APPENDIX F:

AIR EMISSIONS CALCULATIONS

General Conformity Review and Emission Inventory for the Mansfield Hollow Easement Expansion Project
(Worst Case Analysis)

1	2	3	4	5	6	7	8	9	10	11
	Project Emission Sources and Estimated Power						NOx Emission Estimates		VOC Emission Estimates	
Equipment/Engine Categ	# of Engines	hp	LF	hrs/day	Days of Operation	hp-hr	NOx EF (g/hp-hr)	NOx Emissions (tons)	VOC EF (g/hp-hr)	VOC Emissions (tons)
Rollers	1	100	1.00	12	15	18,000	9.200	0.18	1.300	0.03
Skid Steer	1	100	1.00	12	15	18,000	9.200	0.18	1.300	0.03
Tri-Axle	3	200	1.00	12	15	108,000	9.200	1.10	1.300	0.15
Drill Rig	1	300	1.00	12	45	162,000	9.200	1.64	1.300	0.23
Excavator	1	300	1.00	12	15	54,000	9.200	0.55	1.300	0.08
Chainsaw	5	50	1.00	12	30	90,000	9.200	0.91	1.300	0.13
Dozers, Crawler	1	300	1.00	12	15	54,000	9.200	0.55	1.300	0.08
Bucket Loader	1	100	1.00	12	15	18,000	9.200	0.18	1.300	0.03
Large Crane	1	500	1.00	12	15	90,000	9.200	0.91	1.300	0.13
Small Crane	1	300	1.00	12	15	54,000	9.200	0.55	1.300	0.08
Generator	2	200	1.00	12	15	72,000	9.200	0.73	1.300	0.10
Puller Tensioner Combo	1	200	1.00	12	15	36,000	9.200	0.37	1.300	0.05
Aerial Work Equipment	2	200	1.00	12	75	360,000	9.200	3.65	1.300	0.52
Feller Buncher	2	200	1.00	12	30	144,000	9.200	1.46	1.300	0.21
Skidder	2	100	1.00	12	30	72,000	9.200	0.73	1.300	0.10
Brush Mower	2	50	1.00	12	30	36,000	9.200	0.37	1.300	0.05
Chipper	2	50	1.00	12	30	36,000	9.200	0.37	1.300	0.05
Water Pump	3	50	1.00	12	20	36,000	9.200	0.37	1.300	0.05
Total Emissions							**NOx Total**	**14.79**	**VOC Total**	**2.09**

Horsepower Hours
hp-hr = # of engines*hp*LF*hrs/day*days of operation

Load Factors
Load Factor (LF) represents the average percentage of rated horsepower used during a source's operational profile. For this worst case estimate, LF is held at 1 for all equipment. Typical is 0.4 to 0.6

Emission Factors
NOx Emissions Factor for Off-Road Construction Equipment is 9.20 g/hp-hr
VOC Emissions Factor for Off-Road Construction Equipment is 1.30 g/hp-hr

Emissions (g) = Power Demand (hp-hr) * Emission Factor (g/hp-hr)

Emissions (tons) = Emissions (g) * (1 ton/907200 g)