 0.7727 1.2873 73.7154 1.6515 155.9699	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700 - - - -	1	700	10	0.5086 2.0086 1.1284 155.9699 1.6515	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400 -	1	400	111	0.5086 1.6515	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000 - - -	1	1,000	18	0.5086 1.4049 155.9699 1.6515	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2 -	1	2	16	1.1037 1.6515	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-668. NOx Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	1.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		4.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		7.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	4.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	1.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	2.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		6.61	4.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	--	3.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	21.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	6.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	16.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	25.10	23.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	--	--	4.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	4.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'	--	--	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61
		--	--	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43
		--	--	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27	63.27
		--	--	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
		--	--	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46	75.46
6	Erosion Control Seeding	--	--	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89	1.89
		14.04	29.51	105.17	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35
GRAND TOTAL		14.04	29.51	105.17	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35	77.35

Table K-668. NOx Exhaust Emissions from Of

#	Activity									Annual Emissions , tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals										
1	Mobilization and Demobilization	--	--	--	--	1.30	--	--	--	0.0013
		--	--	--	--	1.62	--	--	--	0.0016
		--	--	--	--	0.03	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	4.48	--	--	--	0.0045
		--	--	--	--	7.43	--	--	--	0.0074
2	Clearing and Grubbing	--	--	--	--	4.71	--	--	--	0.0094
		--	--	--	--	1.91	--	--	--	0.0038
		--	--	--	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	0.0026
		--	--	--	--	--	--	--	--	0.0003
		--	--	--	--	6.61	--	--	--	0.0220
3	Excavation (From Bank)	--	--	--	--	--	--	--	--	0.0192
		--	--	--	--	--	--	--	--	0.1063
		6.53	--	--	--	--	--	--	--	0.0326
		16.50	--	--	--	--	--	--	--	0.0825
		0.20	--	--	--	--	--	--	--	0.0010
		23.24	--	--	--	--	--	--	--	0.2417
4	Excavation/Dredging (From Barge)	4.48	--	--	--	--	--	--	--	0.2484
		0.12	--	--	--	--	--	--	--	0.0065
		4.59	--	--	--	--	--	--	--	0.2549
5	Riprap - Graded Stone 'C'	4.61	--	--	--	--	--	--	--	0.0415
		7.43	--	--	--	--	--	--	--	0.0669
		63.27	--	--	--	--	--	--	--	0.5694
		0.15	--	--	--	--	--	--	--	0.0013
		75.46	--	--	--	--	--	--	0.6791	
6	Erosion Control Seeding	1.89	--	--	--	--	--	--	--	0.0151
		0.12	0.12	0.12	--	--	--	--	--	0.0009
		2.00	0.12	0.12	--	--	--	--	--	0.0160
		105.29	0.12	0.12	--	14.04	--	--	--	1.2212
GRAND TOTAL		105.29	0.12	0.12	0.00	14.04	0.00	0.00	0.00	1.2212

Table K-669. CO Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Unmitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	12.0888 2.2556 12.8680 0.0000 0.6321	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	2.5463 1.1116 146.1720 12.0888 12.8680 34.6908	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.6321 1.1166 1.7927 34.6908 12.8680	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.6321 12.8680	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.6321 0.9049 34.6908 12.8680	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	2.0507 12.8680	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-669. CO Exhaust Emissions from Offr

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	0.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		3.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		5.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		9.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	4.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		2.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	20.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	1.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		7.68	22.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	--	4.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	11.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	10.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	3.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	1.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	16.60	15.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	--	--	5.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	6.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'	--	--	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73	5.73
		--	--	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79	4.79
		--	--	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07	14.07
		--	--	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13
		--	--	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72	25.72
6	Erosion Control Seeding	--	--	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51
		17.67	39.41	51.33	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23
GRAND TOTAL		17.67	39.41	51.33	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23	29.23

Table K-669. CO Exhaust Emissions from Offr

#	Activity									Annual Emissions, tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals										
1	Mobilization and Demobilization	--	--	--	--	0.21	--	--	--	0.0002
		--	--	--	--	3.98	--	--	--	0.0040
		--	--	--	--	0.23	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	5.56	--	--	--	0.0056
						9.98				0.0100
2	Clearing and Grubbing	--	--	--	--	4.94	--	--	--	0.0099
		--	--	--	--	2.74	--	--	--	0.0055
		--	--	--	--	--	--	--	--	0.0412
		--	--	--	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	0.0027
						7.68				0.0610
3	Excavation (From Bank)	--	--	--	--	--	--	--	--	0.0239
		--	--	--	--	--	--	--	--	0.0591
		10.37	--	--	--	--	--	--	--	0.0519
		3.67	--	--	--	--	--	--	--	0.0184
		1.59	--	--	--	--	--	--	--	0.0079
		15.63								0.1611
4	Excavation/Dredging (From Barge)	5.56	--	--	--	--	--	--	--	0.3087
		0.91	--	--	--	--	--	--	--	0.0504
		6.47								0.3591
5	Riprap - Graded Stone 'C'	5.73	--	--	--	--	--	--	--	0.0516
		4.79	--	--	--	--	--	--	--	0.0431
		14.07	--	--	--	--	--	--	--	0.1266
		1.13	--	--	--	--	--	--	--	0.0102
		25.72								0.2315
6	Erosion Control Seeding	3.51	--	--	--	--	--	--	--	0.0281
		0.91	0.91	0.91	--	--	--	--	--	0.0073
		4.42	0.91	0.91						0.0353
		52.24	0.91	0.91		17.67				0.8581
GRAND TOTAL		52.24	0.91	0.91	0.00	17.67	0.00	0.00	0.00	0.8581

Table K-670. SO2 Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Unmitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	0.1721 0.0040 0.0474 0.0000 0.0032	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	0.0043 0.0026 0.0163 0.1721 0.0474 0.2281	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.0032 0.0033 0.0035 0.2281 0.0474	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.0032 0.0474	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.0032 0.0036 0.2281 0.0474	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	0.0037 0.0474	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-670. SO2 Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.06	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'	--	--	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
		--	--	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
		--	--	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
		--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		--	--	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
6	Erosion Control Seeding	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		0.05	0.07	0.23	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
GRAND TOTAL		0.05	0.07	0.23	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15

Table K-670. SO2 Exhaust Emissions from Of

#	Activity									Annual Emissions, tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals										
1	Mobilization and Demobilization	--	--	--	--	0.00	--	--	--	0.0000
		--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	0.00	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	0.03	--	--	--	0.0000
						0.04	--	--	--	0.0000
2	Clearing and Grubbing	--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
						0.01	--	--	--	0.0001
3	Excavation (From Bank)	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0002
		0.02	--	--	--	--	--	--	--	0.0001
		0.02	--	--	--	--	--	--	--	0.0001
		0.01	--	--	--	--	--	--	--	0.0000
		0.05	--	--	--	--	--	--	--	0.0005
4	Excavation/Dredging (From Barge)	0.03	--	--	--	--	--	--	--	0.0016
		0.00	--	--	--	--	--	--	--	0.0002
		0.03	--	--	--	--	--	--	--	0.0017
5	Riprap - Graded Stone 'C'	0.03	--	--	--	--	--	--	--	0.0003
		0.02	--	--	--	--	--	--	--	0.0002
		0.09	--	--	--	--	--	--	--	0.0008
		0.00	--	--	--	--	--	--	--	0.0000
		0.14	--	--	--	--	--	--	--	0.0013
6	Erosion Control Seeding	0.01	--	--	--	--	--	--	--	0.0001
		0.00	0.00	0.00	--	--	--	--	--	0.0000
		0.01	0.00	0.00	--	--	--	--	--	0.0001
		0.24	0.00	0.00	--	0.05	--	--	--	0.0038
GRAND TOTAL		0.24	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.0038

Table K-671. PM10 Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Unmitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	2.4742 0.0356 0.8623 0.0000 0.0170	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	0.1997 0.0303 0.2300 2.4742 0.8623 1.8973	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.0170 0.0917 0.0617 1.8973 0.8623	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.0170 0.8623	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.0170 0.0553 1.8973 0.8623	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	0.0651 0.8623	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-671. PM10 Exhaust Emissions from O

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	0.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.46	0.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	--	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	1.10	0.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	--	--	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'	--	--	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
		--	--	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
		--	--	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
		--	--	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		--	--	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29	1.29
6	Erosion Control Seeding	--	--	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
		0.73	1.30	2.28	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
GRAND TOTAL		0.73	1.30	2.28	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40

Table K-671. PM10 Exhaust Emissions from O

#	Activity									Annual Emissions, tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals										
1	Mobilization and Demobilization	--	--	--	--	0.04	--	--	--	0.0000
		--	--	--	--	0.06	--	--	--	0.0001
		--	--	--	--	0.02	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	0.15	--	--	--	0.0001
		--	--	--	--	0.27	--	--	--	0.0003
2	Clearing and Grubbing	--	--	--	--	0.39	--	--	--	0.0008
		--	--	--	--	0.07	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	0.46	--	--	--	0.0013
3	Excavation (From Bank)	--	--	--	--	--	--	--	--	0.0006
		--	--	--	--	--	--	--	--	0.0049
		0.36	--	--	--	--	--	--	--	0.0018
		0.20	--	--	--	--	--	--	--	0.0010
		0.11	--	--	--	--	--	--	--	0.0005
		0.66	--	--	--	--	--	--	--	0.0088
4	Excavation/Dredging (From Barge)	0.15	--	--	--	--	--	--	--	0.0083
		0.06	--	--	--	--	--	--	--	0.0034
		0.21	--	--	--	--	--	--	--	0.0117
5	Riprap - Graded Stone 'C'	0.15	--	--	--	--	--	--	--	0.0014
		0.29	--	--	--	--	--	--	--	0.0026
		0.77	--	--	--	--	--	--	--	0.0069
		0.08	--	--	--	--	--	--	--	0.0007
		1.29	--	--	--	--	--	--	0.0116	
6	Erosion Control Seeding	0.11	--	--	--	--	--	--	--	0.0009
		0.06	0.06	0.06	--	--	--	--	--	0.0005
		0.17	0.06	0.06	--	--	--	--	--	0.0014
		2.34	0.06	0.06	--	0.73	--	--	--	0.0351
GRAND TOTAL		2.34	0.06	0.06	0.00	0.73	0.00	0.00	0.00	0.0351

Table K-672. PM2.5 Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Unmitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	1.2073 0.0327 0.4490 0.0000 0.0157	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	0.1837 0.0279 0.2116 1.2073 0.4490 0.9593	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.0157 0.0844 0.0568 0.9593 0.4490	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.0157 0.4490	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.0157 0.0509 0.9593 0.4490	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	0.0599 0.4490	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-672. PM2.5 Exhaust Emissions from

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Clearing and Grubbing	0.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		0.43	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3	Excavation (From Bank)	--	0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	0.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	0.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	1.01	0.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4	Excavation/Dredging (From Barge)	--	--	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	0.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5	Riprap - Graded Stone 'C'	--	--	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
		--	--	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	
		--	--	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	
		--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	
		--	--	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	
6	Erosion Control Seeding	--	--	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
		--	--	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	
		0.65	1.13	1.60	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
GRAND TOTAL		0.65	1.13	1.60	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	

Table K-672. PM2.5 Exhaust Emissions from

#	Activity									Annual Emissions, tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals										
1	Mobilization and Demobilization	--	--	--	--	0.02	--	--	--	0.0000
		--	--	--	--	0.06	--	--	--	0.0001
		--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	0.14	--	--	--	0.0001
						0.22	--	--	--	0.0002
2	Clearing and Grubbing	--	--	--	--	0.36	--	--	--	0.0007
		--	--	--	--	0.07	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
						0.43	--	--	--	0.0011
3	Excavation (From Bank)	--	--	--	--	--	--	--	--	0.0006
		--	--	--	--	--	--	--	--	0.0045
		0.33	--	--	--	--	--	--	--	0.0016
		0.10	--	--	--	--	--	--	--	0.0005
		0.06	--	--	--	--	--	--	--	0.0003
		0.49	--	--	--	--	--	--	--	0.0075
4	Excavation/Dredging (From Barge)	0.14	--	--	--	--	--	--	--	0.0076
		0.03	--	--	--	--	--	--	--	0.0018
		0.17	--	--	--	--	--	--	--	0.0094
5	Riprap - Graded Stone 'C'	0.14	--	--	--	--	--	--	--	0.0013
		0.27	--	--	--	--	--	--	--	0.0024
		0.39	--	--	--	--	--	--	--	0.0035
		0.04	--	--	--	--	--	--	--	0.0004
		0.84	--	--	--	--	--	--	--	0.0076
6	Erosion Control Seeding	0.10	--	--	--	--	--	--	--	0.0008
		0.03	0.03	0.03	--	--	--	--	--	0.0003
		0.13	0.03	0.03	--	--	--	--	--	0.0011
		1.63	0.03	0.03	--	0.65	--	--	--	0.0268
GRAND TOTAL		1.63	0.03	0.03	0.00	0.65	0.00	0.00	0.00	0.0268

Table K-673. GHG Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Unmitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factors					Annual Emissions, MTCO2e/yr
												CO2	CH4	N2O	CO2e	Units	
09 - Channels and Canals																	
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	24743.4 340.986 8716.75 0 323.936	0 0.02272 0 0 0.01421	0 0 0 0 0	24743.4 341.554 8716.75 0 324.292	g/hr g/hp-hr g/hr g/hr g/hp-hr	0.40 0.55 0.14 0.00 2.59
												Mobilization and Demobilization Subtotal		3.67			
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	363.718 227.324 395.091 24743.4 8716.75 36496.5	0.03898 0.0068 0 0 0 0	0 0 0 0 0 0	364.692 227.494 395.091 24743.4 8716.75 36496.5	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr	1.28 1.02 0.10 0.79 1.67 1.17
												Clearing and Grubbing Subtotal		6.04			
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	323.936 335.303 306.887 36496.5 8716.75	0.01421 0.02493 0.01857 0 0	0 0 0 0 0	324.292 335.926 307.351 36496.5 8716.75	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr	11.13 16.12 8.06 17.52 4.88
												Excavation (From Bank) Subtotal		57.72			
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	323.936 8716.75	0.01421 0	0 0	324.292 8716.75	g/hp-hr g/hr	143.70 30.96
												Excavation/Dredging (From Barge) Subtotal		174.66			
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	323.936 363.718 36496.5 8716.75	0.01421 0.02114 0 0	0 0 0 0	324.292 364.246 36496.5 8716.75	g/hp-hr g/hp-hr g/hr g/hr	24.00 15.74 120.88 6.28
												Riprap - Graded Stone 'C' Subtotal		166.89			
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	312.57 8716.75	0.01854 0	0 0	313.034 8716.75	g/hp-hr g/hr	3.89 4.46
												Erosion Control Seeding Subtotal		8.35			
												09 - Channels and Canals Total		417.33			
GRAND TOTAL														417.33			

Construction Worker Commuting Exhaust Emissions Summary

Table K-674. Maximum Daily Construction Worker Commuting Emissions (River Grading Site)

Phase	ROG lbs/day	NOx lbs/day	CO lbs/day	SO2 lbs/day	PM10 lbs/day	PM2.5 lbs/day
09 - Channels and Canals	0.09	0.44	4.41	0.02	1.97	0.53
Peak Day Construction Exhaust Emissions Total	0.09	0.44	4.41	0.02	1.97	0.53

Notes:

Construction total will not add to the sum of each phase because not all tasks overlap on the same day.

PM10 and PM2.5 emissions include exhaust, tire wear, brake wear, and paved road dust.

Table K-675. Annual Construction Worker Commuting Emissions (River Grading Site)

Phase	ROG tpy	NOx tpy	CO tpy	SO2 tpy	PM10 tpy	PM2.5 tpy	CO2e MT/yr
09 - Channels and Canals	0.00	0.01	0.11	0.00	0.05	0.01	45.18
Annual Construction Exhaust Emissions Total	0.00	0.01	0.11	0.00	0.05	0.01	45.18

Notes:

Total may not add exactly because of rounding.

PM10 and PM2.5 emissions include exhaust, tire wear, brake wear, and paved road dust.

Table K-676. ROG Emissions from Construction Worker Commuting (River Grading Site)

#	Activity	Estimated Duration, Days	Emission Factor (g/mi)	Maximum Daily Emissions, lbs/day																	
				15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	2	1.55E-02	0.0307	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	4	1.55E-02	--	0.0184	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	10	1.55E-02	--	--	0.0410	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	111	1.55E-02	--	--	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307
5	Riprap - Graded Stone 'C'	18	1.55E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Erosion Control Seeding	16	1.55E-02	--	--	--	0.0082	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals Total				--	--	0.0307	0.0389	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307
GRAND TOTAL				--	--	0.0307	0.0389	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307	0.0307

Table K-676. ROG Emissions from Co

#	Activity										Annual Emissions , tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals											
1	Mobilization and Demobilization	--	--	--	--	--	0.0307	--	--	--	0.0000
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	0.0000
3	Excavation (From Bank)	--	0.0410	--	--	--	--	--	--	--	0.0002
4	Excavation/Dredging (From Barge)	0.0307	0.0307	--	--	--	--	--	--	--	0.0017
5	Riprap - Graded Stone 'C'	--	0.0574	0.0574	0.0574	--	--	--	--	--	0.0005
6	Erosion Control Seeding	--	--	--	0.0082	0.0082	--	--	--	--	0.0001
	09 - Cha	0.0307	0.0881	0.0574	0.0656	0.0082	--	--	--	--	0.0023
GRAND TOTAL		0.0307	0.0881	0.0574	0.0656	0.0082	--	--	--	--	0.0023

Table K-677. NOx Emissions from Construction Worker Commuting (River Grading Site)

#	Activity	Estimated Duration, Days	Emission Factor (g/mi)	Maximum Daily Emissions, lbs/day																	
				15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	2	7.71E-02	0.1530	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	4	7.71E-02	--	0.0918	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	10	7.71E-02	--	--	0.2040	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	111	7.71E-02	--	--	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530
5	Riprap - Graded Stone 'C'	18	7.71E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Erosion Control Seeding	16	7.71E-02	--	--	--	0.0408	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals Total				--	--	0.1530	0.1938	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530
GRAND TOTAL				--	--	0.1530	0.1938	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530	0.1530

Table K-677. NOx Emissions from Co

#	Activity										Annual Emissions , tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals											
1	Mobilization and Demobilization	--	--	--	--	--	0.1530	--	--	--	0.0002
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	0.0002
3	Excavation (From Bank)	--	0.2040	--	--	--	--	--	--	--	0.0010
4	Excavation/Dredging (From Barge)	0.1530	0.1530	--	--	--	--	--	--	--	0.0085
5	Riprap - Graded Stone 'C'	--	0.2856	0.2856	0.2856	--	--	--	--	--	0.0026
6	Erosion Control Seeding	--	--	--	0.0408	0.0408	--	--	--	--	0.0003
	09 - Cha	0.1530	0.4387	0.2856	0.3264	0.0408	--	--	--	--	0.0114
GRAND TOTAL		0.1530	0.4387	0.2856	0.3264	0.0408	--	--	--	--	0.0114

Table K-678. CO Emissions from Construction Worker Commuting (River Grading Site)

#	Activity	Estimated Duration, Days	Emission Factor (g/mi)	Maximum Daily Emissions, lbs/day																	
				15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	2	7.76E-01	1.5388	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	4	7.76E-01	--	0.9233	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	10	7.76E-01	--	--	2.0517	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	111	7.76E-01	--	--	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388
5	Riprap - Graded Stone 'C'	18	7.76E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Erosion Control Seeding	16	7.76E-01	--	--	--	0.4103	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals Total				--	--	1.5388	1.9491	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388
GRAND TOTAL				--	--	1.5388	1.9491	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388	1.5388

26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
--	--	--	--	--	1.5388	--	--	--	0.0015
--	--	--	--	--	--	--	--	--	0.0018
--	2.0517	--	--	--	--	--	--	--	0.0103
1.5388	1.5388	--	--	--	--	--	--	--	0.0854
--	2.8724	2.8724	2.8724	--	--	--	--	--	0.0259
--	--	--	0.4103	0.4103	--	--	--	--	0.0033
1.5388	4.4112	2.8724	3.2827	0.4103	--	--	--	--	0.1145
1.5388	4.4112	2.8724	3.2827	0.4103	--	--	--	--	0.1145

Table K-679. SOx Emissions from Construction Worker Commuting (River Grading Site)

#	Activity	Estimated Duration, Days	Emission Factor (g/mi)	Maximum Daily Emissions, lbs/day																	
				15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	2	3.02E-03	0.0060	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	4	3.02E-03	--	0.0036	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	10	3.02E-03	--	--	0.0080	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	111	3.02E-03	--	--	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060
5	Riprap - Graded Stone 'C'	18	3.02E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Erosion Control Seeding	16	3.02E-03	--	--	--	0.0016	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals Total				--	--	0.0060	0.0076	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060
GRAND TOTAL				--	--	0.0060	0.0076	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060	0.0060

Table K-679. SOx Emissions from Co

#	Activity										Annual Emissions , tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals											
1	Mobilization and Demobilization	--	--	--	--	--	0.0060	--	--	--	0.0000
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	0.0000
3	Excavation (From Bank)	--	0.0080	--	--	--	--	--	--	--	0.0000
4	Excavation/Dredging (From Barge)	0.0060	0.0060	--	--	--	--	--	--	--	0.0003
5	Riprap - Graded Stone 'C'	--	0.0112	0.0112	0.0112	--	--	--	--	--	0.0001
6	Erosion Control Seeding	--	--	--	0.0016	0.0016	--	--	--	--	0.0000
	09 - Cha	0.0060	0.0172	0.0112	0.0128	0.0016	--	--	--	--	0.0004
GRAND TOTAL		0.0060	0.0172	0.0112	0.0128	0.0016	--	--	--	--	0.0004

Table K-680. PM10 Emissions from Construction Worker Commuting (River Grading Site)

#	Activity	Estimated Duration, Days	Emission Factor (g/mi)	Maximum Daily Emissions, lbs/day																	
				15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	2	3.47E-01	0.6875	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	4	3.47E-01	--	0.4125	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	10	3.47E-01	--	--	0.9167	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	111	3.47E-01	--	--	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875
5	Riprap - Graded Stone 'C'	18	3.47E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	Erosion Control Seeding	16	3.47E-01	--	--	--	0.1833	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals Total				--	--	0.6875	0.8708	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875
GRAND TOTAL				--	--	0.6875	0.8708	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875	0.6875

Table K-680. PM10 Emissions from C

#	Activity										Annual Emissions , tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals											
1	Mobilization and Demobilization	--	--	--	--	--	0.6875	--	--	--	0.0007
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	0.0008
3	Excavation (From Bank)	--	0.9167	--	--	--	--	--	--	--	0.0046
4	Excavation/Dredging (From Barge)	0.6875	0.6875	--	--	--	--	--	--	--	0.0382
5	Riprap - Graded Stone 'C'	--	1.2834	1.2834	1.2834	--	--	--	--	--	0.0116
6	Erosion Control Seeding	--	--	--	0.1833	0.1833	--	--	--	--	0.0015
	09 - Cha	0.6875	1.9709	1.2834	1.4667	0.1833	--	--	--	--	0.0512
GRAND TOTAL		0.6875	1.9709	1.2834	1.4667	0.1833	--	--	--	--	0.0512

2.5 Table K-681. PM2.5 Emissions from Construction Worker Commuting (River Grading Site)

				Maximum Daily Emissions, lbs/day																		
Summary Lookup	#	Activity	Estimated Duration, Days	Emission Factor (g/mi)	15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug
					09 - Channels and Canals																	
09 - Chann	1	Mobilization and Demobilization	2	9.31E-02	0.1847	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Chann	2	Clearing and Grubbing	4	9.31E-02		0.1108	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Chann	3	Excavation (From Bank)	10	9.31E-02		--	0.2463	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Chann	4	Excavation/Dredging (From Barge)	111	9.31E-02	--	--	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847
09 - Chann	5	Riprap - Graded Stone 'C'	18	9.31E-02		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Chann	6	Erosion Control Seeding	16	9.31E-02		--	--	0.0493	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09 - Channels and Canals Total					--	--	0.1847	0.2340	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847
GRAND TOTAL					--	--	0.1847	0.2340	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847	0.1847

Table K-681. PM2.5 Emissions from C

#	Activity											Annual Emissions, tpy
		19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals												
1	Mobilization and Demobilization	--	--	--	--	--	--	0.1847	--	--	--	0.0002
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	0.0002
3	Excavation (From Bank)	--	--	0.2463	--	--	--	--	--	--	--	0.0012
4	Excavation/Dredging (From Barge)	0.1847	0.1847	0.1847	--	--	--	--	--	--	--	0.0103
5	Riprap - Graded Stone 'C'	--	--	0.3448	0.3448	0.3448	--	--	--	--	--	0.0031
6	Erosion Control Seeding	--	--	--	--	0.0493	0.0493	--	--	--	--	0.0004
	09 - Cha	0.1847	0.1847	0.5296	0.3448	0.3941	0.0493	--	--	--	--	0.0138
GRAND TOTAL		0.1847	0.1847	0.5296	0.3448	0.3941	0.0493	--	--	--	--	0.0138

**Table K-682. GHG Emissions from Construction Worker Commuting
 (River Grading Site)**

#	Activity	Estimated Duration, Days	CO2 Emission Factor, (g/mi)	Annual Emissions, MTCO2e/yr
09 - Channels and Canals				
1	Mobilization and Demobilization	2	301.29	0.54
2	Clearing and Grubbing	4	301.29	0.65
3	Excavation (From Bank)	10	301.29	3.62
4	Excavation/Dredging (From Barge)	111	301.29	30.10
5	Riprap - Graded Stone 'C'	18	301.29	9.11
6	Erosion Control Seeding	16	301.29	1.16
09 - Channels and Canals Total				45.18
GRAND TOTAL				45.18

Haul Truck Exhaust Emissions Summary

Table K-683. Maximum Daily Haul Truck Emissions (River Grading Site)

Phase	ROG lbs/day	NOx lbs/day	CO lbs/day	SO2 lbs/day	PM10 lbs/day	PM2.5 lbs/day
09 - Channels and Canals	1.59	46.28	9.76	0.20	5.45	1.66
Peak Day Construction Exhaust Emissions Total	1.59	46.28	9.76	0.20	5.45	1.66

Notes:

Construction total will not add to the sum of each phase because not all tasks overlap on the same day.

PM10 and PM2.5 emissions include exhaust, tire wear, brake wear, and paved road dust.

Table K-684. Annual Haul Truck Emissions (River Grading Site)

Phase	ROG tpy	NOx tpy	CO tpy	SO2 tpy	PM10 tpy	PM2.5 tpy	CO2e MT/yr
09 - Channels and Canals	0.01	0.42	0.09	0.00	0.05	0.02	173.89
Annual Construction Exhaust Emissions Total	0.01	0.42	0.09	0.00	0.05	0.02	173.89

Notes:

Total may not add exactly because of rounding.

PM10 and PM2.5 emissions include exhaust, tire wear, brake wear, and paved road dust.

Table K-685. ROG Emissions from Haul Trucks (River Grading Site)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximu														
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul		
09 - Channels and Canals																						
1	Mobilization and Demobilization	-	-	30	21	2	0.1207	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Clearing and Grubbing	4	ACR	20	22	4	0.1207	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	
3	Excavation (From Bank)	6,652	CY	n/a	n/a	10	0.1207	--	--	n/a	--	--	--	--	--	--	--	--	--	--	--	
4	Excavation/Dredging (From Barge)	44,177	CY	n/a	n/a	111	0.1207	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
5	Riprap - Graded Stone 'C'	17,546	TN	1,626	66	18	0.1207	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6	Erosion Control Seeding	31	ACR	n/a	n/a	16	0.1207	--	--	--	n/a	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals Total								0.08	0.03	--	--	--	--	--	--	--	--	--	--	--	--	
GRAND TOTAL								0.08	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-685. ROG Emissions from Haul Tr

#	Activity	Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	0.08	--	--	--	0.0001
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0001
3	Excavation (From Bank)	--	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	n/a
4	Excavation/Dredging (From Barge)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
5	Riprap - Graded Stone 'C'	--	--	--	--	--	--	--	1.59	1.59	1.59	--	--	--	--	--	0.0143
6	Erosion Control Seeding	--	--	--	--	--	--	--	--	n/a	n/a	--	--	--	--	--	n/a
GRAND TOTAL		--	--	--	--	--	--	--	1.59	1.59	1.59	--	0.08	--	--	--	0.0144

Table K-686. NOx Emissions from Haul Trucks (River Grading Site)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximum														
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul		
09 - Channels and Canals																						
1	Mobilization and Demobilization	-	-	30	21	2	3.5212	2.45	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Clearing and Grubbing	4	ACR	20	22	4	3.5212	--	0.85	--	--	--	--	--	--	--	--	--	--	--	--	
3	Excavation (From Bank)	6,652	CY	n/a	n/a	10	3.5212	--	--	n/a	--	--	--	--	--	--	--	--	--	--	--	
4	Excavation/Dredging (From Barge)	44,177	CY	n/a	n/a	111	3.5212	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
5	Riprap - Graded Stone 'C'	17,546	TN	1,626	66	18	3.5212	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6	Erosion Control Seeding	31	ACR	n/a	n/a	16	3.5212	--	--	--	n/a	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals Total								2.45	0.85	--	--	--	--	--	--	--	--	--	--	--	--	
GRAND TOTAL								2.45	0.85	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-686. NOx Emissions from Haul Tru

#	Activity	m Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	2.45	--	--	--	0.0024
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0017
3	Excavation (From Bank)	--	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	n/a
4	Excavation/Dredging (From Barge)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
5	Riprap - Graded Stone 'C'	--	--	--	--	--	--	--	46.28	46.28	46.28	--	--	--	--	--	0.4165
6	Erosion Control Seeding	--	--	--	--	--	--	--	--	n/a	n/a	--	--	--	--	--	n/a
GRAND TOTAL		--	--	--	--	--	--	--	46.28	46.28	46.28	--	2.45	--	--	--	0.4207

Table K-687. CO Emissions from Haul Trucks (River Grading Site)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximu														
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul		
09 - Channels and Canals																						
1	Mobilization and Demobilization	-	-	30	21	2	0.7423	0.52	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Clearing and Grubbing	4	ACR	20	22	4	0.7423	--	0.18	--	--	--	--	--	--	--	--	--	--	--	--	
3	Excavation (From Bank)	6,652	CY	n/a	n/a	10	0.7423	--	--	n/a	--	--	--	--	--	--	--	--	--	--	--	
4	Excavation/Dredging (From Barge)	44,177	CY	n/a	n/a	111	0.7423	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
5	Riprap - Graded Stone 'C'	17,546	TN	1,626	66	18	0.7423	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6	Erosion Control Seeding	31	ACR	n/a	n/a	16	0.7423	--	--	--	n/a	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals Total								0.52	0.18	--	--	--	--	--	--	--	--	--	--	--	--	
GRAND TOTAL								0.52	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-687. CO Emissions from Haul Truc

#	Activity	Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	0.52	--	--	--	0.0005
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0004
3	Excavation (From Bank)	--	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	n/a
4	Excavation/Dredging (From Barge)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
5	Riprap - Graded Stone 'C'	--	--	--	--	--	--	--	9.76	9.76	9.76	--	--	--	--	--	0.0878
6	Erosion Control Seeding	--	--	--	--	--	--	--	--	n/a	n/a	--	--	--	--	--	n/a
GRAND TOTAL		--	--	--	--	--	--	--	9.76	9.76	9.76	--	0.52	--	--	--	0.0887

Table K-688. SOx Emissions from Haul Trucks (River Grading Site)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximu														
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul		
09 - Channels and Canals																						
1	Mobilization and Demobilization	-	-	30	21	2	0.0152	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Clearing and Grubbing	4	ACR	20	22	4	0.0152	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	
3	Excavation (From Bank)	6,652	CY	n/a	n/a	10	0.0152	--	--	n/a	--	--	--	--	--	--	--	--	--	--	--	
4	Excavation/Dredging (From Barge)	44,177	CY	n/a	n/a	111	0.0152	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
5	Riprap - Graded Stone 'C'	17,546	TN	1,626	66	18	0.0152	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6	Erosion Control Seeding	31	ACR	n/a	n/a	16	0.0152	--	--	--	n/a	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals Total								0.01	0.00	--	--	--	--	--	--	--	--	--	--	--	--	
GRAND TOTAL								0.01	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-688. SOx Emissions from Haul Tru

#	Activity	Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	0.01	--	--	--	0.0000
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0000
3	Excavation (From Bank)	--	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	n/a
4	Excavation/Dredging (From Barge)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
5	Riprap - Graded Stone 'C'	--	--	--	--	--	--	--	0.20	0.20	0.20	--	--	--	--	--	0.0018
6	Erosion Control Seeding	--	--	--	--	--	--	--	--	--	n/a	n/a	--	--	--	--	n/a
GRAND TOTAL		--	--	--	--	--	--	--	0.20	0.20	0.20	--	0.01	--	--	--	0.0018

Table K-689. PM10 Emissions from Haul Trucks (River Grading Site)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximu														
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul		
09 - Channels and Canals																						
1	Mobilization and Demobilization	-	-	30	21	2	0.4144	0.29	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Clearing and Grubbing	4	ACR	20	22	4	0.4144	--	0.10	--	--	--	--	--	--	--	--	--	--	--	--	
3	Excavation (From Bank)	6,652	CY	n/a	n/a	10	0.4144	--	--	n/a	--	--	--	--	--	--	--	--	--	--	--	
4	Excavation/Dredging (From Barge)	44,177	CY	n/a	n/a	111	0.4144	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
5	Riprap - Graded Stone 'C'	17,546	TN	1,626	66	18	0.4144	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6	Erosion Control Seeding	31	ACR	n/a	n/a	16	0.4144	--	--	--	n/a	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals Total								0.29	0.10	--	--	--	--	--	--	--	--	--	--	--	--	
GRAND TOTAL								0.29	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-689. PM10 Emissions from Haul Tr

#	Activity	Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	0.29	--	--	--	0.0003
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0002
3	Excavation (From Bank)	--	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	n/a
4	Excavation/Dredging (From Barge)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
5	Riprap - Graded Stone 'C'	--	--	--	--	--	--	--	--	5.45	5.45	5.45	--	--	--	--	0.0490
6	Erosion Control Seeding	--	--	--	--	--	--	--	--	--	n/a	n/a	--	--	--	--	n/a
GRAND TOTAL		--	--	--	--	--	--	--	--	5.45	5.45	5.45	--	0.29	--	--	0.0495

Table K-690. PM2.5 Emissions from Haul Trucks (River Grading Site)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	Emission Factor (g/mi)	Maximu														
								15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul		
09 - Channels and Canals																						
1	Mobilization and Demobilization	-	-	30	21	2	0.1262	0.09	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Clearing and Grubbing	4	ACR	20	22	4	0.1262	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	
3	Excavation (From Bank)	6,652	CY	n/a	n/a	10	0.1262	--	--	n/a	--	--	--	--	--	--	--	--	--	--	--	
4	Excavation/Dredging (From Barge)	44,177	CY	n/a	n/a	111	0.1262	--	--	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
5	Riprap - Graded Stone 'C'	17,546	TN	1,626	66	18	0.1262	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6	Erosion Control Seeding	31	ACR	n/a	n/a	16	0.1262	--	--	--	n/a	--	--	--	--	--	--	--	--	--	--	
09 - Channels and Canals Total								0.09	0.03	--	--	--	--	--	--	--	--	--	--	--	--	
GRAND TOTAL								0.09	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--

Table K-690. PM2.5 Emissions from Haul T

#	Activity	Daily Emissions, lbs/day															Annual Emissions, tpy
		15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals																	
1	Mobilization and Demobilization	--	--	--	--	--	--	--	--	--	--	--	0.09	--	--	--	0.0001
2	Clearing and Grubbing	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.0001
3	Excavation (From Bank)	--	--	--	--	--	--	--	n/a	--	--	--	--	--	--	--	n/a
4	Excavation/Dredging (From Barge)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	--	--	--	--	--	--	--	n/a
5	Riprap - Graded Stone 'C'	--	--	--	--	--	--	--	1.66	1.66	1.66	--	--	--	--	--	0.0149
6	Erosion Control Seeding	--	--	--	--	--	--	--	--	n/a	n/a	--	--	--	--	--	n/a
GRAND TOTAL		--	--	--	--	--	--	--	1.66	1.66	1.66	--	0.09	--	--	--	0.0151

Table K-691. GHG Emissions from Haul Trucks (River Grading Site)

#	Activity	Quantity	Unit	Total Truck Trips	Trip Distance (mi)	Estimated Duration, Days	CO2 Emission Factor (g/mi)	Annual Emissions, MTCO2e/yr
09 - Channels and Canals								
1	Mobilization and Demobilization	-	-	30	21	2		1.01
2	Clearing and Grubbing	4	ACR	20	22	4		0.71
3	Excavation (From Bank)	6,652	CY	n/a	n/a	10	1,604.39	n/a
4	Excavation/Dredging (From Barge)	44,177	CY	n/a	n/a	111		n/a
5	Riprap - Graded Stone 'C'	17,546	TN	1,626	66	18	1,604.39	172.18
6	Erosion Control Seeding	31	ACR	n/a	n/a	16	1,604.39	n/a
09 - Channels and Canals Total								173.89
GRAND TOTAL							1,604.39	173.89

Table K-692. PM10 Emissions Summary from Fugitive Dust (River Grading Site)

#	Activity	PM10 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
09 - Channels and Canals																				
1	Mobilization and Demobilization	n/a																		
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	n/a	n/a																	
	Material Handling	n/a	n/a																	
	Grading	0.53	0.53																	
	Bulldozing	n/a	n/a																	
	Unpaved Road Dust	n/a	n/a																	
	Paved Road Dust																			
	Clearing and Grubbing Subtotal	0.53	0.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)																			
	Material Handling		n/a	n/a																
	Grading		1.06	1.06																
	Bulldozing		4.70	4.70																
	Unpaved Road Dust		n/a	n/a																
	Paved Road Dust																			
	Excavation (From Bank) Subtotal	--	5.76	5.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)																			
	Material Handling			n/a																
	Grading			n/a																
	Bulldozing			n/a																
	Unpaved Road Dust			n/a																
	Paved Road Dust			n/a																
	Excavation/Dredging (From Barge) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'																			
	Material Handling			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading			0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
	Bulldozing			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
	Riprap - Graded Stone 'C' Subtotal	--	--	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
6	Erosion Control Seeding																			
	Material Handling			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Bulldozing			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	0.53	6.29	6.29	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
	GRAND TOTAL	0.53	6.29	6.29	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53

KA-2607

Table K-692. PM10 Emissions Summary from Fugitive D

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
09 - Channels and Canals											
1	Mobilization and Demobilization										
	Material Handling						n/a				
	Grading						n/a				
	Bulldozing						n/a				
	Unpaved Road Dust						n/a				
	Paved Road Dust										
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing										
	Material Handling						n/a				n/a
	Grading						0.53				0.00
	Bulldozing						n/a				n/a
	Unpaved Road Dust						n/a				n/a
	Paved Road Dust										
	Clearing and Grubbing Subtotal	--	--	--	--	--	0.53	--	--	--	0.00
3	Excavation (From Bank)										
	Material Handling		n/a				n/a				n/a
	Grading		1.06				n/a				0.00
	Bulldozing		4.70				n/a				0.01
	Unpaved Road Dust		n/a								n/a
	Paved Road Dust										
	Excavation (From Bank) Subtotal	--	5.76	--	--	--	--	--	--	--	0.01
4	Excavation/Dredging (From Barge)										
	Material Handling		n/a								n/a
	Grading		n/a								n/a
	Bulldozing		n/a								n/a
	Unpaved Road Dust		n/a								n/a
	Paved Road Dust										
	Excavation/Dredging (From Barge) Subtotal	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'										
	Material Handling	n/a	n/a								n/a
	Grading	0.53	0.53								0.00
	Bulldozing	n/a	n/a								n/a
	Unpaved Road Dust	n/a	n/a								n/a
	Paved Road Dust										
	Riprap - Graded Stone 'C' Subtotal	0.53	0.53	--	--	--	--	--	--	--	0.00
6	Erosion Control Seeding										
	Material Handling	n/a	n/a		n/a						n/a
	Grading	n/a	n/a		n/a						n/a
	Bulldozing	n/a	n/a		n/a						n/a
	Unpaved Road Dust	n/a	n/a		n/a						n/a
	Paved Road Dust										
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	0.53	6.29	--	--	--	0.53	--	--	--	0.01
GRAND TOTAL		0.53	6.29	--	--	--	0.53	--	--	--	0.01

Table K-693. PM2.5 Emissions Summary from Fugitive Dust (River Grading Site)

#	Activity	PM2.5 Daily Emissions Summary, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	
09 - Channels and Canals																					
1	Mobilization and Demobilization	n/a																			
	Material Handling	n/a																			
	Grading	n/a																			
	Bulldozing	n/a																			
	Unpaved Road Dust	n/a																			
	Paved Road Dust																				
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2	Clearing and Grubbing																				
	Material Handling	n/a	n/a																		
	Grading		0.06	0.06																	
	Bulldozing	n/a	n/a																		
	Unpaved Road Dust	n/a	n/a																		
	Paved Road Dust																				
	Clearing and Grubbing Subtotal	0.06	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
3	Excavation (From Bank)																				
	Material Handling		n/a	n/a																	
	Grading			0.11	0.11																
	Bulldozing			2.58	2.58																
	Unpaved Road Dust		n/a	n/a																	
	Paved Road Dust																				
	Excavation (From Bank) Subtotal	--	2.70	2.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
4	Excavation/Dredging (From Barge)																				
	Material Handling			n/a																	
	Grading			n/a																	
	Bulldozing			n/a																	
	Unpaved Road Dust			n/a																	
	Paved Road Dust																				
	Excavation/Dredging (From Barge) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
5	Riprap - Graded Stone 'C'																				
	Material Handling			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	Grading			0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
	Bulldozing			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	Unpaved Road Dust			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	Paved Road Dust																				
	Riprap - Graded Stone 'C' Subtotal	--	--	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
6	Erosion Control Seeding																				
	Material Handling			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	Grading			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	Bulldozing			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	Unpaved Road Dust			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	Paved Road Dust					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	09 - Channels and Canals Total	0.06	2.75	2.75	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	
	GRAND TOTAL	0.06	2.75	2.75	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	

Table K-693. PM2.5 Emissions Summary from Fugitive

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
09 - Channels and Canals											
1	Mobilization and Demobilization										
	Material Handling						n/a				
	Grading						n/a				
	Bulldozing						n/a				
	Unpaved Road Dust						n/a				
	Paved Road Dust										
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing										
	Material Handling						n/a				n/a
	Grading						0.06				0.00
	Bulldozing						n/a				n/a
	Unpaved Road Dust						n/a				n/a
	Paved Road Dust										
	Clearing and Grubbing Subtotal	--	--	--	--	--	0.06	--	--	--	0.00
3	Excavation (From Bank)										
	Material Handling		n/a				n/a				n/a
	Grading		0.11				n/a				0.00
	Bulldozing		2.58				n/a				0.01
	Unpaved Road Dust		n/a								n/a
	Paved Road Dust										
	Excavation (From Bank) Subtotal	--	2.70	--	--	--	--	--	--	--	0.01
4	Excavation/Dredging (From Barge)										
	Material Handling		n/a								n/a
	Grading		n/a								n/a
	Bulldozing		n/a								n/a
	Unpaved Road Dust		n/a								n/a
	Paved Road Dust										
	Excavation/Dredging (From Barge) Subtotal	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'										
	Material Handling	n/a	n/a								n/a
	Grading	0.06	0.06								0.00
	Bulldozing	n/a	n/a								n/a
	Unpaved Road Dust	n/a	n/a								n/a
	Paved Road Dust										
	Riprap - Graded Stone 'C' Subtotal	0.06	0.06	--	--	--	--	--	--	--	0.00
6	Erosion Control Seeding										
	Material Handling	n/a	n/a		n/a						n/a
	Grading	n/a	n/a		n/a						n/a
	Bulldozing	n/a	n/a		n/a						n/a
	Unpaved Road Dust	n/a	n/a		n/a						n/a
	Paved Road Dust										
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	0.06	2.75	--	--	--	0.06	--	--	--	0.01
GRAND TOTAL		0.06	2.75	--	--	--	0.06	--	--	--	0.01

**River Grading Site
Fugitive Dust Emissions - Material Handling (Truck Loading/Unloading)**

Equation (AP-42, Chapter 13.2.4):

$$E = k(0.0032) \frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}$$

where:

- E = emission factor, pound per ton
- k = particle size multiplier
- U = mean wind speed, miles per hour
- M = material moisture content, %

Average Wind Speed 8.59 mph

Source: MesoWest, Station KSMF (Sacramento International Airport), 2015 data. Site accessed October 27, 2016. mesowest.utah.edu.

k values

PM10 0.35
PM2.5 0.053

Material Moisture Content (%)

Spoils 12 Source: CalEEMod 2016.3.1 User's Guide; default values
Limestone 2.1 Source: AP-42, Table 13.2.4-1; various limestone products
Demolition 2 Source: CalEEMod 2016.3.1 User's Guide; default values

Table K-694. Material Handling Emissions (River Grading Site)

Activity	Total Daily Output, Quantity,		Total Daily Output, Quantity,		Type	PM10 EF, PM2.5 EF,		PM10, PM2.5,		PM10, PM2.5,	
	cy/day	cy/year	ton/day	ton/year		lb/ton	lb/ton	lbs/day	lbs/day	tpy	tpy
09 - Channels and Grading											
Excavation (From Bank)	700	6,652	0	0	Spoils	1.84E-04	2.79E-05	0.0	0.0	0.00	0.00
09 - Channels and Grading Total	700	6,652	0	0				0.0	0.0	0.00	0.00

Source: HDR. 2016. Draft Technical Memorandum: Constructability and Construction Considerations. Yolo Bypass Salmonid Habitat Restoration & Fish Passage Project - 10% Design. August 31.

Appendix K1
Air Quality Emission Calculations

Note:

Emissions assume that standard construction practice of watering is used.

Fremont weir demolition emissions assume that there is an additional "drop" from the mechanical dismemberment of the structure; method is consistent with CalEEMod 2016.3.1.

No emissions assumed to occur with wet excavation activities because spoils would be waterlogged.

Density

1.25 tons per cubic yard

Note: CalEEMod assumes haul trucks can handle 20 tons or 16 cy.

Number of Drops

2 drops per truck (one drop at borrow site and one drop at dam site)

Dust Control

61% reduction from watering at least 3 times per day

Source: CalEEMod

Conversion

2,000 pounds per ton

**River Grading Site
Fugitive Dust Emissions - Grading**

Equations (AP-42, Chapter 11.9):

$$TSP = 0.040(S)^{2.5} \quad \text{and} \quad PM_{15} = 0.051(S)^{2.0}$$

where:

S = mean vehicle speed, miles per hour

Scaling Factors

PM10 0.60 (multiply the 15-micron equation by this fraction to determine emissions)
PM2.5 0.031 (multiply the TSP equation by this fraction to determine emissions)

Emission Factors

PM10 1.54 lb/VMT
PM2.5 0.17 lb/VMT

Mileage Calculation (CalEEMod 2016.3.1 User's Guide, Appendix A):

$$VMT = \frac{As}{Wb} \times \frac{43,560 \left(\frac{sqft}{acre} \right)}{5,280 \left(\frac{ft}{mile} \right)}$$

Table K-695. Maximum Daily Disturbed Area

Equipment Type	Acres/8hr-day
Crawler Tractors	0.5
Graders	0.5
Rubber Tired Dozers	0.5
Scrapers	1

Table K-696. Grading Emissions (River Grading Site)

Activity	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Crew/ Equipment Quantity	Estimated Duration, Days	Graded Acres per Day	Total Graded Area (As)	VMT per year	PM10, lb/day	PM2.5, lb/day	PM10, tpy	PM2.5, tpy
09 - Channels and Canals												
Clearing and Grubbing	1.5 CY Front End Loader Crawler	Crawler Tractors	1	1	4		2.0	1.4	0.5		0.0	
	Trailer Mounted Brush Chipper	Shredders	1	1	4	--	--	--	--	--	--	--
	Chainsaw	Chainsaws	1	1	4	--	--	--	--	--	--	--
	4000 gallon Water Truck	n/a - onroad	1	1	4	--	--	--	0.1	--	0.0	--
	Pickup Truck Conventional	n/a - onroad	6	1	4	--	--	--	--	--	--	--
	16 CY 3 Axle Dump Truck	n/a - onroad	1	1	4	--	--	--	--	--	--	--
						Clearing and Grubbing Total	0.5	2.0	1.4	0.5	0.1	0.0

Table K-696. Grading Emissions (River Grading Site)

Activity	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Crew/ Equipment Quantity	Estimated Duration, Days	Graded Acres per Day	Total Graded Area (As)	VMT per year	PM10, lb/day	PM2.5, lb/day	PM10, tpy	PM2.5, tpy
Excavation (From Bank)	4.5 CY Hydraulic Excavator	Excavators	1	1	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	300 HP Dozer	Rubber Tired Dozers	2	1	10	1.0	10.0	6.9	1.1	0.1	0.0	0.0
	3.5 CY Front End Loader Wheel	Rubber Tired Loaders	2	1	10	--	--	--	--	--	--	--
	16 CY 3 Axle Dump Truck	n/a - onroad	6	1	10	--	--	--	--	--	--	--
	Pickup Truck Conventional	n/a - onroad	7	1	10	--	--	--	--	--	--	--
Excavation (From Bank) Total						1.0	10.0	6.9	1.1	0.1	0.0	0.0
Riprap - Graded Stone 'C'	2.5 CY Hydraulic Excavator	Excavators	2	1	18	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	300 HP Dozer Crawler	Crawler Tractors	1	1	18	0.5	9.0	6.2	0.5	0.1	0.0	0.0
	16 CY 3 Axle Dump Truck	n/a - onroad	23	1	18	--	--	--	--	--	--	--
	Pickup Truck Conventional	n/a - onroad	5	1	18	--	--	--	--	--	--	--
Riprap - Graded Stone 'C' Total						0.5	9.0	6.2	0.5	0.1	0.0	0.0

Blade Width

12 feet

Scraper Speed

7.1 mph (AP-42 default)

Conversions

43,560 square feet per acre
5,280 feet per mile
2,000 pounds per ton

Dust Control

61% reduction from watering at least 3 times per day
Source: CalEEMod

**River Grading Site
Fugitive Dust Emissions - Bulldozing**

Equations (AP-42, Chapter 11.9):

$$\text{TSP} = \frac{5.7(s)^{1.2}}{M^{1.3}} \quad \text{and} \quad \text{PM}_{15} = \frac{1.0(s)^{1.5}}{M^{1.4}}$$

where:

s = silt content 6.9 % (AP-42, Table 11.9-3, Overburden)
M = material moisture content 7.9 % (AP-42, Table 11.9-3, Overburden)

Scaling Factors

PM10 0.75 (multiply the 15-micron equation by this fraction to determine emissions)
PM2.5 0.105 (multiply the TSP equation by this fraction to determine emissions)

Emission Factors

PM10 0.75 lb/hr
PM2.5 0.41 lb/hr

Table K-697. Bulldozing Emissions (River Grading Site)

Activity	Crew / Equipment	Equipment Quantity per Crew	Crew/ Equipment Quantity	Estimated Duration, Days	PM10, lb/day	PM2.5, lb/day	PM10, tpy	PM2.5, tpy
09 - Channels and Canals								
Excavation (From Bank)	300 HP Dozer	2	1		4.70	2.58	0.02	0.01
Riprap - Graded Stone 'C'	300 HP Dozer Crawler	1	1	18	2.35	1.29	0.02	0.01

Operating Schedule

8 hr/day

Conversion

2,000 pounds per ton

10

Dust Control

61% reduction from watering at least 3 times per day

Source: CalEEMod

**River Grading Site
Fugitive Dust Emissions - Unpaved Road Dust (Haul Roads)**

Equation (AP-42, Chapter 13.2.2):

$$E = k(s/12)^a (W/3)^b$$

where:

- E = size-specific emission factor (lb/VMT)
- s = surface material silt content (%)
- W = mean vehicle weight (tons)

Variables

k (PM10)	1.5
k (PM2.5)	0.15
a	0.9
b	0.45
s, %	4.3 (CalEEMod default)
W, tons	180 loaded 74 unloaded

Table K-698. Unpaved Road Dust Emission Factors (lb/VMT)

Weight	PM10	PM2.5
Loaded	3.76	0.38
Unloaded		0.25
Average	3.14	0.31

2.52

Table K-699. Unpaved Road Dust Emissions (River Grading Site)

Activity	Total Daily Output	Total Quantity	Unit	Estimated Duration, Days	VMT per Day	VMT per Year	PM10, lb/day	PM2.5, lb/day	PM10, tpy	PM2.5, tpy
09 - Channels and Canals										
Excavation (From Bank)	700	6,652	CY	10	36	336	44.1	4.4	0.2	0.02

Notes:

Assumes payload of each truck is 100 tons.

Half of truck trips will be loaded and other half will be unloaded.

Only includes materials that will be transported to spoil site by dump trucks.

Distance to borrow area

2 miles (spoils site located within a 1-mile radius of the project access point(s); average of 1 mile travel distance from point of excavation)

Density

1.25 tons/cy

Note: CalEEMod assumes haul trucks can handle 20 tons or 16 cy.

Dust Control

61% reduction from watering at least 3 times per day

Source: CalEEMod

Offroad Exhaust Emissions Summary

Table K-700. Maximum Daily Mitigated Offroad Construction Equipment Emissions (River Grading Site)

Phase	ROG lbs/day	NOx lbs/day	CO lbs/day	SO2 lbs/day	PM10 lbs/day	PM2.5 lbs/day
09 - Channels and Canals	12.27	73.70	48.31	0.23	1.28	0.65
Peak Day Construction Exhaust Emissions Total	12.27	73.70	48.31	0.23	1.28	0.65
<i>Percent Reduction (Compared to Unmitigated)</i>	-3%	-30%	-8%	-2%	-45%	-60%

Notes:

Construction total will not add to the sum of each phase because not all tasks overlap on the same day.

Table K-701. Annual Mitigated Offroad Construction Equipment Emissions (River Grading Site)

Phase	ROG tpy	NOx tpy	CO tpy	SO2 tpy	PM10 tpy	PM2.5 tpy	CO2e MT/yr
09 - Channels and Canals	0.12	0.71	0.78	0.00	0.02	0.01	408.77
Annual Construction Exhaust Emissions Total	0.12	0.71	0.78	0.00	0.02	0.01	408.77
<i>Percent Reduction (Compared to Unmitigated)</i>	15%	-42%	-9%	-1%	-53%	-64%	-2%

Notes:

Total may not add exactly because of rounding.

Table K-702. ROG Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	2.0565 0.1123 1.3847 0.0000 0.0908	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	0.1353 0.0754 72.5633 2.0565 1.3847 5.1968	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.0908 0.1009 0.0716 5.1968 1.3847	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.0908 1.3847	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.0908 0.0933 5.1968 1.3847	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	0.1078 1.3847	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-702. ROG Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																							
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug	2-Sep	9-Sep		
09 - Channels and Canals																									
1	Mobilization and Demobilization	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		1.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
2	Clearing and Grubbing	0.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	10.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	0.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		0.45	10.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
3	Excavation (From Bank)	--	0.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	1.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
		--	--	0.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.41	--		
		--	--	0.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.55	--		
		--	--	0.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.17	--		
		--	1.75	1.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.14	--		
4	Excavation/Dredging (From Barge)	--	--	0.80	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.80	--		
		--	--	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10	--		
		--	--	0.90	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.90	--		
5	Riprap - Graded Stone 'C'	--	--	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	--		
		--	--	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	--		
		--	--	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	2.11	--		
		--	--	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	--		
		--	--	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	3.55	--		
6	Erosion Control Seeding	--	--	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	--		
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10	0.10		
		--	--	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.28	0.10		
GRAND TOTAL		1.51	12.27	5.76	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	3.73	5.86	0.10		

Table K-702. ROG Exhaust Emissions from Of

#	Activity							Annual Emissions , tpy
		16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals								
1	Mobilization and Demobilization	--	--	0.04	--	--	--	0.0000
		--	--	0.20	--	--	--	0.0002
		--	--	0.02	--	--	--	0.0000
		--	--	--	--	--	--	0.0000
		--	--	0.80	--	--	--	0.0008
		--	--	1.06	--	--	--	0.0011
2	Clearing and Grubbing	--	--	0.26	--	--	--	0.0005
		--	--	0.19	--	--	--	0.0004
		--	--	--	--	--	--	0.0205
		--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	0.0003
		--	--	0.45	--	--	--	0.0219
3	Excavation (From Bank)	--	--	--	--	--	--	0.0034
		--	--	--	--	--	--	0.0053
		--	--	--	--	--	--	0.0021
		--	--	--	--	--	--	0.0027
		--	--	--	--	--	--	0.0009
		--	--	--	--	--	--	0.0144
4	Excavation/Dredging (From Barge)	--	--	--	--	--	--	0.0444
		--	--	--	--	--	--	0.0054
		--	--	--	--	--	--	0.0498
5	Riprap - Graded Stone 'C'	--	--	--	--	--	--	0.0074
		--	--	--	--	--	--	0.0044
		--	--	--	--	--	--	0.0190
		--	--	--	--	--	--	0.0011
		--	--	--	--	--	--	0.0319
6	Erosion Control Seeding	--	--	--	--	--	--	0.0015
		0.10	--	--	--	--	--	0.0008
		0.10	--	--	--	--	--	0.0023
		0.10	--	1.51	--	--	--	0.1214
GRAND TOTAL		0.10	0.00	1.51	0.00	0.00	0.00	0.1214

Table K-703. NOx Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	62.8403 0.8490 1.2324 0.0000 0.1602	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	0.9188 0.7727 1.2873 62.8403 1.2324 131.5280	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.1602 0.1675 0.1481 131.5280 1.2324	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.1602 1.2324	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.1602 0.1777 131.5280 1.2324	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	0.7823 1.2324	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-703. NOx Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	1.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		4.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	1.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		1.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	1.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	2.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		3.69	3.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	--	1.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	1.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	13.92	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	2.98	14.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	--	--	1.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	1.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'	--	--	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
		--	--	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
		--	--	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35	53.35
		--	--	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
		--	--	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85	55.85
6	Erosion Control Seeding	--	--	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34	1.34
		7.73	6.72	73.62	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19
GRAND TOTAL		7.73	6.72	73.62	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19	57.19

Table K-703. NOx Exhaust Emissions from Of

#	Activity									Annual Emissions , tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals										
1	Mobilization and Demobilization	--	--	--	--	1.11	--	--	--	0.0011
		--	--	--	--	1.50	--	--	--	0.0015
		--	--	--	--	0.02	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	1.41	--	--	--	0.0014
						4.04	--	--	--	0.0040
2	Clearing and Grubbing	--	--	--	--	1.78	--	--	--	0.0036
		--	--	--	--	1.91	--	--	--	0.0038
		--	--	--	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	0.0022
		--	--	--	--	--	--	--	--	0.0003
						3.69	--	--	--	0.0149
3	Excavation (From Bank)	--	--	--	--	--	--	--	--	0.0061
		--	--	--	--	--	--	--	--	0.0089
		0.86	--	--	--	--	--	--	--	0.0043
		13.92	--	--	--	--	--	--	--	0.0696
		0.15	--	--	--	--	--	--	--	0.0008
		14.93	--	--	--	--	--	--	--	0.0896
4	Excavation/Dredging (From Barge)	1.41	--	--	--	--	--	--	--	0.0782
		0.09	--	--	--	--	--	--	--	0.0048
		1.50	--	--	--	--	--	--	--	0.0831
5	Riprap - Graded Stone 'C'	1.45	--	--	--	--	--	--	--	0.0131
		0.94	--	--	--	--	--	--	--	0.0085
		53.35	--	--	--	--	--	--	--	0.4802
		0.11	--	--	--	--	--	--	--	0.0010
		55.85	--	--	--	--	--	--	--	0.5027
6	Erosion Control Seeding	1.34	--	--	--	--	--	--	--	0.0107
		0.09	0.09	0.09	--	--	--	--	--	0.0007
		1.43	0.09	0.09	--	--	--	--	--	0.0114
		73.70	0.09	0.09	--	7.73	--	--	--	0.7056
GRAND TOTAL		73.70	0.09	0.09	0.00	7.73	0.00	0.00	0.00	0.7056

Table K-704. CO Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	10.5648 2.0693 12.4711 0.0000 0.5975	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	2.2674 1.1116 146.1724 10.5648 12.4711 33.0182	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.5975 0.6274 1.6565 33.0182 12.4711	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.5975 12.4711	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.5975 0.6597 33.0182 12.4711	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	1.9153 12.4711	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-704. CO Exhaust Emissions from Offr

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		3.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		5.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		9.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	4.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		2.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	20.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	1.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		7.14	22.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	--	4.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	6.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	9.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	3.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	1.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	11.16	14.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	--	--	5.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	6.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'	--	--	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42	5.42
		--	--	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49
		--	--	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39	13.39
		--	--	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
		--	--	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40	23.40
6	Erosion Control Seeding	--	--	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28	3.28
		16.46	33.87	47.43	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68
GRAND TOTAL		16.46	33.87	47.43	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68	26.68

Table K-704. CO Exhaust Emissions from Offr

#	Activity									Annual Emissions , tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals										
1	Mobilization and Demobilization	--	--	--	--	0.19	--	--	--	0.0002
		--	--	--	--	3.65	--	--	--	0.0036
		--	--	--	--	0.22	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	5.26	--	--	--	0.0053
						9.31	--	--	--	0.0093
2	Clearing and Grubbing	--	--	--	--	4.40	--	--	--	0.0088
		--	--	--	--	2.74	--	--	--	0.0055
		--	--	--	--	--	--	--	--	0.0412
		--	--	--	--	--	--	--	--	0.0004
		--	--	--	--	--	--	--	--	0.0026
						7.14	--	--	--	0.0597
3	Excavation (From Bank)	--	--	--	--	--	--	--	--	0.0226
		--	--	--	--	--	--	--	--	0.0332
		9.58	--	--	--	--	--	--	--	0.0479
		3.49	--	--	--	--	--	--	--	0.0175
		1.54	--	--	--	--	--	--	--	0.0077
		14.62	--	--	--	--	--	--	--	0.1289
4	Excavation/Dredging (From Barge)	5.26	--	--	--	--	--	--	--	0.2918
		0.88	--	--	--	--	--	--	--	0.0488
		6.14	--	--	--	--	--	--	--	0.3407
5	Riprap - Graded Stone 'C'	5.42	--	--	--	--	--	--	--	0.0487
		3.49	--	--	--	--	--	--	--	0.0314
		13.39	--	--	--	--	--	--	--	0.1205
		1.10	--	--	--	--	--	--	--	0.0099
		23.40	--	--	--	--	--	--	0.2106	
6	Erosion Control Seeding	3.28	--	--	--	--	--	--	--	0.0262
		0.88	0.88	0.88	--	--	--	--	--	0.0070
		4.16	0.88	0.88	--	--	--	--	--	0.0333
		48.31	0.88	0.88	--	16.46	--	--	--	0.7824
GRAND TOTAL		48.31	0.88	0.88	0.00	16.46	0.00	0.00	0.00	0.7824

Table K-705. SO2 Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	0.1718 0.0040 0.0468 0.0000 0.0032	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	0.0043 0.0026 0.0163 0.1718 0.0468 0.2206	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.0032 0.0033 0.0035 0.2206 0.0468	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.0032 0.0468	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.0032 0.0036 0.2206 0.0468	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	0.0037 0.0468	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-705. SO2 Exhaust Emissions from Of

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.06	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'	--	--	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
		--	--	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
		--	--	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
		--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		--	--	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
6	Erosion Control Seeding	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		0.05	0.07	0.23	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
GRAND TOTAL		0.05	0.07	0.23	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15

Table K-705. SO2 Exhaust Emissions from Of

#	Activity									Annual Emissions, tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals										
1	Mobilization and Demobilization	--	--	--	--	0.00	--	--	--	0.0000
		--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	0.00	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	0.03	--	--	--	0.0000
						0.04				0.0000
2	Clearing and Grubbing	--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
						0.01				0.0001
3	Excavation (From Bank)	--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0002
		0.02	--	--	--	--	--	--	--	0.0001
		0.02	--	--	--	--	--	--	--	0.0001
		0.01	--	--	--	--	--	--	--	0.0000
		0.05								0.0005
4	Excavation/Dredging (From Barge)	0.03	--	--	--	--	--	--	--	0.0016
		0.00	--	--	--	--	--	--	--	0.0002
		0.03								
5	Riprap - Graded Stone 'C'	0.03	--	--	--	--	--	--	--	0.0003
		0.02	--	--	--	--	--	--	--	0.0002
		0.09	--	--	--	--	--	--	--	0.0008
		0.00	--	--	--	--	--	--	--	0.0000
		0.14								0.0013
6	Erosion Control Seeding	0.01	--	--	--	--	--	--	--	0.0001
		0.00	0.00	0.00	--	--	--	--	--	0.0000
		0.01	0.00	0.00						0.0001
		0.23	0.00	0.00		0.05				0.0037
GRAND TOTAL		0.23	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.0037

Table K-706. PM10 Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	2.2051 0.0077 0.7714 0.0000 0.0061	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	0.0089 0.0303 0.2300 2.2051 0.7714 1.5952	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.0061 0.0065 0.0058 1.5952 0.7714	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.0061 0.7714	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.0061 0.0067 1.5952 0.7714	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	0.0073 0.7714	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-706. PM10 Exhaust Emissions from O

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.09	0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.12	0.30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'	--	--	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
		--	--	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
		--	--	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
		--	--	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
		--	--	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
6	Erosion Control Seeding	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		0.21	0.30	1.22	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
GRAND TOTAL		0.21	0.30	1.22	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82

Table K-706. PM10 Exhaust Emissions from O

#	Activity									Annual Emissions, tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals										
1	Mobilization and Demobilization	--	--	--	--	0.04	--	--	--	0.0000
		--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	0.05	--	--	--	0.0001
						0.12	--	--	--	0.0001
2	Clearing and Grubbing	--	--	--	--	0.02	--	--	--	0.0000
		--	--	--	--	0.07	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0002
						0.09	--	--	--	0.0005
3	Excavation (From Bank)	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0003
		0.03	--	--	--	--	--	--	--	0.0002
		0.17	--	--	--	--	--	--	--	0.0008
		0.10	--	--	--	--	--	--	--	0.0005
		0.30	--	--	--	--	--	--	--	0.0021
4	Excavation/Dredging (From Barge)	0.05	--	--	--	--	--	--	--	0.0030
		0.05	--	--	--	--	--	--	--	0.0030
		0.11	--	--	--	--	--	--	--	0.0060
5	Riprap - Graded Stone 'C'	0.06	--	--	--	--	--	--	--	0.0005
		0.04	--	--	--	--	--	--	--	0.0003
		0.65	--	--	--	--	--	--	--	0.0058
		0.07	--	--	--	--	--	--	--	0.0006
		0.81	--	--	--	--	--	--	--	0.0073
6	Erosion Control Seeding	0.01	--	--	--	--	--	--	--	0.0001
		0.05	0.05	0.05	--	--	--	--	--	0.0004
		0.07	0.05	0.05	--	--	--	--	--	0.0005
		1.28	0.05	0.05	--	0.21	--	--	--	0.0165
GRAND TOTAL		1.28	0.05	0.05	0.00	0.21	0.00	0.00	0.00	0.0165

Table K-707. PM2.5 Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factor	Units
09 - Channels and Canals													
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	0.9499 0.0071 0.3620 0.0000 0.0056	g/hr g/hp-hr g/hr g/hr g/hp-hr
												Mobilization and Demobilization Subtotal	
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	0.0082 0.0279 0.2116 0.9499 0.3620 0.6688	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr
												Clearing and Grubbing Subtotal	
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	0.0056 0.0060 0.0053 0.6688 0.3620	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr
												Excavation (From Bank) Subtotal	
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	0.0056 0.3620	g/hp-hr g/hr
												Excavation/Dredging (From Barge) Subtotal	
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	0.0056 0.0062 0.6688 0.3620	g/hp-hr g/hp-hr g/hr g/hr
												Riprap - Graded Stone 'C' Subtotal	
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	0.0067 0.3620	g/hp-hr g/hr
												Erosion Control Seeding Subtotal	
												09 - Channels and Canals Total	
GRAND TOTAL													

Table K-707. PM2.5 Exhaust Emissions from

#	Activity	Maximum Daily Emissions, lbs/day																			
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug	26-Aug
09 - Channels and Canals																					
1	Mobilization and Demobilization	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		0.08	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	0.11	0.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'	--	--	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
		--	--	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
		--	--	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
		--	--	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
		--	--	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
6	Erosion Control Seeding	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
		--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
GRAND TOTAL		0.17	0.20	0.62	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40

Table K-707. PM2.5 Exhaust Emissions from

#	Activity									Annual Emissions, tpy
		2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals										
1	Mobilization and Demobilization	--	--	--	--	0.02	--	--	--	0.0000
		--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	0.01	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	0.05	--	--	--	0.0000
		--	--	--	--	0.09	--	--	--	0.0001
2	Clearing and Grubbing	--	--	--	--	0.02	--	--	--	0.0000
		--	--	--	--	0.07	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	--	--	--	--	0.0000
		--	--	--	--	--	--	--	--	0.0001
		--	--	--	--	0.08	--	--	--	0.0004
3	Excavation (From Bank)	--	--	--	--	--	--	--	--	0.0002
		--	--	--	--	--	--	--	--	0.0003
		0.03	--	--	--	--	--	--	--	0.0002
		0.07	--	--	--	--	--	--	--	0.0004
		0.04	--	--	--	--	--	--	--	0.0002
		0.15	--	--	--	--	--	--	--	0.0013
4	Excavation/Dredging (From Barge)	0.05	--	--	--	--	--	--	--	0.0028
		0.03	--	--	--	--	--	--	--	0.0014
		0.08	--	--	--	--	--	--	--	0.0042
5	Riprap - Graded Stone 'C'	0.05	--	--	--	--	--	--	--	0.0005
		0.03	--	--	--	--	--	--	--	0.0003
		0.27	--	--	--	--	--	--	--	0.0024
		0.03	--	--	--	--	--	--	--	0.0003
		0.39	--	--	--	--	--	--	--	0.0035
6	Erosion Control Seeding	0.01	--	--	--	--	--	--	--	0.0001
		0.03	0.03	0.03	--	--	--	--	--	0.0002
		0.04	0.03	0.03	--	--	--	--	--	0.0003
		0.65	0.03	0.03	--	0.17	--	--	--	0.0097
GRAND TOTAL		0.65	0.03	0.03	0.00	0.17	0.00	0.00	0.00	0.0097

Table K-708. GHG Exhaust Emissions from Offroad Construction Equipment (River Grading Site) - Mitigated

#	Activity	Quantity	Unit	Crew / Equipment	OFFROAD Name	Equipment Quantity per Crew	Size (hp)	Crew Daily Output	No. of Crews	Total Daily Output	Estimated Duration, Days	Emission Factors					Annual Emissions, MTCO2e/yr
												CO2	CH4	N2O	CO2e	Units	
09 - Channels and Canals																	
1	Mobilization and Demobilization	-	-	Flatbed Truck Extended Boom Pallet Loader Pickup Truck Conventional Temp. Mobile Office Building Barge Mounted Excavator	n/a - onroad Rough Terrain Forklifts n/a - onroad n/a - onroad Excavators	1 1 1 1 1	MHDT 100 LDT2 n/a 499	- - - - -	1	1	2	24535.8 340.989 8626.38 0 323.905	0 0.01013 0 0 0.00819	0 0 0 0 0	24535.8 341.242 8626.38 0 324.11	g/hr g/hp-hr g/hr g/hr g/hp-hr	0.39 0.55 0.14 0.00 2.59
												Mobilization and Demobilization Subtotal		3.66			
2	Clearing and Grubbing	4	ACR	1.5 CY Front End Loader Crawler Trailer Mounted Brush Chipper Chainsaw 4000 gallon Water Truck Pickup Truck Conventional 16 CY 3 Axle Dump Truck	Crawler Tractors Shredders Chainsaws n/a - onroad n/a - onroad n/a - onroad	1 1 1 1 6 1	110 140 8 MHDT LDT2 HHDT	1	1	1	4	363.734 227.324 395.092 24535.8 8626.38 34432	0.01221 0.0068 0 0 0 0	0 0 0 0 0 0	364.039 227.494 395.092 24535.8 8626.38 34432	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr g/hr	1.28 1.02 0.10 0.79 1.66 1.10
												Clearing and Grubbing Subtotal		5.94			
3	Excavation (From Bank)	6,652	CY	4.5 CY Hydraulic Excavator 300 HP Dozer 3.5 CY Front End Loader Wheel 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Rubber Tired Dozers Rubber Tired Loaders n/a - onroad n/a - onroad	1 2 2 6 7	429 300 164 HHDT LDT2	700	1	700	10	323.905 335.255 306.881 34432 8626.38	0.00819 0.0091 0.00646 0 0	0 0 0 0 0	324.11 335.483 307.043 34432 8626.38	g/hp-hr g/hp-hr g/hp-hr g/hr g/hr	11.12 16.10 8.06 16.53 4.83
												Excavation (From Bank) Subtotal		56.64			
4	Excavation/Dredging (From Barge)	44,177	CY	Barge Mounted Excavator Pickup Truck Conventional	Excavators n/a - onroad	1 4	499 LDT2	400	1	400	111	323.905 8626.38	0.00819 0	0 0	324.11 8626.38	g/hp-hr g/hr	143.62 30.64
												Excavation/Dredging (From Barge) Subtotal		174.26			
5	Riprap - Graded Stone 'C'	17,546	TN	2.5 CY Hydraulic Excavator 300 HP Dozer Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators Crawler Tractors n/a - onroad n/a - onroad	2 1 23 5	257 300 HHDT LDT2	1,000	1	1,000	18	323.905 363.751 34432 8626.38	0.00819 0.00842 0 0	0 0 0 0	324.11 363.962 34432 8626.38	g/hp-hr g/hp-hr g/hr g/hr	23.99 15.72 114.04 6.21
												Riprap - Graded Stone 'C' Subtotal		159.96			
6	Erosion Control Seeding	31	ACR	0.8 CY Front End Loader Wheel Pickup Truck Conventional	Tractors/Loaders/Backhoes n/a - onroad	1 4	97 LDT2	2	1	2	16	312.57 8626.38	0.00972 0	0 0	312.814 8626.38	g/hp-hr g/hr	3.88 4.42
												Erosion Control Seeding Subtotal		8.30			
												09 - Channels and Canals Total		408.77			
GRAND TOTAL														408.77			

Table K-709. PM10 Emissions Summary from Fugitive Dust (River Grading Site) - Mitigated

#	Activity	PM10 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
09 - Channels and Canals																				
1	Mobilization and Demobilization	n/a																		
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing																			
	Material Handling	n/a	n/a																	
	Grading		0.53	0.53																
	Bulldozing	n/a	n/a																	
	Unpaved Road Dust	n/a	n/a																	
	Paved Road Dust																			
	Clearing and Grubbing Subtotal	0.53	0.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)																			
	Material Handling		n/a	n/a																
	Grading		1.06	1.06																
	Bulldozing		4.70	4.70																
	Unpaved Road Dust		n/a	n/a																
	Paved Road Dust																			
	Excavation (From Bank) Subtotal	--	5.76	5.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)																			
	Material Handling			n/a																
	Grading			n/a																
	Bulldozing			n/a																
	Unpaved Road Dust			n/a																
	Paved Road Dust																			
	Excavation/Dredging (From Barge) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'																			
	Material Handling			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading			0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
	Bulldozing			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
	Riprap - Graded Stone 'C' Subtotal	--	--	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
6	Erosion Control Seeding																			
	Material Handling			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Bulldozing			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	0.53	6.29	6.29	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53
	GRAND TOTAL	0.53	6.29	6.29	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53	0.53

Table K-709. PM10 Emissions Summary from Fugitive D

#	Activity										Annual Emissions, tpy
		26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	
09 - Channels and Canals											
1	Mobilization and Demobilization										
	Material Handling						n/a				
	Grading						n/a				
	Bulldozing						n/a				
	Unpaved Road Dust						n/a				
	Paved Road Dust										
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing										
	Material Handling						n/a				n/a
	Grading						0.53				0.00
	Bulldozing						n/a				n/a
	Unpaved Road Dust						n/a				n/a
	Paved Road Dust										
	Clearing and Grubbing Subtotal	--	--	--	--	--	0.53	--	--	--	0.00
3	Excavation (From Bank)										
	Material Handling		n/a				n/a				n/a
	Grading		1.06				n/a				0.00
	Bulldozing		4.70				n/a				0.01
	Unpaved Road Dust		n/a								n/a
	Paved Road Dust										
	Excavation (From Bank) Subtotal	--	5.76	--	--	--	--	--	--	--	0.01
4	Excavation/Dredging (From Barge)										
	Material Handling		n/a								n/a
	Grading		n/a								n/a
	Bulldozing		n/a								n/a
	Unpaved Road Dust		n/a								n/a
	Paved Road Dust										
	Excavation/Dredging (From Barge) Subtotal	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'										
	Material Handling	n/a	n/a								n/a
	Grading	0.53	0.53								0.00
	Bulldozing	n/a	n/a								n/a
	Unpaved Road Dust	n/a	n/a								n/a
	Paved Road Dust										
	Riprap - Graded Stone 'C' Subtotal	0.53	0.53	--	--	--	--	--	--	--	0.00
6	Erosion Control Seeding										
	Material Handling	n/a	n/a		n/a						n/a
	Grading	n/a	n/a		n/a						n/a
	Bulldozing	n/a	n/a		n/a						n/a
	Unpaved Road Dust	n/a	n/a		n/a						n/a
	Paved Road Dust										
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	0.53	6.29	--	--	--	0.53	--	--	--	0.01
GRAND TOTAL		0.53	6.29	--	--	--	0.53	--	--	--	0.01

Table K-710. PM2.5 Emissions Summary from Fugitive Dust (River Grading Site) - Mitigated

#	Activity	PM2.5 Daily Emissions Summary, lbs/day																		
		15-Apr	22-Apr	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	12-Aug	19-Aug
09 - Channels and Canals																				
1	Mobilization and Demobilization	n/a																		
	Material Handling	n/a																		
	Grading	n/a																		
	Bulldozing	n/a																		
	Unpaved Road Dust	n/a																		
	Paved Road Dust																			
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing																			
	Material Handling	n/a	n/a																	
	Grading	0.06	0.06																	
	Bulldozing	n/a	n/a																	
	Unpaved Road Dust	n/a	n/a																	
	Paved Road Dust																			
	Clearing and Grubbing Subtotal	0.06	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	Excavation (From Bank)																			
	Material Handling		n/a	n/a																
	Grading		0.11	0.11																
	Bulldozing		2.58	2.58																
	Unpaved Road Dust		n/a	n/a																
	Paved Road Dust																			
	Excavation (From Bank) Subtotal	--	2.70	2.70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	Excavation/Dredging (From Barge)																			
	Material Handling			n/a																
	Grading			n/a																
	Bulldozing			n/a																
	Unpaved Road Dust			n/a																
	Paved Road Dust																			
	Excavation/Dredging (From Barge) Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'																			
	Material Handling			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading			0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	Bulldozing			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust																			
	Riprap - Graded Stone 'C' Subtotal	--	--	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
6	Erosion Control Seeding																			
	Material Handling			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Grading			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Bulldozing			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Unpaved Road Dust			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Paved Road Dust					n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	0.06	2.75	2.75	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	GRAND TOTAL	0.06	2.75	2.75	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06

Table K-710. PM2.5 Emissions Summary from Fugitive

#	Activity	26-Aug	2-Sep	9-Sep	16-Sep	23-Sep	30-Sep	7-Oct	14-Oct	21-Oct	Annual Emissions, tpy
09 - Channels and Canals											
1	Mobilization and Demobilization										
	Material Handling						n/a				
	Grading						n/a				
	Bulldozing						n/a				
	Unpaved Road Dust						n/a				
	Paved Road Dust										
	Mobilization and Demobilization Subtotal	--	--	--	--	--	--	--	--	--	--
2	Clearing and Grubbing										
	Material Handling						n/a				n/a
	Grading						0.06				0.00
	Bulldozing						n/a				n/a
	Unpaved Road Dust						n/a				n/a
	Paved Road Dust										
	Clearing and Grubbing Subtotal	--	--	--	--	--	0.06	--	--	--	0.00
3	Excavation (From Bank)										
	Material Handling		n/a				n/a				n/a
	Grading		0.11				n/a				0.00
	Bulldozing		2.58				n/a				0.01
	Unpaved Road Dust		n/a								n/a
	Paved Road Dust										
	Excavation (From Bank) Subtotal	--	2.70	--	--	--	--	--	--	--	0.01
4	Excavation/Dredging (From Barge)										
	Material Handling		n/a								n/a
	Grading		n/a								n/a
	Bulldozing		n/a								n/a
	Unpaved Road Dust		n/a								n/a
	Paved Road Dust										
	Excavation/Dredging (From Barge) Subtotal	--	--	--	--	--	--	--	--	--	--
5	Riprap - Graded Stone 'C'										
	Material Handling	n/a	n/a								n/a
	Grading	0.06	0.06								0.00
	Bulldozing	n/a	n/a								n/a
	Unpaved Road Dust	n/a	n/a								n/a
	Paved Road Dust										
	Riprap - Graded Stone 'C' Subtotal	0.06	0.06	--	--	--	--	--	--	--	0.00
6	Erosion Control Seeding										
	Material Handling	n/a	n/a		n/a						n/a
	Grading	n/a	n/a		n/a						n/a
	Bulldozing	n/a	n/a	n/a	n/a						n/a
	Unpaved Road Dust	n/a	n/a	n/a	n/a						n/a
	Paved Road Dust										
	Erosion Control Seeding Subtotal	--	--	--	--	--	--	--	--	--	--
	09 - Channels and Canals Total	0.06	2.75	--	--	--	0.06	--	--	--	0.01
GRAND TOTAL		0.06	2.75	--	--	--	0.06	--	--	--	0.01

River Grading Site
Fugitive Dust Emissions - Unpaved Road Dust (Haul Roads)

Equation (AP-42, Chapter 13.2.2):

$$E = k(s/12)^a (W/3)^b$$

where:

E = size-specific emission factor (lb/VMT)

s = surface material silt content (%)

W = average vehicle weight (tons)

Air Quality Emission Calculations

Variables

k (PM10)	1.5
k (PM2.5)	0.15
a	0.9
b	0.45
s, %	1.6 crushed limestone (AP-42, Table 13.2.4-1)
W, tons	180 loaded 74 unloaded

Table K-711. Mitigated Unpaved Road Dust Emission Factors (lb/VMT)

Weight	PM10	PM2.5
Loaded	1.54	0.15
Unloaded		0.10
Average	1.29	0.13

Table K-712. Mitigated Unpaved Road Dust Emissions (River Grading Site)

Activity	Total Daily Output	Total Quantity	Unit	Estimated Duration, Days	VMT per Day	VMT per Year	PM10, lb/day	PM2.5, lb/day	PM10, tpy	PM2.5, tpy
09 - Channels and Canals										
Excavation (From Bank)	700	6,652	CY	10	36	336	18.1	1.8	0.1	0.01

Notes:

Assumes payload of each truck is 100 tons.

Half of truck trips will be loaded and other half will be unloaded.

Only includes materials that will be transported to spoil site by dump trucks.

Distance to borrow area

2 miles (spoils site located within a 1-mile radius of the project access point(s); average of 1 mile travel distance from point of excavation)

Density

1.25 tons/cy

Note: CalEEMod assumes haul trucks can handle 20 tons or 16 cy.

Dust Control

61% reduction from watering at least 3 times per day

Source: CalEEMod

Appendix K1

Air Quality Emission Calculations

Yolo Bypass - River Grading Area

Marine Emissions

Table 713. Propulsion Engine Emission Factors

Vessel Type	Average HP	Average Age	Model Year	Useful Life	Load Factor	Fuel Correction Factor			Deterioration Factor				Zero-Hour Emission Factor (g/bhp-hr)				Aged Emission Factor (g/bhp-hr)					Fuel Consumption		Emission Factor (kg/hr)			
						NOx	PM	ROG	NOx	PM	ROG	CO	NOx	PM	ROG	CO	NOx	PM10	ROG	CO	SO2	(lb/hr)	(gal/hr)	CO2	CH4	N2O	CO2e
Tug Boats	1,274	5	2016	21	0.50	0.948	0.852	0.720	0.21	0.67	0.44	0.25	4.09	0.08	0.68	3.73	2.0356	0.04	0.27	1.98	0.0055	517	72	735.27	0.004	0.032	745.04

Note:
 Barges and dredgers are not typically self-propelled and emissions from barge/dredger propulsion engines are not estimated.
 Model year equal to construction start date (year) minus average age of vessel.
 A fuel correction factor of 0.72 for hydrocarbon emissions applied to all diesel-powered engines beginning with the 1994 calendar year.
 Starting in 2007, California required the use of ultra low sulfur diesel fuel (ULSD - 15 ppmw sulfur).
 SO2 (g/hp-hr) = (S content in X/1,000,000) x (2 SO2/g S) x BSFC (184 g/hp-hr)

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Table 714. Auxiliary Engine Emission Factors

Vessel Type	Average HP	Average Age	Model Year	Useful Life	Load Factor	Fuel Correction Factor			Deterioration Factor				Zero-Hour Emission Factor (g/bhp-hr)				Aged Emission Factor (g/bhp-hr)					Fuel Consumption		Emission Factor (kg/hr)			
						NOx	PM	ROG	NOx	PM	ROG	CO	NOx	PM	ROG	CO	NOx	PM10	ROG	CO	SO2	(lb/hr)	(gal/hr)	CO2	CH4	N2O	CO2e
Tug Boats	111	5	2016	23	0.31	0.948	0.852	0.720	0.14	0.44	0.28	0.16	5.32	0.22	0.99	3.73	1.61	0.06	0.23	1.20	0.0055	45	6	64.06	0.0004	0.0028	64.91

Note:
 Model year equal to construction start date (year) minus average age of vessel.
 A fuel correction factor of 0.72 for hydrocarbon emissions will be applied to all diesel-powered engines beginning with the 1994 calendar year.
 Starting in 2007, California required the use of ultra low sulfur diesel fuel (ULSD - 15 ppmw sulfur).
 SO2 (g/hp-hr) = (S content in X/1,000,000) x (2 SO2/g S) x BSFC (184 g/hp-hr)

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Construction Start Date 2021

Table 715. Maximum Daily Marine Vessel Emissions

Vessel Type	Quantity	Trips per Day	Hours per Trip	No. Propulsion Engines	No. Auxiliary Engines	Propulsion Engine Emissions (lbs/day)						Auxiliary Engine Emissions (lbs/day)						Total Engine Emissions (lbs/day)					
						ROG	NOx	CO	SO2	PM10	PM2.5	ROG	NOx	CO	SO2	PM10	PM2.5	ROG	NOx	CO	SO2	PM10	PM2.5
09 - Channels and Canals																							
1 - Mobilization and Demobilization																							
Tug Boats	2	1	2	2	2	6.08	45.74	44.40	0.12	0.89	0.82	0.46	3.15	2.34	0.01	0.12	0.11	6.54	48.89	46.74	0.13	1.01	0.93
04 - Excavation/Dredging (From Barge)																							
Tug Boats	1	1	2	2	2	3.04	22.87	22.20	0.06	0.44	0.41	0.23	1.58	1.17	0.01	0.06	0.06	3.27	24.45	23.37	0.07	0.51	0.47

Note:
 Hours per trip estimated to assume that marine vessels would be operating 8 hours per day.
 PM2.5 emissions estimated using PM10 emissions and the California Emission Inventory and Reporting System (CEIDARS) particulate matter (PM) speciation profile no. 425 for diesel vehicle exhaust.
 Trips represent one-day trips.

Table 716. Annual Marine Vessel Emissions

Vessel Type	Quantity	Trips per project	Hours per Trip	No. Propulsion Engines	No. Auxiliary Engines	Propulsion Engine Emissions (tons/project, metric tons/project for CO2e)						Auxiliary Engine Emissions (tons/project, metric tons/project for CO2)						Total Engine Emissions (tons/project, metric tons/project for CO2e)								
						ROG	NOx	CO	SO2	PM10	PM2.5	CO2e	ROG	NOx	CO	SO2	PM10	PM2.5	CO2e	ROG	NOx	CO	SO2	PM10	PM2.5	CO2e
09 - Channels and Canals																										
1 - Mobilization and Demobilization																										
Tug Boats	2	111	2	2	2	0.34	2.54	2.46	0.01	0.05	0.05	661.59	0.03	0.18	0.13	0.00	0.01	0.01	661.59	0.36	2.71	2.59	0.01	0.06	0.05	1,323.19
04 - Excavation/Dredging (From Barge)																										
Tug Boats	1	111	2	2	2	0.17	1.27	1.23	0.00	0.02	0.02	330.80	0.00	0.00	0.00	0.00	0.00	0.00	330.80	0.17	1.27	1.23	0.00	0.02	0.02	661.59
09 - Channels and Canals Total						0.51	3.81	3.70	0.01	0.07	0.07	992.39	0.03	0.18	0.13	0.00	0.01	0.01	992.39	0.53	3.98	3.83	0.01	0.08	0.07	1,984.78

Note:
 Hours per trip estimated to assume that marine vessels would be operating 8 hours per day.
 PM2.5 emissions estimated using PM10 emissions and the California Emission Inventory and Reporting System (CEIDARS) particulate matter (PM) speciation profile no. 425 for diesel vehicle exhaust.
 Trips represent one-day trips.

ROG, CO, NOx, or PM Emission Estimation Method

$$E = EF_0 \times F \times \left(1 + D \times \frac{A}{UL} \right) \times HP \times LF \times Hr$$

Where:

E	=	amount of emissions of a pollutant (PM and NOx) emitted during one period
EF ₀	=	the model year, horsepower, and engine use (propulsion or auxiliary) specific zero hour emission factor (when engine is new)
F	=	fuel correction factor that accounts for emission reduction benefits from burning cleaner fuel
D	=	horsepower and pollutant specific engine deterioration factor, which is the percentage increase of emission factors at the end of the useful life of the engine
A	=	age of the engine when the emissions are estimated
UL	=	vessel type and engine use specific engine useful life
HP	=	rated horsepower of the engine
LF	=	vessel type and engine use specific engine load factor
Hr	=	number of annual operating hours of the engine

Source: California Air Resources Board, 2010. Staff Report: Initial Statement of Reasons for the Proposed Rulemaking, Amendments to the Regulations to Reduce Emissions from Diesel Engines on Commercial Harbor Craft Operated Within California Waters and 24 Nautical Miles of the California Baseline. <http://www.arb.ca.gov/ports/marinevessels/harborcraft/hodocuments.htm>

SOx Emission Estimation Method

$$F_e = HP \times LF \times Hr \times BSFC$$

Where:

F _{HP}	=	fuel consumed per engine per year
Hr	=	rated horsepower of the engine
LF	=	number of annual operating hours of the engine
BSFC	=	vessel type specific engine load factor
	=	brake specific fuel consumption rate; 0.078 gal/kW-hr or 184 g/hp-hr

The sulfur content is assumed to be 15ppm per 13 CFR 2281(a).

Conversion Factors

453.6 grams per pound
2000 pounds per ton

PMSIZE Profile

0.92 PM2.5:PM10
Profile No. 425, Diesel Vehicle Exhaust

Conversion Factors

453.6 grams per pound
1,000 kilograms per metric ton
1,000 grams per kilogram

BSFC = 184 g/hp-hr (<http://www.arb.ca.gov/regact/2007/chc07/appb.pdf>)

Density

0.86 g/mL
7.18 lb/gal

Appendix K1
Air Quality Emission Calculations

Yolo Bypass - River Grading Area
Marine Emissions

Table 717. Annual Marine Vessel Emissions - River Grading Area

Vessel Type	Propulsion Engine Emissions (tons/project, metric tons/project for CO2e)							Auxiliary Engine Emissions (tons/project, metric tons/project for CO2e)							Total Engine Emissions (tons/project, metric tons/project for CO2e)						
	ROG	NOx	CO	SO2	PM10	PM2.5	CO2e	ROG	NOx	CO	SO2	PM10	PM2.5	CO2e	ROG	NOx	CO	SO2	PM10	PM2.5	CO2e
09 - Channels and Canals																					
1 - Mobilization and Demobilization																					
Tug Boats	0.34	0.38	2.46	0.01	0.05	0.05	661.59	0.03	0.03	0.13	0.00	0.01	0.01	661.59	0.36	0.41	2.59	0.01	0.06	0.05	1,323.19
04 - Excavation/Dredging (From Barge)																					
Tug Boats	0.17	0.19	1.23	0.00	0.02	0.02	330.80	0.00	0.00	0.00	0.00	0.00	0.00	330.80	0.17	0.19	1.23	0.00	0.02	0.02	661.59
Total	0.51	0.57	3.70	0.01	0.07	0.07	992.39	0.03	0.03	0.13	0.00	0.01	0.01	992.39	0.53	0.60	3.83	0.01	0.08	0.07	1,984.78

Note:

Hours per trip estimated to assume that marine vessels would be operating 8 hours per day.

PM2.5 emissions estimated using PM10 emissions and the California Emission Inventory and Reporting System (CEIDARS) particulate matter (PM) speciation profile no. 425 for diesel vehicle exhaust.

"Trips" represent one-day trips.

Mitigation Measures

Ships, Propulsion Engines

-Selective Catalytic Reduction with low sulfur fuel 85% NOxreduction

Ships, Auxiliary Engines

-Selective Catalytic Reduction with low sulfur fuel 85% NOxreduction

Tug Boats

61% VOCreduction

Crew and Supply

52% VOCreduction

<http://www.aqmd.gov/ceqa/handbook/mitigation/ogv/TableIX.doc>

**Yolo Bypass - River Grading Area
Data Tables**

Table 718. California Commercial Harbor Craft Engine Profile by Vessel Type

Vessel Type	Propulsion Engine			Auxiliary Engine		
	# of Engines per Vessel	Average Annual Operating Hrs	Useful Life	# of Engines per Vessel	Average Annual Operating Hrs	Useful Life
Commercial Fishing	1.12	1,250	21	0.46	1,633	15
Charter Fishing	1.77	1,622	16	0.75	2,077	15
Ferry/excursion Vessels	2.01	1,843	20	1.23	1,254	20
Crew and Supply	2.5	788	22	1.1	3,036	22
Pilot Vessels	1.7	1,031	19	0.14	994	25
Tug Boats	1.92	2,274	21	1.59	2,486	23
Tow Boats	2.1	1,993	26	1.17	2,965	25
Work Boats	1.46	675	17	0.32	750	23
Others	1.11	779	23	0.46	805	22

Source: California Air Resources Board (CARB). Emissions Estimation Methodology for Commercial Harbor Craft Operating in California, Appendix B [2007 Rulemaking], Available online at: <https://www.arb.ca.gov/regact/2007/chc07/appb.pdf> [Accessed on: October 2, 2017].

Appendix K1
Air Quality Emission Calculations

Table 719. Engine Load Factor by Vessel Type and by Engine Use

Vessel Type	Propulsion Engine Load	Auxiliary Engine Load
Commercial Fishing	0.27	0.43
Charter Fishing	0.52	0.43
Ferry/excursion Vessel	0.42	0.43
Crew and Supply	0.45	0.43
Pilot Vessels	0.51	0.43
Tug Boats	0.5	0.31
Tow Boats	0.68	0.43
Work Boats	0.45	0.43
Others	0.52	0.43

Source: CARB. Emissions Estimation Methodology for Commercial Harbor Craft Operating in California, Appendix B [2007 Rulemaking], Available online at: <https://www.arb.ca.gov/regact/2007/chc07/appb.pdf> [Accessed on: October 2, 2017].

Table 720. Fuel Correction Factor

Calendar Years	Horsepower Range	Model Years	NOx	PM	
1994-2006	<25	Pre-1995	0.930	0.750	
	25-50	Pre-1999			
	51-100	Pre-1998			
	101-175	Pre-1997			
	176+	Pre-1996			
	<25	1995+	0.948	0.822	
	25-50	1999-2010			
	51-100	1998-2010			
	101-175	1997-2010			
	176+	1996-2010			
2007+	<25	Pre-1995	0.930	0.720	
	25-50	Pre-1999			
	51-100	Pre-1998			
	101-175	Pre-1997			
	176+	Pre-1996			
	<25	1995+	0.948	0.800	
	25-50	1999-2010			
	51-100	1998-2010			
	101-175	1997-2010			
	176+	1996-2010			
		All	2011+	0.948	0.852

Source: CARB. Emissions Estimation Methodology for Commercial Harbor Craft Operating in California, Appendix B [2007 Rulemaking], Available online at: <https://www.arb.ca.gov/regact/2007/chc07/appb.pdf> [Accessed on: October 2, 2017].

Table 721. Engine Deterioration Factor

Horsepower Range	NOx	PM	HC	CO
25-50	0.06	0.31	0.51	0.41
51-250	0.14	0.44	0.28	0.16
>251	0.21	0.67	0.44	0.25

Source: CARB. Emissions Estimation Methodology for Commercial Harbor Craft Operating in California, Appendix B [2007 Rulemaking], Available online at: <https://www.arb.ca.gov/regact/2007/chc07/appb.pdf> [Accessed on: October 2, 2017].

Table 722. Commercial Harbor Craft Emission Factor Table (Zero-Hour)

HP Range	Model Year	Main Engines				Auxiliary Engines			
		NOx	PM	ROG	CO	NOx	PM	ROG	CO
25-50 hp	pre-1998	8.14	0.72	1.84	3.65	6.90	0.64	2.19	5.15
	1998-1999	8.14	0.72	1.80	3.65	6.90	0.64	2.14	5.15
	2000-2004	7.31	0.72	1.80	3.65	6.90	0.64	2.14	5.15
	2005-2008	5.32	0.30	1.80	3.73	5.32	0.30	2.14	3.73
	2009-2020	5.32	0.22	1.80	3.73	5.32	0.22	2.14	3.73
51-120 hp	pre-1997	15.34	0.80	1.44	3.50	13.00	0.71	1.71	4.94
	1997-1999	10.33	0.66	0.99	2.55	8.75	0.58	1.18	3.59
	2000-2004	7.31	0.66	0.99	2.55	7.31	0.58	1.18	3.59
	2005-2008	5.32	0.30	0.99	3.73	5.32	0.30	1.18	3.73
	2009-2020	5.32	0.22	0.99	3.73	5.32	0.22	1.18	3.73
121-175 hp	pre-1971	16.52	0.73	1.32	3.21	14.00	0.65	1.57	4.53
	1971-1978	15.34	0.63	1.10	3.21	13.00	0.55	1.31	4.53
	1979-1983	14.16	0.52	1.00	3.21	12.00	0.46	1.19	4.53
	1984-1986	12.98	0.52	0.94	3.14	11.00	0.46	1.12	4.43
	1987-1995	12.98	0.52	0.88	3.07	11.00	0.46	1.05	4.33
	1996-1999	9.64	0.36	0.68	1.97	8.17	0.32	0.81	2.78
	2000-2003	7.31	0.36	0.68	1.97	7.31	0.32	0.81	2.78
	2004-2012	5.10	0.22	0.68	3.73	5.10	0.22	0.81	3.73
	2013-2020	3.80	0.09	0.68	3.73	3.80	0.09	0.81	3.73
	176-250 hp	pre-1971	16.52	0.73	1.32	3.21	14.00	0.65	1.57
1971-1978		15.34	0.63	1.10	3.21	13.00	0.55	1.31	4.53
1979-1983		14.16	0.52	1.00	3.21	12.00	0.46	1.19	4.53
1984-1986		12.98	0.52	0.94	3.14	11.00	0.46	1.12	4.43
1987-1994		12.98	0.52	0.88	3.07	11.00	0.46	1.05	4.33
1995-1999		9.64	0.36	0.68	1.97	8.17	0.32	0.81	2.78
2000-2003		7.31	0.36	0.68	1.97	7.31	0.32	0.81	2.78
2004-2013		5.10	0.15	0.68	3.73	5.10	0.15	0.81	3.73
2014-2020		3.99	0.08	0.68	3.73	3.99	0.08	0.81	3.73
251-500 hp		pre-1971	16.52	0.70	1.26	3.07	14.00	0.62	1.50
	1971-1978	15.34	0.60	1.05	3.07	13.00	0.53	1.25	4.33
	1979-1983	14.16	0.50	0.95	3.07	12.00	0.45	1.13	4.33
	1984-1986	12.98	0.50	0.90	3.07	11.00	0.45	1.07	4.33
	1987-1994	12.98	0.50	0.84	2.99	11.00	0.45	1.00	4.22
	1995-1999	9.64	0.36	0.68	1.97	8.17	0.32	0.81	2.78
	2000-2003	7.31	0.36	0.68	1.97	7.31	0.32	0.81	2.78
	2004-2013	5.10	0.15	0.68	3.73	5.10	0.15	0.81	3.73
	2014-2020	3.99	0.08	0.68	3.73	3.99	0.08	0.81	3.73
	501-750 hp	pre-1971	16.52	0.70	1.26	3.07	14.00	0.62	1.50
1971-1978		15.34	0.60	1.05	3.07	13.00	0.53	1.25	4.33
1979-1983		14.16	0.50	0.95	3.07	12.00	0.45	1.13	4.33
1984-1986		12.98	0.50	0.90	3.07	11.00	0.45	1.07	4.33
1987-1994		12.98	0.50	0.84	2.99	11.00	0.45	1.00	4.22
1995-1999		9.64	0.36	0.68	1.97	8.17	0.32	0.81	2.78
2000-2006		7.31	0.36	0.68	1.97	7.31	0.32	0.81	2.78
2007-2012		5.10	0.15	0.68	3.73	5.10	0.15	0.81	3.73
2013-2020		3.99	0.08	0.68	3.73	3.99	0.08	0.81	3.73

Appendix K1
Air Quality Emission Calculations

Table 722. Commercial Harbor Craft Emission Factor Table (Zero-Hour)

HP Range	Model Year	Main Engines				Auxiliary Engines			
		NOx	PM	ROG	CO	NOx	PM	ROG	CO
751-1900 hp	pre-1971	16.52	0.70	1.26	3.07	14.00	0.62	1.50	4.33
	1971-1978	15.34	0.60	1.05	3.07	13.00	0.53	1.25	4.33
	1979-1983	14.16	0.50	0.95	3.07	12.00	0.45	1.13	4.33
	1984-1986	12.98	0.50	0.90	3.07	11.00	0.45	1.07	4.33
	1987-1998	12.98	0.50	0.84	2.99	11.00	0.45	1.00	4.22
	1999	9.64	0.36	0.68	1.97	8.17	0.32	0.81	2.78
	2000-2006	7.31	0.36	0.68	1.97	7.31	0.32	0.81	2.78
	2007-2011	5.53	0.20	0.68	3.73	5.53	0.20	0.81	3.73
	2012-2016	4.09	0.08	0.68	3.73	4.09	0.08	0.81	3.73
	2017-2020	1.30	0.03	0.18	3.73	1.30	0.03	0.18	3.73
1901-3300 hp	pre-1971	16.52	0.70	1.26	3.07	14.00	0.62	1.50	4.33
	1971-1978	15.34	0.60	1.05	3.07	13.00	0.53	1.25	4.33
	1979-1983	14.16	0.50	0.95	3.07	12.00	0.45	1.13	4.33
	1984-1986	12.98	0.50	0.90	3.07	11.00	0.45	1.07	4.33
	1987-1998	12.98	0.50	0.84	2.99	11.00	0.45	1.00	4.22
	1999	9.64	0.36	0.68	1.97	8.17	0.32	0.81	2.78
	2000-2006	7.31	0.36	0.68	1.97	7.31	0.32	0.81	2.78
	2007-2012	5.53	0.20	0.68	3.73	5.53	0.20	0.81	3.73
	2013-2015	4.37	0.10	0.68	3.73	4.37	0.10	0.81	3.73
	2016-2020	1.30	0.03	0.18	3.73	1.30	0.03	0.18	3.73
3301-5000 hp	pre-1971	16.52	0.70	1.26	3.07	14.00	0.62	1.50	4.33
	1971-1978	15.34	0.60	1.05	3.07	13.00	0.53	1.25	4.33
	1979-1983	14.16	0.50	0.95	3.07	12.00	0.45	1.13	4.33
	1984-1986	12.98	0.50	0.90	3.07	11.00	0.45	1.07	4.33
	1987-1998	12.98	0.50	0.84	2.99	11.00	0.45	1.00	4.22
	1999	9.64	0.36	0.68	1.97	8.17	0.32	0.81	2.78
	2000-2006	7.31	0.36	0.68	1.97	7.31	0.32	0.81	2.78
	2007-2013	5.53	0.20	0.68	3.73	5.53	0.20	0.81	3.73
	2014-2015	4.94	0.25	0.68	3.73	4.94	0.25	0.81	3.75
	2016-2020	1.30	0.03	0.18	3.73	1.30	0.03	0.18	3.75

Source: CARB. Emissions Estimation Methodology for Commercial Harbor Craft Operating in California, Appendix B [2007 Rulemaking]. Available online at: <https://www.arb.ca.gov/regact/2007/chc07/appb.pdf> [Accessed on: October 2, 2017].

Table 723. Quantity of Auxiliary Engines and Average Horsepower

Vessel Category	# Auxiliary Engines	Horsepower		min	max
		Range	Average		
Commercial Fishing	212	6 - 300	71	30	111
Tug Boats	120	7 - 300	111		
Ferry/excursion Vessels	98	10 - 400	94		
Charter Fishing	82	4 - 185	50		
Others	34	10 - 240	56		
Work Boats	26	9 - 221	101		
Crew and Supply	22	16 - 110	79		
Tow Boats	21	18 - 175	79		
Pilot Vessels	1	N/A	30		

Source: CARB. 2004. *Statewide Commercial Harbor Craft Survey, Final Report*. March. Available online at: <https://www.arb.ca.gov/ports/marinevess/documents/hcsurveyrep0304.pdf>
[Accessed on: October 2, 2017.]

Note:

Vessel categories changed from cited document to be consistent with names used in 2007 and 2010 rulemaking documents to assist with VLOOKUP formulas.

Appendix K1
Air Quality Emission Calculations

Table 724. Quantity of Propulsion Engines and Average Horsepower

Vessel Category	# Propulsion Engines	Horsepower		min	max
		Range	Average		
Commercial Fishing	516	8 – 1,485	230	230	1274
Charter Fishing	192	80 – 1,400	381		
Ferry/excursion Vessels	164	35 – 3,110	733		
Tug Boats	144	24 – 3,600	1,274		
Work Boats	99	15 – 1,300	239		
Others	89	28 - 764	281		
Crew and Supply	50	225 - 750	439		
Tow Boats	38	24 – 1,500	500		
Pilot Vessels	15	230 - 550	408		

Source: CARB. 2004. *Statewide Commercial Harbor Craft Survey, Final Report*. March. Available online at: <https://www.arb.ca.gov/ports/marinevess/documents/hcsurveyrep0304.pdf>
[Accessed on: October 2, 2017.]

Note:

Vessel categories changed from cited document to be consistent with names used in 2007 and 2010 rulemaking documents to assist with VLOOKUP formulas.

Table 725. Vessel Age

Vessel Category	Age
Charter Fishing	27
Ferry/excursion Vessels	27
Tug Boats	32
Commercial Fishing	32
Pilot Vessels	24
Work Boats	27
Crew and Supply	27
Tow Boats	39

Source: CARB. 2004. *Statewide Commercial Harbor Craft Survey, Final Report*. March. Available online at:
<https://www.arb.ca.gov/ports/marinevess/documents/hcsurveyrep0304.pdf>
[Accessed on: October 2, 2017.

Note:

Vessel categories changed from cited document to be consistent with names used in 2007 and 2010 rulemaking documents to assist with VLOOKUP formulas.

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	7	135	77	0	4	4	Yolo
Supplemental Fish Passage West	7	135	77	0	4	4	Sutter
Downstream Reach	3	36	46	0	2	2	Yolo
Agricultural Crossing 1	4	75	41	0	2	2	Yolo
Total Emissions for Peak Day	20	381	240	1	12	11	
Maximum Daily Operational Emissions in Yolo County	14	246	163	1	8	8	
Yolo-Solano AQMD Significance Threshold	25	n/a	25	n/a	80	n/a	
Emissions Greater than YSAQMD Threshold?	No	n/a	Yes	n/a	No	n/a	
Maximum Daily Operational Emissions in Sutter County	7	135	77	0	4	4	
Feather River AQMD Significance Threshold	n/a	n/a	n/a	n/a	80	n/a	
Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	No	n/a	

Note: Totals may not add exactly because of rounding.

Table K-726. Unmitigated Maximum Daily Operational Emissions for Alternative 1
Table K-727. Unmitigated Maximum Daily Operational Emissions for Alternative 2

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	7	135	77	0	4	4	Yolo
Supplemental Fish Passage West	7	135	77	0	4	4	Sutter
Downstream Reach	3	36	46	0	2	2	Yolo
Agricultural Crossing 1	4	75	41	0	2	2	Yolo
Total Emissions for Peak Day	20	381	240	1	12	11	
Maximum Daily Operational Emissions in Yolo County	14	246	163	1	8	8	
Yolo-Solano AQMD Significance Threshold	25	n/a	25	n/a	80	n/a	
Emissions Greater than YSAQMD Threshold?	No	n/a	Yes	n/a	No	n/a	
Maximum Daily Operational Emissions in Sutter County	7	135	77	0	4	4	
Feather River AQMD Significance Threshold	n/a	n/a	n/a	n/a	80	n/a	
Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	No	n/a	

Note: Totals may not add exactly because of rounding.

Table K-728. Unmitigated Maximum Daily Operational Emissions for Alternative 3

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	7	138	78	0	4	4	Both
Supplemental Fish Passage East	7	135	77	0	4	4	Yolo
Downstream Reach	3	36	46	0	2	2	Yolo
Agricultural Crossing 1	4	75	41	0	2	2	Yolo
Total Emissions for Peak Day	20	384	242	1	12	11	
Maximum Daily Operational Emissions in Yolo County	20	384	242	1	12	11	
Yolo-Solano AQMD Significance Threshold	25	n/a	25	n/a	80	n/a	
Emissions Greater than YSAQMD Threshold?	No	n/a	Yes	n/a	No	n/a	
Maximum Daily Operational Emissions in Sutter County	7	138	78	0	4	4	
Feather River AQMD Significance Threshold	n/a	n/a	n/a	n/a	80	n/a	
Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	No	n/a	

Note: Totals may not add exactly because of rounding.

Construction of the intake channel, headworks, and outlet channel would be located in both counties. To provide a worst-case estimate of emissions by county, 100% of these emissions were added to each county total.

Table K-729. Unmitigated Maximum Daily Operational Emissions for Alternative 4

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	7	138	78	0	4	4	Both
Supplemental Fish Passage East	7	135	77	0	4	4	Yolo
Downstream Reach	3	36	46	0	2	2	Yolo
Agricultural Crossing 1	4	75	41	0	2	2	Yolo
Northern Water Control Structure Improvements	7	141	79	0	4	4	Yolo
Southern Water Control Structure Improvements	7	141	79	0	4	4	Yolo
Total Emissions for Peak Day	34	665	399	1	20	19	
Maximum Daily Operational Emissions in Yolo County	34	665	399	1	20	19	
Yolo-Solano AQMD Significance Threshold	25	n/a	25	n/a	80	n/a	
Emissions Greater than YSAQMD Threshold?	Yes	n/a	Yes	n/a	No	n/a	
Maximum Daily Operational Emissions in Sutter County	7	138	78	0	4	4	
Feather River AQMD Significance Threshold	n/a	n/a	n/a	n/a	80	n/a	
Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	No	n/a	

Note: Totals may not add exactly because of rounding.

Construction of the intake channel, headworks, and outlet channel would be located in both counties. To provide a worst-case estimate of emissions by county, 100% of these emissions were added to each county total.

Table K-730. Unmitigated Maximum Daily Operational Emissions for Alternative 5

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	9	174	104	0	6	5	Yolo
Supplemental Fish Passage West	7	135	77	0	4	4	Sutter
Agricultural Crossing 1	4	75	41	0	2	2	Yolo
Total Emissions for Peak Day	19	384	222	1	12	11	
Maximum Daily Operational Emissions in Yolo County	13	249	145	0	8	8	
Yolo-Solano AQMD Significance Threshold Emissions Greater than YSAQMD Threshold?	25 n/a No	n/a	25 n/a Yes	n/a	80 n/a No	n/a	
Maximum Daily Operational Emissions in Sutter County	7	135	77	0	4	4	
Feather River AQMD Significance Threshold Emissions Greater than FRAQMD Threshold?	n/a n/a	n/a	n/a	n/a	80 n/a No	n/a	

Note: Totals may not add exactly because of rounding.

Table K-731. Unmitigated Maximum Daily Operational Emissions for Alternative 6

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	10	198	114	0	6	5	Both
Supplemental Fish Passage East	7	135	77	0	4	4	Yolo
Downstream Reach	3	36	46	0	2	2	Yolo
Agricultural Crossing 1	4	75	41	0	2	2	Yolo
Total Emissions for Peak Day	23	444	277	1	14	13	
Maximum Daily Operational Emissions in Yolo County	23	444	277	1	14	13	
Yolo-Solano AQMD Significance Threshold Emissions Greater than YSAQMD Threshold?	25 n/a No	n/a	25 n/a Yes	n/a	80 n/a No	n/a	
Maximum Daily Operational Emissions in Sutter County	10	198	114	0	6	5	
Feather River AQMD Significance Threshold Emissions Greater than FRAQMD Threshold?	n/a n/a	n/a	n/a	n/a	80 n/a No	n/a	

Note: Totals may not add exactly because of rounding.

Construction of the intake channel, headworks, and outlet channel would be located in both counties. To provide a worst-case estimate of emissions by county, 100% of these emissions were added to each county total.

Table K-732. Unmitigated Annual Operational Emissions for Alternative 1

Component	Annual Emissions (tpy)						CO2 (MT/year)	County
	ROG	CO	NOx	SO2	PM10	PM2.5		
Intake Channel, Headworks, and Outlet Channel	0.1	1.8	0.8	0.0	0.0	0.0	285	Yolo
Supplemental Fish Passage West	0.0	0.1	0.0	0.0	0.0	0.0	13	Sutter
Downstream Reach	0.0	0.1	0.1	0.0	0.0	0.0	19	Yolo
Agricultural Crossing 1	0.0	0.0	0.0	0.0	0.0	0.0	7	Yolo
Total Annual Emissions	0.1	2.0	1.0	0.0	0.0	0.0	324	
Annual Emissions in Yolo County	0.1	1.9	0.9	0.0	0.0	0.0	311	
Yolo-Solano AQMD Significance Threshold Emissions Greater than YSAQMD Threshold?	10	n/a	10	n/a	n/a	n/a	1,100	
	No	n/a	No	n/a	n/a	n/a	No	
Annual Emissions in Sutter County	0.0	0.1	0.0	0.0	0.0	0.0	13	
Feather River AQMD Significance Threshold Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	n/a	n/a	1,100	
	n/a	n/a	n/a	n/a	n/a	n/a	No	

Note: Totals may not add exactly because of rounding.

Table K-733. Unmitigated Annual Operational Emissions for Alternative 2

Component	Annual Emissions (tpy)						CO2 (MT/year)	County
	ROG	CO	NOx	SO2	PM10	PM2.5		
Intake Channel, Headworks, and Outlet Channel	0.1	1.9	1.0	0.0	0.0	0.0	310	Yolo
Supplemental Fish Passage West	0.0	0.1	0.0	0.0	0.0	0.0	13	Sutter
Downstream Reach	0.0	0.1	0.1	0.0	0.0	0.0	19	Yolo
Agricultural Crossing 1	0.0	0.0	0.0	0.0	0.0	0.0	7	Yolo
Total Annual Emissions	0.1	2.1	1.1	0.0	0.1	0.1	350	
Annual Emissions in Yolo County	0.1	2.1	1.1	0.0	0.1	0.1	311	
Yolo-Solano AQMD Significance Threshold Emissions Greater than YSAQMD Threshold?	10	n/a	10	n/a	n/a	n/a	1,100	
	No	n/a	No	n/a	n/a	n/a	No	
Annual Emissions in Sutter County	0.0	0.1	0.0	0.0	0.0	0.0	13	
Feather River AQMD Significance Threshold Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	n/a	n/a	1,100	
	n/a	n/a	n/a	n/a	n/a	n/a	No	

Note: Totals may not add exactly because of rounding.

Table K-734. Unmitigated Annual Operational Emissions for Alternative 3

Component	Annual Emissions (tpy)						CO2 (MT/year)	County
	ROG	CO	NOx	SO2	PM10	PM2.5		
Intake Channel, Headworks, and Outlet Channel	0.1	2.0	1.0	0.0	0.1	0.0	327	Both
Supplemental Fish Passage East	0.0	0.1	0.0	0.0	0.0	0.0	13	Yolo
Downstream Reach	0.0	0.1	0.1	0.0	0.0	0.0	19	Yolo
Agricultural Crossing 1	0.0	0.0	0.0	0.0	0.0	0.0	7	Yolo
Total Annual Emissions	0.1	2.2	1.2	0.0	0.1	0.1	366	
Annual Emissions in Yolo County	0.1	2.2	1.2	0.0	0.1	0.1	366	
Yolo-Solano AQMD Significance Threshold Emissions Greater than YSAQMD Threshold?	No	10 n/a	No	10 n/a	n/a	n/a	1,100	
Annual Emissions in Sutter County	0.0	0.0	0.0	0.0	0.0	0.0	7	
Feather River AQMD Significance Threshold Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	n/a	n/a	1,100	
	n/a	n/a	n/a	n/a	n/a	n/a	No	

Note: Totals may not add exactly because of rounding.

Construction of the intake channel, headworks, and outlet channel would be located in both counties. To provide a worst-case estimate of emissions by county, 100% of these emissions were added to each county total.

Table K-735. Unmitigated Annual Operational Emissions for Alternative 4

Component	Annual Emissions (tpy)						CO2 (MT/year)	County
	ROG	CO	NOx	SO2	PM10	PM2.5		
Intake Channel, Headworks, and Outlet Channel	0.1	1.2	0.7	0.0	0.0	0.0	200	Both
Supplemental Fish Passage East	0.0	0.1	0.0	0.0	0.0	0.0	13	Yolo
Downstream Reach	0.0	0.1	0.1	0.0	0.0	0.0	19	Yolo
Agricultural Crossing 1	0.0	0.0	0.0	0.0	0.0	0.0	7	Yolo
Northern Water Control Structure Improvements	0.0	0.3	0.3	0.0	0.0	0.0	61	Yolo
Southern Water Control Structure Improvements	0.0	0.5	0.5	0.0	0.0	0.0	111	Yolo
Total Annual Emissions	0.1	2.2	1.6	0.0	0.1	0.1	411	
Annual Emissions in Yolo County	0.1	2.2	1.6	0.0	0.1	0.1	411	
Yolo-Solano AQMD Significance Threshold Emissions Greater than YSAQMD Threshold?	No	10 n/a	No	10 n/a	n/a	n/a	1,100	
Annual Emissions in Sutter County	0.1	1.2	0.7	0.0	0.0	0.0	200	
Feather River AQMD Significance Threshold Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	n/a	n/a	1,100	
	n/a	n/a	n/a	n/a	n/a	n/a	No	

Note: Totals may not add exactly because of rounding.

Construction of the intake channel, headworks, and outlet channel would be located in both counties. To provide a worst-case estimate of emissions by county, 100% of these emissions were added to each county total.

Table K-736. Unmitigated Annual Operational Emissions for Alternative 5

Component	Annual Emissions (tpy)						CO2 (MT/year)	County
	ROG	CO	NOx	SO2	PM10	PM2.5		
Intake Channel, Headworks, and Outlet Channel	0.1	2.5	1.7	0.0	0.1	0.1	387	Yolo
Supplemental Fish Passage West	0.0	0.1	0.0	0.0	0.0	0.0	13	Sutter
Agricultural Crossing 1	0.0	0.0	0.0	0.0	0.0	0.0	7	Yolo
Total Annual Emissions	0.2	2.6	1.8	0.0	0.1	0.1	407	
Annual Emissions in Yolo County	0.2	2.5	1.7	0.0	0.1	0.1	394	
Yolo-Solano AQMD Significance Threshold Emissions Greater than YSAQMD Threshold?	No	10 n/a	No	10 n/a	n/a	n/a	No	1,100
Annual Emissions in Sutter County	0.0	0.1	0.0	0.0	0.0	0.0	13	
Feather River AQMD Significance Threshold Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	n/a	n/a	No	1,100

Note: Totals may not add exactly because of rounding.

Table K-737. Unmitigated Annual Operational Emissions for Alternative 6

Component	Annual Emissions (tpy)						CO2 (MT/year)	County
	ROG	CO	NOx	SO2	PM10	PM2.5		
Intake Channel, Headworks, and Outlet Channel	0.2	4.0	2.1	0.0	0.1	0.1	664	Both
Supplemental Fish Passage East	0.0	0.1	0.0	0.0	0.0	0.0	13	Yolo
Downstream Reach	0.0	0.1	0.1	0.0	0.0	0.0	19	Yolo
Agricultural Crossing 1	0.0	0.0	0.0	0.0	0.0	0.0	7	Yolo
Total Annual Emissions	0.2	4.2	2.3	0.0	0.1	0.1	703	
Annual Emissions in Yolo County	0.2	4.2	2.3	0.0	0.1	0.1	703	
Yolo-Solano AQMD Significance Threshold Emissions Greater than YSAQMD Threshold?	No	10 n/a	No	10 n/a	n/a	n/a	No	1,100
Annual Emissions in Sutter County	0.2	4.0	2.1	0.0	0.1	0.1	664	
Feather River AQMD Significance Threshold Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	n/a	n/a	No	1,100

Note: Totals may not add exactly because of rounding.

Construction of the intake channel, headworks, and outlet channel would be located in both counties. To provide a worst-case estimate of emissions by county, 100% of these emissions were added to each county total.

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors								
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units	
O&M Road																
1	O&M Road Regrading	12' Blade Grader	Graders	187	1	1	3	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr	
								O&M Road Subtotal								
Environmental Permits and Mitigation																
2	Permits and mitigation					-	-									
Main Channel and Intake Shelf																
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	15	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	30	0.1421	2.6600	1.6432	0.0043	0.1137	0.1046	369.4011	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		60	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	2	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	14	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	6	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Main Channel and Intake Shelf Subtotal								
Headworks Structure																
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	3	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		3	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Headworks Structure Subtotal								
Buildings																
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Buildings Subtotal								
Headworks Structure Operating Equipment																
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Headworks Structure Operating Equipment Subtotal								
								Grand Total								

Table K-738. Alternative 1 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.00	0.01	0.00	0.00	0.00	1.56
		0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.00	0.01	0.00	0.00	0.00	1.56
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.04	0.04	0.00	0.00	0.00	4.80
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.14	2.63	1.62	0.00	0.11	0.10	0.00	0.04	0.02	0.00	0.00	0.00	4.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.06	1.60	0.65	0.00	0.03	0.03	245.67
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.00	0.01	0.00	0.00	0.00	1.23
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.02	0.05	0.00	0.00	0.00	8.64
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.02	0.01	0.00	0.00	0.00	2.46
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		3.63	72.87	44.06	0.16	2.19	2.02	0.07	1.72	0.77	0.00	0.04	0.04	268.04
Headworks Structure														
10	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.01	0.01	0.00	0.00	0.00	0.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.08	0.03	0.00	0.00	0.00	12.28
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
13	Gates and Concrete Structure Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		2.47	59.23	26.46	0.11	1.50	1.38	0.00	0.09	0.04	0.00	0.00	0.00	14.36
Buildings														
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment														
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
16	Test Operate Gates	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.08	0.68	0.09	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.77
		6.55	135.20	76.52	0.28	3.92	3.61	0.07	1.81	0.82	0.00	0.04	0.04	284.73

Table K-739. Alternative 2 - Main Channel and Headworks Operation and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors								
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units	
O&M Road																
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	8	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr	
								O&M Road Subtotal								
Environmental Permits and Mitigation																
2	Permits and mitigation					-	-									
Main Channel and Intake Shelf																
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	29	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	57	0.1421	2.6600	1.6432	0.0043	0.1137	0.1046	369.4011	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		60	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	3	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	30	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	15	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Main Channel and Intake Shelf Subtotal								
Headworks Structure																
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	3	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		3	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Headworks Structure Subtotal								
Buildings																
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Buildings Subtotal								
Headworks Structure Operating Equipment																
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Headworks Structure Operating Equipment Subtotal								
								Grand Total								

Table K-739. Alternative 2 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.01	0.02	0.00	0.00	0.00	4.15
		0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.01	0.02	0.00	0.00	0.00	4.15
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.01	0.07	0.07	0.00	0.01	0.01	9.28
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.14	2.63	1.62	0.00	0.11	0.10	0.00	0.07	0.05	0.00	0.00	0.00	9.43
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.06	1.60	0.65	0.00	0.03	0.03	245.67
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.00	0.01	0.00	0.00	0.00	1.85
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.01	0.05	0.10	0.00	0.00	0.00	18.51
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.04	0.02	0.00	0.00	0.00	6.14
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		3.63	72.87	44.06	0.16	2.19	2.02	0.08	1.84	0.89	0.00	0.05	0.04	291.17
Headworks Structure														
10	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.01	0.01	0.00	0.00	0.00	0.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.08	0.03	0.00	0.00	0.00	12.28
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
13	Gates and Concrete Structure Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		2.47	59.23	26.46	0.11	1.50	1.38	0.00	0.09	0.04	0.00	0.00	0.00	14.36
Buildings														
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment														
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
16	Test Operate Gates	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.08	0.68	0.09	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.77
		6.55	135.20	76.52	0.28	3.92	3.61	0.08	1.94	0.96	0.00	0.05	0.04	310.44

Table K-740. Alternative 3 - Main Channel and Headworks Operation and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							Units	
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2		
O&M Road																
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	10	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr	
								O&M Road Subtotal								
Environmental Permits and Mitigation																
2	Permits and mitigation					-	-									
Main Channel and Intake Shelf																
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	35	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	2	35	0.1421	2.6600	1.6432	0.0043	0.1137	0.1046	369.4011	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		60	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	5	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	40	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	24	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Main Channel and Intake Shelf Subtotal								
Headworks Structure																
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	3	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		3	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Headworks Structure Subtotal								
Buildings																
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Buildings Subtotal								
Headworks Structure Operating Equipment																
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Headworks Structure Operating Equipment Subtotal								
								Grand Total								

Table K-740. Alternative 3 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.01	0.03	0.00	0.00	0.00	5.19
		0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.01	0.03	0.00	0.00	0.00	5.19
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.01	0.09	0.08	0.00	0.01	0.01	11.20
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.28	5.25	3.25	0.01	0.22	0.21	0.00	0.09	0.06	0.00	0.00	0.00	11.58
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.06	1.60	0.65	0.00	0.03	0.03	245.67
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.01	0.02	0.00	0.00	0.00	3.08
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.01	0.06	0.14	0.00	0.01	0.00	24.67
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.06	0.03	0.00	0.00	0.00	9.83
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		3.77	75.49	45.68	0.16	2.30	2.12	0.08	1.92	0.97	0.00	0.05	0.05	306.33
Headworks Structure														
10	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.01	0.01	0.00	0.00	0.00	0.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.08	0.03	0.00	0.00	0.00	12.28
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
13	Gates and Concrete Structure Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		2.47	59.23	26.46	0.11	1.50	1.38	0.00	0.09	0.04	0.00	0.00	0.00	14.36
Buildings														
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment														
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
16	Test Operate Gates	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.08	0.68	0.09	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.77
		6.69	137.82	78.14	0.29	4.04	3.71	0.09	2.02	1.04	0.00	0.05	0.05	326.64

Table K-741. Alternative 4 - Main Channel and Headworks Operation and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors								
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units	
O&M Road																
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	10	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr	
								O&M Road Subtotal								
Environmental Permits and Mitigation																
2	Permits and mitigation					-	-									
Main Channel and Intake Shelf																
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	35	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	2	35	0.1421	2.6600	1.6432	0.0043	0.1137	0.1046	369.4011	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		30	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	5	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	40	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	24	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Main Channel and Intake Shelf Subtotal								
Headworks Structure																
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	3	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		2	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Headworks Structure Subtotal								
Buildings																
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Buildings Subtotal								
Headworks Structure Operating Equipment																
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Headworks Structure Operating Equipment Subtotal								
								Grand Total								

Table K-741. Alternative 4 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.01	0.03	0.00	0.00	0.00	5.19
		0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.01	0.03	0.00	0.00	0.00	5.19
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.01	0.09	0.08	0.00	0.01	0.01	11.20
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.28	5.25	3.25	0.01	0.22	0.21	0.00	0.09	0.06	0.00	0.00	0.00	11.58
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.03	0.80	0.32	0.00	0.02	0.01	122.84
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.01	0.02	0.00	0.00	0.00	3.08
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.01	0.06	0.14	0.00	0.01	0.00	24.67
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.06	0.03	0.00	0.00	0.00	9.83
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		3.77	75.49	45.68	0.16	2.30	2.12	0.05	1.12	0.65	0.00	0.03	0.03	183.49
Headworks Structure														
10	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.01	0.01	0.00	0.00	0.00	0.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.05	0.02	0.00	0.00	0.00	8.19
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
13	Gates and Concrete Structure Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		2.47	59.23	26.46	0.11	1.50	1.38	0.00	0.06	0.03	0.00	0.00	0.00	10.27
Buildings														
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment														
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
16	Test Operate Gates	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.08	0.68	0.09	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.77
		6.69	137.82	78.14	0.29	4.04	3.71	0.06	1.19	0.70	0.00	0.04	0.03	199.71

Table K-742. Alternative 5 - Main Channel and Headworks Operation and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	48	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	4	56	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	8	56	0.1421	2.6600	1.6432	0.0043	0.1137	0.1046	369.4011	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		30	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	5	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	40	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	2	60	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Main Channel and Intake Shelf Subtotal							
Headworks Structure															
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	19	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		2	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Headworks Structure Subtotal							
Buildings															
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Buildings Subtotal							
Headworks Structure Operating Equipment															
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Headworks Structure Operating Equipment Subtotal							
								Grand Total							

Table K-742. Alternative 5 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.01	0.06	0.14	0.00	0.00	0.00	24.89
		0.37	2.42	5.91	0.01	0.19	0.17	0.01	0.06	0.14	0.00	0.00	0.00	24.89
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	1.85	19.76	18.83	0.03	1.55	1.43	0.05	0.55	0.53	0.00	0.04	0.04	71.70
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	1.12	21.02	12.98	0.03	0.90	0.83	0.03	0.59	0.36	0.00	0.03	0.02	74.14
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.03	0.80	0.32	0.00	0.02	0.01	122.84
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.01	0.02	0.00	0.00	0.00	3.08
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.01	0.06	0.14	0.00	0.01	0.00	24.67
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.38	10.68	4.33	0.02	0.21	0.19	0.01	0.32	0.13	0.00	0.01	0.01	49.13
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		6.19	111.41	71.71	0.22	4.25	3.91	0.13	2.33	1.50	0.00	0.10	0.09	345.85
Headworks Structure														
10	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.05	0.04	0.00	0.00	0.00	6.08
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.05	0.02	0.00	0.00	0.00	8.19
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
13	Gates and Concrete Structure Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		2.47	59.23	26.46	0.11	1.50	1.38	0.01	0.10	0.07	0.00	0.00	0.00	15.39
Buildings														
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment														
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
16	Test Operate Gates	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.08	0.68	0.09	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.77
		9.11	173.74	104.16	0.35	5.98	5.50	0.15	2.50	1.71	0.00	0.11	0.10	386.89

Table K-743. Alternative 6 - Main Channel and Headworks Operation and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	10	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	48	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	2	48	0.1421	2.6600	1.6432	0.0043	0.1137	0.1046	369.4011	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		60	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	20	13	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	3	43	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	51	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Main Channel and Intake Shelf Subtotal							
Headworks Structure															
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	3	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		6	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	10	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Headworks Structure Subtotal							
Buildings															
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Buildings Subtotal							
Headworks Structure Operating Equipment															
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Headworks Structure Operating Equipment Subtotal							
								Grand Total							

Table K-743. Alternative 6 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.01	0.03	0.00	0.00	0.00	5.19
		0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.01	0.03	0.00	0.00	0.00	5.19
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.01	0.12	0.11	0.00	0.01	0.01	15.36
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.28	5.25	3.25	0.01	0.22	0.21	0.01	0.13	0.08	0.00	0.01	0.00	15.89
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	3.81	106.76	43.28	0.20	2.10	1.93	0.11	3.20	1.30	0.01	0.06	0.06	491.35
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.02	0.05	0.00	0.00	0.00	8.02
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	1.36	9.53	20.85	0.05	0.78	0.72	0.03	0.20	0.45	0.00	0.02	0.02	79.58
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.14	0.06	0.00	0.00	0.00	20.88
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		6.58	135.23	81.22	0.29	3.88	3.57	0.17	3.81	2.04	0.01	0.10	0.09	631.35
Headworks Structure														
10	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.01	0.01	0.00	0.00	0.00	0.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.01	0.16	0.06	0.00	0.00	0.00	24.57
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
13	Gates and Concrete Structure Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		2.47	59.23	26.46	0.11	1.50	1.38	0.01	0.17	0.07	0.00	0.00	0.00	26.64
Buildings														
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment														
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
16	Test Operate Gates	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.08	0.68	0.09	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.77
		9.51	197.56	113.68	0.42	5.61	5.16	0.18	3.99	2.14	0.01	0.10	0.10	663.95

Table K-744. Downstream Reach, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							Units	
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2		
O&M Road																
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	4	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr	
								O&M Road Subtotal								
Environmental Permits and Mitigation																
2	Permits and mitigation					-	-									
Main Channel and Intake Shelf																
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	7	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	2	7	0.1421	2.6600	1.6432	0.0043	0.1137	0.1046	369.4011	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1	1	0	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	2	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	3	5	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	3	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Main Channel and Intake Shelf Subtotal								
								Grand Total								

Table K-744. Downstream Reach, Oper

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.00	0.01	0.00	0.00	0.00	2.07
		0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.00	0.01	0.00	0.00	0.00	2.07
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.02	0.02	0.00	0.00	0.00	2.24
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.28	5.25	3.25	0.01	0.22	0.21	0.00	0.02	0.01	0.00	0.00	0.00	2.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.00	0.01	0.00	0.00	0.00	1.23
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	1.36	9.53	20.85	0.05	0.78	0.72	0.00	0.02	0.05	0.00	0.00	0.00	9.25
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.01	0.00	0.00	0.00	0.00	1.23
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		2.97	33.80	40.10	0.10	1.88	1.73	0.01	0.07	0.09	0.00	0.00	0.00	16.55
		3.34	36.22	46.01	0.11	2.07	1.90	0.01	0.08	0.10	0.00	0.00	0.00	18.63

Table K-745. Supplemental Fish Passage East, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							Units	
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2		
O&M Road																
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	1	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr	
								O&M Road Subtotal								
Environmental Permits and Mitigation																
2	Permits and mitigation					-	-									
Main Channel and Intake Shelf																
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	1	0.1421	2.6600	1.6432	0.0043	0.1137	0.1046	369.4011	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		1	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	1	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	1	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	1	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Main Channel and Intake Shelf Subtotal								
Headworks Structure																
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		1	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Headworks Structure Subtotal								
Headworks Structure Operating Equipment																
14	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
15	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr	
								Headworks Structure Operating Equipment Subtotal								
								Grand Total								

Table K-745. Supplemental Fish Passage E

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.52
		0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.14	2.63	1.62	0.00	0.11	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.17
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.03	0.01	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.62
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.62
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		3.63	72.87	44.06	0.16	2.19	2.02	0.00	0.04	0.02	0.00	0.00	0.00	6.50
Headworks Structure														
10	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.03	0.01	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
13	Gates and Concrete Structure Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		2.47	59.23	26.46	0.11	1.50	1.38	0.00	0.03	0.01	0.00	0.00	0.00	5.53
Headworks Structure Operating Equipment														
14	Mechanical Hydraulic Equipment Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
15	Test Operate Gates	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.08	0.68	0.09	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.77
		6.55	135.20	76.52	0.28	3.92	3.61	0.00	0.07	0.04	0.00	0.00	0.00	13.32

Table K-746. Supplemental Fish Passage West, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	1	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	1	0.1421	2.6600	1.6432	0.0043	0.1137	0.1046	369.4011	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		1	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	1	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	1	0.1214	0.8494	1.8584	0.0041	0.0699	0.0643	363.7181	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	1	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Main Channel and Intake Shelf Subtotal							
Headworks Structure															
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		1	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Headworks Structure Subtotal							
Headworks Structure Operating Equipment															
14	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
15	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Headworks Structure Operating Equipment Subtotal							
								Grand Total							

Table K-746. Supplemental Fish Passage W

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.52
		0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.14	2.63	1.62	0.00	0.11	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.17
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.03	0.01	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.62
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.62
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		3.63	72.87	44.06	0.16	2.19	2.02	0.00	0.04	0.02	0.00	0.00	0.00	6.50
Headworks Structure														
10	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.03	0.01	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
13	Gates and Concrete Structure Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		2.47	59.23	26.46	0.11	1.50	1.38	0.00	0.03	0.01	0.00	0.00	0.00	5.53
Headworks Structure Operating Equipment														
14	Mechanical Hydraulic Equipment Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
15	Test Operate Gates	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.08	0.68	0.09	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.77
		6.55	135.20	76.52	0.28	3.92	3.61	0.00	0.07	0.04	0.00	0.00	0.00	13.32

Table K-747. Agricultural Crossing 1, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							Units
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	1	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Agricultural Channel and Intake															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	1	0.1421	2.6600	1.6432	0.0043	0.1137	0.1046	369.4011	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
5	Pipe Flush	0.75 CY Hydraulic Excavator	Excavators	158	1		1	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
6	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	1	0.0683	1.9156	0.7766	0.0036	0.0377	0.0347	323.9363	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
7	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Agricultural Channel and Intake Subtotal							
Rail Car Bridge															
8	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.2384	2.5463	2.4260	0.0043	0.1997	0.1837	363.7180	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			6.9998	34.6908	155.9699	0.2281	1.8973	1.7455	36496.5301	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
9	Rail Car Bridge Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
10	Rail Car Bridge Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Rail Car Bridge Subtotal							
								Grand Total							

Table K-747. Agricultural Crossi

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.52
		0.37	2.42	5.91	0.01	0.19	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Environmental Permits and Mitigation														
2	Permits and mitigation													
Agricultural Channel and Intake														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.14	2.63	1.62	0.00	0.11	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.17
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Pipe Flush	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.03	0.01	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		2.72	66.51	30.16	0.13	1.67	1.54	0.00	0.03	0.02	0.00	0.00	0.00	5.27
Rail Car Bridge														
8	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Rail Car Bridge Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
10	Rail Car Bridge Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		0.57	5.85	4.82	0.01	0.45	0.41	0.00	0.00	0.00	0.00	0.00	0.00	1.44
		3.66	74.78	40.89	0.15	2.30	2.12	0.00	0.04	0.02	0.00	0.00	0.00	7.22

Table K-748. Northern Water Control Structure, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	33	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	110 HHDT LDT2	1 1 1	1	9	0.2384 6.9998 1.4797	2.5463 34.6908	2.4260 155.9699 1.6515	0.0043 0.2281 0.0474	0.1997 1.8973 0.8623	0.1837 1.7455 0.7933	363.7180 36496.5301 8716.7490	g/hp-hr g/hr g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Off-Highway Tractors n/a - onroad n/a - onroad	56 HHDT LDT2	1 1 1	1	17	0.1421 6.9998 1.4797	2.6600 34.6908	1.6432 155.9699 1.6515	0.0043 0.2281 0.0474	0.1137 1.8973 0.8623	0.1046 1.7455 0.7933	369.4011 36496.5301 8716.7490	g/hp-hr g/hr g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	10	5	0.0683 6.9998 1.4797	1.9156 34.6908	0.7766 155.9699 1.6515	0.0036 0.2281 0.0474	0.0377 1.8973 0.8623	0.0347 1.7455 0.7933	323.9363 36496.5301 8716.7490	g/hp-hr g/hr g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	212 HHDT LDT2	1 2 1	1	2	0.1214 6.9998 1.4797	12.8680 34.6908	1.8494 155.9699 1.6515	0.0041 0.2281 0.0474	0.0699 1.8973 0.8623	0.0643 1.7455 0.7933	363.7181 36496.5301 8716.7490	g/hp-hr g/hr g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	212 HHDT LDT2	1 2 1	1	13	0.1214 6.9998 1.4797	12.8680 34.6908	1.8494 155.9699 1.6515	0.0041 0.2281 0.0474	0.0699 1.8973 0.8623	0.0643 1.7455 0.7933	363.7181 36496.5301 8716.7490	g/hp-hr g/hr g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	1	2	0.0683 6.9998 1.4797	1.9156 34.6908	0.7766 155.9699 1.6515	0.0036 0.2281 0.0474	0.0377 1.8973 0.8623	0.0347 1.7455 0.7933	323.9363 36496.5301 8716.7490	g/hp-hr g/hr g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Main Channel and Intake Shelf Subtotal							
Berm/Levee															
10	Berm/Levee Repairs	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	1	3	0.0683 6.9998 1.4797	1.9156 34.6908 12.8680	0.7766 155.9699 1.6515	0.0036 0.2281 0.0474	0.0377 1.8973 0.8623	0.0347 1.7455 0.7933	323.9363 36496.5301 8716.7490	g/hp-hr g/hr g/hr
								Berm/Levee Subtotal							
Water Control Structure and Culvert															
11	Debris Removal	1.5 CY Front End Loader Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	110 HHDT LDT2	1 1 1	1	1	0.2384 6.9998 1.4797	2.5463 34.6908	2.4260 155.9699 1.6515	0.0043 0.2281 0.0474	0.1997 1.8973 0.8623	0.1837 1.7455 0.7933	363.7180 36496.5301 8716.7490	g/hp-hr g/hr g/hr
12	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	10	1	0.0683 6.9998 1.4797	1.9156 34.6908	0.7766 155.9699 1.6515	0.0036 0.2281 0.0474	0.0377 1.8973 0.8623	0.0347 1.7455 0.7933	323.9363 36496.5301 8716.7490	g/hp-hr g/hr g/hr
13	Inflatable Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
14	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Water Control Structure and Culvert Subtotal							
Buildings															
15	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck Pickup Truck Conventional	n/a - onroad n/a - onroad	HHDT LDT2	1 2			6.9998 1.4797	34.6908 12.8680	155.9699 1.6515	0.2281 0.0474	1.8973 0.8623	1.7455 0.7933	36496.5301 8716.7490	g/hr g/hr
								Buildings Subtotal							
Water Control Structure Operating Equipment															
16	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
17	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Water Control Structure Operating Equipment Subtotal							
								Grand Total							

Table K-748. Northern Water Control Struc

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.01	0.04	0.10	0.00	0.00	0.00	17.11
		0.37	2.42	5.91	0.01	0.19	0.17	0.01	0.04	0.10	0.00	0.00	0.00	17.11
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.02	0.02	0.00	0.00	0.00	2.88
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.14	2.63	1.62	0.00	0.11	0.10	0.00	0.02	0.01	0.00	0.00	0.00	2.81
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.13	0.05	0.00	0.00	0.00	20.47
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.00	0.01	0.00	0.00	0.00	1.23
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.02	0.05	0.00	0.00	0.00	8.02
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.01	0.00	0.00	0.00	0.00	0.82
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		3.63	72.87	44.06	0.16	2.19	2.02	0.01	0.21	0.14	0.00	0.01	0.01	36.52
Berm/Levee														
10	Berm/Levee Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.01	0.00	0.00	0.00	0.00	1.23
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.01	0.00	0.00	0.00	0.00	1.23
Water Control Structure and Culvert														
11	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.03	0.01	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Inflatable Gates Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
14	Gates and Concrete Structure Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		2.47	59.23	26.46	0.11	1.50	1.38	0.00	0.03	0.01	0.00	0.00	0.00	5.53
Buildings														
15	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Control Structure Operating Equipment														
16	Mechanical Hydraulic Equipment Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
17	Test Operate Gates	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.08	0.68	0.09	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.77
		6.74	140.53	78.68	0.29	4.03	3.71	0.02	0.29	0.26	0.00	0.01	0.01	61.16

Table K-749. Southern Water Control Structure, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	29	0.1131	0.7344	1.7907	0.0039	0.0567	0.0522	346.6688	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	110 HHDT LDT2	1 1 1	1	22	0.2384 6.9998 1.4797	2.5463 34.6908	2.4260 155.9699 1.6515	0.0043 0.2281 0.0474	0.1997 1.8973 0.8623	0.1837 1.7455 0.7933	363.7180 36496.5301 8716.7490	g/hp-hr g/hr g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Off-Highway Tractors n/a - onroad n/a - onroad	56 HHDT LDT2	1 1 1	1	43	0.1421 6.9998 1.4797	2.6600 34.6908	1.6432 155.9699 1.6515	0.0043 0.2281 0.0474	0.1137 1.8973 0.8623	0.1046 1.7455 0.7933	369.4011 36496.5301 8716.7490	g/hp-hr g/hr g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	10	8	0.0683 6.9998 1.4797	1.9156 34.6908	0.7766 155.9699 1.6515	0.0036 0.2281 0.0474	0.0377 1.8973 0.8623	0.0347 1.7455 0.7933	323.9363 36496.5301 8716.7490	g/hp-hr g/hr g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	212 HHDT LDT2	1 2 1	1	6	0.1214 6.9998 1.4797	12.8680 34.6908	1.8494 155.9699 1.6515	0.0041 0.2281 0.0474	0.0699 1.8973 0.8623	0.0643 1.7455 0.7933	363.7181 36496.5301 8716.7490	g/hp-hr g/hr g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	212 HHDT LDT2	1 2 1	1	56	0.1214 6.9998 1.4797	12.8680 34.6908	1.8494 155.9699 1.6515	0.0041 0.2281 0.0474	0.0699 1.8973 0.8623	0.0643 1.7455 0.7933	363.7181 36496.5301 8716.7490	g/hp-hr g/hr g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	1	4	0.0683 6.9998 1.4797	1.9156 34.6908	0.7766 155.9699 1.6515	0.0036 0.2281 0.0474	0.0377 1.8973 0.8623	0.0347 1.7455 0.7933	323.9363 36496.5301 8716.7490	g/hp-hr g/hr g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Main Channel and Intake Shelf Subtotal							
Berm/Levee															
10	Berm/Levee Repairs	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	1	6	0.0683 6.9998 1.4797	1.9156 34.6908 12.8680	0.7766 155.9699 1.6515	0.0036 0.2281 0.0474	0.0377 1.8973 0.8623	0.0347 1.7455 0.7933	323.9363 36496.5301 8716.7490	g/hp-hr g/hr g/hr
								Berm/Levee Subtotal							
Water Control Structure and Culvert															
11	Debris Removal	1.5 CY Front End Loader Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	110 HHDT LDT2	1 1 1	1	1	0.2384 6.9998 1.4797	2.5463 34.6908	2.4260 155.9699 1.6515	0.0043 0.2281 0.0474	0.1997 1.8973 0.8623	0.1837 1.7455 0.7933	363.7180 36496.5301 8716.7490	g/hp-hr g/hr g/hr
12	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	10	1	0.0683 6.9998 1.4797	1.9156 34.6908	0.7766 155.9699 1.6515	0.0036 0.2281 0.0474	0.0377 1.8973 0.8623	0.0347 1.7455 0.7933	323.9363 36496.5301 8716.7490	g/hp-hr g/hr g/hr
13	Inflatable Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
14	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Water Control Structure and Culvert Subtotal							
Buildings															
15	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck Pickup Truck Conventional	n/a - onroad n/a - onroad	HHDT LDT2	1 2			6.9998 1.4797	34.6908 12.8680	155.9699 1.6515	0.2281 0.0474	1.8973 0.8623	1.7455 0.7933	36496.5301 8716.7490	g/hr g/hr
								Buildings Subtotal							
Water Control Structure Operating Equipment															
16	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
17	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.4797	12.8680	1.6515	0.0474	0.8623	0.7933	8716.7490	g/hr
								Water Control Structure Operating Equipment Subtotal							
								Grand Total							

Table K-749. Southern Water Control Struc

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.37	2.42	5.91	0.01	0.19	0.17	0.01	0.04	0.09	0.00	0.00	0.00	15.04
		0.37	2.42	5.91	0.01	0.19	0.17	0.01	0.04	0.09	0.00	0.00	0.00	15.04
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.01	0.05	0.05	0.00	0.00	0.00	7.04
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.14	2.63	1.62	0.00	0.11	0.10	0.00	0.06	0.03	0.00	0.00	0.00	7.12
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.01	0.21	0.09	0.00	0.00	0.00	32.76
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.00	0.01	0.02	0.00	0.00	0.00	3.70
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.45	3.18	6.95	0.02	0.26	0.24	0.01	0.09	0.19	0.00	0.01	0.01	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.01	0.00	0.00	0.00	0.00	1.64
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		3.63	72.87	44.06	0.16	2.19	2.02	0.03	0.43	0.39	0.00	0.02	0.02	87.08
Berm/Levee														
10	Berm/Levee Repairs	0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.02	0.01	0.00	0.00	0.00	2.46
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.19	5.34	2.16	0.01	0.10	0.10	0.00	0.02	0.01	0.00	0.00	0.00	2.46
Water Control Structure and Culvert														
11	Debris Removal	0.46	4.94	4.71	0.01	0.39	0.36	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Sediment Removal (Wet conditions)	1.90	53.38	21.64	0.10	1.05	0.97	0.00	0.03	0.01	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Inflatable Gates Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
14	Gates and Concrete Structure Inspection	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.42
		2.47	59.23	26.46	0.11	1.50	1.38	0.00	0.03	0.01	0.00	0.00	0.00	5.53
Buildings														
15	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Control Structure Operating Equipment														
16	Mechanical Hydraulic Equipment Upkeep	0.05	0.45	0.06	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.70
17	Test Operate Gates	0.03	0.23	0.03	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.08	0.68	0.09	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.77
		6.74	140.53	78.68	0.29	4.03	3.71	0.04	0.52	0.50	0.00	0.02	0.02	110.87

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	2	128	10	0	0	0	Yolo
Supplemental Fish Passage West	2	128	10	0	0	0	Sutter
Downstream Reach	1	34	5	0	0	0	Yolo
Agricultural Crossing 1	1	71	6	0	0	0	Yolo
Total Emissions for Peak Day	6	361	32	1	1	1	
Maximum Daily Operational Emissions in Yolo County	4	233	22	1	1	1	
Yolo-Solano AQMD Significance Threshold	25	n/a	25	n/a	80	n/a	
Emissions Greater than YSAQMD Threshold?	No	n/a	No	n/a	No	n/a	
Maximum Daily Operational Emissions in Sutter County	2	128	10	0	0	0	
Feather River AQMD Significance Threshold	n/a	n/a	n/a	n/a	80	n/a	
Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	No	n/a	

Note: Totals may not add exactly because of rounding.

Table K-750. Mitigated Maximum Daily Operational Emissions for Alternative 1
Table K-751. Mitigated Maximum Daily Operational Emissions for Alternative 2

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	2	128	10	0	0	0	Yolo
Supplemental Fish Passage West	2	128	10	0	0	0	Sutter
Downstream Reach	1	34	5	0	0	0	Yolo
Agricultural Crossing 1	1	71	6	0	0	0	Yolo
Total Emissions for Peak Day	6	361	32	1	1	1	
Maximum Daily Operational Emissions in Yolo County	4	233	22	1	1	1	
Yolo-Solano AQMD Significance Threshold	25	n/a	25	n/a	80	n/a	
Emissions Greater than YSAQMD Threshold?	No	n/a	No	n/a	No	n/a	
Maximum Daily Operational Emissions in Sutter County	2	128	10	0	0	0	
Feather River AQMD Significance Threshold	n/a	n/a	n/a	n/a	80	n/a	
Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	No	n/a	

Note: Totals may not add exactly because of rounding.

Table K-752. Mitigated Maximum Daily Operational Emissions for Alternative 3

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	2	131	11	0	0	0	Both
Supplemental Fish Passage East	2	128	10	0	0	0	Yolo
Downstream Reach	1	34	5	0	0	0	Yolo
Agricultural Crossing 1	1	71	6	0	0	0	Yolo
Total Emissions for Peak Day	6	364	32	1	1	1	
Maximum Daily Operational Emissions in Yolo County	6	364	32	1	1	1	
Yolo-Solano AQMD Significance Threshold	25	n/a	25	n/a	80	n/a	
Emissions Greater than YSAQMD Threshold?	No	n/a	Yes	n/a	No	n/a	
Maximum Daily Operational Emissions in Sutter County	2	131	11	0	0	0	
Feather River AQMD Significance Threshold	n/a	n/a	n/a	n/a	80	n/a	
Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	No	n/a	

Note: Totals may not add exactly because of rounding.

Construction of the intake channel, headworks, and outlet channel would be located in both counties. To provide a worst-case estimate of emissions by county, 100% of these emissions were added to each county total.

Table K-753. Mitigated Maximum Daily Operational Emissions for Alternative 4

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	2	131	11	0	0	0	Both
Supplemental Fish Passage East	2	128	10	0	0	0	Yolo
Downstream Reach	1	34	5	0	0	0	Yolo
Agricultural Crossing 1	1	71	6	0	0	0	Yolo
Northern Water Control Structure Improvements	2	133	10	0	0	0	Yolo
Southern Water Control Structure Improvements	2	133	10	0	0	0	Yolo
Total Emissions for Peak Day	10	630	53	1	2	2	
Maximum Daily Operational Emissions in Yolo County	10	630	53	1	2	2	
Yolo-Solano AQMD Significance Threshold	25	n/a	25	n/a	80	n/a	
Emissions Greater than YSAQMD Threshold?	No	n/a	Yes	n/a	No	n/a	
Maximum Daily Operational Emissions in Sutter County	2	131	11	0	0	0	
Feather River AQMD Significance Threshold	n/a	n/a	n/a	n/a	80	n/a	
Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	No	n/a	

Note: Totals may not add exactly because of rounding.

Construction of the intake channel, headworks, and outlet channel would be located in both counties. To provide a worst-case estimate of emissions by county, 100% of these emissions were added to each county total.

Table K-754. Mitigated Maximum Daily Operational Emissions for Alternative 5

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	2	169	18	0	0	0	Yolo
Supplemental Fish Passage West	2	128	10	0	0	0	Sutter
Agricultural Crossing 1	1	71	6	0	0	0	Yolo
Total Emissions for Peak Day	6	369	35	1	1	1	
Maximum Daily Operational Emissions in Yolo County	4	241	24	1	1	1	
Yolo-Solano AQMD Significance Threshold	25	n/a	25	n/a	80	n/a	
Emissions Greater than YSAQMD Threshold?	No	n/a	No	n/a	No	n/a	
Maximum Daily Operational Emissions in Sutter County	2	128	10	0	0	0	
Feather River AQMD Significance Threshold	n/a	n/a	n/a	n/a	80	n/a	
Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	No	n/a	

Note: Totals may not add exactly because of rounding.

Table K-755. Mitigated Maximum Daily Operational Emissions for Alternative 6

Component	Maximum Daily Operational Emissions (lbs/day)						County
	ROG	CO	NOx	SO2	PM10	PM2.5	
Intake Channel, Headworks, and Outlet Channel	3	187	14	0	1	0	Both
Supplemental Fish Passage East	2	128	10	0	0	0	Yolo
Downstream Reach	1	34	5	0	0	0	Yolo
Agricultural Crossing 1	1	71	6	0	0	0	Yolo
Total Emissions for Peak Day	7	420	36	1	1	1	
Maximum Daily Operational Emissions in Yolo County	7	420	36	1	1	1	
Yolo-Solano AQMD Significance Threshold	25	n/a	25	n/a	80	n/a	
Emissions Greater than YSAQMD Threshold?	No	n/a	Yes	n/a	No	n/a	
Maximum Daily Operational Emissions in Sutter County	3	187	14	0	1	0	
Feather River AQMD Significance Threshold	n/a	n/a	n/a	n/a	80	n/a	
Emissions Greater than FRAQMD Threshold?	n/a	n/a	n/a	n/a	No	n/a	

Note: Totals may not add exactly because of rounding.

Construction of the intake channel, headworks, and outlet channel would be located in both counties. To provide a worst-case estimate of emissions by county, 100% of these emissions were added to each county total.

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors								
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units	
O&M Road																
1	O&M Road Regrading	12' Blade Grader	Graders	187	1	1	3	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr	
O&M Road Subtotal																
Environmental Permits and Mitigation																
2	Permits and mitigation					-	-									
Main Channel and Intake Shelf																
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	15	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	30	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		60	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	2	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	14	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	6	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
Main Channel and Intake Shelf Subtotal																
Headworks Structure																
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	3	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		3	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
Headworks Structure Subtotal																
Buildings																
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
Buildings Subtotal																
Headworks Structure Operating Equipment																
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
Headworks Structure Operating Equipment Subtotal																
Grand Total																

Table K-756. Alternative 1 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)	
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5		
O&M Road															
1	O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56
Environmental Permits and Mitigation															
2	Permits and mitigation														
Main Channel and Intake Shelf															
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.03	0.01	0.00	0.00	0.00	0.00	4.80
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.04	3.31	0.59	0.01	0.00	0.00	0.00	0.05	0.01	0.00	0.00	0.00	0.00	7.29
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.02	1.53	0.09	0.00	0.00	0.00	0.00	245.67
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	8.64
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	2.46
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		1.01	69.01	5.71	0.16	0.17	0.16	0.02	1.65	0.11	0.00	0.00	0.00	0.00	270.37
Headworks Structure															
10	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.08	0.00	0.00	0.00	0.00	0.00	12.28
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
13	Gates and Concrete Structure Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.81	56.16	4.06	0.11	0.17	0.15	0.00	0.08	0.01	0.00	0.00	0.00	0.00	14.35
Buildings															
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment															
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
16	Test Operate Gates	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.07	0.66	0.07	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76
		1.97	127.94	10.19	0.29	0.39	0.36	0.02	1.73	0.11	0.00	0.00	0.00	0.00	287.03

Table K-757. Alternative 2 - Main Channel and Headworks Operation and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	8	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	29	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	57	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		60	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	3	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	30	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	15	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Main Channel and Intake Shelf Subtotal							
Headworks Structure															
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	3	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		3	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Headworks Structure Subtotal							
Buildings															
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Buildings Subtotal							
Headworks Structure Operating Equipment															
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Headworks Structure Operating Equipment Subtotal							
								Grand Total							

Table K-757. Alternative 2 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)	
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5		
O&M Road															
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	4.15
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	4.15
Environmental Permits and Mitigation															
2	Permits and mitigation														
Main Channel and Intake Shelf															
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.06	0.02	0.00	0.00	0.00	0.00	9.28
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.04	3.31	0.59	0.01	0.00	0.00	0.00	0.09	0.02	0.00	0.00	0.00	0.00	13.86
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.02	1.53	0.09	0.00	0.00	0.00	0.00	245.67
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.85
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.04	0.01	0.00	0.00	0.00	0.00	18.51
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	6.14
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		1.01	69.01	5.71	0.16	0.17	0.16	0.02	1.77	0.13	0.00	0.00	0.00	0.00	295.58
Headworks Structure															
10	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.08	0.00	0.00	0.00	0.00	0.00	12.28
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
13	Gates and Concrete Structure Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.81	56.16	4.06	0.11	0.17	0.15	0.00	0.08	0.01	0.00	0.00	0.00	0.00	14.35
Buildings															
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment															
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
16	Test Operate Gates	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.07	0.66	0.07	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76
		1.97	127.94	10.19	0.29	0.39	0.36	0.03	1.86	0.14	0.00	0.00	0.00	0.00	314.84

Table K-758. Alternative 3 - Main Channel and Headworks Operation and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	10	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	35	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	2	35	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		60	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	5	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	40	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	24	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Main Channel and Intake Shelf Subtotal							
Headworks Structure															
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	3	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		3	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Headworks Structure Subtotal							
Buildings															
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Buildings Subtotal							
Headworks Structure Operating Equipment															
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Headworks Structure Operating Equipment Subtotal							
								Grand Total							

Table K-758. Alternative 3 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.19
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.19
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.08	0.02	0.00	0.00	0.00	11.20
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.07	6.63	1.17	0.01	0.01	0.01	0.00	0.12	0.02	0.00	0.00	0.00	17.02
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.02	1.53	0.09	0.00	0.00	0.00	245.67
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	3.08
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.05	0.01	0.00	0.00	0.00	24.68
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.06	0.00	0.00	0.00	0.00	9.83
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		1.05	72.32	6.30	0.16	0.18	0.16	0.02	1.84	0.14	0.00	0.00	0.00	311.75
Headworks Structure														
10	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.08	0.00	0.00	0.00	0.00	12.28
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
13	Gates and Concrete Structure Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.81	56.16	4.06	0.11	0.17	0.15	0.00	0.08	0.01	0.00	0.00	0.00	14.35
Buildings														
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment														
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
16	Test Operate Gates	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.07	0.66	0.07	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.76
		2.01	131.25	10.78	0.29	0.40	0.36	0.03	1.93	0.15	0.00	0.00	0.00	332.05

Table K-759. Alternative 4 - Main Channel and Headworks Operation and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors								
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units	
O&M Road																
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	10	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr	
								O&M Road Subtotal								
Environmental Permits and Mitigation																
2	Permits and mitigation					-	-									
Main Channel and Intake Shelf																
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	35	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	2	35	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		30	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	5	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	40	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	24	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
								Main Channel and Intake Shelf Subtotal								
Headworks Structure																
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	3	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		2	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
								Headworks Structure Subtotal								
Buildings																
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
								Buildings Subtotal								
Headworks Structure Operating Equipment																
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
								Headworks Structure Operating Equipment Subtotal								
								Grand Total								

Table K-759. Alternative 4 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.19
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	5.19
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.08	0.02	0.00	0.00	0.00	11.20
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.07	6.63	1.17	0.01	0.01	0.01	0.00	0.12	0.02	0.00	0.00	0.00	17.02
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.01	0.76	0.04	0.00	0.00	0.00	122.84
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	3.08
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.05	0.01	0.00	0.00	0.00	24.68
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.06	0.00	0.00	0.00	0.00	9.83
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		1.05	72.32	6.30	0.16	0.18	0.16	0.01	1.08	0.10	0.00	0.00	0.00	188.92
Headworks Structure														
10	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.05	0.00	0.00	0.00	0.00	8.19
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
13	Gates and Concrete Structure Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.81	56.16	4.06	0.11	0.17	0.15	0.00	0.06	0.00	0.00	0.00	0.00	10.25
Buildings														
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment														
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
16	Test Operate Gates	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.07	0.66	0.07	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.76
		2.01	131.25	10.78	0.29	0.40	0.36	0.02	1.15	0.10	0.00	0.00	0.00	205.12

Table K-760. Alternative 5 - Main Channel and Headworks Operation and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	48	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	4	56	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	8	56	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		30	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	5	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	40	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	2	60	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Main Channel and Intake Shelf Subtotal							
Headworks Structure															
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	19	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		2	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Headworks Structure Subtotal							
Buildings															
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Buildings Subtotal							
Headworks Structure Operating Equipment															
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Headworks Structure Operating Equipment Subtotal							
								Grand Total							

Table K-760. Alternative 5 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.05	0.01	0.00	0.00	0.00	24.89
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.05	0.01	0.00	0.00	0.00	24.89
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.26	17.60	4.55	0.03	0.03	0.03	0.01	0.49	0.13	0.00	0.00	0.00	71.70
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.30	26.51	4.69	0.05	0.04	0.03	0.01	0.74	0.13	0.00	0.00	0.00	108.90
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.01	0.76	0.04	0.00	0.00	0.00	122.84
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	3.08
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.05	0.01	0.00	0.00	0.00	24.68
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.13	10.18	0.57	0.02	0.02	0.02	0.00	0.31	0.02	0.00	0.00	0.00	49.13
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		1.53	110.49	13.52	0.24	0.24	0.22	0.03	2.36	0.33	0.00	0.00	0.00	380.60
Headworks Structure														
10	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.04	0.01	0.00	0.00	0.00	6.08
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.05	0.00	0.00	0.00	0.00	8.19
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
13	Gates and Concrete Structure Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.81	56.16	4.06	0.11	0.17	0.15	0.00	0.09	0.01	0.00	0.00	0.00	15.37
Buildings														
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment														
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
16	Test Operate Gates	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.07	0.66	0.07	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.76
		2.49	169.42	17.99	0.37	0.46	0.42	0.03	2.51	0.35	0.01	0.01	0.00	421.63

Table K-761. Alternative 6 - Main Channel and Headworks Operation and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors								
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units	
O&M Road																
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	10	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr	
								O&M Road Subtotal								
Environmental Permits and Mitigation																
2	Permits and mitigation					-	-									
Main Channel and Intake Shelf																
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	48	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	2	48	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		60	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	20	13	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	3	43	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	51	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
								Main Channel and Intake Shelf Subtotal								
Headworks Structure																
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	3	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		6	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr	
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	10	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
								Headworks Structure Subtotal								
Buildings																
14	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr	
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
								Buildings Subtotal								
Headworks Structure Operating Equipment																
15	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
16	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr	
								Headworks Structure Operating Equipment Subtotal								
								Grand Total								

Table K-761. Alternative 6 - Main Channel a

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)	
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5		
O&M Road															
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	5.19
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	5.19
Environmental Permits and Mitigation															
2	Permits and mitigation														
Main Channel and Intake Shelf															
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.11	0.03	0.00	0.00	0.00	0.00	15.36
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.07	6.63	1.17	0.01	0.01	0.01	0.00	0.16	0.03	0.00	0.00	0.00	0.00	23.33
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	1.29	101.76	5.67	0.20	0.21	0.19	0.04	3.05	0.17	0.01	0.01	0.01	0.01	491.34
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	8.02
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.27	7.67	1.27	0.05	0.04	0.04	0.01	0.16	0.03	0.00	0.00	0.00	0.00	79.58
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.13	0.01	0.00	0.00	0.00	0.00	20.88
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		1.87	128.31	9.98	0.30	0.31	0.28	0.05	3.63	0.26	0.01	0.01	0.01	0.01	638.80
Headworks Structure															
10	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.96
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.15	0.01	0.00	0.00	0.00	0.00	24.57
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
13	Gates and Concrete Structure Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.81	56.16	4.06	0.11	0.17	0.15	0.00	0.16	0.01	0.00	0.00	0.00	0.00	26.63
Buildings															
14	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Headworks Structure Operating Equipment															
15	Mechanical Hydraulic Equipment Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
16	Test Operate Gates	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.07	0.66	0.07	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.76
		2.83	187.24	14.46	0.42	0.53	0.49	0.05	3.80	0.28	0.01	0.01	0.01	0.01	671.38

Table K-762. Downstream Reach, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	4	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	7	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	2	7	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1	1	0	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	2	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	3	5	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	3	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Main Channel and Intake Shelf Subtotal							
								Grand Total							

Table K-762. Downstream Reach, Oper

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	2.07
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	2.07
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	2.24
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.07	6.63	1.17	0.01	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	3.40
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.23
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.27	7.67	1.27	0.05	0.04	0.04	0.00	0.02	0.00	0.00	0.00	0.00	9.25
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.23
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		0.65	31.64	4.59	0.10	0.11	0.10	0.00	0.07	0.01	0.00	0.00	0.00	17.63
		0.73	33.76	4.94	0.12	0.12	0.11	0.00	0.07	0.01	0.00	0.00	0.00	19.71

Table K-763. Supplemental Fish Passage East, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	1	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	1	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		1	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	1	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	1	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	1	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Main Channel and Intake Shelf Subtotal							
Headworks Structure															
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		1	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Headworks Structure Subtotal							
Headworks Structure Operating Equipment															
14	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
15	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Headworks Structure Operating Equipment Subtotal							
								Grand Total							

Table K-763. Supplemental Fish Passage E

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.52
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.04	3.31	0.59	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.03	0.00	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.62
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.62
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		1.01	69.01	5.71	0.16	0.17	0.16	0.00	0.03	0.00	0.00	0.00	0.00	6.58
Headworks Structure														
10	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.03	0.00	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
13	Gates and Concrete Structure Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.81	56.16	4.06	0.11	0.17	0.15	0.00	0.03	0.00	0.00	0.00	0.00	5.52
Headworks Structure Operating Equipment														
14	Mechanical Hydraulic Equipment Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
15	Test Operate Gates	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.07	0.66	0.07	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.76
		1.97	127.94	10.19	0.29	0.39	0.36	0.00	0.07	0.01	0.00	0.00	0.00	13.37

Table K-764. Supplemental Fish Passage West, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	1	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	1	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		1	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	1	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	1	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	2			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	1	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Main Channel and Intake Shelf Subtotal							
Headworks Structure															
10	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
11	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1		1	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
12	Hinged Bottom Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
13	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Headworks Structure Subtotal							
Headworks Structure Operating Equipment															
14	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
15	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Headworks Structure Operating Equipment Subtotal							
								Grand Total							

Table K-764. Supplemental Fish Passage W

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.52
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.04	3.31	0.59	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.03	0.00	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.62
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.62
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		1.01	69.01	5.71	0.16	0.17	0.16	0.00	0.03	0.00	0.00	0.00	0.00	6.58
Headworks Structure														
10	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.03	0.00	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Hinged Bottom Gates Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
13	Gates and Concrete Structure Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.81	56.16	4.06	0.11	0.17	0.15	0.00	0.03	0.00	0.00	0.00	0.00	5.52
Headworks Structure Operating Equipment														
14	Mechanical Hydraulic Equipment Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
15	Test Operate Gates	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.07	0.66	0.07	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.76
		1.97	127.94	10.19	0.29	0.39	0.36	0.00	0.07	0.01	0.00	0.00	0.00	13.37

Table K-765. Agricultural Crossing 1, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							Units
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	1	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Agricultural Channel and Intake															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	1	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
5	Pipe Flush	0.75 CY Hydraulic Excavator	Excavators	158	1		1	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
6	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	1	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	3			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	2			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
7	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
Agricultural Channel and Intake Subtotal															
Rail Car Bridge															
8	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2	1			1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
9	Rail Car Bridge Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
10	Rail Car Bridge Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
Rail Car Bridge Subtotal															
Grand Total															

Table K-765. Agricultural Crossi

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)	
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5		
O&M Road															
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52
Environmental Permits and Mitigation															
2	Permits and mitigation														
Agricultural Channel and Intake															
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.04	3.31	0.59	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Pipe Flush	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.03	0.00	0.00	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		0.84	63.90	4.87	0.13	0.14	0.13	0.00	0.03	0.00	0.00	0.00	0.00	0.00	5.34
Rail Car Bridge															
8	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Rail Car Bridge Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69
10	Rail Car Bridge Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.16	5.28	1.23	0.01	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42
		1.08	71.29	6.44	0.15	0.22	0.20	0.00	0.04	0.00	0.00	0.00	0.00	0.00	7.29

Table K-766. Northern Water Control Structure, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	33	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	9	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT		1		5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2		1		1.3847	12.4711			0.7714	0.7097	8626.3756	g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower	Off-Highway Tractors	56	1	1	17	0.0375	3.3553	0.5938	0.0064	0.0048	0.0044	542.5718	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT		1		5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2		1		1.3847	12.4711			0.7714	0.7097	8626.3756	g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1	10	5	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT		3		5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2		2		1.3847	12.4711			0.7714	0.7097	8626.3756	g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	2	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT		2		5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2		1		1.3847	12.4711			0.7714	0.7097	8626.3756	g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler	Crawler Tractors	212	1	1	13	0.0236	0.6834	0.1131	0.0041	0.0040	0.0036	363.7264	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT		2		5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2		1		1.3847	12.4711			0.7714	0.7097	8626.3756	g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	2	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT		3		5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2		2		1.3847	12.4711			0.7714	0.7097	8626.3756	g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								1.2324	0.0468	Main Channel and Intake Shelf Subtotal					
Berm/Levee															
10	Berm/Levee Repairs	0.75 CY Hydraulic Excavator	Excavators	158	1	1	3	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT		3		5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2		2		1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Berm/Levee Subtotal							
Water Control Structure and Culvert															
11	Debris Removal	1.5 CY Front End Loader Crawler	Crawler Tractors	110	1	1	1	0.0337	2.2674	0.5867	0.0043	0.0045	0.0041	363.7340	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT		1		5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2		1		1.3847	12.4711			0.7714	0.7097	8626.3756	g/hr
12	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator	Excavators	158	1	10	1	0.0231	1.8258	0.1018	0.0036	0.0037	0.0034	323.9347	g/hp-hr
		16 CY 3 Axle Dump Truck	n/a - onroad	HHDT		3		5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2		2		1.3847	12.4711			0.7714	0.7097	8626.3756	g/hr
13	Inflatable Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
14	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Water Control Structure and Culvert Subtotal							
Buildings															
15	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck	n/a - onroad	HHDT	1			5.1968	33.0182	131.5280	0.2206	1.5952	1.4676	34432.0285	g/hr
		Pickup Truck Conventional	n/a - onroad	LDT2		2		1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Buildings Subtotal							
Water Control Structure Operating Equipment															
16	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
17	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Water Control Structure Operating Equipment Subtotal							
								Grand Total							

Table K-766. Northern Water Control Struct

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.03	0.01	0.00	0.00	0.00	17.11
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.03	0.01	0.00	0.00	0.00	17.11
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.02	0.01	0.00	0.00	0.00	2.88
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.04	3.31	0.59	0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	4.13
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.13	0.01	0.00	0.00	0.00	20.47
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	1.23
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	8.02
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.82
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		1.01	69.01	5.71	0.16	0.17	0.16	0.00	0.20	0.02	0.00	0.00	0.00	37.83
Berm/Levee														
10	Berm/Levee Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.23
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.23
Water Control Structure and Culvert														
11	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.03	0.00	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Inflatable Gates Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
14	Gates and Concrete Structure Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.81	56.16	4.06	0.11	0.17	0.15	0.00	0.03	0.00	0.00	0.00	0.00	5.52
Buildings														
15	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Control Structure Operating Equipment														
16	Mechanical Hydraulic Equipment Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
17	Test Operate Gates	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.07	0.66	0.07	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.76
		2.04	133.03	10.47	0.30	0.40	0.37	0.01	0.27	0.03	0.00	0.00	0.00	62.45

Table K-767. Southern Water Control Structure, Operations and Maintenance

Item #	WBS Description	Equipment	OFFROAD Name	Size (hp)	Quantity	Number of Crews	Estimated Duration, Days	Emission Factors							
								ROG	CO	NOx	SO2	PM10	PM2.5	CO2	Units
O&M Road															
1	Levee O&M Road Regrading	12' Blade Grader	Graders	187	1	1	29	0.0246	0.6411	0.1067	0.0039	0.0038	0.0035	346.6654	g/hp-hr
								O&M Road Subtotal							
Environmental Permits and Mitigation															
2	Permits and mitigation					-	-								
Main Channel and Intake Shelf															
3	Debris Removal	1.5 CY Front End Loader Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	110 HHDT LDT2	1 1 1	1	22	0.0337 5.1968 1.3847	2.2674 33.0182 12.4711	0.5867 131.5280 1.2324	0.0043 0.2206 12.4711	0.0045 1.5952 0.7714	0.0041 1.4676 0.7097	363.7340 34432.0285 8626.3756	g/hp-hr g/hr g/hr
4	Vegetation Removal	56 HP Tractor Rotary Mower 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Off-Highway Tractors n/a - onroad n/a - onroad	56 HHDT LDT2	1 1 1	1	43	0.0375 5.1968 1.3847	3.3553 33.0182 12.4711	0.5938 131.5280 1.2324	0.0064 0.2206 12.4711	0.0048 1.5952 0.7714	0.0044 1.4676 0.7097	542.5718 34432.0285 8626.3756	g/hp-hr g/hr g/hr
5	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	10	8	0.0231 5.1968 1.3847	1.8258 33.0182 12.4711	0.1018 131.5280 1.2324	0.0036 0.2206 12.4711	0.0037 1.5952 0.7714	0.0034 1.4676 0.7097	323.9347 34432.0285 8626.3756	g/hp-hr g/hr g/hr
6	Rock Replacement (Minor Repair)	17 NT Crane Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	212 HHDT LDT2	1 2 1	1	6	0.0236 5.1968 1.3847	0.6834 33.0182 12.4711	0.1131 131.5280 1.2324	0.0041 0.2206 12.4711	0.0040 1.5952 0.7714	0.0036 1.4676 0.7097	363.7264 34432.0285 8626.3756	g/hp-hr g/hr g/hr
7	Rock Replacement (Major Repair)	17 NT Crane Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	212 HHDT LDT2	1 2 1	1	56	0.0236 5.1968 1.3847	0.6834 33.0182 12.4711	0.1131 131.5280 1.2324	0.0041 0.2206 12.4711	0.0040 1.5952 0.7714	0.0036 1.4676 0.7097	363.7264 34432.0285 8626.3756	g/hp-hr g/hr g/hr
8	Channel Repairs	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	1	4	0.0231 5.1968 1.3847	1.8258 33.0182 12.4711	0.1018 131.5280 1.2324	0.0036 0.2206 12.4711	0.0037 1.5952 0.7714	0.0034 1.4676 0.7097	323.9347 34432.0285 8626.3756	g/hp-hr g/hr g/hr
9	Channel Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	4	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								1.2324		0.0468					Main Channel and Intake Shelf Subtotal
Berm/Levee															
10	Berm/Levee Repairs	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	1	6	0.0231 5.1968 1.3847	1.8258 33.0182 12.4711	0.1018 131.5280 1.2324	0.0036 0.2206 12.4711	0.0037 1.5952 0.7714	0.0034 1.4676 0.7097	323.9347 34432.0285 8626.3756	g/hp-hr g/hr g/hr
								Berm/Levee Subtotal							
Water Control Structure and Culvert															
11	Debris Removal	1.5 CY Front End Loader Crawler 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Crawler Tractors n/a - onroad n/a - onroad	110 HHDT LDT2	1 1 1	1	1	0.0337 5.1968 1.3847	2.2674 33.0182 12.4711	0.5867 131.5280 1.2324	0.0043 0.2206 12.4711	0.0045 1.5952 0.7714	0.0041 1.4676 0.7097	363.7340 34432.0285 8626.3756	g/hp-hr g/hr g/hr
12	Sediment Removal (Wet conditions)	0.75 CY Hydraulic Excavator 16 CY 3 Axle Dump Truck Pickup Truck Conventional	Excavators n/a - onroad n/a - onroad	158 HHDT LDT2	1 3 2	10	1	0.0231 5.1968 1.3847	1.8258 33.0182 12.4711	0.1018 131.5280 1.2324	0.0036 0.2206 12.4711	0.0037 1.5952 0.7714	0.0034 1.4676 0.7097	323.9347 34432.0285 8626.3756	g/hp-hr g/hr g/hr
13	Inflatable Gates Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
14	Gates and Concrete Structure Inspection	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	3	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Water Control Structure and Culvert Subtotal							
Buildings															
15	Equipment Building (Major Repair)	16 CY 3 Axle Dump Truck Pickup Truck Conventional	n/a - onroad n/a - onroad	HHDT LDT2	1 2			5.1968 1.3847	33.0182 12.4711	131.5280 1.2324	0.2206 0.0468	1.5952 0.7714	1.4676 0.7097	34432.0285 8626.3756	g/hr g/hr
								Buildings Subtotal							
Water Control Structure Operating Equipment															
16	Mechanical Hydraulic Equipment Upkeep	Pickup Truck Conventional	n/a - onroad	LDT2	2	1	5	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
17	Test Operate Gates	Pickup Truck Conventional	n/a - onroad	LDT2	1	1	1	1.3847	12.4711	1.2324	0.0468	0.7714	0.7097	8626.3756	g/hr
								Water Control Structure Operating Equipment Subtotal							
								Grand Total							

Table K-767. Southern Water Control Struc

Item #	WBS Description	Daily Emissions, lbs/day						Annual Emissions, tons per year						CO2 (MT/year)
		ROG	CO	NOx	SO2	PM10	PM2.5	ROG	CO	NOx	SO2	PM10	PM2.5	
O&M Road														
1	Levee O&M Road Regrading	0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.03	0.01	0.00	0.00	0.00	15.04
		0.08	2.11	0.35	0.01	0.01	0.01	0.00	0.03	0.01	0.00	0.00	0.00	15.04
Environmental Permits and Mitigation														
2	Permits and mitigation													
Main Channel and Intake Shelf														
3	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.05	0.01	0.00	0.00	0.00	7.04
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Vegetation Removal	0.04	3.31	0.59	0.01	0.00	0.00	0.00	0.07	0.01	0.00	0.00	0.00	10.45
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.20	0.01	0.00	0.00	0.00	32.76
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Rock Replacement (Minor Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	3.70
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Rock Replacement (Major Repair)	0.09	2.56	0.42	0.02	0.01	0.01	0.00	0.07	0.01	0.00	0.00	0.00	34.55
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Channel Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.64
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Channel Inspection	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.28
		1.01	69.01	5.71	0.16	0.17	0.16	0.01	0.41	0.05	0.00	0.00	0.00	90.41
Berm/Levee														
10	Berm/Levee Repairs	0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	2.46
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.06	5.09	0.28	0.01	0.01	0.01	0.00	0.02	0.00	0.00	0.00	0.00	2.46
Water Control Structure and Culvert														
11	Debris Removal	0.07	4.40	1.14	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.32
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	Sediment Removal (Wet conditions)	0.64	50.88	2.84	0.10	0.10	0.10	0.00	0.03	0.00	0.00	0.00	0.00	4.09
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Inflatable Gates Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
14	Gates and Concrete Structure Inspection	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.41
		0.81	56.16	4.06	0.11	0.17	0.15	0.00	0.03	0.00	0.00	0.00	0.00	5.52
Buildings														
15	Equipment Building (Major Repair)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Control Structure Operating Equipment														
16	Mechanical Hydraulic Equipment Upkeep	0.05	0.44	0.04	0.00	0.03	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.69
17	Test Operate Gates	0.02	0.22	0.02	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.07
		0.07	0.66	0.07	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.76
		2.04	133.03	10.47	0.30	0.40	0.37	0.01	0.49	0.06	0.00	0.00	0.00	114.19