

APPENDIX C

2007 Phase II ESA Excerpt

Table 5-1. West Jackson Street to Bowman Avenue Soil Results

Analyte	MTCA A	Depth (ft bgs): Units	Boring Location											Surface Sample Location			
			SB-01	SB-02	SB-03	SB-04	SB-05	SB-05 (dup)	SB-06	SB-07	SB-11						
			2	2	3	3	8	8	2	2	0						
Petroleum																	
Motor Oil	2000	mg/kg	270	ND	1100	46JB	4900B	350B	1700	2400	120B						
Diesel	2000	mg/kg	70B	17JB	220B	20JB	2400B	170B	380B	270B	19JB						
Pesticides																	
Aldrin	NS	ug/kg	ND*	ND*	ND*	ND*	ND*	ND*	0.33J*	ND*	0.14J*						
alpha-BHC	NS	ug/kg	0.66J	0.42J	ND	0.28J	ND	ND	0.36J	ND	0.16J						
beta-BHC	NS	ug/kg	0.48J*	ND*	0.8J*	0.23J	ND*	ND*	0.86J*	ND*	0.8J*						
delta-BHC	NS	ug/kg	0.3J	ND	ND	ND	ND	ND	0.37J	ND	ND						
gamma-BHC (Lindane)	10	ug/kg	0.69J*	ND*	ND*	0.8J*	ND*	ND	0.32J*	ND*	0.34J*						
4,4'-DDD	NS	ug/kg	0.52J	0.47J*	4.8J*	0.91J*	ND	ND	1.9J*	ND*	ND*						
4,4'-DDE	NS	ug/kg	ND*	ND*	ND*	0.95J	14J*	1J*	1.5J	ND*	ND*						
4,4'-DDT	3,000	ug/kg	0.34J	0.4J	ND	0.33J	ND	ND	0.57J	ND	0.64J						
Endosulfan I	NS	ug/kg	ND*	ND*	ND*	0.18J*	ND*	ND*	ND*	ND*	ND*						
Endosulfan II	NS	ug/kg	ND	ND	2.2J	ND	ND	ND	ND	ND	ND						
Endosulfan sulfate	NS	ug/kg	ND	ND	ND	ND	ND	ND	0.40J	ND	ND						
Endrin aldehyde	NS	ug/kg	ND	ND	2.1J	ND	ND	ND	ND	ND	0.36J						
Heptachlor	NS	ug/kg	0.16J*	ND*	ND*	0.26J*	ND*	ND*	0.32J*	ND*	ND*						
Heptachlor epoxide	NS	ug/kg	0.41J*	0.17J*	ND*	0.23J*	ND*	ND*	0.17J*	ND*	0.21J*						
Endrin ketone	NS	ug/kg	ND*	ND*	ND*	ND*	ND*	ND*	ND*	3.1J*	ND*						
gamma-Chlordane	NS	ug/kg	0.19J*	0.27J*	ND*	ND*	ND*	ND*	ND*	ND*	0.38J*						

(Table Continues)

Table 5-1. West Jackson Street to Bowman Avenue Soil Results
 (Continued)

PAHs	Metals	Analyte	MTCA A	Depth (ft bgs): Units	Boring Location											Surface Sample Location
					SB-01 2	SB-02 2	SB-03 3	SB-04 3	SB-05 8	SB-05 (dup) 8	SB-06 2	SB-07 2	SB-11 0			
Total cPAHs as Benzo[a]pyrene**			100	ug/kg	67.23	5.56	145.9	51.82	148.94	24.35	38.91	63.6	14.4			
Arsenic			20	mg/kg	2.8	2J	5.3	1.5J	2J	1.7J	3.9	3.1	ND			
Antimony			NC	mg/kg	2.4J	1.2J	5.5	2.3J	ND	ND	7.7	2.1	2.2J			
Beryllium			0.6	mg/kg	0.1	0.16	0.18	0.097	0.044J	0.046J	0.086	0.15	ND			
Cadmium			2	mg/kg	0.11J	0.015J	0.18J	ND	0.43	0.15J	0.54	0.11J	0.11J			
Chromium			19	mg/kg	12B	20B	17B	9.5B	9.3B	8.3B	19B	25B	16B			
Copper			NC	mg/kg	44B	21B	130B	41B	4.5B	4.4B	71B	41B	67B			
Lead			250	mg/kg	120B	4.8B	110B	30B	0.88B	1.3B	110	30	13B			
Nickel			NC	mg/kg	20	12	46	13	9.2	10	21B	31B	24			
Selenium			NC	mg/kg	1.6J	0.57J	2.3J	0.48J	ND	ND	3.2	2.8	1.9J			
Zinc			NC	mg/kg	110B	29B	84B	33B	15B	17B	200B	61B	98B			
Mercury			2	mg/kg	0.036	0.019J	1.1	0.085	ND	ND	0.038	0.032	0.016J			

NOTES:

- Exceeds MTCA A Concentration
- J = Analyte detected at an estimated concentration
- B = Analyte detected in laboratory blank
- ND = Not Detected

NC = No cleanup level listed under MTCA

a = Carcinogenic PAH

* = Cleanup level determined by toxicity equivalency method (not shown here)

** = Total of individual cPAHs multiplied by benzo(a)pyrene toxicity equivalency factor

Table 5-2. West Jackson Street to Bowman Avenue Groundwater Results

Analyte	MTCA	Depth (ft bgs):	Boring Location					
			SB-01	SB-03	SB-04	SB-04-dup	SB-05	
			8	9	4	4	9	
	Units							
Petroleum								
Motor Oil	0.5	mg/l	0.21JB	2.7B	2.2B	1.5B	28B	
Diesel	0.8	mg/l	0.096JB	1.1B	0.39B	0.28B	10B	
Gasoline	0.5	mg/l	NA	NA	NA	NA	0.057	
Pesticides								
alpha-BHC	NC	ug/L	ND	0.0022J	ND	ND	NA	
beta-BHC	NC	ug/L	ND	0.026	0.0068J	0.0031J	NA	
delta-BHC	NC	ug/L	ND	0.011	0.0074J	ND	NA	
gamma-BHC (Lindane)	0.2	ug/L	ND	0.0021J	ND	ND	NA	
4,4'-DDD	NC	ug/L	ND	ND	0.0037J	ND	NA	
4,4'-DDT	0.3	ug/L	ND	0.014J	0.0058J	0.034	NA	
Dieldrin	NC	ug/L	ND	0.0039J	ND	ND	NA	
Endosulfan II	NC	ug/L	ND	ND	0.0037J	ND	NA	
Endosulfan sulfate	NC	ug/L	ND	0.0078J	ND	ND	NA	
Endrin aldehyde	NC	ug/L	ND	ND	0.0051J	0.0045J	NA	
Methoxychlor	NC	ug/L	ND	0.027J	0.0054J	0.019J	NA	
alpha-Chlordane	NC	ug/L	ND	0.0023J	ND	ND	NA	
gamma-Chlordane	NC	ug/L	ND	0.0044J	ND	ND	NA	
PAHs								
Naphthalene	160	ug/L	0.028JB	0.074JB	0.59B	0.73B	NA	
2-Methylnaphthalene	NC	ug/L	0.02JB	0.036JB	0.31B	0.35B	NA	
1-Methylnaphthalene	NC	ug/L	ND	ND	0.32	0.33	NA	

(Table Continues)

Table 5-2. West Jackson Street to Bowman Avenue Groundwater Results
 (Continued)

Analyte	MTCA	Depth (ft bgs):	Boring Location					
			SB-01 8	SB-03 9	SB-04 4	SB-04-dup 4	SB-05 9	
Units								
Arsenic	.005	mg/l	ND	0.0091	ND	ND	ND	NA
Antimony	NC	mg/l	0.00034JB	0.0034B	0.0034B	0.0039B		NA
Cadmium	.005	mg/l	ND	0.0051	0.00007J	ND		NA
Lead	.015	mg/l	0.00065J	0.13	0.036	0.038		NA
Selenium	NC	mg/l	ND	0.0021	ND	ND		NA
Thallium	NC	mg/l	ND	0.00062J	0.000075J	0.000075J		NA
Mercury	.002	mg/l	ND	0.00035	ND	ND		NA

NOTES:

- Exceeds MTCA A Concentration
- a = Carcinogenic PAH
- J = Analyte detected at an estimated concentration
- NA = Not analyzed
- B = Analyzed detected in laboratory blank
- * = Cleanup level determined by toxicity equivalency method (not shown here)
- ND = Not detected
- ** = Total of individual cPAHs multiplied by benzo(a)pyrene toxicity equivalency factor
- NC = No cleanup level listed under MTCA

Table 5-3. 5th Avenue Bridge to West Jackson Street Soil Results

Analyte	MTCA A	Units	Surface Soil Sampling Locations									
			SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-07 (dup)		
Petroleum	2000	mg/kg	52	34	180	31J	33	220	20	7.7		
	2000	mg/kg	ND	ND	22	5.9J	ND	19J	ND	ND		
Pesticides	NC	ug/kg	0.32J	0.17J	ND	ND	0.34J	0.25J	ND	ND		
alpha-BHC	NC	ug/kg	0.3J*	0.46J*	0.53J*	0.3J*	0.45J*	0.35J*	0.34J*	0.35J*		
beta-BHC	NC	ug/kg	ND	ND	ND	ND	ND	0.29J	ND	ND		
delta-BHC	NC	ug/kg	ND	ND	ND	ND	ND	0.31J*	ND*	ND*		
gamma-BHC (Lindane)	10	ug/kg	0.27J*	ND*	ND*	ND*	ND*	0.4J*	ND*	ND*		
4,4'-DDD	NC	ug/kg	ND*	ND*	0.36J*	ND*	ND*	0.4J*	ND*	ND*		
4,4'-DDT	3,000	ug/kg	1.3J	ND	1.2J	ND	ND	ND	ND	ND		
Dieldrin	NC	ug/kg	0.29J	ND	0.25J	ND	ND	ND	ND	ND		
Endosulfan I	NC	ug/kg	0.15J*	ND*	ND*	ND*	ND*	ND*	ND*	ND*		
Endosulfan II	NC	ug/kg	0.58J	ND	ND	ND	ND	ND	ND	ND		
Endosulfan sulfate	NC	ug/kg	ND	12	0.54J	0.94J	ND	0.95J	ND	ND		
Endrin	NC	ug/kg	ND*	0.73J*	0.56J*	0.61J*	ND*	0.64J*	ND*	ND*		
Endrin aldehyde	NC	ug/kg	0.42J	0.76J	1.1J	0.7J	ND	0.83J	0.35J	ND		
Heptachlor	NC	ug/kg	ND*	ND*	0.14J*	ND*	0.18J*	ND*	ND*	ND*		
Heptachlor epoxide	NC	ug/kg	ND*	ND*	0.29J*	ND*	ND*	ND*	ND*	ND*		
Endrin ketone	NC	ug/kg	0.72J*	0.41J*	0.48J*	1.3J*	0.4J*	0.41J*	ND*	ND*		
alpha-Chlordane	NC	ug/kg	0.22J*	0.12J*	0.4J*	0.27J*	0.16J*	0.34J*	ND*	ND*		
gamma-Chlordane	NC	ug/kg	0.15J*	ND*	0.26J*	ND*	ND*	ND*	ND*	ND*		

(Table Continues)

Table 5-3. 5th Avenue Bridge to West Jackson Street Soil Results
 (Continued)

PCBs	PAHs	Analyte	MTCA A	Units	Surface Soil Sampling Locations											
					SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-07 (dup)				
			10	mg/kg	0.0071	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			5,000	ug/kg	1.2J	ND	5.9	2J	1.9J	2.1J	0.89J	0.72J				
			NC	ug/kg	0.81J	ND	3.5J	0.83J	1.3J	1.6J	0.5J	0.62J				
			NC	ug/kg	0.58J	ND	1.9J	0.51J	0.79J	1.1J	0.37J	0.33J				
			NC	ug/kg	16	4.9J	58	32	76	29	2.9J	0.52J				
			NC	ug/kg	0.74J	0.44J	4.7J	1.2J	2.9J	5.3J	0.58J	0.31J				
			NC	ug/kg	1.9J	0.8J	6.9	3.4J	9.3	9.3	1.3J	0.49J				
			NC	ug/kg	6.5B	2.6JB	25B	13B	19B	31B	5.6B	1.1JB				
			NC	ug/kg	22B	7.2B	120B	43B	100B	58B	5.7B	0.98JB				
			NC	ug/kg	31B	15B	110B	80B	75B	140B	36B	4.9JB				
			NC	ug/kg	28B	14B	100B	64B	81B	120B	26B	3.8JB				
			NC	ug/kg	58	17	240	71	520	120	6.8	3.5J				
			*	ug/kg	12	8	49	20	60	61	6.9	ND				
			*	ug/kg	33	19	110	57	120	150	23	3.3J				
			*	ug/kg	78	52	310	110	240	380	28	4.2J				
			100	ug/kg	24	16	99	25	140	100	6.9	3.6J				
			*	ug/kg	53	23	250	57	430	160	9.1	4.4J				
			*	ug/kg	10	6.7	37	10	52	34	4.7J	3.9J				
			100	ug/kg	42.63	27.17	175.8	48.27	235	175.2	13.41	6.392				

(Table Continues)

Table 5-3. 5th Avenue Bridge to West Jackson Street Soil Results
 (Continued)

Analyte	MTCA A	Units	Surface Soil Sampling Locations												
			SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-07 (dup)					
Metals	20	mg/kg	2.7	2J	1.9J	1.7J	1.5J	0.84J	2.2J	1.6J					
Arsenic	NC	mg/kg	1.1J	0.81J	1.1J	0.73J	0.54J	0.59J	0.77J	0.54J					
Antimony	0.6	mg/kg	0.13	0.1	0.052	0.084	0.057	0.047J	0.088	0.082					
Beryllium	19	mg/kg	12B	13B	10B	12B	9.9B	7.7B	13B	9.9B					
Chromium	NC	mg/kg	22B	15B	14B	14B	9.3B	15B	13B	13B					
Copper	250	mg/kg	14B	5.6B	12B	3.9B	3.3B	4.1B	3.2B	2.3B					
Lead	NC	mg/kg	14	18	15	17	13	15	16	15					
Nickel	NC	mg/kg	0.76J	0.56J	0.35J	0.26J	ND	ND	0.43J	0.25J					
Selenium	NC	mg/kg	45B	31B	28B	26B	19B	24B	28B	24B					
Zinc	2	mg/kg	0.019J	0.013J	0.014J	0.028	ND	ND	0.01J	ND					
Mercury															

NOTES:

- Exceeds MTCA A Concentration
- NC = No cleanup level listed under MTCA
- J = Analyte detected at an estimated concentration
- a = Carcinogenic PAH
- B = Analyzed detected in laboratory blank
- * = Cleanup level determined by toxicity equivalency method (not shown here)
- ** = Total of individual cPAHs multiplied by benzo(e)pyrene toxicity equivalency factor
- ND = Not Detected

Table 5-4. Site Soil and Sediment TCDD-TEQ Concentrations

Sample ID	Total TEQ Conc. (ng/kg-dry) ¹	% Moisture
SD-01	5.707	42%
SD-02	7.130	37%
SD-03	7.564	39%
SD-503	9.360	42%
SD-04	6.923	50%
SD-05	3.677	40%
SD-06	16.096	60%
SS-08	1.644	55%
SS-09	7.981	54%
SS-10	2.285	36%

¹ Total 2,3,7,8-TCDD TEQ concentrations calculated using MTCA Table 708-1 toxicity equivalency factors. One-half the reporting limit was used for non-detected concentrations.