APPENDIX F

Noise Calculations

ARCO Maximim Construction Noise Calculation Spreadsheet

Equipment Usage: Number of units in operation each week

Location/ Construction Acivitity	Tractor	Flat Bed Truck	Crane	Cherry Picker	Welding Machine	Backhoe	Forklift	Air Compressor	Generator	Concrete Pump	Front End Loader	Vibratory Roller
	79 dBA	77 dBA	83 dBA	85 dBA	76 dBA	87 dBA	80 dBA	81 dBA	79 dBA	79 dBA	88 dBA	79 dBA
LAR/ Convert Catpoly ot Dimerization Unit	**1**	**3**	**2**	**2**	**6**	**2**	**1**	**3**	**1**	**1**	**2**	**2**
LAR/ #1 H2 Plant Mods	**1**	**1**	**1**	**1**	**4**	**1**	**1**	**3**	**2**	**1**	**0**	**0**
*LAR/ MTBE to SHU or ISO-Octane	1	1	1	1	3	1	1	2	2	1	1	1
*LAR/ Mid Barrel Unit to Gasoline	1	1	1	1	3	1	1	2	2	1	1	1
*LAR/ Pentane Loading Racks	1	1	1	1	4	1	1	3	2	1	0	0
Marine Terminal 2 Pentane	**1**	**1**	**1**	**1**	**3**	**1**	**1**	**2**	**2**	**1**	**1**	**1**
Hathaway and Vinvale Terminals	**1**	**1**	**1**	**1**	**3**	**1**	**1**	**2**	**1**	**1**	**0**	**0**
Carson, Colton, Marine, E. Hynes Teminals	**1**	**1**	**1**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**0**	**0**

* MTBE to SHU or ISO-Octane, Mid Barrel Unit to Gasoline, Pentane Loading Racks equipment usage is less than at #1 H2 Plant Mods and Convert Catpoly ot Dimerization Unit.

Decibel (dB) Addition of Equipment Sound Pressure Levels (dBA)

Sound Reduction (dBA @ distance)	LAR(Catpoly) @commercial	LAR H2 Mods LAR H2 Mods	LAR(Catpoly) @residence	Marine	East Hynes	Vinvale	Hathaway	Colton
100': -6	79	79	79	79	79	79	79	79
200: -12	77	77	77	77	77	77	77	77
300: -16	77	83	77	83	83	83	83	83
400: -18	77	85	77	85	85	85	85	85
800: -24	83	76	83	76	76	76	76	76
1300: -28	83	87	83	87	87	87	87	87
1600: -30	85	80	85	80	80	80	80	80
2600: -34	85	81	85	81	81	81	81	81
3200: -36	76	79	76	79	76	79	79	76
5200: -40	76	79	76	79		79		
	76	88	76	88		76	76	
	76	79	76	79		76	76	
	76	76	76	76				
	76	76	76	76				
	87	76	87	81				
	87	81	87	79				
	80	81	80					
	81	79	81					
	81		81					
	81		81					
	79		79					
	79		79					
	79		79					
	88		88					
	88		88					
	79		79					
	79		79					

Summary of Maximum Construction Equipment Sound Levels

	LAR(Catpoly) @commercial	LAR H2 Mods LAR H2 Mods	LAR(Catpoly) @residence	Marine	East Hynes	Vinvale	Hathaway	Colton
Sound Level @50' (from dB addition above)	97	94	97	94	92	92	92	92
Sound Level @ 50% Simultaneous Use	94	91	94	91	89	89	89	89
Nearest Receptor Distance	1300	800	5200	1300	600	800	200	400
Predicted Maximum Sound Level @ Receptor	**66**	**67**	**54**	**63**	**67**	**65**	**77**	**71**