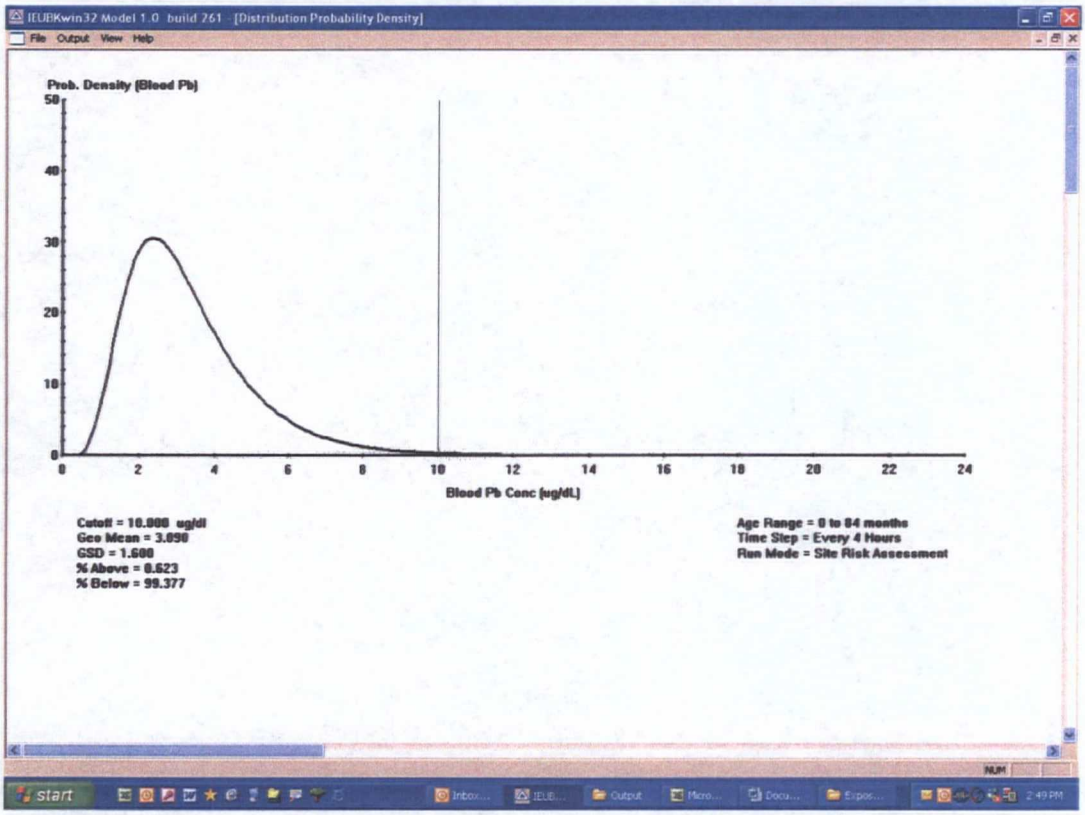
Year	Soil+Dust (ug/day)	Total (ug/day)	Blood (ug/dL)
.5-1	3.379	6.345	3.4
1-2	5.333	8.964	3.7
2-3	5.379	9.437	3.5
3-4	5.435	9.439	3.3
4-5	4.090	8.085	2.8
5-6	3.702	7.963	2.5
6-7	3.505	8.114	2.3

Southern Parcel Graph:



Southern Parcel Conclusions:

The predicted blood lead levels all age groups are below 10 ug/dl. As can be seen in the probability distribution above, 0.6% of young children potentially exposed to lead under the condition summarized above are predicted to exhibit blood lead concentrations greater than the acceptable blood lead level of 10 ug/dl and 99.4% have blood lead levels less than 10 ug/dl. The USEPA regulatory target is at least 95% of young children in a population potentially exposed to lead having blood lead levels below 10 ug/dl. Therefore, under the conditions described above lead does not presents a potentially unacceptable risk for residential children at the Southern Parcel.

AOC 13 Groundwater (MW-21S)

LEAD MODEL FOR WINDOWS Version 1.0

==========

Model Version: 1.0 Build 264

Soil EPC: 256 mg/kg

Groundwater EPC: 17.3 ug/L

==========

The time step used in this model run: 1 - Every 4 Hours (6 times a day).

****** Air ******

Indoor Air Pb Concentration: 30.000 percent of outdoor.

Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc (ug Pb/m^3)
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

****** Diet ******

Age	Diet Intake(ug/day)
.5-1	5.530
1-2	5.780
2-3	6.490
3-4	6.240
4-5	6.010
5-6	6.340
6-7	7.000

****** Drinking Water ******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520

3-4	0.530
4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 17.300 ug Pb/L (Site-specific)

****** Soil & Dust ******

Multiple Source Analysis Used
Average multiple source concentration: 189.200 ug/g (Site-Specific)

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
.5-1	256.000	189.200
1-2	256.000	189.200
2-3	256.000	189.200
3-4	256.000	189.200
4-5	256.000	189.200
5-6	256.000	189.200
6-7	256.000	189.200

****** Alternate Intake ******

Age	Alternate (ug Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

****** Maternal Contribution: Infant Model ******

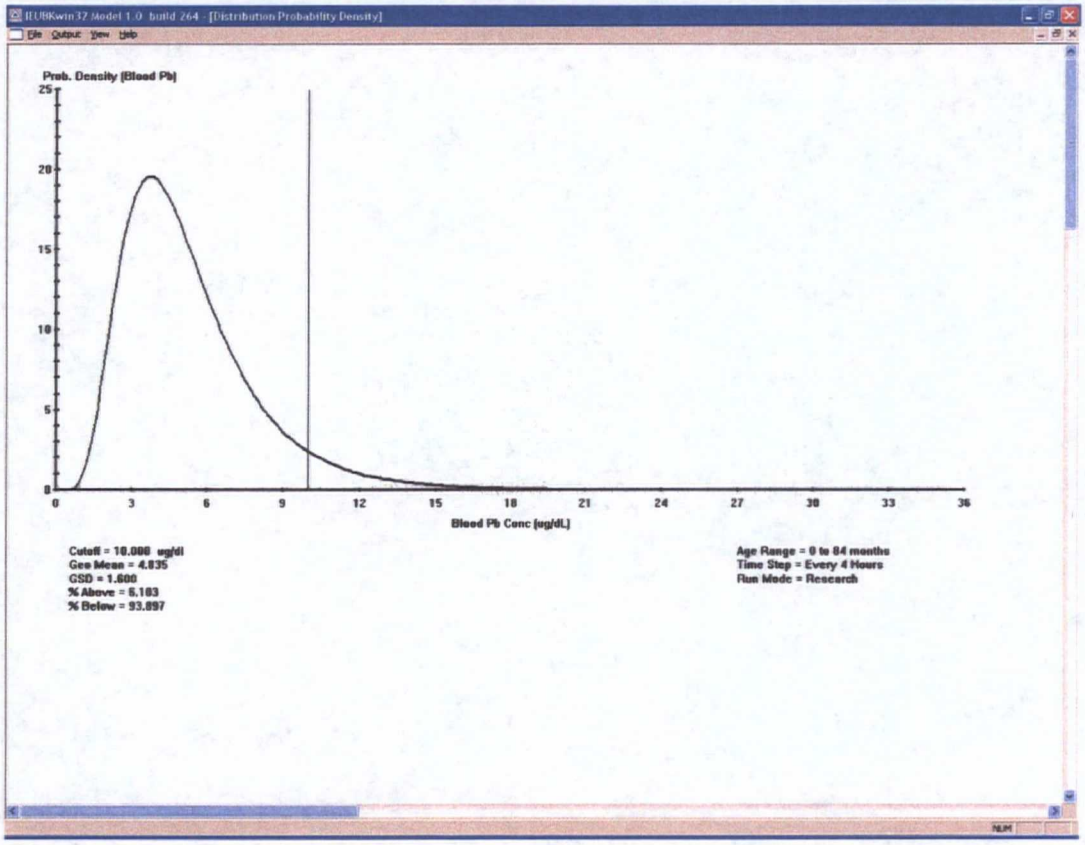
Maternal Blood Concentration: 2.500 ug Pb/dL

****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:
****

Year	Air (ug/day)	Diet (ug/day)	Alternate (ug/day)	Water (ug/day)
.5-1	0.021	2.491	0.000	1.559
1-2	0.034	2.548	0.000	3.813
2-3	0.062	2.901	0.000	4.022
3-4	0.067	2.833	0.000	4.162
4-5	0.067	2.792	0.000	4.421
5-6	0.093	2.972	0.000	4.703
6-7	0.093	3.297	0.000	4.807

Year	Soil+Dust (ug/day)	Total (ug/day)	Blood (ug/dL)
.5-1	5.037	9.107	4.9
1-2	7.829	14.224	5.8
2-3	7.940	14.925	5.5
3-4	8.063	15.124	5.3
4-5	6.112	13.392	4.6
5-6	5.550	13.318	4.1
6-7	5.266	13.464	3.8

AOC 13 (MW-21S) Graph:



AOC 13 Conclusions:

The predicted blood lead levels all age groups are below 10 ug/dl. As can be seen in the probability distribution above, 6% of young children potentially exposed to lead under the condition summarized above are predicted to exhibit blood lead concentrations greater than the acceptable blood lead level of 10 ug/dl and 94% have blood lead levels less than 10 ug/dl. The USEPA regulatory target is at least 95% of young children in a population potentially exposed to lead having blood lead levels below 10 ug/dl. Therefore, under the conditions described above lead slightly exceeds the regulatory target and potentially presents unacceptable risk for residential children in AOC 13.

Appendix D

Appendix D

Daily Dose and Potential Risk and Hazard Calculations

RME Spreadsheets

Current and Future Trespasser (RME)

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
AK STEEL FORMER ARMCO HAMILTON PLANT

Receptors Evaluated:	
Receptor 1:	Current/Future Trespasser - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR CURRENT/FUTURE TRESPASSER - RME DERMAL CONTACT AND INGESTION OF SURFACE SOIL		Assumed Value	Units	Calculated Value
Soil Ingestion Rate	Current/Future Trespasser - RME	100	(mg soil/day)	
Soil on Skin	Current/Future Trespasser - RME	0.05	(mg/cm^2)	
Skin Exposed	Current/Future Trespasser - RME	4033	(cm^2)	
Body Weight	Current/Future Trespasser - RME	43	(kg)	
Exposure Frequency	Current/Future Trespasser - RME	52	(days)/365(days) =	1.42E-01
Exposure Duration (cancer)	Current/Future Trespasser - RME	10	(years)/70(years) =	1.43E-01
Exposure Duration (noncancer)	Current/Future Trespasser - RME	10	(years)/10(years) =	1.00E+00
Lifetime		70	(years)	
Unit Conversion Factor		1.00E-06	(kg/mg)	

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
DERMAL CONTACT AND
INGESTION OF SURFACE SOIL
FOR CURRENT/FUTURE TRESPASSER - RME

Chemical	Unit Concentration in Soil (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	ADDing Current/Future Trespasser - RME (mg/kg-day)	ADDder Current/Future Trespasser - RME (mg/kg-day)	Unit Excess Lifetime Cancer Risk - Ingestion	Unit Excess Lifetir Cancer Risk Dermal Conta
2,3,7-8 TCDD TEQ	1.00E+00	0.03	1.50E+05	1.50E+05	4.73E-08	2.86E-09	7.10E-03	4.29E-04
2-Methylnaphthalene	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Aluminum	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Antimony	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Arsenic	1.00E+00	0.03	1.50E+00	1.50E+00	4.73E-08	2.86E-09	7.10E-08	4.29E-09
Barium	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Benzene	1.00E+00	0.01	5.50E-02	5.50E-02	4.73E-08	9.54E-10	2.60E-09	5.25E-11
Benzo(a)anthracene	1.00E+00	0.13	7.30E-01	7.30E-01	4.73E-08	1.24E-08	3.46E-08	9.06E-09
Benzo(a)pyrene	1.00E+00	0.13	7.30E+00	7.30E+00	4.73E-08	1.24E-08	3.46E-07	9.06E-08
Benzo(b)fluoranthene	1.00E+00	0.13	7.30E-01	7.30E-01	4.73E-08	1.24E-08	3.46E-08	9.06E-09
Benzo(k)fluoranthene	1.00E+00	0.13	7.30E-02	7.30E-02	4.73E-08	1.24E-08	3.46E-09	9.06E-10
Cadmium	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Chromium (total)	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Copper	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Dibenz(a,h)anthracene	1.00E+00	0.13	7.30E+00	7.30E+00	4.73E-08	1.24E-08	3.46E-07	9.06E-08
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	7.30E-01	7.30E-01	4.73E-08	1.24E-08	3.46E-08	9.06E-09
Iron	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Lead	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Manganese	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Mercury	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Naphthalene	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Thallium	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Toluene	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Total PCBs	1.00E+00	0.14	2.00E+00	2.00E+00	4.73E-08	1.34E-08	9.47E-08	2.67E-08
Total Xylenes	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Vanadium	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA
Zinc	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA

TABLE
POTENTIAL CARCINOGENIC RISK
DERMAL CONTACT AND
INGESTION OF SURFACE SOIL
FOR CURRENT/FUTURE TRESPASSER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	Risk (per mg/kg)	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk
2,3,7-8 TCDD TEQ	7.53E-03	3.84E-06	2.89E-08	5.42E-06	4.08E-08	NCOPC	NCOPC	5.62E-06	4.23E-08	7.22E-06	5.44E-08	9.94E-06	7.48E-08	NCOPC	NCOPC
2-Methylnaphthalene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	8.01E-01	NC
Aluminum	NC	1.96E+04	NC	2.22E+04	NC	2.70E+04	NC	1.38E+04	NC	3.33E+04	NC	2.09E+04	NC	1.46E+04	NC
Antimony	NC	NCOPC	NCOPC	3.61E+00	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.05E+02	NC	NCOPC	NCOPC
Arsenic	7.53E-08	1.08E+01	8.15E-07	1.22E+01	9.22E-07	9.29E+00	6.99E-07	4.84E+01	3.64E-06	4.98E+00	3.75E-07	9.70E+00	7.30E-07	8.22E+00	6.19E-07
Barium	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.28E+02	NC	NCOPC	NCOPC
Benzene	2.66E-09	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.44E+01	3.83E-08	NCOPC	NCOPC	NCOPC	NCOPC
Benzo(a)anthracene	4.36E-08	7.00E-01	3.05E-08	3.80E+00	1.66E-07	4.31E+00	1.88E-07	1.40E+00	6.12E-08	1.32E+00	5.76E-08	4.42E+00	1.93E-07	2.47E+01	1.07E-06
Benzo(a)pyrene	4.36E-07	7.10E-01	3.10E-07	5.60E+00	2.44E-06	6.60E+00	2.88E-06	1.23E+00	5.34E-07	6.75E+00	2.94E-06	3.27E+00	1.42E-06	2.23E+01	9.71E-06
Benzo(b)fluoranthene	4.36E-08	6.90E-01	3.01E-08	7.93E+00	3.46E-07	4.34E+00	1.89E-07	1.16E+00	5.06E-08	8.14E+00	3.55E-07	3.01E+00	1.31E-07	1.94E+01	8.46E-07
Benzo(k)fluoranthene	4.36E-09	NCOPC	NCOPC	NCOPC	NCOPC	4.46E+00	1.95E-08	NCOPC	NCOPC	5.72E+00	2.50E-08	3.06E+00	1.33E-08	2.10E+01	9.15E-08
Cadmium	NC	4.02E+00	NC	4.35E+00	NC	NCOPC	NCOPC	3.40E+00	NC	3.96E+00	NC	1.93E+00	NC	8.22E-01	NC
Chromium (total)	NC	4.89E+01	NC	2.05E+01	NC	2.76E+01	NC	2.42E+01	NC	5.66E+01	NC	2.06E+02	NC	1.91E+01	NC
Copper	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.41E+02	NC	NCOPC	NCOPC	1.26E+02	NC	NCOPC	NCOPC
Dibenz(a,h)anthracene	4.36E-07	1.91E-01	8.31E-08	9.68E-01	4.22E-07	1.90E+00	8.29E-07	5.70E-01	2.49E-07	8.12E-01	3.54E-07	6.92E-01	3.02E-07	4.28E+00	1.87E-06
Indeno(1,2,3-cd)pyrene	4.36E-08	4.48E-01	1.95E-08	1.72E+00	7.50E-08	5.40E+00	2.35E-07	8.85E-01	3.86E-08	5.11E+00	2.23E-07	2.07E+00	9.04E-08	1.41E+01	6.16E-07
Iron	NC	1.15E+05	NC	1.26E+05	NC	2.67E+04	NC	2.49E+04	NC	1.15E+05	NC	6.14E+04	NC	5.03E+04	NC
Lead	NC	5.44E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC	1.99E+02	NC	NCOPC	NCOPC	1.33E+02	NC	2.56E+02	NC
Manganese	NC	3.53E+03	NC	2.25E+03	NC	4.29E+03	NC	8.86E+02	NC	5.51E+03	NC	4.21E+03	NC	1.72E+03	NC
Mercury	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.38E+00	NC	NCOPC	NCOPC	8.30E-01	NC	1.62E+00	NC
Naphthalene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.23E+00	NC
Thallium	NC	NCOPC	NCOPC	9.74E-01	NC	8.10E-01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Toluene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.09E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC
Total PCBs	1.21E-07	7.10E+01	8.61E-06	1.96E+00	2.38E-07	1.30E+00	1.58E-07	1.84E-01	2.23E-08	1.40E-01	1.70E-08	7.70E-01	9.35E-08	5.48E+00	6.65E-07
Total Xylenes	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.40E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	NC	3.43E+01	NC	3.18E+01	NC	3.57E+01	NC	3.58E+01	NC	3.78E+01	NC	3.41E+01	NC	2.57E+01	NC
Zinc	NC	1.30E+03	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.31E+02	NC	NCOPC	NCOPC
	Total Risk:		9.93E-06		4.65E-06		5.20E-06		4.84E-06		4.44E-06		3.06E-06		1.55E-05

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
DERMAL CONTACT AND
INGESTION OF SURFACE SOIL
FOR CURRENT/FUTURE TRESPASSER - RME

Chemical	Unit Concentration in Soil (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Reference Dose (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	ADDing Current/Future Trespasser - RME (mg/kg-day)	ADDder Current/Future Trespasser - RME (mg/kg-day)	Unit Hazard Index - Ingestion	Unit Hazard Index - Dermal Contact	Unit Hazard Index
2,3,7-8 TCDD TEQ	1.00E+00	0.03	1.00E-09	1.00E-09	3.31E-07	2.00E-08	3.31E+02	2.00E+01	3.51E+02
2-Methylnaphthalene	1.00E+00	0.13	4.00E-03	4.00E-03	3.31E-07	8.69E-08	8.28E-05	2.17E-05	1.05E-04
Aluminum	1.00E+00	0.001	1.00E+00	1.00E+00	3.31E-07	6.68E-10	3.31E-07	6.68E-10	3.32E-07
Antimony	1.00E+00	0.001	4.00E-04	6.00E-05	3.31E-07	6.68E-10	8.28E-04	1.11E-05	8.39E-04
Arsenic	1.00E+00	0.03	3.00E-04	3.00E-04	3.31E-07	2.00E-08	1.10E-03	6.68E-05	1.17E-03
Barium	1.00E+00	0.001	2.00E-01	1.40E-02	3.31E-07	6.68E-10	1.66E-06	4.77E-08	1.70E-06
Benzene	1.00E+00	0.01	4.00E-03	4.00E-03	3.31E-07	6.68E-09	8.28E-05	1.67E-06	8.45E-05
Benzo(a)anthracene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	8.69E-08	1.10E-05	2.90E-06	1.39E-05
Benzo(a)pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	8.69E-08	1.10E-05	2.90E-06	1.39E-05
Benzo(b)fluoranthene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	8.69E-08	1.10E-05	2.90E-06	1.39E-05
Benzo(k)fluoranthene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	8.69E-08	1.10E-05	2.90E-06	1.39E-05
Cadmium	1.00E+00	0.001	1.00E-03	2.50E-05	3.31E-07	6.68E-10	3.31E-04	2.67E-05	3.58E-04
Chromium (total)	1.00E+00	0.001	1.50E+00	1.95E-02	3.31E-07	6.68E-10	2.21E-07	3.43E-08	2.55E-07
Copper	1.00E+00	0.001	3.70E-02	3.70E-02	3.31E-07	6.68E-10	8.95E-06	1.81E-08	8.97E-06
Dibenz(a,h)anthracene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	8.69E-08	1.10E-05	2.90E-06	1.39E-05
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	8.69E-08	1.10E-05	2.90E-06	1.39E-05
Iron	1.00E+00	0.001	7.00E-01	7.00E-01	3.31E-07	6.68E-10	4.73E-07	9.54E-10	4.74E-07
Lead	1.00E+00	NA	NA	NA	3.31E-07	NA	NA	NA	NC
Manganese	1.00E+00	0.001	2.40E-02	9.60E-04	3.31E-07	6.68E-10	1.38E-05	6.96E-07	1.45E-05
Mercury	1.00E+00	0.001	3.00E-04	2.10E-05	3.31E-07	6.68E-10	1.10E-03	3.18E-05	1.14E-03
Naphthalene	1.00E+00	0.13	2.00E-02	2.00E-02	3.31E-07	8.69E-08	1.66E-05	4.34E-06	2.09E-05
Thallium	1.00E+00	0.001	6.67E-05	6.67E-05	3.31E-07	6.68E-10	4.97E-03	1.00E-05	4.98E-03
Toluene	1.00E+00	0.01	8.00E-02	8.00E-02	3.31E-07	6.68E-09	4.14E-06	8.35E-08	4.22E-06
Total PCBs	1.00E+00	0.14	2.00E-05	2.00E-05	3.31E-07	9.35E-08	1.66E-02	4.68E-03	2.12E-02
Total Xylenes	1.00E+00	0.01	2.00E-01	2.00E-01	3.31E-07	6.68E-09	1.66E-06	3.34E-08	1.69E-06
Vanadium	1.00E+00	0.001	5.04E-03	1.31E-04	3.31E-07	6.68E-10	6.57E-05	5.10E-06	7.08E-05
Zinc	1.00E+00	0.001	3.00E-01	3.00E-01	3.31E-07	6.68E-10	1.10E-06	2.23E-09	1.11E-06

TABLE
POTENTIAL HAZARD INDEX
DERMAL CONTACT AND
INGESTION OF SURFACE SOIL
FOR CURRENT/FUTURE TRESPASSER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	HI (per mg/kg)	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ
2,3,7-8 TCDD TEQ	3.51E+02	3.84E-06	1.35E-03	5.42E-06	1.90E-03	NCOPC	NCOPC	5.62E-06	1.97E-03	7.22E-06	2.54E-03	9.94E-06	3.49E-03	NCOPC	NCOPC
2-Methylnaphthalene	1.05E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	8.01E-01	8.37E-05
Aluminum	3.32E-07	1.96E+04	6.51E-03	2.22E+04	7.36E-03	2.70E+04	8.95E-03	1.38E+04	4.59E-03	3.33E+04	1.11E-02	2.09E+04	6.94E-03	1.46E+04	4.83E-03
Antimony	8.39E-04	NCOPC	NCOPC	3.61E+00	3.03E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.05E+02	8.81E-02	NCOPC	NCOPC
Arsenic	1.17E-03	1.08E+01	1.27E-02	1.22E+01	1.43E-02	9.29E+00	1.09E-02	4.84E+01	5.67E-02	4.98E+00	5.83E-03	9.70E+00	1.14E-02	8.22E+00	9.62E-03
Barium	1.70E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.28E+02	3.89E-04	NCOPC	NCOPC
Benzene	8.45E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.44E+01	1.22E-03	NCOPC	NCOPC	NCOPC	NCOPC
Benzo(a)anthracene	1.39E-05	7.00E-01	9.76E-06	3.80E+00	5.30E-05	4.31E+00	6.01E-05	1.40E+00	1.96E-05	1.32E+00	1.84E-05	4.42E+00	6.16E-05	2.47E+01	3.44E-04
Benzo(a)pyrene	1.39E-05	7.10E-01	9.90E-06	5.60E+00	7.81E-05	6.60E+00	9.20E-05	1.23E+00	1.71E-05	6.75E+00	9.41E-05	3.27E+00	4.55E-05	2.23E+01	3.10E-04
Benzo(b)fluoranthene	1.39E-05	6.90E-01	9.62E-06	7.93E+00	1.10E-04	4.34E+00	6.05E-05	1.16E+00	1.62E-05	8.14E+00	1.13E-04	3.01E+00	4.20E-05	1.94E+01	2.70E-04
Benzo(k)fluoranthene	1.39E-05	NCOPC	NCOPC	NCOPC	NCOPC	4.46E+00	6.22E-05	NCOPC	NCOPC	5.72E+00	7.97E-05	3.06E+00	4.26E-05	2.10E+01	2.92E-04
Cadmium	3.58E-04	4.02E+00	1.44E-03	4.35E+00	1.56E-03	NCOPC	NCOPC	3.40E+00	1.22E-03	3.96E+00	1.42E-03	1.93E+00	6.92E-04	8.22E-01	2.94E-04
Chromium (total)	2.55E-07	4.89E+01	1.25E-05	2.05E+01	5.24E-06	2.76E+01	7.05E-06	2.42E+01	6.17E-06	5.66E+01	1.44E-05	2.06E+02	5.26E-05	1.91E+01	4.88E-06
Copper	8.97E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.41E+02	2.16E-03	NCOPC	NCOPC	1.26E+02	1.13E-03	NCOPC	NCOPC
Dibenz(a,h)anthracene	1.39E-05	1.91E-01	2.66E-06	9.68E-01	1.35E-05	1.90E+00	2.65E-05	5.70E-01	7.95E-06	8.12E-01	1.13E-05	6.92E-01	9.65E-06	4.26E+00	5.97E-05
Indeno(1,2,3-cd)pyrene	1.39E-05	4.48E-01	6.24E-06	1.72E+00	2.40E-05	5.40E+00	7.53E-05	8.85E-01	1.23E-05	5.11E+00	7.12E-05	2.07E+00	2.89E-05	1.41E+01	1.97E-04
Iron	4.74E-07	1.15E+05	5.45E-02	1.26E+05	5.98E-02	2.67E+04	1.27E-02	2.49E+04	1.18E-02	1.15E+05	5.47E-02	6.14E+04	2.91E-02	5.03E+04	2.39E-02
Lead	NC	5.44E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC	1.99E+02	NC	NCOPC	NCOPC	1.33E+02	NC	2.56E+02	NC
Manganese	1.45E-05	3.53E+03	5.12E-02	2.25E+03	3.26E-02	4.29E+03	6.22E-02	8.86E+02	1.28E-02	5.51E+03	7.99E-02	4.21E+03	6.11E-02	1.72E+03	2.50E-02
Mercury	1.14E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.38E+00	1.57E-03	NCOPC	NCOPC	8.30E-01	9.43E-04	1.62E+00	1.84E-03
Naphthalene	2.09E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.23E+00	4.67E-05
Thallium	4.98E-03	NCOPC	NCOPC	9.74E-01	4.85E-03	8.10E-01	4.03E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Toluene	4.22E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.09E+02	4.63E-04	NCOPC	NCOPC	NCOPC	NCOPC
Total PCBs	2.12E-02	7.10E+01	1.51E+00	1.96E+00	4.17E-02	1.30E+00	2.76E-02	1.84E-01	3.91E-03	1.40E-01	2.97E-03	7.70E-01	1.64E-02	5.48E+00	1.16E-01
Total Xylenes	1.69E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.40E+02	7.44E-04	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	7.08E-05	3.43E+01	2.43E-03	3.18E+01	2.25E-03	3.57E+01	2.53E-03	3.58E+01	2.54E-03	3.78E+01	2.68E-03	3.41E+01	2.41E-03	2.57E+01	1.82E-03
Zinc	1.11E-06	1.30E+03	1.44E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.31E+02	6.98E-04	NCOPC	NCOPC
	Total HI:		1.84E+00		1.70E-01		1.29E-01		9.94E-02		1.84E-01		2.23E-01		1.85E-01

Notes:
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
AK STEEL FORMER ARMCO HAMILTON PLANT

Receptors Evaluated:	
Receptor 1:	Current/Future Trespasser - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR CURRENT/FUTURE TRESPASSER - RME INHALATION OF AMBIENT AIR		Assumed Value	Units	Calculated Value
Inhalation Rate	Current/Future Trespasser - RME	7.2	(m^3 air/day)	(1.2m^3/hr x 6hrs/1day)
Body Weight	Current/Future Trespasser - RME	43	(kg)	
Exposure Frequency	Current/Future Trespasser - RME	52	(days)/365(days) =	1.42E-01
Exposure Duration (cancer)	Current/Future Trespasser - RME	10	(yrs)/70(yrs) =	1.43E-01
Exposure Duration (noncancer)	Current/Future Trespasser - RME	10	(yrs)/10(yrs) =	1.00E+00
Lifetime		70	(years)	

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
INHALATION OF
AMBIENT AIR
FOR CURRENT/FUTURE TRESPASSER - RME

Chemical	Unit Concentration In Air (mg/m^3 air)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	ADDinh Current/Future Trespasser - RME (mg/kg-day)	Lifetime Average Daily Dose - Inh. (mg/kg-day)	Unit Excess Lifetime Cancer Risk - Inhalation
1,1-Biphenyl	1.00E+00	NA	3.41E-03	3.41E-03	NC
2,3,7-8 TCDD TEQ	1.00E+00	1.50E+05	3.41E-03	3.41E-03	5.11E+02
2-Methylnaphthalene	1.00E+00	NA	3.41E-03	3.41E-03	NC
Acenaphthene	1.00E+00	NA	3.41E-03	3.41E-03	NC
Acenaphthylene	1.00E+00	NA	3.41E-03	3.41E-03	NC
Aluminum	1.00E+00	NA	3.41E-03	3.41E-03	NC
Anthracene	1.00E+00	NA	3.41E-03	3.41E-03	NC
Antimony	1.00E+00	NA	3.41E-03	3.41E-03	NC
Arsenic	1.00E+00	1.51E+01	3.41E-03	3.41E-03	5.15E-02
Barium	1.00E+00	NA	3.41E-03	3.41E-03	NC
Benzene	1.00E+00	2.70E-02	3.41E-03	3.41E-03	9.20E-05
Benzo(a)anthracene	1.00E+00	3.90E-01	3.41E-03	3.41E-03	1.33E-03
Benzo(a)pyrene	1.00E+00	3.90E+00	3.41E-03	3.41E-03	1.33E-02
Benzo(b)fluoranthene	1.00E+00	3.90E-01	3.41E-03	3.41E-03	1.33E-03
Benzo(g,h,i)perylene	1.00E+00	NA	3.41E-03	3.41E-03	NC
Benzo(k)fluoranthene	1.00E+00	3.90E-01	3.41E-03	3.41E-03	1.33E-03
Cadmium	1.00E+00	6.30E+00	3.41E-03	3.41E-03	2.15E-02
Carbazole	1.00E+00	NA	3.41E-03	3.41E-03	NC
Chromium (total)	1.00E+00	NA	3.41E-03	3.41E-03	NC
Chrysene	1.00E+00	3.90E-02	3.41E-03	3.41E-03	1.33E-04
Copper	1.00E+00	NA	3.41E-03	3.41E-03	NC
Dibenz(a,h)anthracene	1.00E+00	4.10E+00	3.41E-03	3.41E-03	1.40E-02
Dibenzofuran	1.00E+00	NA	3.41E-03	3.41E-03	NC
Fluoranthene	1.00E+00	NA	3.41E-03	3.41E-03	NC
Fluorene	1.00E+00	NA	3.41E-03	3.41E-03	NC
Indeno(1,2,3-cd)pyrene	1.00E+00	3.90E-01	3.41E-03	3.41E-03	1.33E-03
Iron	1.00E+00	NA	3.41E-03	3.41E-03	NC
Lead	1.00E+00	NA	3.41E-03	3.41E-03	NC
Manganese	1.00E+00	NA	3.41E-03	3.41E-03	NC
Mercury	1.00E+00	NA	3.41E-03	3.41E-03	NC
Naphthalene	1.00E+00	NA	3.41E-03	3.41E-03	NC
p-Cresol (4-Methylphenol)	1.00E+00	NA	3.41E-03	3.41E-03	NC
Phenanthrene	1.00E+00	NA	3.41E-03	3.41E-03	NC
Phenol	1.00E+00	NA	3.41E-03	3.41E-03	NC
Pyrene	1.00E+00	NA	3.41E-03	3.41E-03	NC
Thallium	1.00E+00	NA	3.41E-03	3.41E-03	NC
Toluene	1.00E+00	NA	3.41E-03	3.41E-03	NC
Total PCBs	1.00E+00	2.00E+00	3.41E-03	3.41E-03	6.82E-03
Total Xylenes	1.00E+00	NA	3.41E-03	3.41E-03	NC
Trichloroethene	1.00E+00	7.00E-03	3.41E-03	3.41E-03	2.39E-05
Vanadium	1.00E+00	NA	3.41E-03	3.41E-03	NC
Zinc	1.00E+00	NA	3.41E-03	3.41E-03	NC

TABLE
POTENTIAL CARCINOGENIC RISK
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
INHALATION OF
AMBIENT AIR
FOR CURRENT/FUTURE TRESPASSER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	Risk (per mg/m³)	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk
1,1-Biphenyl	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
2,3,7-8 TCDD TEQ	5.11E+02	6.12E-15	3.13E-12	7.39E-15	3.78E-12	NCOPC	NCOPC	8.95E-15	4.58E-12	1.15E-14	5.88E-12	1.58E-14	8.10E-12	NCOPC	NCOPC
2-Methylnaphthalene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.28E-09	NC
Acenaphthene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Acenaphthylene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Aluminum	NC	3.12E-05	NC	3.02E-05	NC	4.30E-05	NC	2.20E-05	NC	5.31E-05	NC	3.33E-05	NC	2.32E-05	NC
Anthracene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Antimony	NC	NCOPC	NCOPC	4.92E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.67E-07	NC	NCOPC	NCOPC
Arsenic	5.15E-02	1.73E-08	8.88E-10	1.67E-08	8.59E-10	1.48E-08	7.62E-10	7.71E-09	3.97E-09	7.94E-09	4.08E-10	1.55E-08	7.95E-10	1.31E-08	6.74E-10
Barium	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.63E-07	NC	NCOPC	NCOPC
Benzene	9.20E-05	1.28E-02	1.18E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.30E-03	6.72E-07	3.06E-05	2.81E-09	1.60E-02	1.47E-06
Benzo(a)anthracene	1.33E-03	1.12E-09	1.48E-12	5.18E-09	6.88E-12	6.87E-09	9.14E-12	2.24E-09	2.97E-12	2.11E-09	2.80E-12	7.05E-09	9.37E-12	3.93E-08	5.22E-11
Benzo(a)pyrene	1.33E-02	1.13E-09	1.50E-11	7.63E-09	1.01E-10	1.05E-08	1.40E-10	1.95E-09	2.60E-11	1.08E-08	1.43E-10	5.20E-09	6.92E-11	3.55E-08	4.72E-10
Benzo(b)fluoranthene	1.33E-03	1.10E-09	1.46E-12	1.08E-08	1.44E-11	6.92E-09	9.19E-12	1.85E-09	2.46E-12	1.30E-08	1.72E-11	4.60E-09	6.38E-12	3.09E-08	4.11E-11
Benzo(g,h,i)perylene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Benzo(k)fluoranthene	1.33E-03	NCOPC	NCOPC	NCOPC	NCOPC	7.12E-09	9.46E-12	NCOPC	NCOPC	9.12E-09	1.21E-11	4.87E-09	6.47E-12	3.34E-08	4.44E-11
Cadmium	2.15E-02	6.41E-09	1.38E-10	5.93E-09	1.27E-10	NCOPC	NCOPC	5.42E-09	1.16E-10	6.32E-09	1.36E-10	3.08E-09	6.62E-11	1.31E-09	2.81E-11
Carbazole	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Chromium (total)	NC	7.80E-08	NC	2.80E-08	NC	4.40E-08	NC	3.85E-08	NC	9.02E-08	NC	3.29E-07	NC	3.05E-08	NC
Chrysene	1.33E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Copper	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.84E-07	NC	NCOPC	NCOPC	2.01E-07	NC	NCOPC	NCOPC
Dibenz(a,h)anthracene	1.40E-02	3.04E-10	4.25E-12	1.32E-09	1.84E-11	3.03E-09	4.23E-11	9.09E-10	1.27E-11	1.29E-09	1.81E-11	1.10E-09	1.54E-11	6.83E-09	9.54E-11
Dibenzofuran	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Fluoranthene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Fluorene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Indeno(1,2,3-cd)pyrene	1.33E-03	7.13E-10	9.48E-13	2.34E-09	3.12E-12	8.61E-09	1.14E-11	1.41E-09	1.88E-12	8.14E-09	1.08E-11	3.30E-09	4.39E-12	2.25E-08	2.99E-11
Iron	NC	1.83E-04	NC	1.72E-04	NC	4.26E-05	NC	3.97E-05	NC	1.84E-04	NC	9.78E-05	NC	8.02E-05	NC
Lead	NC	8.67E-07	NC	NCOPC	NCOPC	NCOPC	NCOPC	3.17E-07	NC	NCOPC	NCOPC	2.12E-07	NC	4.07E-07	NC
Manganese	NC	5.62E-08	NC	3.07E-08	NC	6.84E-08	NC	1.41E-08	NC	8.78E-08	NC	6.71E-08	NC	2.75E-08	NC
Mercury	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.21E-09	NC	NCOPC	NCOPC	1.32E-09	NC	2.58E-09	NC
Naphthalene	NC	1.76E-02	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.62E-03	NC	1.42E-01	NC
p-Cresol (4-Methylphenol)	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Phenanthrene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Phenol	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Pyrene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Thallium	NC	NCOPC	NCOPC	1.33E-09	NC	1.29E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Toluene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.80E-02	NC	NCOPC	NCOPC	1.35E-02	NC
Total PCBs	6.82E-03	1.13E-07	7.71E-10	2.68E-09	1.82E-11	2.07E-09	1.41E-11	2.93E-10	2.00E-12	2.23E-10	1.52E-12	1.23E-09	8.36E-12	8.73E-09	5.95E-11
Total Xylenes	NC	1.49E-02	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.28E-02	NC	NCOPC	NCOPC	1.74E-02	NC
Trichloroethene	2.39E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.51E-05	1.32E-09	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	NC	5.46E-08	NC	4.33E-08	NC	5.70E-08	NC	5.71E-08	NC	8.02E-08	NC	5.43E-08	NC	4.10E-08	NC
Zinc	NC	2.08E-06	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.01E-06	NC	NCOPC	NCOPC
	Total Risk:		1.18E-06		1.15E-09		9.97E-10		4.14E-09		6.74E-07		3.80E-09		1.47E-06

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
INHALATION OF
AMBIENT AIR
FOR CURRENT/FUTURE TRESPASSER - RME

Chemical	Unit Concentration In Air (mg/m^3 air)	Inhalation Reference Dose (mg/kg-day)	ADDinh Current/Future Trespasser - RME (mg/kg-day)	Chronic Average Daily Dose-Inh (mg/kg-day)	Unit Hazard Index - Inhalation
1,1-Biphenyl	1.00E+00	5.00E-02	2.39E-02	2.39E-02	4.77E-01
2,3,7-8 TCDD TEQ	1.00E+00	NA	2.39E-02	2.39E-02	NC
2-Methylnaphthalene	1.00E+00	8.57E-04	2.39E-02	2.39E-02	2.78E+01
Acenaphthene	1.00E+00	6.00E-02	2.39E-02	2.39E-02	3.98E-01
Acenaphthylene	1.00E+00	6.00E-02	2.39E-02	2.39E-02	3.98E-01
Aluminum	1.00E+00	1.43E-03	2.39E-02	2.39E-02	1.67E+01
Anthracene	1.00E+00	3.00E-01	2.39E-02	2.39E-02	7.95E-02
Antimony	1.00E+00	NA	2.39E-02	2.39E-02	NC
Arsenic	1.00E+00	8.57E-06	2.39E-02	2.39E-02	2.78E+03
Barium	1.00E+00	1.40E-04	2.39E-02	2.39E-02	1.70E+02
Benzene	1.00E+00	8.57E-03	2.39E-02	2.39E-02	2.78E+00
Benzo(a)anthracene	1.00E+00	3.00E-02	2.39E-02	2.39E-02	7.95E-01
Benzo(a)pyrene	1.00E+00	3.00E-02	2.39E-02	2.39E-02	7.95E-01
Benzo(b)fluoranthene	1.00E+00	3.00E-02	2.39E-02	2.39E-02	7.95E-01
Benzo(g,h,i)perylene	1.00E+00	3.00E-02	2.39E-02	2.39E-02	7.95E-01
Benzo(k)fluoranthene	1.00E+00	3.00E-02	2.39E-02	2.39E-02	7.95E-01
Cadmium	1.00E+00	5.71E-06	2.39E-02	2.39E-02	4.17E+03
Carbazole	1.00E+00	NA	2.39E-02	2.39E-02	NC
Chromium (total)	1.00E+00	NA	2.39E-02	2.39E-02	NC
Chrysene	1.00E+00	3.00E-02	2.39E-02	2.39E-02	7.95E-01
Copper	1.00E+00	NA	2.39E-02	2.39E-02	NC
Dibenz(a,h)anthracene	1.00E+00	3.00E-02	2.39E-02	2.39E-02	7.95E-01
Dibenzofuran	1.00E+00	1.00E-03	2.39E-02	2.39E-02	2.39E+01
Fluoranthene	1.00E+00	4.00E-02	2.39E-02	2.39E-02	5.96E-01
Fluorene	1.00E+00	4.00E-02	2.39E-02	2.39E-02	5.96E-01
Indeno(1,2,3-cd)pyrene	1.00E+00	3.00E-02	2.39E-02	2.39E-02	7.95E-01
Iron	1.00E+00	NA	2.39E-02	2.39E-02	NC
Lead	1.00E+00	NA	2.39E-02	2.39E-02	NC
Manganese	1.00E+00	1.43E-05	2.39E-02	2.39E-02	1.67E+03
Mercury	1.00E+00	8.57E-05	2.39E-02	2.39E-02	2.78E+02
Naphthalene	1.00E+00	8.57E-04	2.39E-02	2.39E-02	2.78E+01
p-Cresol (4-Methylphenol)	1.00E+00	5.00E-02	2.39E-02	2.39E-02	4.77E-01
Phenanthrene	1.00E+00	3.00E-01	2.39E-02	2.39E-02	7.95E-02
Phenol	1.00E+00	5.70E-02	2.39E-02	2.39E-02	4.19E-01
Pyrene	1.00E+00	3.00E-02	2.39E-02	2.39E-02	7.95E-01
Thallium	1.00E+00	NA	2.39E-02	2.39E-02	NC
Toluene	1.00E+00	1.43E+00	2.39E-02	2.39E-02	1.67E-02
Total PCBs	1.00E+00	2.00E-05	2.39E-02	2.39E-02	1.19E+03
Total Xylenes	1.00E+00	2.86E-02	2.39E-02	2.39E-02	8.35E-01
Trichloroethene	1.00E+00	1.70E-01	2.39E-02	2.39E-02	1.40E-01
Vanadium	1.00E+00	NA	2.39E-02	2.39E-02	NC
Zinc	1.00E+00	NA	2.39E-02	2.39E-02	NC

TABLE
POTENTIAL HAZARD INDEX
NONCARCINOGENIC ASSESSMENT
INHALATION OF
AMBIENT AIR
FOR CURRENT/FUTURE TRESPASSER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	HI (per mg/m³)	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ
1,1-Biphenyl	4.77E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
2,3,7-8 TCDD TEQ	NC	6.12E-15	NC	7.39E-15	NC	NCOPC	NCOPC	8.95E-15	NC	1.15E-14	NC	1.58E-14	NC	NCOPC	NCOPC
2-Methylnaphthalene	2.78E+01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.28E-09	3.55E-08
Acenaphthene	3.98E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Acenaphthylene	3.98E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Aluminum	1.67E+01	3.12E-05	5.22E-04	3.02E-05	5.04E-04	4.30E-05	7.18E-04	2.20E-05	3.68E-04	5.31E-05	8.86E-04	3.33E-05	5.57E-04	2.32E-05	3.87E-04
Anthracene	7.95E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Antimony	NC	NCOPC	NCOPC	4.92E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.57E-07	NC	NCOPC	NCOPC
Arsenic	2.78E+03	1.73E-08	4.80E-05	1.67E-08	4.65E-05	1.48E-08	4.12E-05	7.71E-08	2.15E-04	7.94E-09	2.21E-05	1.55E-08	4.30E-05	1.31E-08	3.64E-05
Barium	1.70E+02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.63E-07	6.19E-05	NCOPC	NCOPC
Benzene	2.78E+00	1.28E-02	3.55E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.30E-03	2.03E-02	3.06E-05	8.51E-05	1.60E-02	4.44E-02
Benzo(a)anthracene	7.95E-01	1.12E-09	8.87E-10	5.18E-09	4.12E-09	6.87E-09	5.47E-09	2.24E-09	1.78E-09	2.11E-09	1.67E-09	7.05E-09	5.60E-09	3.93E-08	3.12E-08
Benzo(a)pyrene	7.95E-01	1.13E-09	9.00E-10	7.63E-09	6.07E-09	1.05E-08	8.36E-09	1.95E-09	1.55E-09	1.08E-08	8.55E-09	5.20E-09	4.14E-09	3.55E-08	2.82E-08
Benzo(b)fluoranthene	7.95E-01	1.10E-09	8.75E-10	1.08E-08	8.59E-09	6.92E-09	5.50E-09	1.85E-09	1.47E-09	1.30E-08	1.03E-08	4.80E-09	3.82E-09	3.09E-08	2.46E-08
Benzo(g,h,i)perylene	7.95E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Benzo(k)fluoranthene	7.95E-01	NCOPC	NCOPC	NCOPC	NCOPC	7.12E-09	5.66E-09	NCOPC	NCOPC	9.12E-09	7.25E-09	4.87E-09	3.87E-09	3.34E-08	2.66E-08
Cadmium	4.17E+03	8.41E-09	2.67E-05	5.93E-09	2.47E-05	NCOPC	NCOPC	5.42E-09	2.26E-05	6.32E-09	2.64E-05	3.06E-09	1.28E-05	1.31E-09	5.47E-06
Carbazole	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Chromium (total)	NC	7.80E-08	NC	2.80E-08	NC	4.40E-08	NC	3.85E-08	NC	9.02E-08	NC	3.29E-07	NC	3.05E-08	NC
Chrysene	7.95E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Copper	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.84E-07	NC	NCOPC	NCOPC	2.01E-07	NC	NCOPC	NCOPC
Dibenz(a,h)anthracene	7.95E-01	3.04E-10	2.42E-10	1.32E-09	1.05E-09	3.03E-09	2.41E-09	9.09E-10	7.22E-10	1.29E-09	1.03E-09	1.10E-09	8.77E-10	6.83E-09	5.43E-09
Dibenzofuran	2.39E+01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Fluoranthene	5.96E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Fluorene	5.96E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Indeno(1,2,3-cd)pyrene	7.95E-01	7.13E-10	5.67E-10	2.34E-09	1.86E-09	8.81E-09	6.84E-09	1.41E-09	1.12E-09	8.14E-09	6.48E-09	3.30E-09	2.63E-09	2.25E-08	1.79E-08
Iron	NC	1.83E-04	NC	1.72E-04	NC	4.28E-05	NC	3.97E-05	NC	1.84E-04	NC	9.78E-05	NC	8.02E-05	NC
Lead	NC	8.87E-07	NC	NCOPC	NCOPC	NCOPC	NCOPC	3.17E-07	NC	NCOPC	NCOPC	2.12E-07	NC	4.07E-07	NC
Manganese	1.67E+03	5.62E-06	9.39E-03	3.07E-06	5.12E-03	6.84E-06	1.14E-02	1.41E-06	2.36E-03	8.78E-06	1.47E-02	6.71E-06	1.12E-02	2.75E-06	4.59E-03
Mercury	2.78E+02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.21E-09	6.14E-07	NCOPC	NCOPC	1.32E-09	3.68E-07	2.58E-09	7.19E-07
Naphthalene	2.78E+01	1.78E-02	4.89E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.82E-03	1.56E-01	1.42E-01	3.94E+00
p-Cresol (4-Methylphenol)	4.77E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Phenanthrene	7.95E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Phenol	4.19E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Pyrene	7.95E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Thallium	NC	NCOPC	NCOPC	1.33E-09	NC	1.29E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Toluene	1.67E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.80E-02	6.35E-04	NCOPC	NCOPC	1.35E-02	2.25E-04
Total PCBs	1.19E+03	1.13E-07	1.35E-04	2.66E-08	3.19E-08	2.07E-08	2.47E-05	2.93E-10	3.50E-07	2.23E-10	2.66E-07	1.23E-08	1.46E-05	8.73E-09	1.04E-05
Total Xylenes	8.36E-01	1.49E-02	1.24E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.28E-02	5.25E-02	NCOPC	NCOPC	1.74E-02	1.45E-02
Trichloroethene	1.40E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.51E-05	7.74E-06	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	NC	5.46E-08	NC	4.33E-08	NC	5.70E-08	NC	5.71E-08	NC	6.02E-08	NC	5.43E-08	NC	4.10E-08	NC
Zinc	NC	2.08E-06	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.01E-06	NC	NCOPC	NCOPC
	Total HI:		6.47E-01		5.70E-03		1.22E-02		2.98E-03		8.90E-02		1.68E-01		4.09E+00

Notes:
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT

Receptors Evaluated:	
Receptor 1:	Current/Future Trespasser - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR CURRENT/FUTURE TRESPASSER - RME DERMAL CONTACT AND INGESTION OF SEDIMENT - WADING		Assumed Value	Units	Calculated Value
Sediment Ingestion Rate	Current/Future Trespasser - RME	100	(mg soil/day)	
Sediment on Skin	Current/Future Trespasser - RME	0.28	(mg/cm^2)	
Skin Exposed	Current/Future Trespasser - RME	4033	(cm^2)	
Body Weight	Current/Future Trespasser - RME	43	(kg)	
Exposure Frequency	Current/Future Trespasser - RME	52	(days)/365(days) =	1.42E-01
Exposure Duration (cancer)	Current/Future Trespasser - RME	10	(years)/70(years) =	1.43E-01
Exposure Duration (noncancer)	Current/Future Trespasser - RME	10	(years)/10(years) =	1.00E+00
Lifetime		70	(years)	
Unit Conversion Factor		1.00E-06	(kg/mg)	

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
DERMAL CONTACT AND
INGESTION OF SEDIMENT - WADING
FOR CURRENT/FUTURE TRESPASSER - RME

Chemical	Unit Concentration in Sediment (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	ADDing Current/Future Trespasser - RME (mg/kg-day)	ADDder Current/Future Trespasser - RME (mg/kg-day)	Unit Excess Lifetime Cancer Risk - Ingestion	Unit Excess Lifetime Cancer Risk - Dermal Contact	Unit Excess Lifetime Cancer Risk
2-Methylnaphthalene	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC
Aluminum	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC
Arsenic	1.00E+00	0.03	1.50E+00	1.50E+00	4.73E-08	1.60E-08	7.10E-08	2.41E-08	9.50E-08
Benzo(a)anthracene	1.00E+00	0.13	7.30E-01	7.30E-01	4.73E-08	6.95E-08	3.46E-08	5.07E-08	8.53E-08
Benzo(a)pyrene	1.00E+00	0.13	7.30E+00	7.30E+00	4.73E-08	6.95E-08	3.46E-07	5.07E-07	8.53E-07
Benzo(b)fluoranthene	1.00E+00	0.13	7.30E-01	7.30E-01	4.73E-08	6.95E-08	3.46E-08	5.07E-08	8.53E-08
Benzo(k)fluoranthene	1.00E+00	0.13	7.30E-02	7.30E-02	4.73E-08	6.95E-08	3.46E-09	5.07E-09	8.53E-09
Chromium (total)	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC
Chrysene	1.00E+00	0.13	7.30E-03	7.30E-03	4.73E-08	6.95E-08	3.46E-10	5.07E-10	8.53E-10
Dibenz(a,h)anthracene	1.00E+00	0.13	7.30E+00	7.30E+00	4.73E-08	6.95E-08	3.46E-07	5.07E-07	8.53E-07
Dibenzofuran	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC
Fluoranthene	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	7.30E-01	7.30E-01	4.73E-08	6.95E-08	3.46E-08	5.07E-08	8.53E-08
Iron	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC
Manganese	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC
Naphthalene	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC
Pyrene	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC
Thallium	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC
Total PCBs	1.00E+00	0.14	2.00E+00	2.00E+00	4.73E-08	7.48E-08	9.47E-08	1.50E-07	2.44E-07
Vanadium	1.00E+00	NA	NA	NA	4.73E-08	NA	NA	NA	NC

TABLE
POTENTIAL CARCINOGENIC RISK
DERMAL CONTACT AND
INGESTION OF SEDIMENT - WADING
FOR CURRENT/FUTURE TRESPASSER - RME

Chemical	Reference Risk (per mg/kg)	Intermittent Stream (b) EPC (mg/kg)	Intermittent Stream (b) Risk	Great Miami River (a) EPC (mg/kg)	Great Miami River (a) Risk	Great Miami River EPC (mg/kg)	Great Miami River Risk	AOC 22: Riparian Area (c) EPC (mg/kg)	AOC 22: Riparian Area (c) Risk
2-Methylnaphthalene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	9.94E+00	NC
Aluminum	NC	1.63E+04	NC	NCOPC	NCOPC	8.53E+03	NC	1.13E+04	NC
Arsenic	9.50E-08	7.30E+00	6.94E-07	3.50E+00	3.33E-07	5.26E+00	5.00E-07	9.47E+00	9.00E-07
Benzo(a)anthracene	8.53E-08	1.70E+01	1.45E-06	NCOPC	NCOPC	9.92E+01	8.46E-06	4.62E+01	3.94E-06
Benzo(a)pyrene	8.53E-07	1.40E+01	1.19E-05	8.50E-01	7.25E-07	9.36E+01	7.98E-05	3.36E+01	2.87E-05
Benzo(b)fluoranthene	8.53E-08	1.20E+01	1.02E-06	7.70E-01	6.57E-08	7.17E+01	6.12E-06	3.53E+01	3.01E-06
Benzo(k)fluoranthene	8.53E-09	1.30E+01	1.11E-07	NCOPC	NCOPC	7.17E+01	6.11E-07	3.22E+01	2.74E-07
Chromium (total)	NC	2.24E+01	NC	NCOPC	NCOPC	2.29E+01	NC	4.42E+01	NC
Chrysene	8.53E-10	NCOPC	NCOPC	NCOPC	NCOPC	9.35E+01	7.98E-08	NCOPC	NCOPC
Dibenz(a,h)anthracene	8.53E-07	2.60E+00	2.22E-06	NCOPC	NCOPC	1.44E+01	1.23E-05	5.36E+00	4.57E-06
Dibenzofuran	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.13E+01	NC
Fluoranthene	NC	NCOPC	NCOPC	NCOPC	NCOPC	2.37E+02	NC	NCOPC	NCOPC
Indeno(1,2,3-cd)pyrene	8.53E-08	8.30E+00	7.08E-07	NCOPC	NCOPC	5.07E+01	4.33E-06	1.48E+01	1.26E-06
Iron	NC	1.92E+04	NC	1.27E+04	NC	1.97E+04	NC	4.10E+04	NC
Manganese	NC	2.57E+03	NC	4.81E+02	NC	9.21E+02	NC	1.54E+03	NC
Naphthalene	NC	NCOPC	NCOPC	ND	NCOPC	2.09E+00	NC	3.27E+01	NC
Pyrene	NC	NCOPC	NCOPC	NCOPC	NCOPC	2.09E+02	NC	NCOPC	NCOPC
Thallium	NC	NCOPC	NCOPC	NCOPC	NCOPC	3.59E+00	NC	3.32E-01	NC
Total PCBs	2.44E-07	NCOPC	NCOPC	2.40E-01	5.86E-08	9.70E-01	2.37E-07	9.80E-01	2.39E-07
Vanadium	NC	2.78E+01	NC	1.55E+01	NC	1.79E+01	NC	1.95E+01	NC
	Total Risk:		1.81E-05		1.18E-06		1.12E-04		4.29E-05

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
ND - Not Detected.
(a) Location where the former COG pipeline (AOC 19) passed beneath the Great Miami River.
(b) AOC 7.
(c) Hydric soil in the Riparian area adjacent to the river.

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
DERMAL CONTACT AND
INGESTION OF SEDIMENT - WADING
FOR CURRENT/FUTURE TRESPASSER - RME

Chemical	Unit Concentration in Sediment (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Reference Dose (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	ADDing Current/Future Trespasser - RME (mg/kg-day)	ADDder Current/Future Trespasser - RME (mg/kg-day)	Unit Hazard Index - Ingestion	Unit Hazard Index - Dermal Contact	Unit Hazard Index
2-Methylnaphthalene	1.00E+00	0.13	4.00E-03	4.00E-03	3.31E-07	4.86E-07	8.28E-05	1.22E-04	2.04E-04
Aluminum	1.00E+00	0.001	1.00E+00	1.00E+00	3.31E-07	3.74E-09	3.31E-07	3.74E-09	3.35E-07
Arsenic	1.00E+00	0.03	3.00E-04	3.00E-04	3.31E-07	1.12E-07	1.10E-03	3.74E-04	1.48E-03
Benzo(a)anthracene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	4.86E-07	1.10E-05	1.62E-05	2.73E-05
Benzo(a)pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	4.86E-07	1.10E-05	1.62E-05	2.73E-05
Benzo(b)fluoranthene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	4.86E-07	1.10E-05	1.62E-05	2.73E-05
Benzo(k)fluoranthene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	4.86E-07	1.10E-05	1.62E-05	2.73E-05
Chromium (total)	1.00E+00	0.001	NA	NA	3.31E-07	3.74E-09	NA	NA	NC
Chrysene	1.00E+00	0.13	1.50E+00	1.95E-02	3.31E-07	4.86E-07	2.21E-07	2.48E-05	2.52E-05
Dibenz(a,h)anthracene	1.00E+00	0.13	2.00E-02	2.00E-02	3.31E-07	4.86E-07	1.66E-05	2.43E-05	4.09E-05
Dibenzofuran	1.00E+00	0.01	3.00E-02	3.00E-02	3.31E-07	3.74E-08	1.10E-05	1.25E-06	1.23E-05
Fluoranthene	1.00E+00	0.13	4.00E-02	4.00E-02	3.31E-07	4.86E-07	8.28E-06	1.22E-05	2.04E-05
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	4.86E-07	1.10E-05	1.62E-05	2.73E-05
Iron	1.00E+00	0.001	7.00E-01	7.00E-01	3.31E-07	3.74E-09	4.73E-07	5.34E-09	4.79E-07
Manganese	1.00E+00	0.001	2.40E-02	9.60E-04	3.31E-07	3.74E-09	1.38E-05	3.90E-06	1.77E-05
Naphthalene	1.00E+00	0.13	2.00E-02	2.00E-02	3.31E-07	4.86E-07	1.66E-05	2.43E-05	4.09E-05
Pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	3.31E-07	4.86E-07	1.10E-05	1.62E-05	2.73E-05
Thallium	1.00E+00	0.001	6.67E-05	6.67E-05	3.31E-07	3.74E-09	4.97E-03	5.61E-05	5.02E-03
Total PCBs	1.00E+00	0.14	2.00E-05	2.00E-05	3.31E-07	5.24E-07	1.66E-02	2.62E-02	4.28E-02
Vanadium	1.00E+00	0.001	5.04E-03	1.31E-04	3.31E-07	3.74E-09	6.57E-05	2.86E-05	9.43E-05

TABLE
POTENTIAL HAZARD INDEX
DERMAL CONTACT AND
INGESTION OF SEDIMENT - WADING
FOR CURRENT/FUTURE TRESPASSER - RME

Chemical	Reference HI (per mg/kg)	Intermittent Stream (b) EPC (mg/kg)	Intermittent Stream (b) HQ	Great Miami River (a) EPC (mg/kg)	Great Miami River (a) HQ	Great Miami River EPC (mg/kg)	Great Miami River HQ	AOC 22: Riparian Area (c) EPC (mg/kg)	AOC 22: Riparian Area (c) HQ
2-Methylnaphthalene	2.04E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	9.94E+00	2.03E-03
Aluminum	3.35E-07	1.63E+04	5.45E-03	NCOPC	NCOPC	8.53E+03	2.86E-03	1.13E+04	3.79E-03
Arsenic	1.48E-03	7.30E+00	1.08E-02	3.50E+00	5.17E-03	5.26E+00	7.78E-03	9.47E+00	1.40E-02
Benzo(a)anthracene	2.73E-05	1.70E+01	4.63E-04	NCOPC	NCOPC	9.92E+01	2.70E-03	4.62E+01	1.26E-03
Benzo(a)pyrene	2.73E-05	1.40E+01	3.82E-04	8.50E-01	2.32E-05	9.36E+01	2.55E-03	3.36E+01	9.17E-04
Benzo(b)fluoranthene	2.73E-05	1.20E+01	3.27E-04	7.70E-01	2.10E-05	7.17E+01	1.95E-03	3.53E+01	9.63E-04
Benzo(k)fluoranthene	2.73E-05	1.30E+01	3.54E-04	NCOPC	NCOPC	7.17E+01	1.95E-03	3.22E+01	8.76E-04
Chromium (total)	NC	2.24E+01	NC	NCOPC	NCOPC	2.29E+01	NC	4.42E+01	NC
Chrysene	2.52E-05	NCOPC	NCOPC	NCOPC	NCOPC	9.35E+01	2.35E-03	NCOPC	NCOPC
Dibenz(a,h)anthracene	4.09E-05	2.60E+00	1.06E-04	NCOPC	NCOPC	1.44E+01	5.90E-04	5.36E+00	2.19E-04
Dibenzofuran	1.23E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.13E+01	2.62E-04
Fluoranthene	2.04E-05	NCOPC	NCOPC	NCOPC	NCOPC	2.37E+02	4.84E-03	NCOPC	NCOPC
Indeno(1,2,3-cd)pyrene	2.73E-05	8.30E+00	2.26E-04	NCOPC	NCOPC	5.07E+01	1.38E-03	1.48E+01	4.04E-04
Iron	4.79E-07	1.92E+04	9.19E-03	1.27E+04	6.08E-03	1.97E+04	9.44E-03	4.10E+04	1.96E-02
Manganese	1.77E-05	2.57E+03	4.54E-02	4.81E+02	8.51E-03	9.21E+02	1.63E-02	1.54E+03	2.73E-02
Naphthalene	4.09E-05	NCOPC	NCOPC	ND	NCOPC	2.09E+00	8.56E-05	3.27E+01	1.34E-03
Pyrene	2.73E-05	NCOPC	NCOPC	NCOPC	NCOPC	2.09E+02	5.70E-03	NCOPC	NCOPC
Thallium	5.02E-03	NCOPC	NCOPC	NCOPC	NCOPC	3.59E+00	1.80E-02	3.32E-01	1.67E-03
Total PCBs	4.28E-02	NCOPC	NCOPC	2.40E-01	1.03E-02	9.70E-01	4.15E-02	9.80E-01	4.19E-02
Vanadium	9.43E-05	2.78E+01	2.62E-03	1.55E+01	1.46E-03	1.79E+01	1.69E-03	1.95E+01	1.84E-03
	Total HI:		7.53E-02		3.15E-02		1.22E-01		1.18E-01

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
ND - Not Detected.
(a) Location where the former COG pipeline (AOC 19) passed beneath the Great Miami River.
(b) AOC 7.
(c) Hydric soil in the Riparian area adjacent to the river.

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT

Receptors Evaluated:	
Receptor 1:	Current/Future Trespasser - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR CURRENT/FUTURE TRESPASSER - RME DERMAL CONTACT WITH SURFACE WATER - WADING		Assumed Value	Units	Calculated Value
Skin Exposed	Current/Future Trespasser - RME	4,033	(cm^2)	
Body Weight	Current/Future Trespasser - RME	43	(kg)	
Exposure Time	Current/Future Trespasser - RME	2	(hr/day)	
Exposure Frequency	Current/Future Trespasser - RME	52	(days)/365(days) =	1.42E-01
Exposure Duration (cancer)	Current/Future Trespasser - RME	10	(yrs)/70(yrs) =	1.43E-01
Exposure Duration (noncancer)	Current/Future Trespasser - RME	10	(yrs)/10(yrs) =	1.00E+00
Lifetime		70		
Unit Conversion Factor		0.001	(l/cm^3)	

AK STEEL FORMER ARMCO HAMILT
NEW MIAMI, BUTLER COUNTY, OHIO
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
DERMAL CONTACT WITH
SURFACE WATER - WADING
CURRENT/FUTURE TRESPASSER - RME

Chemical	Unit Concentration In Surface Water (mg/l)	Dermal Cancer Slope Factor (mg/kg-day)$^{-1}$	Dermal Permeability Constant (cm/hr)	B (unitless)	Tau Event (hr/event)	Time To Steady State t* (hr)	Fraction Absorbed	Exposure Time (hr)		DA Event Dose Absorbed (mg/cm^2-event)	DAD Current/Future Trespasser - RME (mg/kg-day)	Unit Lifetime Cancer Risk	
												Dermal Contact	Total
Aluminum	1.00E+00	NA	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	3.82E-06	NA	NC
Iron	1.00E+00	NA	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	3.82E-06	NA	NC
Mercury	1.00E+00	NA	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	3.82E-06	NA	NC
Naphthalene	1.00E+00	NA	4.70E-02	2.00E-01	5.80E-01	1.34E+00	1.00E+00	2.00E+00	ET>t*	1.41E-04	2.70E-04	NA	NC
Vanadium	1.00E+00	NA	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	3.82E-06	NA	NC

TABLE
POTENTIAL CARCINOGENIC RISK
DERMAL CONTACT WITH
SURFACE WATER - WADING
CURRENT/FUTURE TRESPASSER - RME

Chemical	Reference Risk (per mg/L)	Intermittent Stream (b)		Great Miami River (a)		Great Miami River	
		EPC (mg/L)	Risk	EPC (mg/L)	Risk	EPC (mg/L)	Risk
Aluminum	NC	3.48E+00	NC	NCOPC	NC	NCOPC	NC
Iron	NC	2.60E+00	NC	2.78E+00	NC	7.66E-01	NC
Mercury	NC	ND	NC	3.00E-05	NC	1.38E-04	NC
Naphthalene	NC	7.50E-04	NC	ND	NC	ND	NC
Vanadium	NC	4.70E-03	NC	8.60E-03	NC	NCOPC	NC
	Total Risk:		NC		NC		NC

Notes:
EPC - Exposure Point Concentration.
NA - Not Analyzed.
NC - Not Calculated. No dose response value, or chemical was NA/ND in this area.
NCOPC - Not a compound of potential concern in this area/medium.
ND - Not Detected.
(a) Location where the former COG pipeline (AOC 19) passed beneath the Great Miami River.
(b) AOC 7.

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
DERMAL CONTACT WITH
SURFACE WATER - WADING
CURRENT/FUTURE TRESPASSER - RME

Chemical	Unit Concentration In Surface Water (mg/l)	Dermal Reference Dose (mg/kg-day)	Dermal Permeability Constant (cm/hr)	B (unitless)	Tau Event (hr/event)	Time To Steady State t* (hr)	Fraction Absorbed	Exposure Time (hr)		DA Event Dose Absorbed (mg/cm^2-event)	DAD Current/Future Trespasser - RME (mg/kg-day)	Unit Hazard Quotient	
												Dermal Contact	Total
Aluminum	1.00E+00	1.00E+00	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	2.67E-05	2.67E-05	2.67E-05
Iron	1.00E+00	7.00E-01	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	2.67E-05	3.82E-05	3.82E-05
Mercury	1.00E+00	2.10E-05	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	2.67E-05	1.27E+00	1.27E+00
Naphthalene	1.00E+00	2.00E-02	4.70E-02	2.00E-01	5.60E-01	1.34E+00	1.00E+00	2.00E+00	ET>t*	1.41E-04	1.89E-03	9.43E-02	9.43E-02
Vanadium	1.00E+00	1.31E-04	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	2.67E-05	2.04E-01	2.04E-01

TABLE
POTENTIAL HAZARD INDEX
DERMAL CONTACT WITH
SURFACE WATER - WADING
CURRENT/FUTURE TRESPASSER - RME

Chemical	Reference HI (per mg/L)	Intermittent Stream (b)		Great Miami River (a)		Great Miami River	
		EPC (mg/L)	HQ	EPC (mg/L)	HQ	EPC (mg/L)	HQ
Aluminum	2.67E-05	3.48E+00	9.29E-05	NCOPC	NC	NCOPC	NC
Iron	3.82E-05	2.60E+00	9.94E-05	2.78E+00	1.06E-04	7.66E-01	2.92E-05
Mercury	1.27E+00	ND	NC	3.00E-05	3.82E-05	1.38E-04	1.76E-04
Naphthalene	9.43E-02	7.50E-04	7.08E-05	ND	NC	ND	NC
Vanadium	2.04E-01	4.70E-03	9.59E-04	8.60E-03	1.75E-03	NCOPC	NC
	Total HI:		1.22E-03		1.90E-03		2.05E-04

Notes:
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not Calculated. No dose response value, or chemical was NA/ND in this area.
NCOPC - Not a compound of potential concern in this area/medium.
ND - Not Detected.
(a) Location where the former COG pipeline (AOC 19) passed beneath the Great Miami River.
(b) AOC 7.

Current and Future Recreational Angler (RME)

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
AK STEEL FORMER ARMCO HAMILTON PLANT

Receptors Evaluated:	
Receptor 1:	Current/Future Recreational Angler - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME INGESTION OF FISH		Assumed Value	Units	Calculated Value
Fish Ingestion Rate	Current/Future Recreational Angler - RME	0.025	(kg fish/day)	
Body Weight	Current/Future Recreational Angler - RME	70	(kg)	
Exposure Frequency	Current/Future Recreational Angler - RME	365	(days)/365(days) =	1.00E+00
Exposure Duration (cancer)	Current/Future Recreational Angler - RME	30	(yrs)/70(yrs) =	4.29E-01
Exposure Duration (noncancer)	Current/Future Recreational Angler - RME	30	(yrs)/30(yrs) =	1.00E+00
Lifetime		70	(years)	
Local Consumption Factor		1	(unitless)	

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME
FISH INGESTION

Chemical	Unit Concentration In Fish Tissue (mg/kg)	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	ADDing Current/Future Recreational Angler - RME (mg/kg-day)	Unit Excess Lifetime Cancer Risk
Iron	1.00E+00	NA	1.53E-04	NC
Mercury	1.00E+00	NA	1.53E-04	NC
Total PCBs	1.00E+00	2.00E+00	1.53E-04	3.06E-04
Vanadium	1.00E+00	NA	1.53E-04	NC

TABLE
POTENTIAL CARCINOGENIC RISK
FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME
FISH INGESTION

Chemical	Reference Risk (per mg/kg)	Great Miami River (a)		Great Miami River		Upgradient (b)	
		EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk
Iron	NC	NC	NC	NC	NC	NC	NCOPC
Mercury	NC	3.35E-01	NC	1.54E+00	NC	NC	NCOPC
Total PCBs	3.06E-04	7.30E-01	2.23E-04	2.49E+00	7.62E-04	1.01E+01	3.09E-03
Vanadium	NC	NC	NC	NC	NC	NC	NC
Total Potential Risk:			2.23E-04		7.62E-04		3.09E-03

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
(a) Location where the former COG pipeline (AOC 19) passed beneath the Great Miami River.
(b) Upgradient analysis performed for PCBs for comparison to Great Miami River predicted fish tissue concentrations and potential risks.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME
FISH INGESTION

Chemical	Unit Concentration in Fish Tissue (mg/kg)	Oral Reference Dose (mg/kg-day)	ADDing Current/Future Recreational Angler - RME (mg/kg-day)	Unit Hazard Index
Iron	1.00E+00	7.00E-01	3.57E-04	5.10E-04
Mercury	1.00E+00	1.00E-04	3.57E-04	3.57E+00
Total PCBs	1.00E+00	2.00E-05	3.57E-04	1.79E+01
Vanadium	1.00E+00	5.04E-03	3.57E-04	7.09E-02

TABLE
POTENTIAL HAZARD INDEX
FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME
FISH INGESTION

Chemical	Reference HI (per mg/kg)	Great Miami River (a) EPC (mg/kg)	Great Miami River (a) HQ	Great Miami River EPC (mg/kg)	Great Miami River HQ	Upgradient (b) EPC (mg/kg)	Upgradient (b) HQ
Iron	5.10E-04	NC	NC	NC	NC	NC	NC
Mercury	3.57E+00	3.35E-01	1.20E+00	1.54E+00	5.50E+00	NC	NC
Total PCBs	1.79E+01	7.30E-01	1.30E+01	2.49E+00	4.44E+01	1.01E+01	1.81E+02
Vanadium	7.09E-02	NC	NC	NC	NC	NC	NC
Total Potential HI:			1.42E+01		4.99E+01		1.81E+02

Notes:
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
(a) Location where the former COG pipeline (AOC 19) passed beneath the Great Miami River.
(b) Upgradient analysis performed for PCBs for comparison to Great Miami River predicted fish tissue concentrations and potential risks.

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT

Receptors Evaluated:	
Receptor 1:	Current/Future Recreational Angler - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME DERMAL CONTACT AND INGESTION OF SEDIMENT		Assumed Value	Units	Calculated Value
Sediment Ingestion Rate	Current/Future Recreational Angler - RME	50	(mg soil/day)	
Sediment on Skin	Current/Future Recreational Angler - RME	0.30	(mg/cm^2)	
Skin Exposed	Current/Future Recreational Angler - RME	2134	(cm^2)	
Body Weight	Current/Future Recreational Angler - RME	70	(kg)	
Exposure Frequency	Current/Future Recreational Angler - RME	52	(days)/365(days) =	1.42E-01
Exposure Duration (cancer)	Current/Future Recreational Angler - RME	30	(years)/70(years) =	4.29E-01
Exposure Duration (noncancer)	Current/Future Recreational Angler - RME	30	(years)/30(years) =	1.00E+00
Lifetime		70	(years)	
Unit Conversion Factor		1.00E-06	(kg/mg)	

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
DERMAL CONTACT AND
INGESTION OF SEDIMENT
FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME

Chemical	Unit Concentration (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	ADDing Current/Future Recreational Angler - RME (mg/kg-day)	ADDder Current/Future Recreational Angler - RME (mg/kg-day)	Unit Excess Lifetime Cancer Risk - Ingestion	Unit Excess Lifetime Cancer Risk - Dermal Contact	Unit Excess Lifetime Cancer Risk
2-Methylnaphthalene	1.00E+00	NA	NA	NA	0.00E+00	NA	NA	NA	NC
Aluminum	1.00E+00	NA	NA	NA	4.36E-08	NA	NA	NA	NC
Arsenic	1.00E+00	0.03	1.50E+00	1.50E+00	4.36E-08	1.68E-08	6.54E-08	2.51E-08	9.05E-08
Benzo(a)anthracene	1.00E+00	0.13	7.30E-01	7.30E-01	4.36E-08	7.26E-08	3.18E-08	5.30E-08	8.48E-08
Benzo(a)pyrene	1.00E+00	0.13	7.30E+00	7.30E+00	4.36E-08	7.26E-08	3.18E-07	5.30E-07	8.48E-07
Benzo(b)fluoranthene	1.00E+00	0.13	7.30E-01	7.30E-01	4.36E-08	7.26E-08	3.18E-08	5.30E-08	8.48E-08
Benzo(k)fluoranthene	1.00E+00	0.13	7.30E-02	7.30E-02	4.36E-08	7.26E-08	3.18E-09	5.30E-09	8.48E-09
Chromium (total)	1.00E+00	NA	NA	NA	4.36E-08	NA	NA	NA	NC
Chrysene	1.00E+00	0.13	7.30E-03	7.30E-03	4.36E-08	7.26E-08	3.18E-10	5.30E-10	8.48E-10
Dibenz(a,h)anthracene	1.00E+00	0.13	7.30E+00	7.30E+00	4.36E-08	7.26E-08	3.18E-07	5.30E-07	8.48E-07
Dibenzofuran	1.00E+00	NA	NA	NA	4.36E-08	NA	NA	NA	NC
Fluoranthene	1.00E+00	NA	NA	NA	4.36E-08	NA	NA	NA	NC
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	7.30E-01	7.30E-01	4.36E-08	7.26E-08	3.18E-08	5.30E-08	8.48E-08
Iron	1.00E+00	NA	NA	NA	4.36E-08	NA	NA	NA	NC
Manganese	1.00E+00	NA	NA	NA	4.36E-08	NA	NA	NA	NC
Naphthalene	1.00E+00	NA	NA	NA	4.36E-08	NA	NA	NA	NC
Pyrene	1.00E+00	NA	NA	NA	4.36E-08	NA	NA	NA	NC
Thallium	1.00E+00	NA	NA	NA	4.36E-08	NA	NA	NA	NC
Total PCBs	1.00E+00	0.14	2.00E+00	2.00E+00	4.36E-08	7.62E-08	8.72E-08	1.56E-07	2.44E-07
Vanadium	1.00E+00	NA	NA	NA	4.36E-08	NA	NA	NA	NC

TABLE
POTENTIAL CARCINOGENIC RISK
DERMAL CONTACT AND
INGESTION OF SEDIMENT
FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME

Chemical	Reference Risk (per mg/m³)	Great Miami River (a)		Great Miami River		AOC 22: Riparian Area (b)	
		EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk
2-Methylnaphthalene	NC	NCOPC	NCOPC	NCOPC	NCOPC	9.94E+00	NC
Aluminum	NC	NCOPC	NCOPC	8.53E+03	NC	1.13E+04	NC
Arsenic	9.05E-08	3.50E+00	3.17E-07	5.26E+00	4.77E-07	9.47E+00	8.57E-07
Benzo(a)anthracene	8.48E-08	NCOPC	NCOPC	9.92E+01	8.41E-06	4.62E+01	3.92E-06
Benzo(a)pyrene	8.48E-07	8.50E-01	7.21E-07	9.36E+01	7.94E-05	3.36E+01	2.85E-05
Benzo(b)fluoranthene	8.48E-08	7.70E-01	6.53E-08	7.17E+01	6.08E-06	3.53E+01	3.00E-06
Benzo(k)fluoranthene	8.48E-09	NCOPC	NCOPC	7.17E+01	6.08E-07	3.22E+01	2.73E-07
Chromium (total)	NC	NCOPC	NCOPC	2.29E+01	NC	4.42E+01	NC
Chrysene	8.48E-10	NCOPC	NCOPC	9.35E+01	7.93E-08	NCOPC	NCOPC
Dibenz(a,h)anthracene	8.48E-07	NCOPC	NCOPC	1.44E+01	1.22E-05	5.36E+00	4.55E-06
Dibenzofuran	NC	NCOPC	NCOPC	NCOPC	NCOPC	2.13E+01	NC
Fluoranthene	NC	NCOPC	NCOPC	2.37E+02	NC	NCOPC	NCOPC
Indeno(1,2,3-cd)pyrene	8.48E-08	NCOPC	NCOPC	5.07E+01	4.30E-06	1.48E+01	1.26E-06
Iron	NC	1.27E+04	NC	1.97E+04	NC	4.10E+04	NC
Manganese	NC	4.81E+02	NC	9.21E+02	NC	1.54E+03	NC
Naphthalene	NC	ND	NCOPC	2.09E+00	NC	3.27E+01	NC
Pyrene	NC	NCOPC	NCOPC	2.09E+02	NC	NCOPC	NCOPC
Thallium	NC	NCOPC	NCOPC	3.59E+00	NC	3.32E-01	NC
Total PCBs	2.44E-07	2.40E-01	5.85E-08	9.70E-01	2.36E-07	9.80E-01	2.39E-07
Vanadium	NC	1.55E+01	NC	1.79E+01	NC	1.95E+01	NC
	Total Risk:		1.16E-06		1.12E-04		4.26E-05

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) Location where the former COG pipeline (AOC 19) passed beneath the Great Miami River.
(b) Hydric soil in the Riparian area adjacent to the river.

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
DERMAL CONTACT AND
INGESTION OF SEDIMENT
FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME

Chemical	Unit Concentration (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Reference Dose (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	ADDing Current/Future Recreational Angler - RME (mg/kg-day)	ADDder Current/Future Recreational Angler - RME (mg/kg-day)	Unit Hazard Index - Ingestion	Unit Hazard Index - Dermal Contact	Unit Hazard Index
2-Methylnaphthalene	1.00E+00	0.13	4.00E-03	4.00E-03	1.02E-07	1.69E-07	2.54E-05	4.23E-05	6.78E-05
Aluminum	1.00E+00	0.001	1.00E+00	1.00E+00	1.02E-07	1.30E-09	1.02E-07	1.30E-09	1.03E-07
Arsenic	1.00E+00	0.03	3.00E-04	3.00E-04	1.02E-07	3.91E-08	3.39E-04	1.30E-04	4.69E-04
Benzo(a)anthracene	1.00E+00	0.13	3.00E-02	3.00E-02	1.02E-07	1.69E-07	3.39E-06	5.65E-06	9.04E-06
Benzo(a)pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	1.02E-07	1.69E-07	3.39E-06	5.65E-06	9.04E-06
Benzo(b)fluoranthene	1.00E+00	0.13	3.00E-02	3.00E-02	1.02E-07	1.69E-07	3.39E-06	5.65E-06	9.04E-06
Benzo(k)fluoranthene	1.00E+00	0.13	3.00E-02	3.00E-02	1.02E-07	1.69E-07	3.39E-06	5.65E-06	9.04E-06
Chromium (total)	1.00E+00	0.001	1.50E+00	1.95E-02	1.02E-07	1.30E-09	6.78E-08	6.68E-08	1.35E-07
Chrysene	1.00E+00	0.13	3.00E-02	3.00E-02	1.02E-07	1.69E-07	3.39E-06	5.65E-06	9.04E-06
Dibenz(a,h)anthracene	1.00E+00	0.13	3.00E-02	3.00E-02	1.02E-07	1.69E-07	3.39E-06	5.65E-06	9.04E-06
Dibenzofuran	1.00E+00	0.01	1.00E-03	1.00E-03	1.02E-07	1.30E-08	1.02E-04	1.30E-05	1.15E-04
Fluoranthene	1.00E+00	0.13	4.00E-02	4.00E-02	1.02E-07	1.69E-07	2.54E-06	4.23E-06	6.78E-06
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	1.02E-07	1.69E-07	3.39E-06	5.65E-06	9.04E-06
Iron	1.00E+00	0.001	7.00E-01	7.00E-01	1.02E-07	1.30E-09	1.45E-07	1.86E-09	1.47E-07
Manganese	1.00E+00	0.001	2.40E-02	9.60E-04	1.02E-07	1.30E-09	4.24E-06	1.36E-06	5.60E-06
Naphthalene	1.00E+00	0.13	2.00E-02	2.00E-02	1.02E-07	1.69E-07	5.09E-06	8.47E-06	1.36E-05
Pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	1.02E-07	1.69E-07	3.39E-06	5.65E-06	9.04E-06
Thallium	1.00E+00	0.001	6.67E-05	6.67E-05	1.02E-07	1.30E-09	1.53E-03	1.95E-05	1.55E-03
Total PCBs	1.00E+00	0.14	2.00E-05	2.00E-05	1.02E-07	1.82E-07	5.09E-03	9.12E-03	1.42E-02
Vanadium	1.00E+00	0.001	5.04E-03	1.31E-04	1.02E-07	1.30E-09	2.02E-05	8.94E-06	3.01E-05

TABLE
POTENTIAL HAZARD INDEX
DERMAL CONTACT AND
INGESTION OF SEDIMENT
FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME

Chemical	Reference HI (per mg/m³)	Great Miami River (a)		Great Miami River		AOC 22: Riparian Area (b)	
		EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	Risk
2-Methylnaphthalene	6.78E-05	NCOPC	NCOPC	NCOPC	NCOPC	9.94E+00	6.74E-04
Aluminum	1.03E-07	NCOPC	NCOPC	8.53E+03	8.79E-04	1.13E+04	1.17E-03
Arsenic	4.69E-04	3.50E+00	1.64E-03	5.26E+00	2.47E-03	9.47E+00	4.44E-03
Benzo(a)anthracene	9.04E-06	NCOPC	NCOPC	9.92E+01	8.96E-04	4.62E+01	4.18E-04
Benzo(a)pyrene	9.04E-06	8.50E-01	7.68E-06	9.36E+01	8.46E-04	3.36E+01	3.04E-04
Benzo(b)fluoranthene	9.04E-06	7.70E-01	6.96E-06	7.17E+01	6.48E-04	3.53E+01	3.19E-04
Benzo(k)fluoranthene	9.04E-06	NCOPC	NCOPC	7.17E+01	6.48E-04	3.22E+01	2.91E-04
Chromium (total)	1.35E-07	NCOPC	NCOPC	2.29E+01	3.09E-06	4.42E+01	5.95E-06
Chrysene	9.04E-06	NCOPC	NCOPC	9.35E+01	8.45E-04	NCOPC	NCOPC
Dibenz(a,h)anthracene	9.04E-06	NCOPC	NCOPC	1.44E+01	1.31E-04	5.36E+00	4.84E-05
Dibenzofuran	1.15E-04	NCOPC	NCOPC	NCOPC	NCOPC	2.13E+01	2.45E-03
Fluoranthene	6.78E-06	NCOPC	NCOPC	2.37E+02	1.60E-03	NCOPC	NCOPC
Indeno(1,2,3-cd)pyrene	9.04E-06	NCOPC	NCOPC	5.07E+01	4.59E-04	1.48E+01	1.34E-04
Iron	1.47E-07	1.27E+04	1.87E-03	1.97E+04	2.90E-03	4.10E+04	6.03E-03
Manganese	5.60E-06	4.81E+02	2.69E-03	9.21E+02	5.16E-03	1.54E+03	8.64E-03
Naphthalene	1.36E-05	ND	NCOPC	2.09E+00	2.84E-05	3.27E+01	4.43E-04
Pyrene	9.04E-06	NCOPC	NCOPC	2.09E+02	1.89E-03	NCOPC	NCOPC
Thallium	1.55E-03	NCOPC	NCOPC	3.59E+00	5.54E-03	3.32E-01	5.13E-04
Total PCBs	1.42E-02	2.40E-01	3.41E-03	9.70E-01	1.38E-02	9.80E-01	1.39E-02
Vanadium	3.01E-05	1.55E+01	4.67E-04	1.79E+01	5.39E-04	1.95E+01	5.89E-04
	Total HI:		1.01E-02		3.93E-02		4.04E-02

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
ND - Not Detected.
(a) Location where the former COG pipeline (AOC 19) passed beneath the Great Miami River.
(b) Hydric soil in the Riparian area adjacent to the river.

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT

Receptors Evaluated:	
Receptor 1:	Current/Future Recreational Angler - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR CURRENT/FUTURE RECREATIONAL ANGLER - RME DERMAL CONTACT WITH SURFACE WATER		Assumed Value	Units	Calculated Value
Skin Exposed	Current/Future Recreational Angler - RME	5,645	(cm^2)	
Body Weight	Current/Future Recreational Angler - RME	70	(kg)	
Exposure Time	Current/Future Recreational Angler - RME	2	(hr/day)	
Exposure Frequency	Current/Future Recreational Angler - RME	52	(days)/365(days) =	1.42E-01
Exposure Duration (cancer)	Current/Future Recreational Angler - RME	30	(yrs)/70(yrs) =	4.29E-01
Exposure Duration (noncancer)	Current/Future Recreational Angler - RME	30	(yrs)/30(yrs) =	1.00E+00
Lifetime		70		
Unit Conversion Factor (dermal only)		0.001	(l/cm^3)	

AK STEEL FORMER ARMCO HAMIL
NEW MIAMI, BUTLER COUNTY, OHIO
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
DERMAL CONTACT WITH
SURFACE WATER
CURRENT/FUTURE RECREATIONAL ANGLER - RME

Chemical	Unit Concentration In Surface Water (mg/l)	Dermal Cancer Slope Factor (mg/kg-day)$^{-1}$	Dermal Permeability Constant (cm/hr)	B (unitless)	Tau Event (hr/event)	Time To Steady State t* (hr)	Fraction Absorbed	Exposure Time (hr)		DA Event Dose Absorbed (mg/cm^2-event)	DAD Current/Future Recreational Angler - RME (mg/kg-day)	Unit Lifetime Cancer Risk	
												Dermal Contact	Total
Aluminum	1.00E+00	NA	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	9.85E-06	NA	NC
Iron	1.00E+00	NA	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	9.85E-06	NA	NC
Mercury	1.00E+00	NA	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	9.85E-06	NA	NC
Naphthalene	1.00E+00	NA	4.70E-02	2.00E-01	5.60E-01	1.34E+00	1.00E+00	2.00E+00	ET>t*	1.41E-04	6.95E-04	NA	NC
Vanadium	1.00E+00	NA	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	9.85E-06	NA	NC

TABLE
CARCINOGENIC ASSESSMENT
DERMAL CONTACT WITH
SURFACE WATER
CURRENT/FUTURE RECREATIONAL ANGLER - RME

Chemical	Reference Risk (per mg/L)	Great Miami River (a)		Great Miami River	
		EPC (mg/L)	Risk	EPC (mg/L)	Risk
Aluminum	NC	NCOPC	NC	NCOPC	NC
Iron	NC	2.78E+00	NC	7.66E-01	NC
Mercury	NC	3.00E-05	NC	1.38E-04	NC
Naphthalene	NC	ND	NC	ND	NC
Vanadium	NC	8.60E-03	NC	NCOPC	NC
	Total Risk:		NC		NC

Notes:
EPC - Exposure Point Concentration.
NC - Not Calculated. No dose response value, or chemical was NA/ND in this area.
NCOPC - Not a compound of potential concern in this area/medium.
ND - Not Detected.
(a) Location where the former COG pipeline (AOC 19) passed beneath the Great Miami River.

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
DERMAL CONTACT WITH
SURFACE WATER
CURRENT/FUTURE RECREATIONAL ANGLER - RME

Chemical	Unit Concentration in Surface Water (mg/l)	Dermal Reference Dose (mg/kg-day)	Dermal Permeability Constant (cm/hr)	B (unitless)	Tau Event (hr/event)	Time To Steady State t* (hr)	Fraction Absorbed	Exposure Time (hr)		DA Event Dose Absorbed (mg/cm^2-event)	DAD Current/Future Recreational Angler - RME (mg/kg-day)	Unit Hazard Quotient	
												Dermal Contact	Total
Aluminum	1.00E+00	1.00E+00	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	2.30E-05	2.30E-05	2.30E-05
Iron	1.00E+00	7.00E-01	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	2.30E-05	3.28E-05	3.28E-05
Mercury	1.00E+00	2.10E-05	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	2.30E-05	1.09E+00	1.09E+00
Naphthalene	1.00E+00	2.00E-02	4.70E-02	2.00E-01	5.60E-01	1.34E+00	1.00E+00	2.00E+00	ET>t*	1.41E-04	1.62E-03	8.11E-02	8.11E-02
Vanadium	1.00E+00	1.31E-04	1.00E-03	--	--	--	--	2.00E+00		2.00E-06	2.30E-05	1.75E-01	1.75E-01

TABLE
POTENTIAL HAZARD INDEX
DERMAL CONTACT WITH
SURFACE WATER
CURRENT/FUTURE RECREATIONAL ANGLER - RME

Chemical	Reference HI (per mg/L)	Great Miami River (a) EPC (mg/L)	Great Miami River (a) HQ	Great Miami River EPC (mg/L)	Great Miami River HQ
Aluminum	2.30E-05	NCOPC	NC	NCOPC	NC
Iron	3.28E-05	2.78E+00	9.13E-05	7.66E-01	2.51E-05
Mercury	1.09E+00	3.00E-05	3.28E-05	1.38E-04	1.51E-04
Naphthalene	8.11E-02	ND	NC	ND	NC
Vanadium	1.75E-01	8.60E-03	1.51E-03	NCOPC	NC
	Total HI:		1.63E-03		1.76E-04

Notes:
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not Calculated. No dose response value, or chemical was NA/ND in this area.
NCOPC - Not a compound of potential concern in this area/medium.
ND - Not Detected.
(a) Location where the former COG pipeline (AOC 19) passed beneath the Great Miami River.

Future On-site Worker (RME)

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
AK STEEL FORMER ARMCO HAMILTON PLANT

Receptors Evaluated:	
Receptor 1:	Future On-Site Worker - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR FUTURE ON-SITE WORKER - RME DERMAL CONTACT AND INGESTION OF SURFACE SOIL		Assumed Value	Units	Calculated Value
Soil Ingestion Rate	Future On-Site Worker - RME	50	(mg soil/day)	
Soil on Skin	Future On-Site Worker - RME	0.20	(mg/cm^2)	
Skin Exposed	Future On-Site Worker - RME	3282	(cm^2)	
Body Weight	Future On-Site Worker - RME	70	(kg)	
Exposure Frequency	Future On-Site Worker - RME	250	(days)/365(days) =	6.85E-01
Exposure Duration (cancer)	Future On-Site Worker - RME	25	(years)/70(years) =	3.57E-01
Exposure Duration (noncancer)	Future On-Site Worker - RME	25	(years)/25(years) =	1.00E+00
Lifetime		70	(years)	
Unit Conversion Factor		1.00E-06	(kg/mg)	

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
DERMAL CONTACT AND
INGESTION OF SURFACE SOIL
FOR FUTURE ON-SITE WORKER - RME

Chemical	Unit Concentration in Soil (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	ADDing Future On-Site Worker - RME (mg/kg-day)	ADDder Future On-Site Worker - RME (mg/kg-day)	Unit Excess Lifetime Cancer Risk - Ingestion	Unit Excess Lifetim Cancer Risk - Dermal Contac
2,3,7-8 TCDD TEQ	1.00E+00	0.03	1.50E+05	1.50E+05	1.75E-07	6.88E-08	2.62E-02	1.03E-02
2-Methylnaphthalene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Aluminum	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Antimony	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Arsenic	1.00E+00	0.03	1.50E+00	1.50E+00	1.75E-07	6.88E-08	2.62E-07	1.03E-07
Barium	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Benzene	1.00E+00	0.01	5.50E-02	5.50E-02	1.75E-07	2.29E-08	9.61E-09	1.26E-09
Benzo(a)anthracene	1.00E+00	0.13	7.30E-01	7.30E-01	1.75E-07	2.98E-07	1.28E-07	2.18E-07
Benzo(a)pyrene	1.00E+00	0.13	7.30E+00	7.30E+00	1.75E-07	2.98E-07	1.28E-06	2.18E-06
Benzo(b)fluoranthene	1.00E+00	0.13	7.30E-01	7.30E-01	1.75E-07	2.98E-07	1.28E-07	2.18E-07
Benzo(k)fluoranthene	1.00E+00	0.13	7.30E-02	7.30E-02	1.75E-07	2.98E-07	1.28E-08	2.18E-08
Cadmium	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Chromium (total)	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Copper	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Dibenz(a,h)anthracene	1.00E+00	0.13	7.30E+00	7.30E+00	1.75E-07	2.98E-07	1.28E-06	2.18E-06
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	7.30E-01	7.30E-01	1.75E-07	2.98E-07	1.28E-07	2.18E-07
Iron	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Lead	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Manganese	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Mercury	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Naphthalene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Thallium	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Toluene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Total PCBs	1.00E+00	0.14	2.00E+00	2.00E+00	1.75E-07	3.21E-07	3.49E-07	6.42E-07
Total Xylenes	1.00E+00	NA	NA	NA	1.75E-07	NA.	NA	NA
Vanadium	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA
Zinc	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA

TABLE
POTENTIAL CARCINOGENIC RISK
DERMAL CONTACT AND
INGESTION OF SURFACE SOIL
FOR FUTURE ON-SITE WORKER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	Risk (per mg/kg)	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk
2,3,7-8 TCDD TEQ	3.85E-02	3.84E-06	1.40E-07	5.42E-06	1.98E-07	NCOPC	NCOPC	5.62E-06	2.05E-07	7.22E-06	2.64E-07	9.94E-06	3.63E-07	NCOPC	NCOPC
2-Methylnaphthalene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	8.01E-01	NC
Aluminum	NC	1.98E+04	NC	2.22E+04	NC	2.70E+04	NC	1.38E+04	NC	3.33E+04	NC	2.09E+04	NC	1.46E+04	NC
Antimony	NC	NCOPC	NCOPC	3.61E+00	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.05E+02	NC	NCOPC	NCOPC
Arsenic	3.85E-07	1.08E+01	3.98E-06	1.22E+01	4.47E-06	9.29E+00	3.39E-06	4.84E+01	1.77E-05	4.98E+00	1.82E-06	9.70E+00	3.54E-06	8.22E+00	3.00E-06
Barium	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.28E+02	NC	NCOPC	NCOPC
Benzene	1.09E-08	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.44E+01	1.57E-07	NCOPC	NCOPC	NCOPC	NCOPC
Benzo(a)anthracene	3.45E-07	7.00E-01	2.42E-07	3.80E+00	1.31E-06	4.31E+00	1.49E-06	1.40E+00	4.85E-07	1.32E+00	4.56E-07	4.42E+00	1.53E-06	2.47E+01	8.51E-06
Benzo(a)pyrene	3.45E-06	7.10E-01	2.45E-06	5.60E+00	1.93E-05	6.60E+00	2.28E-05	1.23E+00	4.23E-06	6.75E+00	2.33E-05	3.27E+00	1.13E-05	2.23E+01	7.69E-05
Benzo(b)fluoranthene	3.45E-07	6.90E-01	2.38E-07	7.93E+00	2.74E-06	4.34E+00	1.50E-06	1.16E+00	4.00E-07	8.14E+00	2.81E-06	3.01E+00	1.04E-06	1.94E+01	6.69E-06
Benzo(k)fluoranthene	3.45E-08	NCOPC	NCOPC	NCOPC	NCOPC	4.46E+00	1.54E-07	NCOPC	NCOPC	5.72E+00	1.98E-07	3.06E+00	1.05E-07	2.10E+01	7.24E-07
Cadmium	NC	4.02E+00	NC	4.35E+00	NC	NCOPC	NCOPC	3.40E+00	NC	3.96E+00	NC	1.93E+00	NC	8.22E-01	NC
Chromium (total)	NC	4.89E+01	NC	2.05E+01	NC	2.76E+01	NC	2.42E+01	NC	5.86E+01	NC	2.06E+02	NC	1.91E+01	NC
Copper	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.41E+02	NC	NCOPC	NCOPC	1.28E+02	NC	NCOPC	NCOPC
Dibenz(a,h)anthracene	3.45E-06	1.91E-01	6.58E-07	9.68E-01	3.34E-06	1.90E+00	6.56E-06	5.70E-01	1.97E-06	8.12E-01	2.80E-06	6.92E-01	2.39E-06	4.28E+00	1.48E-05
Indeno(1,2,3-cd)pyrene	3.45E-07	4.48E-01	1.54E-07	1.72E+00	5.94E-07	5.40E+00	1.86E-06	8.85E-01	3.06E-07	5.11E+00	1.76E-06	2.07E+00	7.15E-07	1.41E+01	4.88E-06
Iron	NC	1.15E+05	NC	1.26E+05	NC	2.67E+04	NC	2.49E+04	NC	1.15E+05	NC	6.14E+04	NC	5.03E+04	NC
Lead	NC	5.44E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC	1.99E+02	NC	NCOPC	NCOPC	1.33E+02	NC	2.56E+02	NC
Manganese	NC	3.53E+03	NC	2.25E+03	NC	4.29E+03	NC	8.86E+02	NC	5.51E+03	NC	4.21E+03	NC	1.72E+03	NC
Mercury	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.38E+00	NC	NCOPC	NCOPC	8.30E-01	NC	1.62E+00	NC
Naphthalene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.23E+00	NC
Thallium	NC	NCOPC	NCOPC	9.74E-01	NC	8.10E-01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Toluene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.09E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC
Total PCBs	9.92E-07	7.10E+01	7.04E-05	1.96E+00	1.95E-06	1.30E+00	1.29E-06	1.84E-01	1.82E-07	1.40E-01	1.39E-07	7.70E-01	7.64E-07	5.48E+00	5.43E-06
Total Xylenes	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.40E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	NC	3.43E+01	NC	3.16E+01	NC	3.57E+01	NC	3.58E+01	NC	3.78E+01	NC	3.41E+01	NC	2.57E+01	NC
Zinc	NC	1.30E+03	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.31E+02	NC	NCOPC	NCOPC
	Total Risk:		7.82E-06		3.39E-06		3.80E-05		2.54E-05		3.37E-05		2.17E-05		1.21E-04

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
DERMAL CONTACT AND
INGESTION OF SURFACE SOIL
FOR FUTURE ON-SITE WORKER - RME

Chemical	Unit Concentration In Soil (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Reference Dose (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	ADDing Future On-Site Worker - RME (mg/kg-day)	ADDder Future On-Site Worker - RME (mg/kg-day)	Unit Hazard Index - Ingestion	Unit Hazard Index - Dermal Conta
2,3,7-8 TCDD TEQ	1.00E+00	0.03	1.00E-09	1.00E-09	4.89E-07	1.93E-07	4.89E+02	1.93E+02
2-Methylnaphthalene	1.00E+00	0.13	4.00E-03	4.00E-03	4.89E-07	8.35E-07	1.22E-04	2.09E-04
Aluminum	1.00E+00	0.001	1.00E+00	1.00E+00	4.89E-07	6.42E-09	4.89E-07	6.42E-09
Antimony	1.00E+00	0.001	4.00E-04	6.00E-05	4.89E-07	6.42E-09	1.22E-03	1.07E-04
Arsenic	1.00E+00	0.03	3.00E-04	3.00E-04	4.89E-07	1.93E-07	1.63E-03	6.42E-04
Barium	1.00E+00	0.001	2.00E-01	1.40E-02	4.89E-07	6.42E-09	2.45E-06	4.59E-07
Benzene	1.00E+00	0.01	4.00E-03	4.00E-03	4.89E-07	6.42E-08	1.22E-04	1.61E-05
Benzo(a)anthracene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05
Benzo(a)pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05
Benzo(b)fluoranthene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05
Benzo(k)fluoranthene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05
Cadmium	1.00E+00	0.001	1.00E-03	2.50E-05	4.89E-07	6.42E-09	4.89E-04	2.57E-04
Chromium (total)	1.00E+00	0.001	1.50E+00	1.95E-02	4.89E-07	6.42E-09	3.26E-07	3.29E-07
Copper	1.00E+00	0.001	3.70E-02	3.70E-02	4.89E-07	6.42E-09	1.32E-05	1.74E-07
Dibenz(a,h)anthracene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05
Iron	1.00E+00	0.001	7.00E-01	7.00E-01	4.89E-07	6.42E-09	6.99E-07	9.18E-09
Lead	1.00E+00	NA	NA	NA	4.89E-07	NA	NA	NA
Manganese	1.00E+00	0.001	2.40E-02	9.60E-04	4.89E-07	6.42E-09	2.04E-05	6.69E-06
Mercury	1.00E+00	0.001	3.00E-04	2.10E-05	4.89E-07	6.42E-09	1.63E-03	3.06E-04
Naphthalene	1.00E+00	0.13	2.00E-02	2.00E-02	4.89E-07	8.35E-07	2.45E-05	4.17E-05
Thallium	1.00E+00	0.001	6.67E-05	6.67E-05	4.89E-07	6.42E-09	7.33E-03	9.63E-05
Toluene	1.00E+00	0.01	8.00E-02	8.00E-02	4.89E-07	6.42E-08	6.12E-06	8.03E-07
Total PCBs	1.00E+00	0.14	2.00E-05	2.00E-05	4.89E-07	8.99E-07	2.45E-02	4.50E-02
Total Xylenes	1.00E+00	0.01	2.00E-01	2.00E-01	4.89E-07	6.42E-08	2.45E-06	3.21E-07
Vanadium	1.00E+00	0.001	5.04E-03	1.31E-04	4.89E-07	6.42E-09	9.71E-05	4.90E-05
Zinc	1.00E+00	0.001	3.00E-01	3.00E-01	4.89E-07	6.42E-09	1.63E-06	2.14E-08

TABLE
POTENTIAL HAZARD INDEX
DERMAL CONTACT AND
INGESTION OF SURFACE SOIL
FOR FUTURE ON-SITE WORKER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	HI (per mg/kg)	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ
2,3,7-8 TCDD TEQ	6.82E+02	3.84E-06	2.62E-03	5.42E-06	3.70E-03	NCOPC	NCOPC	5.62E-06	3.83E-03	7.22E-06	4.92E-03	9.94E-06	6.78E-03	NCOPC	NCOPC
2-Methylnaphthalene	3.31E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	8.01E-01	2.65E-04
Aluminum	4.98E-07	1.98E+04	9.71E-03	2.22E+04	1.10E-02	2.70E+04	1.34E-02	1.38E+04	6.85E-03	3.33E+04	1.65E-02	2.09E+04	1.04E-02	1.46E+04	7.22E-03
Antimony	1.33E-03	NCOPC	NCOPC	3.61E+00	4.80E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.05E+02	1.40E-01	NCOPC	NCOPC
Arsenic	2.27E-03	1.08E+01	2.46E-02	1.22E+01	2.78E-02	9.29E+00	2.11E-02	4.84E+01	1.10E-01	4.98E+00	1.13E-02	9.70E+00	2.20E-02	8.22E+00	1.87E-02
Barium	2.90E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.28E+02	6.62E-04	NCOPC	NCOPC
Benzene	1.38E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.44E+01	1.99E-03	NCOPC	NCOPC	NCOPC	NCOPC
Benzo(a)anthracene	4.41E-05	7.00E-01	3.09E-05	3.80E+00	1.68E-04	4.31E+00	1.90E-04	1.40E+00	6.20E-05	1.32E+00	5.83E-05	4.42E+00	1.95E-04	2.47E+01	1.09E-03
Benzo(a)pyrene	4.41E-05	7.10E-01	3.13E-05	5.60E+00	2.47E-04	6.60E+00	2.91E-04	1.23E+00	5.41E-05	6.75E+00	2.98E-04	3.27E+00	1.44E-04	2.23E+01	9.83E-04
Benzo(b)fluoranthene	4.41E-05	6.90E-01	3.05E-05	7.93E+00	3.50E-04	4.34E+00	1.92E-04	1.16E+00	5.12E-05	8.14E+00	3.59E-04	3.01E+00	1.33E-04	1.94E+01	8.56E-04
Benzo(k)fluoranthene	4.41E-05	NCOPC	NCOPC	NCOPC	NCOPC	4.46E+00	1.97E-04	NCOPC	NCOPC	5.72E+00	2.53E-04	3.06E+00	1.35E-04	2.10E+01	9.26E-04
Cadmium	7.46E-04	4.02E+00	3.00E-03	4.35E+00	3.25E-03	NCOPC	NCOPC	3.40E+00	2.54E-03	3.96E+00	2.96E-03	1.93E+00	1.44E-03	8.22E-01	6.13E-04
Chromium (total)	6.56E-07	4.89E+01	3.21E-05	2.05E+01	1.35E-05	2.76E+01	1.81E-05	2.42E+01	1.58E-05	5.66E+01	3.71E-05	2.06E+02	1.35E-04	1.91E+01	1.25E-05
Copper	1.34E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.41E+02	3.23E-03	NCOPC	NCOPC	1.26E+02	1.69E-03	NCOPC	NCOPC
Dibenz(a,h)anthracene	4.41E-05	1.91E-01	8.41E-06	9.68E-01	4.27E-05	1.90E+00	8.39E-05	5.70E-01	2.52E-05	8.12E-01	3.59E-05	6.92E-01	3.06E-05	4.28E+00	1.89E-04
Indeno(1,2,3-cd)pyrene	4.41E-05	4.48E-01	1.98E-05	1.72E+00	7.59E-05	5.40E+00	2.38E-04	8.85E-01	3.91E-05	5.11E+00	2.26E-04	2.07E+00	9.15E-05	1.41E+01	6.24E-04
Iron	7.08E-07	1.15E+05	8.13E-02	1.28E+05	8.93E-02	2.67E+04	1.89E-02	2.49E+04	1.76E-02	1.15E+05	8.17E-02	6.14E+04	4.35E-02	5.03E+04	3.56E-02
Lead	NC	5.44E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC	1.99E+02	NC	NCOPC	NCOPC	1.33E+02	NC	2.56E+02	NC
Manganese	2.71E-05	3.53E+03	9.55E-02	2.25E+03	6.09E-02	4.29E+03	1.16E-01	8.86E+02	2.40E-02	5.51E+03	1.49E-01	4.21E+03	1.14E-01	1.72E+03	4.67E-02
Mercury	1.94E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.38E+00	2.68E-03	NCOPC	NCOPC	8.30E-01	1.61E-03	1.62E+00	3.14E-03
Naphthalene	6.62E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.23E+00	1.48E-04
Thallium	7.43E-03	NCOPC	NCOPC	9.74E-01	7.24E-03	8.10E-01	6.02E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Toluene	6.92E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.09E+02	7.58E-04	NCOPC	NCOPC	NCOPC	NCOPC
Total PCBs	6.94E-02	7.10E+01	4.93E+00	1.96E+00	1.36E-01	1.30E+00	9.02E-02	1.84E-01	1.28E-02	1.40E-01	9.72E-03	7.70E-01	5.35E-02	5.48E+00	3.80E-01
Total Xylenes	2.77E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.40E+02	1.22E-03	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	1.46E-04	3.43E+01	5.01E-03	3.18E+01	4.65E-03	3.57E+01	5.22E-03	3.58E+01	5.23E-03	3.78E+01	5.52E-03	3.41E+01	4.97E-03	2.57E+01	3.76E-03
Zinc	1.65E-06	1.30E+03	2.15E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.31E+02	1.04E-03	NCOPC	NCOPC
	Total HI:		5.15E+00		3.50E-01		2.72E-01		1.59E-01		2.87E-01		4.82E-01		5.01E-01

Notes:
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
AK STEEL FORMER ARMCO HAMILTON PLANT

Receptors Evaluated:	
Receptor 1:	Future On-Site Worker - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR FUTURE ON-SITE WORKER - RME DERMAL CONTACT AND INGESTION OF SURFACE & SUBSURFACE SOIL		Assumed Value	Units	Calculated Value
Soil Ingestion Rate	Future On-Site Worker - RME	50	(mg soil/day)	
Soil on Skin	Future On-Site Worker - RME	0.20	(mg/cm^2)	
Skin Exposed	Future On-Site Worker - RME	3282	(cm^2)	
Body Weight	Future On-Site Worker - RME	70	(kg)	
Exposure Frequency	Future On-Site Worker - RME	250	(days)/365(days) =	6.85E-01
Exposure Duration (cancer)	Future On-Site Worker - RME	25	(years)/70(years) =	3.57E-01
Exposure Duration (noncancer)	Future On-Site Worker - RME	25	(years)/25(years) =	1.00E+00
Lifetime		70	(years)	
Unit Conversion Factor		1.00E-06	(kg/mg)	

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
DERMAL CONTACT AND
INGESTION OF SURFACE & SUBSURFACE SOIL
FOR FUTURE ON-SITE WORKER - RME

Chemical	Unit Concentration in Soil (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	ADDing Future On-Site Worker - RME (mg/kg-day)	ADDder Future On-Site Worker - RME (mg/kg-day)	Unit Excess Lifetime Cancer Risk - Ingestion	Unit Excess Lifetime Cancer Risk - Dermal Contact	Unit Excess Lifetime Cancer Risk
1,1-Biphenyl	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
2,3,7-8 TCDD TEQ	1.00E+00	0.03	1.50E+05	1.50E+05	1.75E-07	6.88E-08	2.62E-02	1.03E-02	3.65E-02
2-Methylnaphthalene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Acenaphthene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Acenaphthylene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Aluminum	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Anthracene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Antimony	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Arsenic	1.00E+00	0.03	1.50E+00	1.50E+00	1.75E-07	6.88E-08	2.62E-07	1.03E-07	3.65E-07
Barium	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Benzene	1.00E+00	0.01	5.50E-02	5.50E-02	1.75E-07	2.29E-08	9.61E-09	1.26E-09	1.09E-08
Benzo(a)anthracene	1.00E+00	0.13	7.30E-01	7.30E-01	1.75E-07	2.98E-07	1.28E-07	2.18E-07	3.45E-07
Benzo(a)pyrene	1.00E+00	0.13	7.30E+00	7.30E+00	1.75E-07	2.98E-07	1.28E-06	2.18E-06	3.45E-06
Benzo(b)fluoranthene	1.00E+00	0.13	7.30E-01	7.30E-01	1.75E-07	2.98E-07	1.28E-07	2.18E-07	3.45E-07
Benzo(g,h,i)perylene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Benzo(k)fluoranthene	1.00E+00	0.13	7.30E-02	7.30E-02	1.75E-07	2.98E-07	1.28E-08	2.18E-08	3.45E-08
Cadmium	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Carbazole	1.00E+00	0.1	2.00E-02	0.02	1.75E-07	2.29E-07	3.49E-09	4.59E-09	NCOPC
Chromium (total)	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Chrysene	1.00E+00	0.13	7.30E-03	0.0073	1.75E-07	2.98E-07	1.28E-09	2.18E-09	NCOPC
Copper	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Dibenz(a,h)anthracene	1.00E+00	0.13	7.30E+00	7.30E+00	1.75E-07	2.98E-07	1.28E-06	2.18E-06	3.45E-06
Dibenzofuran	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Fluoranthene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Fluorene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	7.30E-01	7.30E-01	1.75E-07	2.98E-07	1.28E-07	2.18E-07	3.45E-07
Iron	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Lead	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Manganese	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Mercury	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Naphthalene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
p-Cresol (4-Methylphenol)	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Phenanthrene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Phenol	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Pyrene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NCOPC
Thallium	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Toluene	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Total PCBs	1.00E+00	0.14	2.00E+00	2.00E+00	1.75E-07	3.21E-07	3.49E-07	6.42E-07	9.92E-07
Total Xylenes	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Trichloroethene	1.00E+00	0.01	1.30E-02	0.013	1.75E-07	2.29E-08	2.27E-09	2.98E-10	NCOPC
Vanadium	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC
Zinc	1.00E+00	NA	NA	NA	1.75E-07	NA	NA	NA	NC

TABLE
POTENTIAL CARCINOGENIC RISK
DERMAL CONTACT AND
INGESTION OF SURFACE & SUBSURFACE SOIL
FOR FUTURE ON-SITE WORKER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	Risk (per mg/kg)	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk
1,1-Biphenyl	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.20E+03	NC
2,3,7-8 TCDD TEQ	3.85E-02	2.58E-06	9.79E-08	5.42E-06	1.98E-07	NCOPC	NCOPC	8.55E-06	3.12E-07	1.42E-05	5.20E-07	2.09E-05	7.64E-07	2.59E-06	9.46E-08
2-Methylnaphthalene	NCOPC	4.24E+01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.04E+01	NC	5.11E+02	NC
Acenaphthene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.24E+01	NC
Acenaphthylene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.44E+01	NC	5.17E+02	NC
Aluminum	NC	1.55E+04	NC	2.53E+04	NC	1.91E+04	NC	1.10E+04	NC	3.49E+04	NC	1.90E+04	NC	1.48E+04	NC
Anthracene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.36E+02	NC
Antimony	NC	NCOPC	NCOPC	3.61E+00	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.05E+02	NC	NCOPC	NCOPC
Arsenic	3.85E-07	1.12E+01	4.07E-06	8.56E+00	3.13E-06	8.32E+00	3.04E-06	2.45E+01	8.94E-06	4.17E+00	1.52E-06	9.35E+00	3.42E-06	8.60E+00	3.14E-06
Barium	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.01E+02	NC	NCOPC	NCOPC
Benzene	1.09E-08	1.26E+01	1.37E-07	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.21E+00	7.84E-08	3.02E-02	3.28E-10	1.58E+01	1.71E-07
Benzo(a)anthracene	3.45E-07	6.83E+01	2.36E-05	2.72E+00	9.39E-07	7.50E+00	2.59E-06	1.09E+00	3.76E-07	9.50E-01	3.28E-07	3.57E+01	1.23E-05	3.35E+02	1.16E-04
Benzo(a)pyrene	3.45E-06	5.86E+01	2.02E-04	3.75E+00	1.29E-05	6.60E+00	2.28E-05	9.50E-01	3.28E-06	4.17E+00	1.44E-05	2.79E+01	9.64E-05	2.70E+02	9.33E-04
Benzo(b)fluoranthene	3.45E-07	4.58E+01	1.58E-05	5.51E+00	1.90E-06	7.40E+00	2.55E-06	9.10E-01	3.14E-07	4.30E+00	1.48E-06	2.28E+01	7.89E-06	2.14E+02	7.40E-05
Benzo(g,h,i)perylene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.40E+01	NC	1.31E+02	NC
Benzo(k)fluoranthene	3.45E-06	5.54E+01	1.91E-06	NCOPC	NCOPC	7.70E+00	2.66E-07	NCOPC	NCOPC	3.15E+00	1.09E-07	2.68E+01	9.24E-07	2.24E+02	7.73E-06
Cadmium	NC	1.88E+01	NC	3.33E+00	NC	NCOPC	NCOPC	7.40E+00	NC	5.41E+00	NC	1.50E+00	NC	8.02E-01	NC
Carbazole	NCOPC	2.29E+01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.41E+01	NC	2.23E+02	NC
Chromium (total)	NC	3.79E+01	NC	1.76E+01	NC	2.09E+01	NC	3.97E+01	NC	3.85E+01	NC	1.15E+02	NC	2.06E+01	NC
Chrysene	NCOPC	6.51E+01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.27E+01	NC	3.07E+02	NC
Copper	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.09E+02	NC	NCOPC	NCOPC	5.80E+01	NC	NCOPC	NCOPC
Dibenz(a,h)anthracene	3.45E-06	1.22E+01	4.19E-05	5.80E-01	2.00E-06	1.90E+00	6.56E-06	5.70E-01	1.97E-06	5.20E-01	1.80E-06	3.38E+00	1.17E-05	4.78E+01	1.65E-04
Dibenzofuran	NCOPC	3.92E+01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.14E+01	NC	3.72E+02	NC
Fluoranthene	NCOPC	1.78E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	9.31E+01	NC	9.10E+02	NC
Fluorene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.70E+01	NC	6.03E+02	NC
Indeno(1,2,3-cd)pyrene	3.45E-07	3.28E+01	1.13E-05	1.10E+00	3.80E-07	5.40E+00	1.86E-06	1.50E+00	5.18E-07	1.52E+00	5.25E-07	1.32E+01	4.54E-06	1.31E+02	4.52E-05
Iron	NC	1.07E+05	NC	3.84E+04	NC	2.66E+04	NC	2.03E+04	NC	4.71E+04	NC	5.18E+04	NC	3.88E+04	NC
Lead	NC	1.08E+03	NC	NCOPC	NCOPC	NCOPC	NCOPC	1.64E+02	NC	NCOPC	NCOPC	8.44E+01	NC	8.13E+01	NC
Manganese	NC	2.81E+03	NC	2.26E+03	NC	2.47E+03	NC	8.41E+02	NC	4.56E+03	NC	3.29E+03	NC	1.67E+03	NC
Mercury	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	9.90E-01	NC	NCOPC	NCOPC	3.81E-01	NC	2.17E+00	NC
Naphthalene	NC	3.55E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.14E+02	NC	2.88E+03	NC
p-Cresol (4-Methylphenol)	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.60E+03	NC
Phenanthrene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.32E+02	NC	1.39E+03	NC
Phenol	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.20E+03	NC
Pyrene	NCOPC	1.23E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.68E+01	NC	6.97E+02	NC
Thallium	NC	1.30E+00	NC	8.20E-01	NC	6.40E-01	NC	1.30E+00	NC	NCOPC	NCOPC	NCOPC	NCOPC	6.00E+00	NC
Toluene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.48E+01	NC	NCOPC	NCOPC	1.94E+01	NC
Total PCBs	9.92E-07	4.29E+01	4.25E-05	1.49E+00	1.48E-06	1.30E+00	1.29E-06	3.15E-01	3.12E-07	1.40E-01	1.39E-07	3.86E-01	3.83E-07	2.90E+00	2.87E-06
Total Xylenes	NC	3.00E+01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.27E+02	NC	NCOPC	NCOPC	3.52E+01	NC
Trichloroethene	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.50E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	NC	3.25E+01	NC	2.40E+01	NC	2.97E+01	NC	3.06E+01	NC	2.76E+01	NC	3.24E+01	NC	2.35E+01	NC
Zinc	NC	3.91E+03	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.82E+02	NC	NCOPC	NCOPC
	Total Risk:		3.44E-04		2.30E-06		4.09E-05		1.60E-05		2.09E-05		1.38E-04		1.35E-03

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
DERMAL CONTACT AND
INGESTION OF SURFACE & SUBSURFACE SOIL
FOR FUTURE ON-SITE WORKER - RME

Chemical	Unit Concentration In Soil (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Reference Dose (mg/kg-day)	Dermal Reference Dose (mg/kg-day)	ADDing Future On-Site Worker - RME (mg/kg-day)	ADDder Future On-Site Worker - RME (mg/kg-day)	Unit Hazard Index - Ingestion	Unit Hazard Index - Dermal Contact	Unit Hazard Index
1,1-Biphenyl	1.00E+00	0.01	5.00E-02	5.00E-02	4.89E-07	6.42E-08	9.78E-06	1.28E-06	1.11E-05
2,3,7-8 TCDD TEQ	1.00E+00	0.03	1.00E-09	1.00E-09	4.89E-07	1.93E-07	4.89E+02	1.93E+02	6.82E+02
2-Methylnaphthalene	1.00E+00	0.13	4.00E-03	4.00E-03	4.89E-07	8.35E-07	1.22E-04	2.09E-04	3.31E-04
Acenaphthene	1.00E+00	0.13	6.00E-02	6.00E-02	4.89E-07	8.35E-07	8.15E-06	1.39E-05	2.21E-05
Acenaphthylene	1.00E+00	0.13	6.00E-02	6.00E-02	4.89E-07	8.35E-07	8.15E-06	1.39E-05	2.21E-05
Aluminum	1.00E+00	0.001	1.00E+00	1.00E+00	4.89E-07	6.42E-09	4.89E-07	6.42E-09	4.96E-07
Anthracene	1.00E+00	0.13	3.00E-01	3.00E-01	4.89E-07	8.35E-07	1.63E-06	2.78E-06	4.41E-06
Antimony	1.00E+00	0.001	4.00E-04	6.00E-05	4.89E-07	6.42E-09	1.22E-03	1.07E-04	1.33E-03
Arsenic	1.00E+00	0.03	3.00E-04	3.00E-04	4.89E-07	1.93E-07	1.63E-03	6.42E-04	2.27E-03
Barium	1.00E+00	0.001	2.00E-01	1.40E-02	4.89E-07	6.42E-09	2.45E-06	4.59E-07	2.90E-06
Benzene	1.00E+00	0.01	4.00E-03	4.00E-03	4.89E-07	6.42E-08	1.22E-04	1.61E-05	1.38E-04
Benzo(a)anthracene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05	4.41E-05
Benzo(a)pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05	4.41E-05
Benzo(b)fluoranthene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05	4.41E-05
Benzo(g,h,i)perylene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05	4.41E-05
Benzo(k)fluoranthene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05	4.41E-05
Cadmium	1.00E+00	0.001	1.00E-03	2.50E-05	4.89E-07	6.42E-09	4.89E-04	2.57E-04	7.46E-04
Carbazole	1.00E+00	NA	NA	NA	4.89E-07	NA	NA	NA	NC
Chromium (total)	1.00E+00	0.001	1.50E+00	1.95E-02	4.89E-07	6.42E-09	3.26E-07	3.29E-07	6.56E-07
Chrysene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05	4.41E-05
Copper	1.00E+00	0.001	3.70E-02	3.70E-02	4.89E-07	6.42E-09	1.32E-05	1.74E-07	1.34E-05
Dibenz(a,h)anthracene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05	4.41E-05
Dibenzofuran	1.00E+00	0.01	1.00E-03	1.00E-03	4.89E-07	6.42E-08	4.89E-04	6.42E-05	5.53E-04
Fluoranthene	1.00E+00	0.13	4.00E-02	4.00E-02	4.89E-07	8.35E-07	1.22E-05	2.09E-05	3.31E-05
Fluorene	1.00E+00	0.13	4.00E-02	4.00E-02	4.89E-07	8.35E-07	1.22E-05	2.09E-05	3.31E-05
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05	4.41E-05
Iron	1.00E+00	0.001	7.00E-01	7.00E-01	4.89E-07	6.42E-09	6.99E-07	9.18E-09	7.08E-07
Lead	1.00E+00	NA	NA	NA	4.89E-07	NA	NA	NA	NC
Manganese	1.00E+00	0.001	2.40E-02	9.60E-04	4.89E-07	6.42E-09	2.04E-05	6.69E-06	2.71E-05
Mercury	1.00E+00	0.001	3.00E-04	2.10E-05	4.89E-07	6.42E-09	1.63E-03	3.06E-04	1.94E-03
Naphthalene	1.00E+00	0.13	2.00E-02	2.00E-02	4.89E-07	8.35E-07	2.45E-05	4.17E-05	6.62E-05
p-Cresol (4-Methylphenol)	1.00E+00	0.1	5.00E-02	5.00E-02	4.89E-07	6.42E-07	9.78E-06	1.28E-05	2.26E-05
Phenanthrene	1.00E+00	0.13	3.00E-01	3.00E-01	4.89E-07	8.35E-07	1.63E-06	2.78E-06	4.41E-06
Phenol	1.00E+00	0.1	3.00E-01	3.00E-01	4.89E-07	6.42E-07	1.63E-06	2.14E-06	3.77E-06
Pyrene	1.00E+00	0.13	3.00E-02	3.00E-02	4.89E-07	8.35E-07	1.63E-05	2.78E-05	4.41E-05
Thallium	1.00E+00	0.001	6.67E-05	6.67E-05	4.89E-07	6.42E-09	7.33E-03	9.63E-05	7.43E-03
Toluene	1.00E+00	0.01	8.00E-02	8.00E-02	4.89E-07	6.42E-08	6.12E-06	8.03E-07	6.92E-06
Total PCBs	1.00E+00	0.14	2.00E-05	2.00E-05	4.89E-07	8.99E-07	2.45E-02	4.50E-02	6.94E-02
Total Xylenes	1.00E+00	0.01	2.00E-01	2.00E-01	4.89E-07	6.42E-08	2.45E-06	3.21E-07	2.77E-06
Trichloroethene	1.00E+00	0.01	5.00E-01	5.00E-01	4.89E-07	6.42E-08	9.78E-07	1.28E-07	1.11E-06
Vanadium	1.00E+00	0.001	5.04E-03	1.31E-04	4.89E-07	6.42E-09	9.71E-05	4.90E-05	1.46E-04
Zinc	1.00E+00	0.001	3.00E-01	3.00E-01	4.89E-07	6.42E-09	1.63E-06	2.14E-08	1.65E-06

TABLE
POTENTIAL HAZARD INDEX
DERMAL CONTACT AND
INGESTION OF SURFACE & SUBSURFACE SOIL
FOR FUTURE ON-SITE WORKER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	HI (per mg/kg)	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ
1,1-Biphenyl	1.11E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.20E+03	1.33E-02
2,3,7-8 TCDD TEQ	6.82E+02	2.68E-06	1.83E-03	5.42E-06	3.70E-03	NCOPC	NCOPC	8.55E-06	5.83E-03	1.42E-05	9.71E-03	2.09E-05	1.43E-02	2.59E-06	1.77E-03
2-Methylnaphthalene	3.31E-04	4.24E+01	1.40E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.04E+01	6.74E-03	5.11E+02	1.69E-01
Acenaphthene	2.21E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.24E+01	9.36E-04
Acenaphthylene	2.21E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.44E+01	7.59E-04	5.17E+02	1.14E-02
Aluminum	4.96E-07	1.55E+04	7.66E-03	2.53E+04	1.25E-02	1.91E+04	9.45E-03	1.10E+04	5.46E-03	3.49E+04	1.73E-02	1.90E+04	9.41E-03	1.48E+04	7.34E-03
Anthracene	4.41E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.38E+02	1.92E-03
Antimony	1.33E-03	NCOPC	NCOPC	3.61E+00	4.80E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.05E+02	1.40E-01	NCOPC	NCOPC
Arsenic	2.27E-03	1.12E+01	2.53E-02	8.56E+00	1.95E-02	8.32E+00	1.89E-02	2.45E+01	5.56E-02	4.17E+00	9.48E-03	9.35E+00	2.13E-02	8.80E+00	1.98E-02
Barium	2.90E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.01E+02	5.83E-04	NCOPC	NCOPC
Benzene	1.38E-04	1.28E+01	1.74E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.21E+00	9.98E-04	3.02E-02	4.18E-06	1.58E+01	2.18E-03
Benzo(a)anthracene	4.41E-05	6.83E+01	3.01E-03	2.72E+00	1.20E-04	7.50E+00	3.31E-04	1.09E+00	4.81E-05	9.50E-01	4.19E-05	3.57E+01	1.58E-03	3.35E+02	1.48E-02
Benzo(a)pyrene	4.41E-05	5.88E+01	2.59E-03	3.75E+00	1.66E-04	6.60E+00	2.91E-04	9.50E-01	4.19E-05	4.17E+00	1.84E-04	2.79E+01	1.23E-03	2.70E+02	1.19E-02
Benzo(b)fluoranthene	4.41E-05	4.58E+01	2.02E-03	5.51E+00	2.43E-04	7.40E+00	3.27E-04	9.10E-01	4.02E-05	4.30E+00	1.90E-04	2.26E+01	1.01E-03	2.14E+02	9.46E-03
Benzo(g,h,i)perylene	4.41E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.40E+01	6.16E-04	1.31E+02	5.79E-03
Benzo(k)fluoranthene	4.41E-05	5.54E+01	2.44E-03	NCOPC	NCOPC	7.70E+00	3.40E-04	NCOPC	NCOPC	3.15E+00	1.39E-04	2.68E+01	1.18E-03	2.24E+02	9.89E-03
Cadmium	7.46E-04	1.88E+01	1.40E-02	3.33E+00	2.48E-03	NCOPC	NCOPC	7.40E+00	5.52E-03	5.41E+00	4.04E-03	1.50E+00	1.12E-03	8.02E-01	5.98E-04
Carbazole	NC	2.29E+01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.41E+01	NC	2.23E+02	NC
Chromium (total)	6.56E-07	3.79E+01	2.48E-05	1.76E+01	1.15E-05	2.09E+01	1.37E-05	3.97E+01	2.60E-05	3.65E+01	2.39E-05	1.15E+02	7.51E-05	2.06E+01	1.35E-05
Chrysene	4.41E-05	6.51E+01	2.87E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.27E+01	1.44E-03	3.07E+02	1.36E-02
Copper	1.34E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.09E+02	1.45E-03	NCOPC	NCOPC	5.80E+01	7.77E-04	NCOPC	NCOPC
Dibenz(a,h)anthracene	4.41E-05	1.22E+01	5.36E-04	5.80E-01	2.56E-05	1.90E+00	8.39E-05	5.70E-01	2.52E-05	5.20E-01	2.30E-05	3.38E+00	1.49E-04	4.78E+01	2.11E-03
Dibenzofuran	5.53E-04	3.92E+01	2.17E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.14E+01	1.19E-02	3.72E+02	2.06E-01
Fluoranthene	3.31E-05	1.78E+02	5.89E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	9.31E+01	3.08E-03	9.10E+02	3.01E-02
Fluorene	3.31E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.70E+01	1.22E-03	6.03E+02	2.00E-02
Indeno(1,2,3-cd)pyrene	4.41E-05	3.28E+01	1.45E-03	1.10E+00	4.86E-05	5.40E+00	2.38E-04	1.50E+00	6.62E-05	1.52E+00	6.71E-05	1.32E+01	5.80E-04	1.31E+02	5.78E-03
Iron	7.08E-07	1.07E+05	7.54E-02	3.84E+04	2.72E-02	2.66E+04	1.89E-02	2.03E+04	1.44E-02	4.71E+04	3.33E-02	5.18E+04	3.67E-02	3.88E+04	2.75E-02
Lead	NC	1.08E+03	NC	NCOPC	NCOPC	NCOPC	NCOPC	1.64E+02	NC	NCOPC	NCOPC	8.44E+01	NC	8.13E+01	NC
Manganese	2.71E-05	2.61E+03	7.08E-02	2.26E+03	6.13E-02	2.47E+03	6.70E-02	8.41E+02	2.28E-02	4.56E+03	1.23E-01	3.29E+03	8.92E-02	1.67E+03	4.53E-02
Mercury	1.94E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	9.90E-01	1.92E-03	NCOPC	NCOPC	3.81E-01	7.38E-04	2.17E+00	4.20E-03
Naphthalene	6.82E-05	3.55E+02	2.35E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.14E+02	7.52E-03	2.86E+03	1.89E-01
p-Cresol (4-Methylphenol)	2.26E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.60E+03	3.62E-02
Phenanthrene	4.41E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.32E+02	5.82E-04	1.39E+03	6.13E-03
Phenol	3.77E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.20E+03	8.30E-03
Pyrene	4.41E-05	1.23E+02	5.43E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.68E+01	3.39E-03	6.97E+02	3.08E-02
Thallium	7.43E-03	1.30E+00	9.66E-03	8.20E-01	6.09E-03	6.40E-01	4.76E-03	1.30E+00	9.66E-03	NCOPC	NCOPC	NCOPC	NCOPC	6.00E+00	4.46E-02
Toluene	6.92E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.48E+01	3.79E-04	NCOPC	NCOPC	1.94E+01	1.34E-04
Total PCBs	6.94E-02	4.29E+01	2.98E+00	1.49E+00	1.03E-01	1.30E+00	9.02E-02	3.15E-01	2.18E-02	1.40E-01	9.72E-03	3.86E-01	2.68E-02	2.90E+00	2.01E-01
Total Xylenes	2.77E-06	3.00E+01	8.30E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.27E+02	3.51E-04	NCOPC	NCOPC	3.52E+01	9.73E-05
Trichloroethene	1.11E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.50E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	1.46E-04	3.25E+01	4.75E-03	2.40E+01	3.51E-03	2.97E+01	4.34E-03	3.06E+01	4.46E-03	2.76E+01	4.03E-03	3.24E+01	4.74E-03	2.35E+01	3.43E-03
Zinc	1.65E-06	3.91E+03	6.46E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.82E+02	6.30E-04	NCOPC	NCOPC
Total HI:			3.23E+00		2.45E-01		2.15E-01		1.49E-01		2.13E-01		3.89E-01		1.15E+00

Notes:
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
AK STEEL FORMER ARMCO HAMILTON PLANT

Receptors Evaluated:	
Receptor 1:	Future On-Site Worker - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR FUTURE ON-SITE WORKER - RME INHALATION OF AMBIENT AIR		Assumed Value	Units	Calculated Value
Inhalation Rate	Future On-Site Worker - RME	16	(m^3 air/day)	($2m^3$/hour x 8hrs/day)
Body Weight	Future On-Site Worker - RME	70	(kg)	
Exposure Frequency	Future On-Site Worker - RME	250	(days)/365(days) =	6.85E-01
Exposure Duration (cancer)	Future On-Site Worker - RME	25	(yrs)/70(yrs) =	3.57E-01
Exposure Duration (noncancer)	Future On-Site Worker - RME	25	(yrs)/25(yrs) =	1.00E+00
Lifetime		70	(years)	

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
CARCINOGENIC ASSESSMENT
INHALATION OF
AMBIENT AIR
FOR FUTURE ON-SITE WORKER - RME

Chemical	Unit Concentration In Air (mg/m^3 air)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	ADDinh Future On-Site Worker - RME (mg/kg-day)	Lifetime Average Daily Dose - Inh. (mg/kg-day)	Unit Excess Lifetime Cancer Risk - Inhalation
1,1-Biphenyl	1.00E+00	NA	5.59E-02	5.59E-02	NC
2,3,7-8 TCDD TEQ	1.00E+00	1.50E+05	5.59E-02	5.59E-02	8.39E+03
2-Methylnaphthalene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Acenaphthene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Acenaphthylene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Aluminum	1.00E+00	NA	5.59E-02	5.59E-02	NC
Anthracene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Antimony	1.00E+00	NA	5.59E-02	5.59E-02	NC
Arsenic	1.00E+00	1.51E+01	5.59E-02	5.59E-02	8.44E-01
Barium	1.00E+00	NA	5.59E-02	5.59E-02	NC
Benzene	1.00E+00	2.70E-02	5.59E-02	5.59E-02	1.51E-03
Benzo(a)anthracene	1.00E+00	3.90E-01	5.59E-02	5.59E-02	2.18E-02
Benzo(a)pyrene	1.00E+00	3.90E+00	5.59E-02	5.59E-02	2.18E-01
Benzo(b)fluoranthene	1.00E+00	3.90E-01	5.59E-02	5.59E-02	2.18E-02
Benzo(g,h,i)perylene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Benzo(k)fluoranthene	1.00E+00	3.90E-01	5.59E-02	5.59E-02	2.18E-02
Cadmium	1.00E+00	6.30E+00	5.59E-02	5.59E-02	3.52E-01
Carbazole	1.00E+00	NA	5.59E-02	5.59E-02	NC
Chromium (total)	1.00E+00	NA	5.59E-02	5.59E-02	NC
Chrysene	1.00E+00	3.90E-02	5.59E-02	5.59E-02	2.18E-03
Copper	1.00E+00	NA	5.59E-02	5.59E-02	NC
Dibenz(a,h)anthracene	1.00E+00	4.10E+00	5.59E-02	5.59E-02	2.29E-01
Dibenzofuran	1.00E+00	NA	5.59E-02	5.59E-02	NC
Fluoranthene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Fluorene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Indeno(1,2,3-cd)pyrene	1.00E+00	3.90E-01	5.59E-02	5.59E-02	2.18E-02
Iron	1.00E+00	NA	5.59E-02	5.59E-02	NC
Lead	1.00E+00	NA	5.59E-02	5.59E-02	NC
Manganese	1.00E+00	NA	5.59E-02	5.59E-02	NC
Mercury	1.00E+00	NA	5.59E-02	5.59E-02	NC
Naphthalene	1.00E+00	NA	5.59E-02	5.59E-02	NC
p-Cresol (4-Methylphenol)	1.00E+00	NA	5.59E-02	5.59E-02	NC
Phenanthrene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Phenol	1.00E+00	NA	5.59E-02	5.59E-02	NC
Pyrene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Thallium	1.00E+00	NA	5.59E-02	5.59E-02	NC
Toluene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Total PCBs	1.00E+00	2.00E+00	5.59E-02	5.59E-02	1.12E-01
Total Xylenes	1.00E+00	NA	5.59E-02	5.59E-02	NC
Trichloroethene	1.00E+00	7.00E-03	5.59E-02	5.59E-02	3.91E-04
Vanadium	1.00E+00	NA	5.59E-02	5.59E-02	NC
Zinc	1.00E+00	NA	5.59E-02	5.59E-02	NC

TABLE
POTENTIAL CARCINOGENIC RISK
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
INHALATION OF
AMBIENT AIR
FOR FUTURE ON-SITE WORKER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	Risk (per mg/m³)	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk
1,1-Biphenyl	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
2,3,7-8 TCDD TEQ	8.39E+03	6.12E-15	5.14E-11	7.39E-15	6.19E-11	NCOPC	NCOPC	8.95E-15	7.51E-11	1.15E-14	9.65E-11	1.58E-14	1.33E-10	NCOPC	NCOPC
2-Methylnaphthalene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.28E-09	NC
Acenaphthene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Acenaphthylene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Aluminum	NC	3.12E-05	NC	3.02E-05	NC	4.30E-05	NC	2.20E-05	NC	5.31E-05	NC	3.33E-05	NC	2.32E-05	NC
Anthracene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Antimony	NC	NCOPC	NCOPC	4.92E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.67E-07	NC	NCOPC	NCOPC
Arsenic	8.44E-01	1.73E-08	1.46E-08	1.67E-08	1.41E-08	1.48E-08	1.25E-08	7.71E-08	6.51E-08	7.94E-09	6.70E-09	1.55E-08	1.30E-08	1.31E-08	1.11E-08
Barium	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.63E-07	NC	NCOPC	NCOPC
Benzene	1.51E-03	8.08E-03	1.22E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.62E-03	6.97E-06	1.93E-05	2.92E-08	1.01E-02	1.52E-05
Benzo(a)anthracene	2.18E-02	1.12E-09	2.43E-11	5.18E-09	1.13E-10	6.87E-09	1.50E-10	2.24E-09	4.88E-11	2.11E-09	4.59E-11	7.05E-09	1.54E-10	3.93E-08	8.57E-10
Benzo(a)pyrene	2.18E-01	1.13E-09	2.47E-10	7.63E-09	1.66E-09	1.05E-08	2.29E-09	1.95E-09	4.26E-10	1.08E-08	2.35E-09	5.20E-09	1.13E-09	3.55E-08	7.74E-09
Benzo(b)fluoranthene	2.18E-02	1.10E-09	2.40E-11	1.08E-08	2.36E-10	6.92E-09	1.51E-10	1.85E-09	4.03E-11	1.30E-08	2.83E-10	4.80E-09	1.05E-10	3.09E-08	6.74E-10
Benzo(g,h,i)perylene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Benzo(k)fluoranthene	2.18E-02	NCOPC	NCOPC	NCOPC	NCOPC	7.12E-09	1.55E-10	NCOPC	NCOPC	9.12E-09	1.99E-10	4.87E-09	1.06E-10	3.34E-08	7.29E-10
Cadmium	3.52E-01	6.41E-09	2.26E-09	5.93E-09	2.09E-09	NCOPC	NCOPC	5.42E-09	1.91E-09	6.32E-09	2.23E-09	3.08E-09	1.09E-09	1.31E-09	4.62E-10
Carbazole	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Chromium (total)	NC	7.90E-08	NC	2.80E-08	NC	4.40E-08	NC	3.85E-08	NC	9.02E-08	NC	3.29E-07	NC	3.05E-08	NC
Chrysene	2.18E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Copper	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.84E-07	NC	NCOPC	NCOPC	2.01E-07	NC	NCOPC	NCOPC
Dibenz(a,h)anthracene	2.29E-01	3.04E-10	6.96E-11	1.32E-09	3.02E-10	3.03E-09	6.94E-10	9.09E-10	2.08E-10	1.29E-09	2.97E-10	1.10E-09	2.53E-10	6.83E-09	1.57E-09
Dibenzofuran	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Fluoranthene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Fluorene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Indeno(1,2,3-cd)pyrene	2.18E-02	7.13E-10	1.56E-11	2.34E-09	5.11E-11	8.61E-09	1.88E-10	1.41E-09	3.08E-11	8.14E-09	1.78E-10	3.30E-09	7.20E-11	2.25E-08	4.91E-10
Iron	NC	1.83E-04	NC	1.72E-04	NC	4.26E-05	NC	3.97E-05	NC	1.84E-04	NC	9.78E-05	NC	8.02E-05	NC
Lead	NC	8.67E-07	NC	NCOPC	NCOPC	NCOPC	NCOPC	3.17E-07	NC	NCOPC	NCOPC	2.12E-07	NC	4.07E-07	NC
Manganese	NC	5.62E-06	NC	3.07E-06	NC	6.84E-06	NC	1.41E-06	NC	8.78E-06	NC	6.71E-06	NC	2.75E-06	NC
Mercury	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.21E-09	NC	NCOPC	NCOPC	1.32E-09	NC	2.56E-09	NC
Naphthalene	NC	1.11E-02	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.56E-03	NC	8.95E-02	NC
p-Cresol (4-Methylphenol)	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Phenanthrene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Phenol	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Pyrene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Thallium	NC	NCOPC	NCOPC	1.33E-09	NC	1.29E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Toluene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.41E-02	NC	NCOPC	NCOPC	8.52E-03	NC
Total PCBs	1.12E-01	1.13E-07	1.26E-08	2.68E-09	2.99E-10	2.07E-09	2.32E-10	2.93E-10	3.28E-11	2.23E-10	2.50E-11	1.23E-09	1.37E-10	8.73E-09	9.76E-10
Total Xylenes	NC	9.40E-03	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.97E-02	NC	NCOPC	NCOPC	1.10E-02	NC
Trichloroethene	3.91E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.49E-05	1.36E-08	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	NC	5.46E-08	NC	4.33E-08	NC	5.70E-08	NC	5.71E-08	NC	6.02E-08	NC	5.43E-08	NC	4.10E-08	NC
Zinc	NC	2.08E-08	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.01E-08	NC	NCOPC	NCOPC
Total Risk:			1.22E-05		1.89E-08		1.64E-08		6.79E-08		7.08E-08		4.54E-08		1.53E-05

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
INHALATION OF
AMBIENT AIR
FOR FUTURE ON-SITE WORKER - RME

Chemical	Unit Concentration in Air (mg/m^3 air)	Inhalation Reference Dose (mg/kg-day)	ADDinh Future On-Site Worker - RME (mg/kg-day)	Chronic Average Daily Dose-Inh (mg/kg-day)	Unit Hazard Index - Inhalation
1,1-Biphenyl	1.00E+00	5.00E-02	1.57E-01	1.57E-01	3.13E+00
2,3,7-8 TCDD TEQ	1.00E+00	NA	1.57E-01	1.57E-01	NC
2-Methylnaphthalene	1.00E+00	8.57E-04	1.57E-01	1.57E-01	1.83E+02
Acenaphthene	1.00E+00	6.00E-02	1.57E-01	1.57E-01	2.61E+00
Acenaphthylene	1.00E+00	6.00E-02	1.57E-01	1.57E-01	2.61E+00
Aluminum	1.00E+00	1.43E-03	1.57E-01	1.57E-01	1.10E+02
Anthracene	1.00E+00	3.00E-01	1.57E-01	1.57E-01	5.22E-01
Antimony	1.00E+00	NA	1.57E-01	1.57E-01	NC
Arsenic	1.00E+00	8.57E-06	1.57E-01	1.57E-01	1.83E+04
Barium	1.00E+00	1.40E-04	1.57E-01	1.57E-01	1.12E+03
Benzene	1.00E+00	8.57E-03	1.57E-01	1.57E-01	1.83E+01
Benzo(a)anthracene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Benzo(a)pyrene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Benzo(b)fluoranthene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Benzo(g,h,i)perylene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Benzo(k)fluoranthene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Cadmium	1.00E+00	5.71E-06	1.57E-01	1.57E-01	2.74E+04
Carbazole	1.00E+00	NA	1.57E-01	1.57E-01	NC
Chromium (total)	1.00E+00	NA	1.57E-01	1.57E-01	NC
Chrysene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Copper	1.00E+00	NA	1.57E-01	1.57E-01	NC
Dibenz(a,h)anthracene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Dibenzofuran	1.00E+00	1.00E-03	1.57E-01	1.57E-01	1.57E+02
Fluoranthene	1.00E+00	4.00E-02	1.57E-01	1.57E-01	3.91E+00
Fluorene	1.00E+00	4.00E-02	1.57E-01	1.57E-01	3.91E+00
Indeno(1,2,3-cd)pyrene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Iron	1.00E+00	NA	1.57E-01	1.57E-01	NC
Lead	1.00E+00	NA	1.57E-01	1.57E-01	NC
Manganese	1.00E+00	1.43E-05	1.57E-01	1.57E-01	1.10E+04
Mercury	1.00E+00	8.57E-05	1.57E-01	1.57E-01	1.83E+03
Naphthalene	1.00E+00	8.57E-04	1.57E-01	1.57E-01	1.83E+02
p-Cresol (4-Methylphenol)	1.00E+00	5.00E-02	1.57E-01	1.57E-01	3.13E+00
Phenanthrene	1.00E+00	3.00E-01	1.57E-01	1.57E-01	5.22E-01
Phenol	1.00E+00	5.70E-02	1.57E-01	1.57E-01	2.75E+00
Pyrene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Thallium	1.00E+00	NA	1.57E-01	1.57E-01	NC
Toluene	1.00E+00	1.43E+00	1.57E-01	1.57E-01	1.10E-01
Total PCBs	1.00E+00	2.00E-05	1.57E-01	1.57E-01	7.83E+03
Total Xylenes	1.00E+00	2.86E-02	1.57E-01	1.57E-01	5.48E+00
Trichloroethene	1.00E+00	1.70E-01	1.57E-01	1.57E-01	9.21E-01
Vanadium	1.00E+00	NA	1.57E-01	1.57E-01	NC
Zinc	1.00E+00	NA	1.57E-01	1.57E-01	NC

TABLE
POTENTIAL HAZARD INDEX
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
INHALATION OF
AMBIENT AIR
FOR FUTURE ON-SITE WORKER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	HI (per mg/m³)	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ
1,1-Biphenyl	3.13E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
2,3,7-8 TCDD TEQ	NC	6.12E-15	NC	7.39E-15	NC	NCOPC	NCOPC	8.95E-15	NC	1.15E-14	NC	1.58E-14	NC	NCOPC	NCOPC
2-Methylnaphthalene	1.83E+02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.28E-09	2.33E-07
Acenaphthene	2.61E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Acenaphthylene	2.61E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Aluminum	1.10E+02	3.12E-05	3.42E-03	3.02E-05	3.31E-03	4.30E-05	4.71E-03	2.20E-05	2.42E-03	5.31E-05	5.81E-03	3.33E-05	3.65E-03	2.32E-05	2.54E-03
Anthracene	5.22E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Antimony	NC	NCOPC	NCOPC	4.92E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.67E-07	NC	NCOPC	NCOPC
Arsenic	1.83E+04	1.73E-08	3.15E-04	1.67E-08	3.05E-04	1.48E-08	2.70E-04	7.71E-08	1.41E-03	7.94E-09	1.45E-04	1.55E-08	2.82E-04	1.31E-08	2.39E-04
Barium	1.12E+03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.63E-07	4.06E-04	NCOPC	NCOPC
Benzene	1.83E+01	8.08E-03	1.48E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.62E-03	8.44E-02	1.93E-05	3.53E-04	1.01E-02	1.84E-01
Benzo(a)anthracene	5.22E+00	1.12E-09	5.82E-09	5.18E-09	2.70E-08	6.87E-09	3.59E-08	2.24E-09	1.17E-08	2.11E-09	1.10E-08	7.05E-09	3.68E-08	3.93E-08	2.05E-07
Benzo(a)pyrene	5.22E+00	1.13E-09	5.91E-09	7.63E-09	3.98E-08	1.05E-08	5.49E-08	1.95E-09	1.02E-08	1.08E-08	5.61E-08	5.20E-09	2.72E-08	3.55E-08	1.85E-07
Benzo(b)fluoranthene	5.22E+00	1.10E-09	5.74E-09	1.08E-08	5.64E-08	6.92E-09	3.61E-08	1.85E-09	9.65E-09	1.30E-08	6.77E-08	4.80E-09	2.51E-08	3.09E-08	1.61E-07
Benzo(g,h,i)perylene	5.22E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Benzo(k)fluoranthene	5.22E+00	NCOPC	NCOPC	NCOPC	NCOPC	7.12E-09	3.71E-08	NCOPC	NCOPC	9.12E-09	4.76E-08	4.87E-09	2.54E-08	3.34E-08	1.75E-07
Cadmium	2.74E+04	6.41E-09	1.76E-04	5.93E-09	1.62E-04	NCOPC	NCOPC	5.42E-09	1.48E-04	6.32E-09	1.73E-04	3.08E-09	8.45E-05	1.31E-09	3.59E-05
Carbazole	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Chromium (total)	NC	7.80E-08	NC	2.80E-08	NC	4.40E-08	NC	3.85E-08	NC	9.02E-08	NC	3.29E-07	NC	3.05E-08	NC
Chrysene	5.22E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Copper	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.84E-07	NC	NCOPC	NCOPC	2.01E-07	NC	NCOPC	NCOPC
Dibenz(a,h)anthracene	5.22E+00	3.04E-10	1.59E-09	1.32E-09	6.88E-09	3.03E-09	1.58E-08	9.09E-10	4.74E-09	1.29E-09	6.76E-09	1.10E-09	5.76E-09	6.83E-09	3.56E-08
Dibenzofuran	1.57E+02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Fluoranthene	3.91E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Fluorene	3.91E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Indeno(1,2,3-cd)pyrene	5.22E+00	7.13E-10	3.72E-09	2.34E-09	1.22E-08	8.61E-09	4.49E-08	1.41E-09	7.36E-09	8.14E-09	4.25E-08	3.30E-09	1.72E-08	2.25E-08	1.18E-07
Iron	NC	1.83E-04	NC	1.72E-04	NC	4.26E-05	NC	3.97E-05	NC	1.84E-04	NC	9.78E-05	NC	8.02E-05	NC
Lead	NC	8.67E-07	NC	NCOPC	NCOPC	NCOPC	NCOPC	3.17E-07	NC	NCOPC	NCOPC	2.12E-07	NC	4.07E-07	NC
Manganese	1.10E+04	5.62E-06	8.16E-02	3.07E-06	3.36E-02	6.84E-06	7.49E-02	1.41E-06	1.55E-02	8.78E-06	9.62E-02	6.71E-06	7.36E-02	2.75E-06	3.01E-02
Mercury	1.83E+03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.21E-09	4.03E-06	NCOPC	NCOPC	1.32E-09	2.42E-06	2.58E-09	4.72E-06
Naphthalene	1.83E+02	1.11E-02	2.03E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.56E-03	6.49E-01	8.95E-02	1.64E+01
p-Cresol (4-Methylphenol)	3.13E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Phenanthrene	5.22E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Phenol	2.75E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Pyrene	5.22E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Thallium	NC	NCOPC	NCOPC	1.33E-09	NC	1.29E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC
Toluene	1.10E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.41E-02	2.84E-03	NCOPC	NCOPC	8.52E-03	9.34E-04
Total PCBs	7.83E+03	1.13E-07	8.85E-04	2.68E-09	2.09E-05	2.07E-09	1.62E-05	2.93E-10	2.30E-06	2.23E-10	1.75E-06	1.23E-09	9.61E-06	8.73E-09	6.83E-05
Total Xylenes	5.48E+00	9.40E-03	5.15E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.97E-02	2.18E-01	NCOPC	NCOPC	1.10E-02	6.04E-02
Trichloroethene	9.21E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.49E-05	3.21E-05	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	NC	5.46E-08	NC	4.33E-08	NC	5.70E-08	NC	5.71E-08	NC	6.02E-08	NC	5.43E-08	NC	4.10E-08	NC
Zinc	NC	2.08E-06	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.01E-06	NC	NCOPC	NCOPC
	Total HI:		2.29E+00		3.74E-02		7.99E-02		1.94E-02		4.07E-01		7.28E-01		1.66E+01

Notes:
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
AK STEEL FORMER ARMCO HAMILTON PLANT

Receptors Evaluated:	
Receptor 1:	Future On-Site Worker - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR FUTURE ON-SITE WORKER - RME INHALATION OF AMBIENT AIR (SURFACE AND SUBSURFACE SOIL PATHWAY		Assumed Value	Units	Calculated Value
Inhalation Rate	Future On-Site Worker - RME	16	(m^3 air/day)	($2m^3$/hour x 8hrs/day)
Body Weight	Future On-Site Worker - RME	70	(kg)	
Exposure Frequency	Future On-Site Worker - RME	250	(days)/365(days) =	6.85E-01
Exposure Duration (cancer)	Future On-Site Worker - RME	25	(yrs)/70(yrs) =	3.57E-01
Exposure Duration (noncancer)	Future On-Site Worker - RME	25	(yrs)/25(yrs) =	1.00E+00
Lifetime		70	(years)	

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
CARCINOGENIC ASSESSMENT
INHALATION OF
AMBIENT AIR (SURFACE AND SUBSURFACE SOIL PATHWAY)
FOR FUTURE ON-SITE WORKER - RME

Chemical	Unit Concentration In Air (mg/m^3 air)	Inhalation Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	ADDinh Future On-Site Worker - RME (mg/kg-day)	Lifetime Average Daily Dose - Inh. (mg/kg-day)	Unit Excess Lifetime Cancer Risk - Inhalation
1,1-Biphenyl	1.00E+00	NA	5.59E-02	5.59E-02	NC
2,3,7-8 TCDD TEQ	1.00E+00	1.50E+05	5.59E-02	5.59E-02	8.39E+03
2-Methylnaphthalene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Acenaphthene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Acenaphthylene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Aluminum	1.00E+00	NA	5.59E-02	5.59E-02	NC
Anthracene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Antimony	1.00E+00	NA	5.59E-02	5.59E-02	NC
Arsenic	1.00E+00	1.51E+01	5.59E-02	5.59E-02	8.44E-01
Barium	1.00E+00	NA	5.59E-02	5.59E-02	NC
Benzene	1.00E+00	2.70E-02	5.59E-02	5.59E-02	1.51E-03
Benzo(a)anthracene	1.00E+00	3.90E-01	5.59E-02	5.59E-02	2.18E-02
Benzo(a)pyrene	1.00E+00	3.90E+00	5.59E-02	5.59E-02	2.18E-01
Benzo(b)fluoranthene	1.00E+00	3.90E-01	5.59E-02	5.59E-02	2.18E-02
Benzo(g,h,i)perylene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Benzo(k)fluoranthene	1.00E+00	3.90E-01	5.59E-02	5.59E-02	2.18E-02
Cadmium	1.00E+00	6.30E+00	5.59E-02	5.59E-02	3.52E-01
Carbazole	1.00E+00	NA	5.59E-02	5.59E-02	NC
Chromium (total)	1.00E+00	NA	5.59E-02	5.59E-02	NC
Chrysene	1.00E+00	3.90E-02	5.59E-02	5.59E-02	2.18E-03
Copper	1.00E+00	NA	5.59E-02	5.59E-02	NC
Dibenz(a,h)anthracene	1.00E+00	4.10E+00	5.59E-02	5.59E-02	2.29E-01
Dibenzofuran	1.00E+00	NA	5.59E-02	5.59E-02	NC
Fluoranthene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Fluorene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Indeno(1,2,3-cd)pyrene	1.00E+00	3.90E-01	5.59E-02	5.59E-02	2.18E-02
Iron	1.00E+00	NA	5.59E-02	5.59E-02	NC
Lead	1.00E+00	NA	5.59E-02	5.59E-02	NC
Manganese	1.00E+00	NA	5.59E-02	5.59E-02	NC
Mercury	1.00E+00	NA	5.59E-02	5.59E-02	NC
Naphthalene	1.00E+00	NA	5.59E-02	5.59E-02	NC
p-Cresol (4-Methylphenol)	1.00E+00	NA	5.59E-02	5.59E-02	NC
Phenanthrene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Phenol	1.00E+00	NA	5.59E-02	5.59E-02	NC
Pyrene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Thallium	1.00E+00	NA	5.59E-02	5.59E-02	NC
Toluene	1.00E+00	NA	5.59E-02	5.59E-02	NC
Total PCBs	1.00E+00	2.00E+00	5.59E-02	5.59E-02	1.12E-01
Total Xylenes	1.00E+00	NA	5.59E-02	5.59E-02	NC
Trichloroethene	1.00E+00	7.00E-03	5.59E-02	5.59E-02	3.91E-04
Vanadium	1.00E+00	NA	5.59E-02	5.59E-02	NC
Zinc	1.00E+00	NA	5.59E-02	5.59E-02	NC

TABLE
POTENTIAL CARCINOGENIC RISK
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
INHALATION OF
AMBIENT AIR (SURFACE AND SUBSURFACE SOIL PATHWAY)
FOR FUTURE ON-SITE WORKER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	Risk (per mg/m³)	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk	EPC (mg/m³)	Risk
1,1-Biphenyl	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.91E-06	NC
2,3,7-8 TCDD TEQ	8.39E+03	4.27E-15	3.58E-11	7.39E-15	6.19E-11	NCOPC	NCOPC	1.36E-14	1.14E-10	2.27E-14	1.90E-10	3.34E-14	2.80E-10	4.13E-15	3.46E-11
2-Methylnaphthalene	NC	6.76E-06	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.24E-06	NC	8.14E-07	NC
Acenaphthene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.76E-06	NC
Acenaphthylene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.46E-06	NC	8.25E-07	NC
Aluminum	NC	2.46E-05	NC	3.45E-05	NC	3.04E-05	NC	1.76E-05	NC	5.56E-05	NC	3.02E-05	NC	2.36E-05	NC
Anthracene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.95E-07	NC
Antimony	NC	NCOPC	NCOPC	4.92E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.67E-07	NC	NCOPC	NCOPC
Arsenic	8.44E-01	1.78E-08	1.50E-08	1.17E-08	9.85E-09	1.33E-08	1.12E-08	3.90E-08	3.29E-08	6.65E-09	5.61E-09	1.49E-08	1.26E-08	1.37E-08	1.16E-08
Barium	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.20E-07	NC	NCOPC	NCOPC
Benzene	1.51E-03	8.08E-03	1.22E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.62E-03	6.97E-06	1.93E-05	2.92E-08	1.01E-02	1.52E-05
Benzo(a)anthracene	2.18E-02	1.09E-07	2.37E-09	3.71E-09	8.08E-11	1.20E-08	2.61E-10	1.74E-09	3.79E-11	1.51E-09	3.30E-11	5.69E-08	1.24E-09	5.34E-07	1.17E-08
Benzo(a)pyrene	2.18E-01	9.34E-08	2.04E-08	5.11E-09	1.11E-09	1.05E-08	2.29E-09	1.51E-09	3.30E-10	6.65E-09	1.45E-09	4.45E-08	9.70E-09	4.31E-07	9.39E-08
Benzo(b)fluoranthene	2.18E-02	7.29E-08	1.59E-09	7.51E-09	1.64E-10	1.18E-08	2.57E-10	1.45E-09	3.16E-11	6.85E-09	1.49E-10	3.64E-08	7.94E-10	3.42E-07	7.45E-09
Benzo(g,h,i)perylene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.22E-08	NC	2.09E-07	NC
Benzo(k)fluoranthene	2.18E-02	8.82E-08	1.92E-09	NCOPC	NCOPC	1.23E-08	2.68E-10	NCOPC	NCOPC	5.02E-09	1.09E-10	4.27E-08	9.30E-10	3.57E-07	7.79E-09
Cadmium	3.52E-01	3.00E-08	1.06E-08	4.54E-09	1.60E-09	NCOPC	NCOPC	1.18E-08	4.15E-09	8.62E-09	3.04E-09	2.39E-09	8.40E-10	1.26E-09	4.50E-10
Carbazole	NC	3.64E-06	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.24E-06	NC	3.56E-07	NC
Chromium (total)	NC	6.04E-08	NC	2.39E-08	NC	3.34E-08	NC	6.33E-08	NC	5.81E-08	NC	1.83E-07	NC	3.28E-08	NC
Chrysene	2.18E-03	1.04E-07	2.26E-10	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.22E-08	1.14E-10	4.90E-07	1.07E-09
Copper	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.73E-07	NC	NCOPC	NCOPC	9.24E-06	NC	NCOPC	NCOPC
Dibenz(a,h)anthracene	2.29E-01	1.94E-08	4.44E-09	7.91E-10	1.81E-10	3.03E-09	6.94E-10	9.09E-10	2.08E-10	8.29E-10	1.90E-10	5.38E-09	1.23E-09	7.61E-08	1.75E-08
Dibenzofuran	NC	6.24E-06	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.41E-06	NC	5.93E-07	NC
Fluoranthene	NC	2.83E-07	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.46E-07	NC	1.45E-06	NC
Fluorene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.89E-06	NC	9.81E-07	NC
Indeno(1,2,3-cd)pyrene	2.18E-02	5.23E-08	1.14E-09	1.50E-09	3.27E-11	8.61E-09	1.88E-10	2.39E-09	5.21E-11	2.42E-09	5.28E-11	2.10E-08	4.57E-10	2.09E-07	4.55E-09
Iron	NC	1.70E-04	NC	5.23E-05	NC	4.24E-05	NC	3.23E-05	NC	7.51E-05	NC	8.26E-05	NC	6.19E-05	NC
Lead	NC	1.73E-06	NC	NCOPC	NCOPC	NCOPC	NCOPC	2.62E-07	NC	NCOPC	NCOPC	1.34E-07	NC	1.30E-07	NC
Manganese	NC	4.17E-06	NC	3.09E-06	NC	3.94E-06	NC	1.34E-06	NC	7.26E-06	NC	5.25E-06	NC	2.67E-06	NC
Mercury	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.58E-09	NC	NCOPC	NCOPC	6.07E-10	NC	3.45E-09	NC
Naphthalene	NC	1.11E-02	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.56E-03	NC	8.95E-02	NC
p-Cresol (4-Methylphenol)	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.55E-06	NC
Phenanthrene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.10E-07	NC	2.21E-06	NC
Phenol	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.51E-06	NC
Pyrene	NC	1.96E-07	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.22E-07	NC	1.11E-06	NC
Thallium	NC	2.07E-09	NC	1.12E-09	NC	1.02E-09	NC	2.07E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	9.56E-09	NC
Toluene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.41E-02	NC	NCOPC	NCOPC	8.52E-03	NC
Total PCBs	1.12E-01	6.84E-08	7.64E-09	2.03E-09	2.27E-10	2.07E-09	2.32E-10	5.01E-10	5.61E-11	2.23E-10	2.50E-11	6.15E-10	6.88E-11	4.62E-09	5.16E-10
Total Xylenes	NC	9.40E-03	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.97E-02	NC	NCOPC	NCOPC	1.10E-02	NC
Trichloroethene	3.91E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.49E-05	1.36E-08	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	NC	5.18E-08	NC	3.27E-08	NC	4.73E-08	NC	4.87E-08	NC	4.40E-08	NC	5.17E-08	NC	3.74E-08	NC
Zinc	NC	6.23E-06	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.08E-07	NC	NCOPC	NCOPC
	Total Risk:		1.23E-08		1.33E-08		1.54E-08		3.79E-08		7.09E-08		5.75E-08		1.54E-08

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
INHALATION OF
AMBIENT AIR (SURFACE AND SUBSURFACE SOIL PATHWAY)
FOR FUTURE ON-SITE WORKER - RME

Chemical	Unit Concentration In Air (mg/m^3 air)	Inhalation Reference Dose (mg/kg-day)	ADDInh Future On-Site Worker - RME (mg/kg-day)	Chronic Average Daily Dose-Inh (mg/kg-day)	Unit Hazard Index - Inhalation
1,1-Biphenyl	1.00E+00	5.00E-02	1.57E-01	1.57E-01	3.13E+00
2,3,7-8 TCDD TEQ	1.00E+00	NA	1.57E-01	1.57E-01	NC
2-Methylnaphthalene	1.00E+00	8.57E-04	1.57E-01	1.57E-01	1.83E+02
Acenaphthene	1.00E+00	6.00E-02	1.57E-01	1.57E-01	2.61E+00
Acenaphthylene	1.00E+00	6.00E-02	1.57E-01	1.57E-01	2.61E+00
Aluminum	1.00E+00	1.43E-03	1.57E-01	1.57E-01	1.10E+02
Anthracene	1.00E+00	3.00E-01	1.57E-01	1.57E-01	5.22E-01
Antimony	1.00E+00	NA	1.57E-01	1.57E-01	NC
Arsenic	1.00E+00	8.57E-06	1.57E-01	1.57E-01	1.83E+04
Barium	1.00E+00	1.40E-04	1.57E-01	1.57E-01	1.12E+03
Benzene	1.00E+00	8.57E-03	1.57E-01	1.57E-01	1.83E+01
Benzo(a)anthracene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Benzo(a)pyrene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Benzo(b)fluoranthene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Benzo(g,h,i)perylene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Benzo(k)fluoranthene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Cadmium	1.00E+00	5.71E-06	1.57E-01	1.57E-01	2.74E+04
Carbazole	1.00E+00	NA	1.57E-01	1.57E-01	NC
Chromium (total)	1.00E+00	NA	1.57E-01	1.57E-01	NC
Chrysene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Copper	1.00E+00	NA	1.57E-01	1.57E-01	NC
Dibenz(a,h)anthracene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Dibenzofuran	1.00E+00	1.00E-03	1.57E-01	1.57E-01	1.57E+02
Fluoranthene	1.00E+00	4.00E-02	1.57E-01	1.57E-01	3.91E+00
Fluorene	1.00E+00	4.00E-02	1.57E-01	1.57E-01	3.91E+00
Indeno(1,2,3-cd)pyrene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Iron	1.00E+00	NA	1.57E-01	1.57E-01	NC
Lead	1.00E+00	NA	1.57E-01	1.57E-01	NC
Manganese	1.00E+00	1.43E-05	1.57E-01	1.57E-01	1.10E+04
Mercury	1.00E+00	8.57E-05	1.57E-01	1.57E-01	1.83E+03
Naphthalene	1.00E+00	8.57E-04	1.57E-01	1.57E-01	1.83E+02
p-Cresol (4-Methylphenol)	1.00E+00	5.00E-02	1.57E-01	1.57E-01	3.13E+00
Phenanthrene	1.00E+00	3.00E-01	1.57E-01	1.57E-01	5.22E-01
Phenol	1.00E+00	5.70E-02	1.57E-01	1.57E-01	2.75E+00
Pyrene	1.00E+00	3.00E-02	1.57E-01	1.57E-01	5.22E+00
Thallium	1.00E+00	NA	1.57E-01	1.57E-01	NC
Toluene	1.00E+00	1.43E+00	1.57E-01	1.57E-01	1.10E-01
Total PCBs	1.00E+00	2.00E-05	1.57E-01	1.57E-01	7.83E+03
Total Xylenes	1.00E+00	2.86E-02	1.57E-01	1.57E-01	5.48E+00
Trichloroethene	1.00E+00	1.70E-01	1.57E-01	1.57E-01	9.21E-01
Vanadium	1.00E+00	NA	1.57E-01	1.57E-01	NC
Zinc	1.00E+00	NA	1.57E-01	1.57E-01	NC

TABLE
POTENTIAL HAZARD INDEX
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
INHALATION OF
AMBIENT AIR (SURFACE AND SUBSURFACE SOIL PATHWAY)
FOR FUTURE ON-SITE WORKER - RME

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	HI (per mg/m³)	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ	EPC (mg/m³)	HQ
1,1-Biphenyl	3.13E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.61E-06	5.99E-06
2,3,7-8 TCDD TEQ	NC	4.27E-15	NC	7.39E-15	NC	NCOPC	NCOPC	1.36E-14	NC	2.27E-14	NC	3.34E-14	NC	4.13E-15	NC
2-Methylnaphthalene	1.83E+02	6.76E-08	1.23E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.24E-08	5.93E-06	8.14E-07	1.49E-04
Acenaphthene	2.61E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.76E-06	1.76E-07
Acenaphthylene	2.61E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.48E-08	1.43E-07	8.25E-07	2.15E-06
Aluminum	1.10E+02	2.46E-05	2.70E-03	3.45E-05	3.78E-03	3.04E-05	3.33E-03	1.76E-05	1.92E-03	5.56E-05	6.10E-03	3.02E-05	3.31E-03	2.36E-05	2.59E-03
Anthracene	5.22E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.95E-07	3.63E-07
Antimony	NC	NCOPC	NCOPC	4.92E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.67E-07	NC	NCOPC	NCOPC
Arsenic	1.83E+04	1.78E-08	3.25E-04	1.17E-08	2.13E-04	1.33E-08	2.42E-04	3.90E-08	7.13E-04	6.65E-09	1.21E-04	1.49E-08	2.72E-04	1.37E-08	2.50E-04
Barium	1.12E+03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.20E-07	3.58E-04	NCOPC	NCOPC
Benzene	1.83E+01	8.08E-03	1.48E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.62E-03	8.44E-02	1.93E-05	3.53E-04	1.01E-02	1.84E-01
Benzo(a)anthracene	5.22E+00	1.09E-07	5.68E-07	3.71E-09	1.93E-08	1.20E-08	6.24E-08	1.74E-09	9.07E-09	1.51E-09	7.90E-09	5.69E-08	2.97E-07	5.34E-07	2.79E-06
Benzo(a)pyrene	5.22E+00	9.34E-08	4.87E-07	5.11E-09	2.67E-08	1.05E-08	5.49E-08	1.51E-09	7.90E-09	6.65E-09	3.47E-08	4.45E-08	2.32E-07	4.31E-07	2.25E-06
Benzo(b)fluoranthene	5.22E+00	7.29E-08	3.81E-07	7.51E-09	3.92E-08	1.18E-08	6.16E-08	1.45E-09	7.57E-09	6.85E-09	3.58E-08	3.64E-08	1.90E-07	3.42E-07	1.78E-06
Benzo(g,h,i)perylene	5.22E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.22E-08	1.16E-07	2.09E-07	1.09E-06
Benzo(k)fluoranthene	5.22E+00	8.62E-08	4.60E-07	NCOPC	NCOPC	1.23E-08	6.40E-08	NCOPC	NCOPC	5.02E-09	2.62E-08	4.27E-08	2.23E-07	3.57E-07	1.86E-06
Cadmium	2.74E+04	3.00E-08	8.22E-04	4.54E-09	1.24E-04	NCOPC	NCOPC	1.18E-08	3.23E-04	8.62E-09	2.36E-04	2.39E-09	6.54E-05	1.28E-09	3.50E-05
Carbazole	NC	3.64E-08	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.24E-08	NC	3.56E-07	NC
Chromium (total)	NC	6.04E-06	NC	2.39E-08	NC	3.34E-08	NC	6.33E-08	NC	5.81E-08	NC	1.83E-07	NC	3.28E-08	NC
Chrysene	5.22E+00	1.04E-07	5.41E-07	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.22E-08	2.72E-07	4.90E-07	2.56E-06
Copper	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.73E-07	NC	NCOPC	NCOPC	9.24E-08	NC	NCOPC	NCOPC
Dibenz(a,h)anthracene	5.22E+00	1.94E-08	1.01E-07	7.91E-10	4.13E-09	3.03E-09	1.58E-08	9.09E-10	4.74E-09	8.29E-10	4.33E-09	5.38E-09	2.81E-08	7.61E-08	3.97E-07
Dibenzofuran	1.57E+02	6.24E-06	9.77E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.41E-08	5.35E-06	5.93E-07	9.29E-05
Fluoranthene	3.91E+00	2.83E-07	1.11E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.48E-07	5.81E-07	1.45E-06	5.68E-06
Fluorene	3.91E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.89E-08	2.31E-07	9.61E-07	3.76E-06
Indeno(1,2,3-cd)pyrene	5.22E+00	5.23E-08	2.73E-07	1.50E-09	7.82E-09	8.61E-09	4.49E-08	2.39E-09	1.25E-08	2.42E-09	1.26E-08	2.10E-08	1.09E-07	2.09E-07	1.09E-06
Iron	NC	1.70E-04	NC	5.23E-05	NC	4.24E-05	NC	3.23E-05	NC	7.51E-05	NC	8.26E-05	NC	6.19E-05	NC
Lead	NC	1.73E-06	NC	NCOPC	NCOPC	NCOPC	NCOPC	2.62E-07	NC	NCOPC	NCOPC	1.34E-07	NC	1.30E-07	NC
Manganese	1.10E+04	4.17E-06	4.57E-02	3.09E-06	3.38E-02	3.94E-06	4.32E-02	1.34E-06	1.47E-02	7.26E-06	7.96E-02	5.25E-06	5.75E-02	2.67E-06	2.92E-02
Mercury	1.83E+03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.58E-09	2.88E-06	NCOPC	NCOPC	6.07E-10	1.11E-06	3.45E-09	6.31E-06
Naphthalene	1.83E+02	1.11E-02	2.03E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.56E-03	6.49E-01	8.95E-02	1.64E+01
p-Cresol (4-Methylphenol)	3.13E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.55E-06	7.99E-06
Phenanthrene	5.22E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.10E-07	1.10E-07	2.21E-06	1.16E-06
Phenol	2.75E+00	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.51E-06	9.63E-06
Pyrene	5.22E+00	1.96E-07	1.02E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.22E-07	6.39E-07	1.11E-06	5.80E-06
Thallium	NC	2.07E-09	NC	1.12E-09	NC	1.02E-09	NC	2.07E-09	NC	NCOPC	NCOPC	NCOPC	NCOPC	9.56E-09	NC
Toluene	1.10E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.41E-02	2.64E-03	NCOPC	NCOPC	8.52E-03	9.34E-04
Total PCBs	7.83E+03	6.84E-08	5.35E-04	2.03E-09	1.59E-05	2.07E-09	1.62E-05	5.01E-10	3.92E-06	2.23E-10	1.75E-06	6.15E-10	4.82E-06	4.62E-09	3.61E-05
Total Xylenes	5.48E+00	9.40E-03	5.15E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.97E-02	2.18E-01	NCOPC	NCOPC	1.10E-02	6.04E-02
Trichloroethene	9.21E-01	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.49E-05	3.21E-05	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	NC	5.18E-08	NC	3.27E-08	NC	4.73E-08	NC	4.87E-08	NC	4.40E-08	NC	5.17E-08	NC	3.74E-08	NC
Zinc	NC	6.23E-08	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.08E-07	NC	NCOPC	NCOPC
	Total HI:		2.28E+00		3.79E-02		4.68E-02		1.77E-02		3.91E-01		7.11E-01		1.66E+01

Notes:
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT

Receptors Evaluated:	
Receptor 1:	Future On-Site Worker - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR FUTURE ON-SITE WORKER - RME INGESTION OF GROUNDWATER AS DRINKING WATER		Assumed Value	Units	Calculated Value
Water Ingestion Rate	Future On-Site Worker - RME	1	(l/day)	
Body Weight	Future On-Site Worker - RME	70	(kg)	
Exposure Frequency	Future On-Site Worker - RME	250	(days)/365(days) =	6.85E-01
Exposure Duration (cancer)	Future On-Site Worker - RME	25	(yrs)/70(yrs) =	3.57E-01
Exposure Duration (noncancer)	Future On-Site Worker - RME	25	(yrs)/25(yrs) =	1.00E+00
Lifetime		70		

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

Chemical	Unit Groundwater Concentration (mg/l)	Oral Cancer Slope Factor (mg/kg-day)$^{-1}$	ADDing Future On-Site Worker - RME (mg/kg-day)	Unit Lifetime Cancer Risk	
				Ingestion	Total
1,1-Biphenyl	1.00E+00	NA	3.49E-03	NA	NC
2,4-Dimethylphenol	1.00E+00	NA	3.49E-03	NA	NC
2-Methylnaphthalene	1.00E+00	NA	3.49E-03	NA	NC
Acenaphthene	1.00E+00	NA	3.49E-03	NA	NC
Acenaphthylene	1.00E+00	NA	3.49E-03	NA	NC
Aluminum	1.00E+00	NA	3.49E-03	NA	NC
Anthracene	1.00E+00	NA	3.49E-03	NA	NC
Antimony	1.00E+00	NA	3.49E-03	NA	NC
Arsenic	1.00E+00	1.50E+00	3.49E-03	5.24E-03	5.24E-03
Barium	1.00E+00	NA	3.49E-03	NA	NC
Benzene	1.00E+00	5.50E-02	3.49E-03	1.92E-04	1.92E-04
Benzo(a)anthracene	1.00E+00	7.30E-01	3.49E-03	2.55E-03	2.55E-03
Benzo(a)pyrene	1.00E+00	7.30E+00	3.49E-03	2.55E-02	2.55E-02
Benzo(b)fluoranthene	1.00E+00	7.30E-01	3.49E-03	2.55E-03	2.55E-03
Benzo(g,h,i)perylene	1.00E+00	NA	3.49E-03	NA	NC
Benzo(k)fluoranthene	1.00E+00	7.30E-02	3.49E-03	2.55E-04	2.55E-04
Carbazole	1.00E+00	2.00E-02	3.49E-03	6.99E-05	6.99E-05
Chromium (total)	1.00E+00	NA	3.49E-03	NA	NC
Chrysene	1.00E+00	7.30E-03	3.49E-03	2.55E-05	2.55E-05
Cyanide	1.00E+00	NA	3.49E-03	NA	NC
Dibenz(a,h)anthracene	1.00E+00	7.30E+00	3.49E-03	2.55E-02	2.55E-02
Dibenzofuran	1.00E+00	NA	3.49E-03	NA	NC
Ethylbenzene	1.00E+00	NA	3.49E-03	NA	NC
Fluoranthene	1.00E+00	NA	3.49E-03	NA	NC
Fluorene	1.00E+00	NA	3.49E-03	NA	NC
Indeno(1,2,3-cd)pyrene	1.00E+00	7.30E-01	3.49E-03	2.55E-03	2.55E-03
Iron	1.00E+00	NA	3.49E-03	NA	NC
Isopropylbenzene	1.00E+00	NA	3.49E-03	NA	NC
Lead	1.00E+00	NA	3.49E-03	NA	NC
Manganese	1.00E+00	NA	3.49E-03	NA	NC
Naphthalene	1.00E+00	NA	3.49E-03	NA	NC
o-Cresol (2-Methylphenol)	1.00E+00	NA	3.49E-03	NA	NC
p-Cresol (4-Methylphenol)	1.00E+00	NA	3.49E-03	NA	NC
Phenanthrene	1.00E+00	NA	3.49E-03	NA	NC
Pyrene	1.00E+00	NA	3.49E-03	NA	NC
Selenium	1.00E+00	NA	3.49E-03	NA	NC
Styrene	1.00E+00	NA	3.49E-03	NA	NC
Thallium	1.00E+00	NA	3.49E-03	NA	NC
Toluene	1.00E+00	NA	3.49E-03	NA	NC
Total Xylenes	1.00E+00	NA	3.49E-03	NA	NC
Trichloroethene	1.00E+00	1.30E-02	3.49E-03	4.54E-05	4.54E-05
Vanadium	1.00E+00	NA	3.49E-03	NA	NC
1-Methylnaphthalene	1.00E+00	NA	3.49E-03	NA	NC
1,2,4-Trichlorobenzene	1.00E+00	NA	3.49E-03	NA	NC
Bis(2-Ethylhexyl)phthalate	1.00E+00	1.40E-02	3.49E-03	4.89E-05	4.89E-05
Tetrachloroethene	1.00E+00	5.40E-01	3.49E-03	1.89E-03	1.89E-03
Vinyl Chloride	1.00E+00	7.20E-01	3.49E-03	2.52E-03	2.52E-03

TABLE
POTENTIAL CARCINOGENIC RISK
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Northern Parcel									
		AOC 1						AOC 18 and AOC 21		Block A	
	Reference	MW-12S		MW-17M		MW-17S		MW-15S		MW-13M	
Chemical	Risk (per mg/l)	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk
1,1-Biphenyl	NC	–	–	–	–	–	–	–	–	–	–
2,4-Dimethylphenol	NC	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	NC	–	–	–	–	–	–	–	–	–	–
Acenaphthene	NC	–	–	–	–	–	–	–	–	–	–
Acenaphthylene	NC	–	–	–	–	–	–	–	–	–	–
Aluminum	NC	1.36E+01	NC	–	–	–	–	–	–	–	–
Anthracene	NC	–	–	–	–	–	–	–	–	–	–
Antimony	NC	–	–	–	–	–	–	–	–	–	–
Arsenic	5.24E-03	–	–	–	–	4.52E-04	2.42E-06	–	–	–	–
Barium	NC	–	–	–	–	–	–	–	–	–	–
Benzene	1.92E-04	–	–	–	–	–	–	–	–	–	–
Benzo(a)anthracene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Benzo(a)pyrene	2.55E-02	–	–	–	–	–	–	–	–	–	–
Benzo(b)fluoranthene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Benzo(g,h,i)perylene	NC	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	2.55E-04	–	–	–	–	–	–	–	–	–	–
Carbazole	6.99E-05	–	–	–	–	–	–	–	–	–	–
Chromium (total)	NC	2.26E-02	NC	–	–	–	–	–	–	–	–
Chrysene	2.55E-05	–	–	–	–	–	–	–	–	–	–
Cyanide	NC	–	–	–	–	1.30E-01	NC	–	–	1.51E-01	NC
Dibenz(a,h)anthracene	2.55E-02	–	–	–	–	–	–	–	–	–	–
Dibenzofuran	NC	–	–	–	–	–	–	–	–	–	–
Ethylbenzene	NC	–	–	–	–	–	–	–	–	–	–
Fluoranthene	NC	–	–	–	–	–	–	–	–	–	–
Fluorene	NC	–	–	–	–	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Iron	NC	1.91E+01	NC	–	–	–	–	1.11E+00	NC	–	–
Isopropylbenzene	NC	–	–	–	–	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	NC	7.93E-01	NC	–	–	6.75E-01	NC	–	–	–	–
Naphthalene	NC	–	–	–	–	–	–	–	–	–	–
o-Cresol (2-Methylphenol)	NC	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	NC	–	–	–	–	–	–	–	–	–	–
Phenanthrene	NC	–	–	–	–	–	–	–	–	–	–
Pyrene	NC	–	–	–	–	–	–	–	–	–	–
Selenium	NC	–	–	–	–	–	–	–	–	2.08E-02	NC
Styrene	NC	–	–	–	–	–	–	–	–	–	–
Thallium	NC	–	–	–	–	–	–	–	–	–	–
Toluene	NC	–	–	–	–	–	–	–	–	–	–
Total Xylenes	NC	–	–	–	–	–	–	–	–	–	–
Trichloroethene	4.54E-05	–	–	–	–	–	–	–	–	–	–
Vanadium	NC	2.75E-02	NC	–	–	–	–	–	–	–	–
1-Methylnaphthalene	NC	–	–	–	–	–	–	–	–	–	–
1,2,4-Trichlorobenzene	NC	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-05	–	–	9.65E-03	4.72E-07	–	–	–	–	–	–
Tetrachloroethene	1.89E-03	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	2.52E-03	–	–	–	–	–	–	–	–	–	–
	Total Risk:		NC		4.72E-07		2.42E-06		NC		NC

Notes:
"–" - Not Detected or Not a compound of potential concern in this area/medium.
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

TABLE
POTENTIAL CARCINOGENIC RISK
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Northern Parcel				Southern Parcel					
		Block A				(Excluding AOC 13)					
	Reference	MW-13S		MW-18S		MW-1D		MW-1S		MW-2D	
Chemical	Risk (per mg/l)	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk
1,1-Biphenyl	NC	–	–	–	–	–	–	–	–	–	–
2,4-Dimethylphenol	NC	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	NC	–	–	–	–	–	–	7.30E-03	NC	–	–
Acenaphthene	NC	–	–	–	–	–	–	–	–	–	–
Acenaphthylene	NC	–	–	–	–	–	–	–	–	–	–
Aluminum	NC	–	–	–	–	–	–	–	–	–	–
Anthracene	NC	–	–	–	–	–	–	–	–	–	–
Antimony	NC	–	–	–	–	–	–	–	–	–	–
Arsenic	5.24E-03	–	–	–	–	–	–	5.70E-03	2.89E-05	–	–
Barium	NC	–	–	–	–	–	–	–	–	–	–
Benzene	1.92E-04	–	–	–	–	–	–	9.30E-04	1.78E-07	–	–
Benzo(a)anthracene	2.55E-03	–	–	–	–	–	–	1.20E-04	3.06E-07	–	–
Benzo(a)pyrene	2.55E-02	–	–	–	–	–	–	1.70E-04	4.34E-06	–	–
Benzo(b)fluoranthene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Benzo(g,h,i)perylene	NC	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	2.55E-04	–	–	–	–	–	–	–	–	–	–
Carbazole	6.99E-06	–	–	–	–	–	–	7.00E-03	4.89E-07	–	–
Chromium (total)	NC	–	–	–	–	–	–	–	–	–	–
Chrysene	2.55E-05	–	–	–	–	–	–	–	–	–	–
Cyanide	NC	–	–	–	–	–	–	9.34E-02	NC	–	–
Dibenz(a,h)anthracene	2.55E-02	–	–	–	–	–	–	–	–	–	–
Dibenzofuran	NC	–	–	–	–	–	–	5.80E-03	NC	–	–
Ethylbenzene	NC	–	–	–	–	–	–	–	–	–	–
Fluoranthene	NC	–	–	–	–	–	–	–	–	–	–
Fluorene	NC	–	–	–	–	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Iron	NC	–	–	–	–	1.31E+00	NC	–	–	–	–
Isopropylbenzene	NC	–	–	–	–	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	NC	4.56E-01	NC	–	–	2.92E-01	NC	1.73E+00	NC	2.99E-01	NC
Naphthalene	NC	–	–	8.80E-04	NC	–	–	1.20E-01	NC	–	–
o-Cresol (2-Methylphenol)	NC	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	NC	–	–	–	–	–	–	–	–	–	–
Phenanthrene	NC	–	–	–	–	–	–	–	–	–	–
Pyrene	NC	–	–	–	–	–	–	–	–	–	–
Selenium	NC	–	–	–	–	–	–	–	–	–	–
Styrene	NC	–	–	–	–	–	–	–	–	–	–
Thallium	NC	–	–	–	–	–	–	–	–	–	–
Toluene	NC	–	–	–	–	–	–	–	–	–	–
Total Xylenes	NC	–	–	–	–	–	–	–	–	–	–
Trichloroethene	4.54E-05	–	–	–	–	–	–	–	–	–	–
Vanadium	NC	–	–	–	–	–	–	–	–	–	–
1-Methylnaphthalene	NC	–	–	–	–	–	–	–	–	–	–
1,2,4-Trichlorobenzene	NC	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-05	–	–	–	–	–	–	–	–	–	–
Tetrachloroethene	1.89E-03	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	2.52E-03	–	–	–	–	–	–	–	–	–	–
	Total Risk:		NC		NC		NC		3.82E-05		NC

Notes:
"–" - Not Detected or Not a compound of potential concern in this area/medium.
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

TABLE
POTENTIAL CARCINOGENIC RISK
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Southern Parcel (Excluding AOC 13)									
	Reference	MW-2S		MW-3D		MW-3S		MW-4M		MW-4S	
Chemical	Risk (per mg/l)	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk
1,1-Biphenyl	NC	–	–	–	–	–	–	–	–	–	–
2,4-Dimethylphenol	NC	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	NC	–	–	–	–	–	–	–	–	–	–
Acenaphthene	NC	–	–	–	–	–	–	–	–	–	–
Acenaphthylene	NC	–	–	–	–	–	–	–	–	–	–
Aluminum	NC	–	–	–	–	–	–	–	–	7.12E+00	NC
Anthracene	NC	–	–	–	–	–	–	–	–	–	–
Antimony	NC	–	–	–	–	1.55E-03	NC	–	–	–	–
Arsenic	5.24E-03	9.20E-04	4.82E-06	3.02E-04	1.58E-06	5.20E-03	2.73E-05	1.48E-03	7.76E-06	6.80E-03	3.56E-05
Barium	NC	–	–	–	–	–	–	–	–	–	–
Benzene	1.92E-04	–	–	–	–	–	–	–	–	–	–
Benzo(a)anthracene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Benzo(a)pyrene	2.55E-02	–	–	–	–	–	–	–	–	–	–
Benzo(b)fluoranthene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Benzo(g,h,i)perylene	NC	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	2.55E-04	–	–	–	–	–	–	–	–	–	–
Carbazole	6.99E-05	–	–	–	–	–	–	–	–	–	–
Chromium (total)	NC	–	–	–	–	–	–	–	–	1.68E-02	NC
Chrysene	2.55E-05	–	–	–	–	–	–	–	–	–	–
Cyanide	NC	–	–	–	–	1.08E-01	NC	–	–	–	–
Dibenz(a,h)anthracene	2.55E-02	–	–	–	–	–	–	–	–	–	–
Dibenzofuran	NC	–	–	–	–	–	–	–	–	–	–
Ethylbenzene	NC	–	–	–	–	–	–	–	–	–	–
Fluoranthene	NC	–	–	–	–	–	–	–	–	–	–
Fluorene	NC	–	–	–	–	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Iron	NC	–	–	–	–	3.27E+00	NC	4.32E+00	NC	7.06E+00	NC
Isopropylbenzene	NC	–	–	–	–	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	NC	–	–	1.50E-01	NC	8.88E-01	NC	1.34E-01	NC	3.62E-01	NC
Naphthalene	NC	–	–	–	–	–	–	–	–	1.20E-03	NC
o-Cresol (2-Methylphenol)	NC	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	NC	–	–	–	–	–	–	–	–	–	–
Phenanthrene	NC	–	–	–	–	–	–	–	–	–	–
Pyrene	NC	–	–	–	–	–	–	–	–	–	–
Selenium	NC	2.12E-02	NC	–	–	–	–	–	–	–	–
Styrene	NC	–	–	–	–	–	–	–	–	–	–
Thallium	NC	1.67E-03	NC	–	–	4.84E-03	NC	–	–	–	–
Toluene	NC	–	–	–	–	–	–	–	–	–	–
Total Xylenes	NC	–	–	–	–	–	–	–	–	–	–
Trichloroethene	4.54E-05	–	–	–	–	–	–	–	–	–	–
Vanadium	NC	–	–	–	–	–	–	–	–	1.82E-02	NC
1-Methylnaphthalene	NC	–	–	–	–	–	–	–	–	–	–
1,2,4-Trichlorobenzene	NC	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-05	–	–	–	–	–	–	–	–	–	–
Tetrachloroethene	1.89E-03	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	2.52E-03	–	–	–	–	–	–	–	–	–	–
	Total Risk:		4.82E-06		1.58E-06		2.73E-05		7.76E-06		3.56E-05

Notes:
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EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

TABLE
POTENTIAL CARCINOGENIC RISK
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Southern Parcel (Excluding AOC 13)									
	Reference	MW-7M		MW-7S		MW-19S		MW-32S		MW-33S	
Chemical	Risk (per mg/l)	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk
1,1-Biphenyl	NC	–	–	–	–	–	–	–	–	–	–
2,4-Dimethylphenol	NC	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	NC	–	–	–	–	–	–	–	–	–	–
Acenaphthene	NC	–	–	–	–	–	–	–	–	–	–
Acenaphthylene	NC	–	–	–	–	–	–	–	–	–	–
Aluminum	NC	–	–	–	–	–	–	–	–	–	–
Anthracene	NC	–	–	–	–	–	–	–	–	–	–
Antimony	NC	–	–	–	–	–	–	–	–	–	–
Arsenic	5.24E-03	3.50E-03	1.83E-05	–	–	6.50E-03	3.41E-05	–	–	–	–
Barium	NC	–	–	–	–	–	–	–	–	–	–
Benzene	1.92E-04	–	–	–	–	–	–	–	–	–	–
Benzo(a)anthracene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Benzo(a)pyrene	2.55E-02	–	–	–	–	–	–	–	–	1.06E-04	2.70E-06
Benzo(b)fluoranthene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Benzo(g,h,i)perylene	NC	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	2.55E-04	–	–	–	–	–	–	–	–	–	–
Carbazole	6.99E-05	–	–	–	–	–	–	–	–	–	–
Chromium (total)	NC	–	–	–	–	–	–	–	–	–	–
Chrysene	2.55E-05	–	–	–	–	–	–	–	–	–	–
Cyanide	NC	–	–	1.68E-01	NC	–	–	–	–	–	–
Dibenz(a,h)anthracene	2.55E-02	–	–	–	–	–	–	–	–	–	–
Dibenzofuran	NC	–	–	–	–	–	–	–	–	–	–
Ethylbenzene	NC	–	–	–	–	–	–	–	–	–	–
Fluoranthene	NC	–	–	–	–	–	–	–	–	–	–
Fluorene	NC	–	–	–	–	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Iron	NC	3.35E+00	NC	–	–	–	–	–	–	–	–
Isopropylbenzene	NC	–	–	–	–	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	NC	1.61E-01	NC	2.21E-01	NC	1.50E-01	NC	9.08E-02	NC	–	–
Naphthalene	NC	–	–	–	–	–	–	–	–	–	–
o-Cresol (2-Methylphenol)	NC	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	NC	–	–	–	–	–	–	–	–	–	–
Phenanthrene	NC	–	–	–	–	–	–	–	–	–	–
Pyrene	NC	–	–	–	–	–	–	–	–	–	–
Selenium	NC	–	–	–	–	–	–	–	–	–	–
Styrene	NC	–	–	–	–	–	–	–	–	–	–
Thallium	NC	–	–	–	–	–	–	–	–	–	–
Toluene	NC	–	–	–	–	–	–	–	–	–	–
Total Xylenes	NC	–	–	–	–	–	–	–	–	–	–
Trichloroethene	4.54E-06	–	–	–	–	–	–	–	–	–	–
Vanadium	NC	–	–	–	–	–	–	1.07E-02	NC	–	–
1-Methylnaphthalene	NC	–	–	–	–	–	–	–	–	–	–
1,2,4-Trichlorobenzene	NC	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-05	–	–	–	–	–	–	–	–	–	–
Tetrachloroethene	1.89E-03	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	2.52E-03	–	–	–	–	–	–	–	–	–	–
	Total Risk:		1.83E-05		NC		3.41E-05		NC		2.70E-06

Notes:
"–" - Not Detected or Not a compound of potential concern in this area/medium.
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

TABLE
POTENTIAL CARCINOGENIC RISK
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Southern Parcel									
		(Excluding AOC 13)						AOC 13			
	Reference	MW-25S		MW-30S		MW-32S		MW-9M		MW-9S	
Chemical	Risk (per mg/l)	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk
1;1-Biphenyl	NC	–	–	–	–	–	–	–	–	1.45E-01	NC
2,4-Dimethylphenol	NC	–	–	–	–	–	–	–	–	3.00E+00	NC
2-Methylnaphthalene	NC	–	–	5.29E-03	NC	–	–	1.50E-03	NC	7.60E-01	NC
Acenaphthene	NC	–	–	–	–	–	–	–	–	8.77E-01	NC
Acenaphthylene	NC	–	–	–	–	–	–	–	–	1.81E-01	NC
Aluminum	NC	–	–	–	–	–	–	–	–	–	–
Anthracene	NC	–	–	–	–	–	–	–	–	7.63E-01	NC
Antimony	NC	–	–	–	–	–	–	–	–	–	–
Arsenic	5.24E-03	–	–	–	–	–	–	–	–	–	–
Barium	NC	–	–	–	–	–	–	–	–	4.44E-01	NC
Benzene	1.92E-04	5.12E-04	9.84E-08	–	–	–	–	–	–	2.80E+00	5.38E-04
Benzo(a)anthracene	2.55E-03	–	–	–	–	–	–	–	–	4.98E-01	1.27E-03
Benzo(a)pyrene	2.55E-02	–	–	–	–	–	–	1.80E-04	4.08E-06	3.06E-01	7.81E-03
Benzo(b)fluoranthene	2.55E-03	–	–	–	–	–	–	–	–	2.53E-01	6.45E-04
Benzo(g,h,i)perylene	NC	–	–	–	–	–	–	–	–	1.20E-01	NC
Benzo(k)fluoranthene	2.55E-04	–	–	–	–	–	–	–	–	1.89E-01	4.82E-05
Carbazole	6.99E-05	1.22E-02	8.53E-07	–	–	–	–	–	–	3.00E-01	2.10E-05
Chromium (total)	NC	–	–	–	–	–	–	–	–	–	–
Chrysene	2.55E-05	–	–	–	–	–	–	–	–	4.56E-01	1.16E-05
Cyanide	NC	–	–	–	–	7.69E-02	NC	–	–	5.25E-01	NC
Dibenz(a,h)anthracene	2.55E-02	–	–	–	–	–	–	–	–	4.93E-02	1.26E-03
Dibenzofuran	NC	6.41E-03	NC	–	–	–	–	–	–	4.71E-01	NC
Ethylbenzene	NC	–	–	–	–	–	–	–	–	6.30E-01	NC
Fluoranthene	NC	–	–	–	–	–	–	–	–	1.76E+00	NC
Fluorene	NC	–	–	–	–	–	–	–	–	1.18E+00	NC
Indeno(1,2,3-cd)pyrene	2.55E-03	–	–	–	–	–	–	–	–	1.18E-01	3.01E-04
Iron	NC	–	–	–	–	–	–	2.09E+00	NC	4.46E+00	NC
Isopropylbenzene	NC	–	–	–	–	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	NC	–	–	–	–	–	–	–	–	1.52E-01	NC
Naphthalene	NC	–	–	–	–	–	–	1.00E-02	NC	1.30E+01	NC
o-Cresol (2-Methylphenol)	NC	–	–	–	–	–	–	–	–	4.70E-01	NC
p-Cresol (4-Methylphenol)	NC	–	–	–	–	–	–	–	–	1.20E-01	NC
Phenanthrene	NC	–	–	–	–	–	–	–	–	3.38E+00	NC
Pyrene	NC	–	–	–	–	–	–	–	–	1.28E+00	NC
Selenium	NC	–	–	–	–	–	–	–	–	–	–
Styrene	NC	–	–	–	–	–	–	–	–	–	–
Thallium	NC	–	–	–	–	–	–	–	–	–	–
Toluene	NC	–	–	–	–	–	–	–	–	8.90E-01	NC
Total Xylenes	NC	–	–	–	–	–	–	–	–	1.72E+00	NC
Trichloroethene	4.54E-06	–	–	–	–	–	–	–	–	–	–
Vanadium	NC	–	–	–	–	–	–	–	–	–	–
1-Methylnaphthalene	NC	7.09E-04	NC	1.14E-01	NC	–	–	–	–	7.50E-01	NC
1,2,4-Trichlorobenzene	NC	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-06	–	–	–	–	–	–	–	–	–	–
Tetrachloroethene	1.89E-03	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	2.52E-03	–	–	–	–	–	–	–	–	–	–
Total Risk:			9.81E-07		NC		NC		4.08E-06		1.19E-02

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Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

TABLE
POTENTIAL CARCINOGENIC RISK
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Southern Parcel									
		AOC 13									
	Reference	MW-08M		MW-09		MW-30M		MW-20S		MW-31M	
Chemical	Risk (per mg/l)	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk
1,1-Biphenyl	NC	–	–	–	–	–	–	–	–	–	–
2,4-Dimethylphenol	NC	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	NC	–	–	4.00E-02	NC	–	–	1.00E-03	NC	–	–
Acenaphthene	NC	–	–	–	–	–	–	–	–	–	–
Acenaphthylene	NC	–	–	–	–	–	–	–	–	–	–
Aluminum	NC	–	–	–	–	–	–	–	–	–	–
Anthracene	NC	–	–	–	–	–	–	–	–	–	–
Antimony	NC	–	–	–	–	–	–	–	–	–	–
Arsenic	5.24E-03	–	–	6.70E-03	3.51E-05	2.62E-03	1.37E-05	–	–	1.46E-03	7.65E-06
Barium	NC	–	–	–	–	–	–	–	–	2.89E-01	NC
Benzene	1.92E-04	6.70E-03	1.29E-06	1.10E+01	2.11E-03	–	–	9.70E-03	1.86E-06	4.68E-03	8.99E-07
Benzo(a)anthracene	2.55E-03	–	–	6.30E-04	1.61E-06	–	–	1.33E-04	3.39E-07	–	–
Benzo(a)pyrene	2.55E-02	–	–	4.10E-04	1.05E-05	–	–	1.80E-04	4.59E-06	–	–
Benzo(b)fluoranthene	2.55E-03	–	–	3.05E-04	7.78E-07	–	–	–	–	–	–
Benzo(g,h,i)perylene	NC	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	2.55E-04	–	–	–	–	–	–	–	–	–	–
Carbazole	6.99E-05	–	–	–	–	–	–	5.20E-03	3.63E-07	–	–
Chromium (total)	NC	–	–	–	–	–	–	–	–	–	–
Chrysene	2.55E-05	–	–	–	–	–	–	–	–	–	–
Cyanide	NC	–	–	2.26E+01	NC	–	–	1.21E-01	NC	9.92E+00	NC
Dibenz(a,h)anthracene	2.55E-02	–	–	–	–	–	–	–	–	–	–
Dibenzofuran	NC	–	–	–	–	–	–	2.60E-03	NC	–	–
Ethylbenzene	NC	–	–	4.70E-01	NC	–	–	–	–	–	–
Fluoranthene	NC	–	–	–	–	–	–	–	–	–	–
Fluorene	NC	–	–	–	–	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	2.55E-03	–	–	–	–	–	–	–	–	–	–
Iron	NC	2.46E+00	NC	1.16E+01	NC	1.81E+00	NC	–	–	3.39E+00	NC
Isopropylbenzene	NC	–	–	9.40E-02	NC	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	NC	–	–	2.41E-01	NC	1.19E-01	NC	4.08E-01	NC	4.65E-01	NC
Naphthalene	NC	–	–	2.80E+00	NC	–	–	1.40E-03	NC	–	–
o-Cresol (2-Methylphenol)	NC	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	NC	–	–	2.80E-02	NC	–	–	–	–	–	–
Phenanthrene	NC	–	–	–	–	–	–	–	–	–	–
Pyrene	NC	–	–	–	–	–	–	–	–	–	–
Selenium	NC	–	–	–	–	–	–	–	–	–	–
Styrene	NC	–	–	2.80E-01	NC	–	–	–	–	–	–
Thallium	NC	–	–	–	–	–	–	–	–	–	–
Toluene	NC	–	–	2.10E+01	NC	–	–	–	–	–	–
Total Xylenes	NC	–	–	7.70E+00	NC	–	–	–	–	–	–
Trichloroethene	4.54E-05	–	–	–	–	–	–	–	–	–	–
Vanadium	NC	–	–	–	–	–	–	–	–	–	–
1-Methylnaphthalene	NC	–	–	1.94E-02	NC	–	–	–	–	–	–
1,2,4-Trichlorobenzene	NC	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-05	–	–	–	–	–	–	–	–	–	–
Tetrachloroethene	1.89E-03	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	2.52E-03	–	–	–	–	–	–	–	–	–	–
	Total Risk:		1.29E-06		2.16E-03		1.37E-05		7.18E-06		8.66E-06

Notes:
"–" - Not Detected or Not a compound of potential concern in this area/medium.
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

TABLE
POTENTIAL CARCINOGENIC RISK
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Southern Parcel										Southern Parcel	
		AOC 13										AOC 13	
	Reference	MW-31S		MW-27M		MW-27S		MW-28S		MW-29S		MW-31S	
Chemical	Risk (per mg/l)	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk	EPC (mg/l)	Risk
1,1-Biphenyl	NC	–	–	3.52E-02	NC	1.81E-01	NC	–	–	–	–	–	–
2,4-Dimethylphenol	NC	–	–	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	NC	1.50E-02	NC	3.42E-01	NC	1.93E+00	NC	1.63E-02	NC	–	–	–	–
Acenaphthene	NC	–	–	–	–	4.03E-02	NC	–	–	–	–	–	–
Acenaphthylene	NC	–	–	5.04E-02	NC	2.15E-01	NC	–	–	–	–	–	–
Aluminum	NC	6.33E+00	NC	–	–	–	–	–	–	–	–	–	–
Anthracene	NC	–	–	–	–	–	–	–	–	–	–	–	–
Antimony	NC	3.19E-03	NC	–	–	–	–	–	–	–	–	–	–
Arsenic	5.24E-03	8.54E-02	4.48E-04	–	–	–	–	–	–	8.36E-04	4.38E-06	–	–
Barium	NC	3.65E-01	NC	–	–	–	–	–	–	–	–	–	–
Benzene	1.92E-04	1.50E-01	2.88E-05	1.23E-02	2.35E-06	6.10E-01	1.17E-04	4.69E-01	9.01E-05	6.38E-04	1.23E-07	–	–
Benzo(a)anthracene	2.55E-03	–	–	1.55E-03	3.94E-06	3.48E-04	8.83E-07	2.88E-04	7.30E-07	–	–	–	–
Benzo(a)pyrene	2.55E-02	–	–	1.01E-03	2.57E-06	2.23E-04	5.68E-06	–	–	–	–	–	–
Benzo(b)fluoranthene	2.55E-03	–	–	3.38E-03	8.57E-06	1.86E-04	4.74E-07	–	–	–	–	–	–
Benzo(g,h,i)perylene	NC	–	–	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	2.55E-04	–	–	9.82E-04	2.50E-07	–	–	–	–	–	–	–	–
Carbazole	6.99E-05	–	–	3.36E-03	2.35E-07	–	–	–	–	–	–	–	–
Chromium (total)	NC	1.52E-02	NC	–	–	–	–	–	–	–	–	–	–
Chrysene	2.55E-05	–	–	–	–	–	–	–	–	–	–	–	–
Cyanide	NC	8.13E+00	NC	3.82E+00	NC	–	–	7.28E+00	NC	1.28E+00	NC	–	–
Dibenz(a,h)anthracene	2.55E-02	–	–	2.15E-04	5.48E-06	–	–	–	–	–	–	–	–
Dibenzofuran	NC	2.40E-03	NC	5.30E-02	NC	1.69E-01	NC	–	–	–	–	–	–
Ethylbenzene	NC	–	–	–	–	–	–	1.49E-01	NC	–	–	–	–
Fluoranthene	NC	–	–	–	–	–	–	–	–	–	–	–	–
Fluorene	NC	–	–	5.75E-02	NC	8.68E-02	NC	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	2.55E-03	–	–	5.29E-04	1.35E-06	–	–	–	–	–	–	–	–
Iron	NC	1.03E+01	NC	–	–	–	–	–	–	1.89E+00	NC	–	–
Isopropylbenzene	NC	–	–	–	–	–	–	–	–	–	–	–	–
Lead	NC	1.73E-02	NC	–	–	–	–	–	–	–	–	–	–
Manganese	NC	2.48E-01	NC	–	–	–	–	–	–	5.00E-01	NC	–	–
Naphthalene	NC	2.10E-01	NC	9.84E-01	NC	1.26E+01	NC	1.04E+00	NC	–	–	–	–
o-Cresol (2-Methylphenol)	NC	–	–	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	NC	–	–	–	–	3.55E-02	NC	–	–	–	–	–	–
Phenanthrene	NC	–	–	–	–	–	–	–	–	–	–	–	–
Pyrene	NC	–	–	–	–	–	–	–	–	–	–	–	–
Selenium	NC	–	–	–	–	–	–	–	–	–	–	–	–
Styrene	NC	–	–	–	–	–	–	–	–	–	–	–	–
Thallium	NC	–	–	–	–	–	–	–	–	–	–	–	–
Toluene	NC	8.60E-02	NC	–	–	3.38E-01	NC	1.41E-01	NC	–	–	–	–
Total Xylenes	NC	2.37E-01	NC	–	–	4.40E-01	NC	4.82E-01	NC	–	–	–	–
Trichloroethene	4.54E-05	–	–	–	–	–	–	–	–	–	–	3.58E-03	1.63E-07
Vanadium	NC	–	–	–	–	–	–	–	–	–	–	–	–
1-Methylnaphthalene	NC	–	–	1.59E-01	NC	9.38E-01	NC	3.87E-02	NC	–	–	–	–
1,2,4-Trichlorobenzene	NC	–	–	–	–	2.83E-02	NC	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-05	–	–	4.96E-03	2.42E-07	–	–	–	–	–	–	–	–
Tetrachloroethene	1.88E-03	–	–	–	–	–	–	–	–	–	–	1.97E-02	3.72E-05
Vinyl Chloride	2.52E-03	8.39E-04	2.11E-06	–	–	–	–	–	–	–	–	–	–
Total Risk:			4.79E-04		4.81E-06		1.24E-04		9.86E-05		4.88E-06		3.73E-05

Notes:
"–" - Not Detected or Not a compound of potential concern in this area/medium.
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

AK STEEL FORMER ARMCO HAMILTON PLANT
NEW MIAMI, BUTLER COUNTY, OHIO
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

Chemical	Unit Groundwater Concentration (mg/l)	Oral Reference Dose (mg/kg-day)	ADDing Future On-Site Worker - RME (mg/kg-day)	Unit Hazard Quotient	
				Ingestion	Total
1,1-Biphenyl	1.00E+00	5.00E-02	9.78E-03	1.96E-01	1.96E-01
2,4-Dimethylphenol	1.00E+00	2.00E-02	9.78E-03	4.89E-01	4.89E-01
2-Methylnaphthalene	1.00E+00	4.00E-03	9.78E-03	2.45E+00	2.45E+00
Acenaphthene	1.00E+00	6.00E-02	9.78E-03	1.63E-01	1.63E-01
Acenaphthylene	1.00E+00	6.00E-02	9.78E-03	1.63E-01	1.63E-01
Aluminum	1.00E+00	1.00E+00	9.78E-03	9.78E-03	9.78E-03
Anthracene	1.00E+00	3.00E-01	9.78E-03	3.26E-02	3.26E-02
Antimony	1.00E+00	4.00E-04	9.78E-03	2.45E+01	2.45E+01
Arsenic	1.00E+00	3.00E-04	9.78E-03	3.26E+01	3.26E+01
Barium	1.00E+00	2.00E-01	9.78E-03	4.89E-02	4.89E-02
Benzene	1.00E+00	4.00E-03	9.78E-03	2.45E+00	2.45E+00
Benzo(a)anthracene	1.00E+00	3.00E-02	9.78E-03	3.26E-01	3.26E-01
Benzo(a)pyrene	1.00E+00	3.00E-02	9.78E-03	3.26E-01	3.26E-01
Benzo(b)fluoranthene	1.00E+00	3.00E-02	9.78E-03	3.26E-01	3.26E-01
Benzo(g,h,i)perylene	1.00E+00	3.00E-02	9.78E-03	3.26E-01	3.26E-01
Benzo(k)fluoranthene	1.00E+00	3.00E-02	9.78E-03	3.26E-01	3.26E-01
Carbazole	1.00E+00	NA	9.78E-03	NA	NC
Chromium (total)	1.00E+00	1.50E+00	9.78E-03	6.52E-03	6.52E-03
Chrysene	1.00E+00	3.00E-02	9.78E-03	3.26E-01	3.26E-01
Cyanide	1.00E+00	2.00E-02	9.78E-03	4.89E-01	4.89E-01
Dibenz(a,h)anthracene	1.00E+00	3.00E-02	9.78E-03	3.26E-01	3.26E-01
Dibenzofuran	1.00E+00	1.00E-03	9.78E-03	9.78E+00	9.78E+00
Ethylbenzene	1.00E+00	1.00E-01	9.78E-03	9.78E-02	9.78E-02
Fluoranthene	1.00E+00	4.00E-02	9.78E-03	2.45E-01	2.45E-01
Fluorene	1.00E+00	4.00E-02	9.78E-03	2.45E-01	2.45E-01
Indeno(1,2,3-cd)pyrene	1.00E+00	3.00E-02	9.78E-03	3.26E-01	3.26E-01
Iron	1.00E+00	7.00E-01	9.78E-03	1.40E-02	1.40E-02
Isopropylbenzene	1.00E+00	1.00E-01	9.78E-03	9.78E-02	9.78E-02
Lead	1.00E+00	NA	9.78E-03	NA	NC
Manganese	1.00E+00	2.40E-02	9.78E-03	4.08E-01	4.08E-01
Naphthalene	1.00E+00	2.00E-02	9.78E-03	4.89E-01	4.89E-01
o-Cresol (2-Methylphenol)	1.00E+00	5.00E-02	9.78E-03	1.96E-01	1.96E-01
p-Cresol (4-Methylphenol)	1.00E+00	5.00E-02	9.78E-03	1.96E-01	1.96E-01
Phenanthrene	1.00E+00	3.00E-01	9.78E-03	3.26E-02	3.26E-02
Pyrene	1.00E+00	3.00E-02	9.78E-03	3.26E-01	3.26E-01
Selenium	1.00E+00	5.00E-03	9.78E-03	1.96E+00	1.96E+00
Styrene	1.00E+00	2.00E-01	9.78E-03	4.89E-02	4.89E-02
Thallium	1.00E+00	6.67E-05	9.78E-03	1.47E+02	1.47E+02
Toluene	1.00E+00	8.00E-02	9.78E-03	1.22E-01	1.22E-01
Total Xylenes	1.00E+00	2.00E-01	9.78E-03	4.89E-02	4.89E-02
Trichloroethene	1.00E+00	5.00E-01	9.78E-03	1.96E-02	1.96E-02
Vanadium	1.00E+00	5.04E-03	9.78E-03	1.94E+00	1.94E+00
1-Methylnaphthalene	1.00E+00	4.00E-03	9.78E-03	2.45E+00	2.45E+00
1,2,4-Trichlorobenzene	1.00E+00	1.00E-02	9.78E-03	9.78E-01	9.78E-01
Bis(2-Ethylhexyl)phthalate	1.00E+00	2.00E-02	9.78E-03	4.89E-01	4.89E-01
Tetrachloroethene	1.00E+00	1.00E-02	9.78E-03	9.78E-01	9.78E-01
Vinyl Chloride	1.00E+00	3.00E-03	9.78E-03	3.26E+00	3.26E+00

TABLE
POTENTIAL HAZARD INDEX
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Northern Parcel									
		AOC 1						AOC 18 and AOC 21		Block A	
	Reference	MW-12S		MW-17M		MW-17S		MW-18S		MW-13M	
Chemical	HI (per mg/l)	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ
1,1-Biphenyl	1.98E-01	–	–	–	–	–	–	–	–	–	–
2,4-Dimethylphenol	4.89E-01	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	2.45E+00	–	–	–	–	–	–	–	–	–	–
Acenaphthene	1.63E-01	–	–	–	–	–	–	–	–	–	–
Acenaphthylene	1.63E-01	–	–	–	–	–	–	–	–	–	–
Aluminum	9.78E-03	1.36E+01	1.33E-01	–	–	–	–	–	–	–	–
Anthracene	3.26E-02	–	–	–	–	–	–	–	–	–	–
Antimony	2.45E+01	–	–	–	–	–	–	–	–	–	–
Arsenic	3.26E+01	–	–	–	–	4.62E-04	1.51E-02	–	–	–	–
Barium	4.89E-02	–	–	–	–	–	–	–	–	–	–
Benzene	2.45E+00	–	–	–	–	–	–	–	–	–	–
Benzo(a)anthracene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(a)pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(b)fluoranthene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(g,h,i)perylene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Carbazole	NC	–	–	–	–	–	–	–	–	–	–
Chromium (total)	6.52E-03	2.26E-02	1.47E-04	–	–	–	–	–	–	–	–
Chrysene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Cyanide	4.89E-01	–	–	–	–	1.30E-01	6.36E-02	–	–	1.51E-01	7.39E-02
Dibenz(a,h)anthracene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Dibenzofuran	9.78E+00	–	–	–	–	–	–	–	–	–	–
Ethylbenzene	9.78E-02	–	–	–	–	–	–	–	–	–	–
Fluoranthene	2.45E-01	–	–	–	–	–	–	–	–	–	–
Fluorene	2.45E-01	–	–	–	–	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Iron	1.40E-02	1.91E+01	2.67E-01	–	–	–	–	1.11E+00	1.55E-02	–	–
Isopropylbenzene	9.78E-02	–	–	–	–	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	4.08E-01	7.93E-01	3.23E-01	–	–	6.75E-01	2.75E-01	–	–	–	–
Naphthalene	4.89E-01	–	–	–	–	–	–	–	–	–	–
o-Cresol (2-Methylphenol)	1.96E-01	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	1.96E-01	–	–	–	–	–	–	–	–	–	–
Phenanthrene	3.26E-02	–	–	–	–	–	–	–	–	–	–
Pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Selenium	1.96E+00	–	–	–	–	–	–	–	–	2.08E-02	4.07E-02
Styrene	4.89E-02	–	–	–	–	–	–	–	–	–	–
Thallium	1.47E+02	–	–	–	–	–	–	–	–	–	–
Toluene	1.22E-01	–	–	–	–	–	–	–	–	–	–
Total Xylenes	4.89E-02	–	–	–	–	–	–	–	–	–	–
Trichloroethene	1.96E-02	–	–	–	–	–	–	–	–	–	–
Vanadium	1.94E+00	2.75E-02	5.34E-02	–	–	–	–	–	–	–	–
1-Methylnaphthalene	2.45E+00	–	–	–	–	–	–	–	–	–	–
1,2,4-Trichlorobenzene	9.78E-01	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-01	–	–	9.66E-03	4.72E-03	–	–	–	–	–	–
Tetrachloroethene	9.78E-01	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	3.26E+00	–	–	–	–	–	–	–	–	–	–
	Total HI		7.77E-01		4.72E-03		3.34E-01		1.55E-02		1.15E-01

Notes:
"–" - Not Detected or Not a compound of potential concern in this area/medium.
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

TABLE
POTENTIAL HAZARD INDEX
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Northern Parcel				Southern Parcel					
		Block A				(Excluding AOC 13)					
	Reference	MW-13S		MW-18S		MW-1D		MW-1S		MW-2D	
Chemical	HI (per mg/l)	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ
1,1-Biphenyl	1.96E-01	–	–	–	–	–	–	–	–	–	–
2,4-Dimethylphenol	4.89E-01	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	2.45E+00	–	–	–	–	–	–	7.30E-03	1.79E-02	–	–
Acenaphthene	1.63E-01	–	–	–	–	–	–	–	–	–	–
Acenaphthylene	1.63E-01	–	–	–	–	–	–	–	–	–	–
Aluminum	9.78E-03	–	–	–	–	–	–	–	–	–	–
Anthracene	3.26E-02	–	–	–	–	–	–	–	–	–	–
Antimony	2.45E+01	–	–	–	–	–	–	–	–	–	–
Arsenic	3.26E+01	–	–	–	–	–	–	5.70E-03	1.86E-01	–	–
Barium	4.89E-02	–	–	–	–	–	–	–	–	–	–
Benzene	2.45E+00	–	–	–	–	–	–	9.30E-04	2.27E-03	–	–
Benzo(a)anthracene	3.26E-01	–	–	–	–	–	–	1.20E-04	3.91E-05	–	–
Benzo(a)pyrene	3.26E-01	–	–	–	–	–	–	1.70E-04	5.54E-05	–	–
Benzo(b)fluoranthene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(g,h,i)perylene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Carbazole	NC	–	–	–	–	–	–	7.00E-03	NC	–	–
Chromium (total)	6.52E-03	–	–	–	–	–	–	–	–	–	–
Chrysene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Cyanide	4.89E-01	–	–	–	–	–	–	9.34E-02	4.57E-02	–	–
Dibenz(a,h)anthracene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Dibenzofuran	9.78E+00	–	–	–	–	–	–	5.80E-03	5.68E-02	–	–
Ethylbenzene	9.78E-02	–	–	–	–	–	–	–	–	–	–
Fluoranthene	2.45E-01	–	–	–	–	–	–	–	–	–	–
Fluorene	2.45E-01	–	–	–	–	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Iron	1.40E-02	–	–	–	–	1.31E+00	1.83E-02	–	–	–	–
Isopropylbenzene	9.78E-02	–	–	–	–	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	4.08E-01	4.56E-01	1.86E-01	–	–	2.92E-01	1.19E-01	1.73E+00	7.05E-01	2.99E-01	1.22E-01
Naphthalene	4.89E-01	–	–	8.80E-04	4.31E-04	–	–	1.20E-01	5.87E-02	–	–
o-Cresol (2-Methylphenol)	1.96E-01	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	1.96E-01	–	–	–	–	–	–	–	–	–	–
Phenanthrene	3.26E-02	–	–	–	–	–	–	–	–	–	–
Pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Selenium	1.96E+00	–	–	–	–	–	–	–	–	–	–
Styrene	4.89E-02	–	–	–	–	–	–	–	–	–	–
Thallium	1.47E+02	–	–	–	–	–	–	–	–	–	–
Toluene	1.22E-01	–	–	–	–	–	–	–	–	–	–
Total Xylenes	4.89E-02	–	–	–	–	–	–	–	–	–	–
Trichloroethene	1.96E-02	–	–	–	–	–	–	–	–	–	–
Vanadium	1.94E+00	–	–	–	–	–	–	–	–	–	–
1-Methylnaphthalene	2.45E+00	–	–	–	–	–	–	–	–	–	–
1,2,4-Trichlorobenzene	9.78E-01	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-01	–	–	–	–	–	–	–	–	–	–
Tetrachloroethene	9.78E-01	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	3.26E+00	–	–	–	–	–	–	–	–	–	–
	Total HI:		1.86E-01		4.31E-04		1.37E-01		1.07E+00		1.22E-01

Notes:
"–" - Not Detected or Not a compound of potential concern in this area/medium.
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

TABLE
POTENTIAL HAZARD INDEX
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Southern Parcel (Excluding AOC 13)									
	Reference	MW-3S		MW-3D		MW-3I		MW-4M		MW-4S	
Chemical	HI (per mg/l)	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ
1,1-Biphenyl	1.96E-01	–	–	–	–	–	–	–	–	–	–
2,4-Dimethylphenol	4.89E-01	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	2.45E+00	–	–	–	–	–	–	–	–	–	–
Acenaphthene	1.63E-01	–	–	–	–	–	–	–	–	–	–
Acenaphthylene	1.63E-01	–	–	–	–	–	–	–	–	–	–
Aluminum	9.78E-03	–	–	–	–	–	–	–	–	7.12E+00	6.97E-02
Anthracene	3.26E-02	–	–	–	–	–	–	–	–	–	–
Antimony	2.45E+01	–	–	–	–	1.55E-03	3.79E-02	–	–	–	–
Arsenic	3.26E+01	9.20E-04	3.00E-02	3.02E-04	9.85E-03	5.20E-03	1.70E-01	1.48E-03	4.83E-02	6.80E-03	2.22E-01
Barium	4.89E-02	–	–	–	–	–	–	–	–	–	–
Benzene	2.45E+00	–	–	–	–	–	–	–	–	–	–
Benzo(a)anthracene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(a)pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(b)fluoranthene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(g,h,i)perylene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Carbazole	NC	–	–	–	–	–	–	–	–	–	–
Chromium (total)	6.52E-03	–	–	–	–	–	–	–	–	1.68E-02	1.09E-04
Chrysene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Cyanide	4.89E-01	–	–	–	–	1.08E-01	5.28E-02	–	–	–	–
Dibenz(a,h)anthracene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Dibenzofuran	9.78E+00	–	–	–	–	–	–	–	–	–	–
Ethylbenzene	9.78E-02	–	–	–	–	–	–	–	–	–	–
Fluoranthene	2.45E-01	–	–	–	–	–	–	–	–	–	–
Fluorene	2.45E-01	–	–	–	–	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Iron	1.40E-02	–	–	–	–	3.27E+00	4.57E-02	4.32E+00	6.04E-02	7.06E+00	9.87E-02
Isopropylbenzene	9.78E-02	–	–	–	–	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	4.08E-01	–	–	1.50E-01	6.12E-02	8.88E-01	3.62E-01	1.34E-01	5.46E-02	3.62E-01	1.47E-01
Naphthalene	4.89E-01	–	–	–	–	–	–	–	–	1.20E-03	5.87E-04
o-Cresol (2-Methylphenol)	1.96E-01	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	1.96E-01	–	–	–	–	–	–	–	–	–	–
Phenanthrene	3.26E-02	–	–	–	–	–	–	–	–	–	–
Pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Selenium	1.96E+00	2.12E-02	4.15E-02	–	–	–	–	–	–	–	–
Styrene	4.89E-02	–	–	–	–	–	–	–	–	–	–
Thallium	1.47E+02	1.87E-03	2.45E-01	–	–	4.94E-03	7.25E-01	–	–	–	–
Toluene	1.22E-01	–	–	–	–	–	–	–	–	–	–
Total Xylenes	4.89E-02	–	–	–	–	–	–	–	–	–	–
Trichloroethene	1.96E-02	–	–	–	–	–	–	–	–	–	–
Vanadium	1.94E+00	–	–	–	–	–	–	–	–	1.82E-02	3.53E-02
1-Methylnaphthalene	2.45E+00	–	–	–	–	–	–	–	–	–	–
1,2,4-Trichlorobenzene	9.78E-01	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-01	–	–	–	–	–	–	–	–	–	–
Tetrachloroethene	9.78E-01	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	3.26E+00	–	–	–	–	–	–	–	–	–	–
	Total HI:		3.18E-01		7.10E-02		1.38E+00		1.83E-01		5.74E-01

Notes:
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HI - Hazard Index.
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INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Southern Parcel (Excluding AOC 13)									
	Reference	MW-7M		MW-7S		MW-19S		MW-22S		MW-23S	
Chemical	HI (per mg/l)	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ
1,1-Biphenyl	1.96E-01	–	–	–	–	–	–	–	–	–	–
2,4-Dimethylphenol	4.89E-01	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	2.45E+00	–	–	–	–	–	–	–	–	–	–
Acenaphthene	1.63E-01	–	–	–	–	–	–	–	–	–	–
Acenaphthylene	1.63E-01	–	–	–	–	–	–	–	–	–	–
Aluminum	9.78E-03	–	–	–	–	–	–	–	–	–	–
Anthracene	3.26E-02	–	–	–	–	–	–	–	–	–	–
Antimony	2.45E+01	–	–	–	–	–	–	–	–	–	–
Arsenic	3.26E+01	3.50E-03	1.14E-01	–	–	6.50E-03	2.12E-01	–	–	–	–
Barium	4.89E-02	–	–	–	–	–	–	–	–	–	–
Benzene	2.45E+00	–	–	–	–	–	–	–	–	–	–
Benzo(a)anthracene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(a)pyrene	3.26E-01	–	–	–	–	–	–	–	–	1.06E-04	3.46E-05
Benzo(b)fluoranthene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(g,h,i)perylene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Carbazole	NC	–	–	–	–	–	–	–	–	–	–
Chromium (total)	6.52E-03	–	–	–	–	–	–	–	–	–	–
Chrysene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Cyanide	4.89E-01	–	–	1.68E-01	6.22E-02	–	–	–	–	–	–
Dibenz(a,h)anthracene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Dibenzofuran	9.78E+00	–	–	–	–	–	–	–	–	–	–
Ethylbenzene	9.78E-02	–	–	–	–	–	–	–	–	–	–
Fluoranthene	2.45E-01	–	–	–	–	–	–	–	–	–	–
Fluorene	2.45E-01	–	–	–	–	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Iron	1.40E-02	3.35E+00	4.68E-02	–	–	–	–	–	–	–	–
Isopropylbenzene	9.78E-02	–	–	–	–	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	4.08E-01	1.61E-01	6.56E-02	2.21E-01	9.01E-02	1.50E-01	6.12E-02	9.08E-02	3.70E-02	–	–
Naphthalene	4.89E-01	–	–	–	–	–	–	–	–	–	–
o-Cresol (2-Methylphenol)	1.96E-01	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	1.96E-01	–	–	–	–	–	–	–	–	–	–
Phenanthrene	3.26E-02	–	–	–	–	–	–	–	–	–	–
Pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Selenium	1.96E+00	–	–	–	–	–	–	–	–	–	–
Styrene	4.89E-02	–	–	–	–	–	–	–	–	–	–
Thallium	1.47E+02	–	–	–	–	–	–	–	–	–	–
Toluene	1.22E-01	–	–	–	–	–	–	–	–	–	–
Total Xylenes	4.89E-02	–	–	–	–	–	–	–	–	–	–
Trichloroethene	1.96E-02	–	–	–	–	–	–	–	–	–	–
Vanadium	1.94E+00	–	–	–	–	–	–	1.07E-02	2.08E-02	–	–
1-Methylnaphthalene	2.45E+00	–	–	–	–	–	–	–	–	–	–
1,2,4-Trichlorobenzene	9.78E-01	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-01	–	–	–	–	–	–	–	–	–	–
Tetrachloroethene	9.78E-01	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	3.26E+00	–	–	–	–	–	–	–	–	–	–
	Total HI:		2.27E-01		1.72E-01		2.73E-01		5.78E-02		3.46E-05

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INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Southern Parcel									
		(Excluding AOC 13)						AOC 13			
	Reference	MW-36S		MW-30S		MW-32S		MW-9M		MW-6S	
Chemical	HI (per mg/l)	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ
1,1-Biphenyl	1.96E-01	--	--	--	--	--	--	--	--	1.45E-01	2.84E-02
2,4-Dimethylphenol	4.89E-01	--	--	--	--	--	--	--	--	3.00E+00	1.47E+00
2-Methylnaphthalene	2.45E+00	--	--	5.29E-03	1.29E-02	--	--	1.50E-03	3.67E-03	7.80E-01	1.86E+00
Acenaphthene	1.63E-01	--	--	--	--	--	--	--	--	9.77E-01	1.59E-01
Acenaphthylene	1.63E-01	--	--	--	--	--	--	--	--	1.81E-01	2.95E-02
Aluminum	9.78E-03	--	--	--	--	--	--	--	--	--	--
Anthracene	3.26E-02	--	--	--	--	--	--	--	--	7.63E-01	2.48E-02
Antimony	2.45E+01	--	--	--	--	--	--	--	--	--	--
Arsenic	3.26E+01	--	--	--	--	--	--	--	--	--	--
Barium	4.89E-02	--	--	--	--	--	--	--	--	4.44E-01	2.17E-02
Benzene	2.45E+00	5.12E-04	1.25E-03	--	--	--	--	--	--	2.80E+00	6.85E+00
Benzo(a)anthracene	3.26E-01	--	--	--	--	--	--	--	--	4.98E-01	1.62E-01
Benzo(a)pyrene	3.26E-01	--	--	--	--	--	--	1.60E-04	5.22E-05	3.06E-01	9.98E-02
Benzo(b)fluoranthene	3.26E-01	--	--	--	--	--	--	--	--	2.53E-01	8.26E-02
Benzo(g,h,i)perylene	3.26E-01	--	--	--	--	--	--	--	--	1.20E-01	3.91E-02
Benzo(k)fluoranthene	3.26E-01	--	--	--	--	--	--	--	--	1.89E-01	6.16E-02
Carbazole	NC	1.22E-02	NC	--	--	--	--	--	--	3.00E-01	NC
Chromium (total)	6.52E-03	--	--	--	--	--	--	--	--	--	--
Chrysene	3.26E-01	--	--	--	--	--	--	--	--	4.56E-01	1.49E-01
Cyanide	4.89E-01	--	--	--	--	7.69E-02	3.78E-02	--	--	5.25E-01	2.57E-01
Dibenz(a,h)anthracene	3.26E-01	--	--	--	--	--	--	--	--	4.93E-02	1.61E-02
Dibenzofuran	9.78E+00	6.41E-03	6.27E-02	--	--	--	--	--	--	4.71E-01	4.61E+00
Ethylbenzene	9.78E-02	--	--	--	--	--	--	--	--	6.30E-01	6.16E-02
Fluoranthene	2.45E-01	--	--	--	--	--	--	--	--	1.76E+00	4.31E-01
Fluorene	2.45E-01	--	--	--	--	--	--	--	--	1.19E+00	2.91E-01
Indeno(1,2,3-cd)pyrene	3.26E-01	--	--	--	--	--	--	--	--	1.18E-01	3.85E-02
Iron	1.40E-02	--	--	--	--	--	--	2.09E+00	2.92E-02	4.46E+00	6.23E-02
Isopropylbenzene	9.78E-02	--	--	--	--	--	--	--	--	--	--
Lead	NC	--	--	--	--	--	--	--	--	--	--
Manganese	4.08E-01	--	--	--	--	--	--	--	--	1.52E-01	6.20E-02
Naphthalene	4.89E-01	--	--	--	--	--	--	1.00E-02	4.89E-03	1.30E+01	6.36E+00
o-Cresol (2-Methylphenol)	1.96E-01	--	--	--	--	--	--	--	--	4.70E-01	9.20E-02
p-Cresol (4-Methylphenol)	1.96E-01	--	--	--	--	--	--	--	--	1.20E-01	2.35E-02
Phenanthrene	3.26E-02	--	--	--	--	--	--	--	--	3.30E+00	1.08E-01
Pyrene	3.26E-01	--	--	--	--	--	--	--	--	1.28E+00	4.17E-01
Selenium	1.96E+00	--	--	--	--	--	--	--	--	--	--
Styrene	4.89E-02	--	--	--	--	--	--	--	--	--	--
Thallium	1.47E+02	--	--	--	--	--	--	--	--	--	--
Toluene	1.22E-01	--	--	--	--	--	--	--	--	8.90E-01	1.08E-01
Total Xylenes	4.89E-02	--	--	--	--	--	--	--	--	1.72E+00	8.41E-02
Trichloroethene	1.96E-02	--	--	--	--	--	--	--	--	--	--
Vanadium	1.94E+00	--	--	--	--	--	--	--	--	--	--
1-Methylnaphthalene	2.45E+00	7.09E-04	1.73E-03	1.14E-01	2.79E-01	--	--	--	--	7.50E-01	1.83E+00
1,2,4-Trichlorobenzene	9.78E-01	--	--	--	--	--	--	--	--	--	--
Bis(2-Ethylhexyl)phthalate	4.89E-01	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	9.78E-01	--	--	--	--	--	--	--	--	--	--
Vinyl Chloride	3.26E+00	--	--	--	--	--	--	--	--	--	--
Total HI:			6.57E-02		2.82E-01		3.78E-02		3.78E-02		2.88E+01

Notes:
"--" - Not Detected or Not a compound of potential concern in this area/medium.
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

TABLE
POTENTIAL HAZARD INDEX
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Southern Parcel									
		AOC 13									
	Reference	MW-8M		MW-9S		MW-20M		MW-20S		MW-21M	
Chemical	HI (per mg/l)	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ
1,1-Biphenyl	1.96E-01	–	–	–	–	–	–	–	–	–	–
2,4-Dimethylphenol	4.89E-01	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	2.45E+00	–	–	4.00E-02	9.78E-02	–	–	1.00E-03	2.45E-03	–	–
Acenaphthene	1.63E-01	–	–	–	–	–	–	–	–	–	–
Acenaphthylene	1.63E-01	–	–	–	–	–	–	–	–	–	–
Aluminum	9.78E-03	–	–	–	–	–	–	–	–	–	–
Anthracene	3.26E-02	–	–	–	–	–	–	–	–	–	–
Antimony	2.45E+01	–	–	–	–	–	–	–	–	–	–
Arsenic	3.26E+01	–	–	6.70E-03	2.19E-01	2.62E-03	8.55E-02	–	–	1.46E-03	4.78E-02
Barium	4.89E-02	–	–	–	–	–	–	–	–	2.99E-01	1.46E-02
Benzene	2.45E+00	6.70E-03	1.64E-02	1.10E+01	2.69E+01	–	–	9.70E-03	2.37E-02	4.68E-03	1.14E-02
Benzo(a)anthracene	3.26E-01	–	–	6.30E-04	2.05E-04	–	–	1.33E-04	4.34E-05	–	–
Benzo(a)pyrene	3.26E-01	–	–	4.10E-04	1.34E-04	–	–	1.80E-04	5.87E-05	–	–
Benzo(b)fluoranthene	3.26E-01	–	–	3.05E-04	9.95E-05	–	–	–	–	–	–
Benzo(g,h,i)perylene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Carbazole	NC	–	–	–	–	–	–	5.20E-03	NC	–	–
Chromium (total)	6.52E-03	–	–	–	–	–	–	–	–	–	–
Chrysene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Cyanide	4.89E-01	–	–	2.28E+01	1.11E+01	–	–	1.21E-01	5.92E-02	9.92E+00	4.85E+00
Dibenz(a,h)anthracene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Dibenzofuran	9.78E+00	–	–	–	–	–	–	2.80E-03	2.54E-02	–	–
Ethylbenzene	9.78E-02	–	–	4.70E-01	4.60E-02	–	–	–	–	–	–
Fluoranthene	2.45E-01	–	–	–	–	–	–	–	–	–	–
Fluorene	2.45E-01	–	–	–	–	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Iron	1.40E-02	2.48E+00	3.44E-02	1.16E+01	1.62E-01	1.81E+00	2.53E-02	–	–	3.39E+00	4.74E-02
Isopropylbenzene	9.78E-02	–	–	9.40E-02	9.20E-03	–	–	–	–	–	–
Lead	NC	–	–	–	–	–	–	–	–	–	–
Manganese	4.08E-01	–	–	2.41E-01	9.83E-02	1.19E-01	4.85E-02	4.08E-01	1.66E-01	4.65E-01	1.90E-01
Naphthalene	4.89E-01	–	–	2.80E+00	1.37E+00	–	–	1.40E-03	6.85E-04	–	–
o-Cresol (2-Methylphenol)	1.96E-01	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	1.96E-01	–	–	2.60E-02	5.09E-03	–	–	–	–	–	–
Phenanthrene	3.26E-02	–	–	–	–	–	–	–	–	–	–
Pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–
Selenium	1.96E+00	–	–	–	–	–	–	–	–	–	–
Styrene	4.89E-02	–	–	2.80E-01	1.37E-02	–	–	–	–	–	–
Thallium	1.47E+02	–	–	–	–	–	–	–	–	–	–
Toluene	1.22E-01	–	–	2.10E+01	2.57E+00	–	–	–	–	–	–
Total Xylenes	4.89E-02	–	–	7.70E+00	3.77E-01	–	–	–	–	–	–
Trichloroethene	1.96E-02	–	–	–	–	–	–	–	–	–	–
Vanadium	1.94E+00	–	–	–	–	–	–	–	–	–	–
1-Methylnaphthalene	2.45E+00	–	–	1.94E-02	4.73E-02	–	–	–	–	–	–
1,2,4-Trichlorobenzene	9.78E-01	–	–	–	–	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-01	–	–	–	–	–	–	–	–	–	–
Tetrachloroethene	9.78E-01	–	–	–	–	–	–	–	–	–	–
Vinyl Chloride	3.26E+00	–	–	–	–	–	–	–	–	–	–
	Total HI:		5.08E-02		4.30E-01		1.88E-01		2.78E-01		5.18E+00

Notes:
"–" - Not Detected or Not a compound of potential concern in this area/medium.
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

TABLE
POTENTIAL HAZARD INDEX
INGESTION OF GROUNDWATER AS DRINKING WATER
FUTURE ON-SITE WORKER - RME

		Southern Parcel										Southern Parcel	
		AOC 13										AOC 13	
	Reference	MW-31S		MW-27M		MW-27S		MW-39S		MW-39S		MW-31S	
Chemical	HI (per mg/l)	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ	EPC (mg/l)	HQ
1,1-Biphenyl	1.96E-01	–	–	3.52E-02	6.88E-03	1.61E-01	3.15E-02	–	–	–	–	–	–
2,4-Dimethylphenol	4.89E-01	–	–	–	–	–	–	–	–	–	–	–	–
2-Methylnaphthalene	2.45E+00	1.50E-02	3.67E-02	3.42E-01	8.37E-01	1.93E+00	4.72E+00	1.63E-02	3.99E-02	–	–	–	–
Acenaphthene	1.63E-01	–	–	–	–	4.03E-02	6.57E-03	–	–	–	–	–	–
Acenaphthylene	1.63E-01	–	–	5.04E-02	8.21E-03	2.15E-01	3.51E-02	–	–	–	–	–	–
Aluminum	9.78E-03	6.33E+00	6.19E-02	–	–	–	–	–	–	–	–	–	–
Anthracene	3.26E-02	–	–	–	–	–	–	–	–	–	–	–	–
Antimony	2.45E+01	3.19E-03	7.80E-02	–	–	–	–	–	–	–	–	–	–
Arsenic	3.26E+01	8.54E-02	2.79E+00	–	–	–	–	–	–	8.36E-04	2.73E-02	–	–
Barium	4.89E-02	3.65E-01	1.79E-02	–	–	–	–	–	–	–	–	–	–
Benzene	2.45E+00	1.50E-01	3.67E-01	1.23E-02	3.00E-02	6.10E-01	1.49E+00	4.69E-01	1.15E+00	6.38E-04	1.56E-03	–	–
Benzo(a)anthracene	3.26E-01	–	–	1.55E-03	5.04E-04	3.46E-04	1.13E-04	2.86E-04	9.33E-05	–	–	–	–
Benzo(a)pyrene	3.26E-01	–	–	1.01E-03	3.28E-04	2.23E-04	7.27E-05	–	–	–	–	–	–
Benzo(b)fluoranthene	3.26E-01	–	–	3.36E-03	1.10E-03	1.86E-04	6.07E-05	–	–	–	–	–	–
Benzo(g,h,i)perylene	3.26E-01	–	–	–	–	–	–	–	–	–	–	–	–
Benzo(k)fluoranthene	3.26E-01	–	–	9.82E-04	3.20E-04	–	–	–	–	–	–	–	–
Carbazole	NC	–	–	3.36E-03	NC	–	–	–	–	–	–	–	–
Chromium (total)	6.52E-03	1.52E-02	9.92E-05	–	–	–	–	–	–	–	–	–	–
Chrysene	3.26E-01	–	–	–	–	–	–	–	–	–	–	–	–
Cyanide	4.89E-01	8.13E+00	3.98E+00	3.82E+00	1.87E+00	–	–	7.28E+00	3.56E+00	1.28E+00	6.28E-01	–	–
Dibenz(a,h)anthracene	3.26E-01	–	–	2.15E-04	7.01E-05	–	–	–	–	–	–	–	–
Dibenzofuran	9.78E+00	2.40E-03	2.35E-02	5.30E-02	5.18E-01	1.69E-01	1.65E+00	–	–	–	–	–	–
Ethylbenzene	9.78E-02	–	–	–	–	–	–	1.49E-01	1.46E-02	–	–	–	–
Fluoranthene	2.45E-01	–	–	–	–	–	–	–	–	–	–	–	–
Fluorene	2.45E-01	–	–	5.75E-02	1.41E-02	8.66E-02	2.12E-02	–	–	–	–	–	–
Indeno(1,2,3-cd)pyrene	3.26E-01	–	–	5.29E-04	1.73E-04	–	–	–	–	–	–	–	–
Iron	1.40E-02	1.03E+01	1.44E-01	–	–	–	–	–	–	1.89E+00	2.64E-02	–	–
Isopropylbenzene	9.78E-02	–	–	–	–	–	–	–	–	–	–	–	–
Lead	NC	1.73E-02	NC	–	–	–	–	–	–	–	–	–	–
Manganese	4.08E-01	2.48E-01	1.01E-01	–	–	–	–	–	–	5.00E-01	2.04E-01	–	–
Naphthalene	4.89E-01	2.10E-01	1.03E-01	9.84E-01	4.81E-01	1.28E+01	6.16E+00	1.04E+00	5.09E-01	–	–	–	–
o-Cresol (2-Methylphenol)	1.96E-01	–	–	–	–	–	–	–	–	–	–	–	–
p-Cresol (4-Methylphenol)	1.96E-01	–	–	–	–	3.55E-02	6.95E-03	–	–	–	–	–	–
Phenanthrene	3.26E-02	–	–	–	–	–	–	–	–	–	–	–	–
Pyrene	3.26E-01	–	–	–	–	–	–	–	–	–	–	–	–
Selenium	1.96E+00	–	–	–	–	–	–	–	–	–	–	–	–
Styrene	4.89E-02	–	–	–	–	–	–	–	–	–	–	–	–
Thallium	1.47E+02	–	–	–	–	–	–	–	–	–	–	–	–
Toluene	1.22E-01	8.60E-02	1.05E-02	–	–	3.36E-01	4.11E-02	1.41E-01	1.72E-02	–	–	–	–
Total Xylenes	4.89E-02	2.37E-01	1.16E-02	–	–	4.40E-01	2.15E-02	4.62E-01	2.26E-02	–	–	–	–
Trichloroethene	1.96E-02	–	–	–	–	–	–	–	–	–	–	3.58E-03	7.01E-05
Vanadium	1.94E+00	–	–	–	–	–	–	–	–	–	–	–	–
1-Methylnaphthalene	2.45E+00	–	–	1.58E-01	3.86E-01	9.36E-01	2.29E+00	3.87E-02	9.47E-02	–	–	–	–
1,2,4-Trichlorobenzene	9.78E-01	–	–	–	–	2.93E-02	2.87E-02	–	–	–	–	–	–
Bis(2-Ethylhexyl)phthalate	4.89E-01	–	–	4.98E-03	2.42E-03	–	–	–	–	–	–	–	–
Tetrachloroethene	9.78E-01	–	–	–	–	–	–	–	–	–	–	1.97E-02	1.93E-02
Vinyl Chloride	3.26E+00	8.39E-04	2.74E-03	–	–	–	–	–	–	–	–	–	–
	Total HI		7.72E+00		4.18E+00		1.85E+01		5.41E+00		6.88E-01		1.93E-02

Notes:
"–" - Not Detected or Not a compound of potential concern in this area/medium.
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
Well ID's denoted with an "S" are shallow, "M" are intermediate and "D" are deep.

Future Construction Worker (RME)

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
AK STEEL FORMER ARMCO HAMILTON PLANT

Receptors Evaluated:	
Receptor 1:	Future Construction Worker - RME

CARCINOGENIC AND NONCARCINOGENIC ASSUMPTIONS FOR FUTURE CONSTRUCTION WORKER - RME DERMAL CONTACT AND INGESTION OF SUBSURFACE AND SURFACE SOIL		Assumed Value	Units	Calculated Value
Soil Ingestion Rate	Future Construction Worker - RME	330	(mg soil/day)	
Soil on Skin	Future Construction Worker - RME	0.30	(mg/cm^2)	
Skin Exposed	Future Construction Worker - RME	3282	(cm^2)	
Body Weight	Future Construction Worker - RME	70	(kg)	
Exposure Frequency	Future Construction Worker - RME	130	(days)/365(days) =	3.56E-01
Exposure Duration (cancer)	Future Construction Worker - RME	1	(years)/70(years) =	1.43E-02
Exposure Duration (noncancer)	Future Construction Worker - RME	1	(years)/1(years) =	1.00E+00
Lifetime		70	(years)	
Unit Conversion Factor		1.00E-06	(kg/mg)	

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
CARCINOGENIC ASSESSMENT - UNIT RISK CALCULATION
DERMAL CONTACT AND
INGESTION OF SUBSURFACE AND SURFACE SOIL
FOR FUTURE CONSTRUCTION WORKER - RME

Chemical	Unit Concentration in Soil (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	Dermal Cancer Slope Factor $(mg/kg\text{-}day)^{-1}$	ADDing Future Construction Worker - RME (mg/kg-day)	ADDder Future Construction Worker - RME (mg/kg-day)	Unit Excess Lifetime Cancer Risk - Ingestion	Unit Excess Lifetime Cancer Risk - Dermal Contact
1,1-Biphenyl	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
2,3,7-8 TCDD TEQ	1.00E+00	0.03	1.50E+05	1.50E+05	2.40E-08	2.15E-09	3.60E-03	3.22E-04
2-Methylnaphthalene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Acenaphthene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Acenaphthylene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Aluminum	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Anthracene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Antimony	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Arsenic	1.00E+00	0.03	1.50E+00	1.50E+00	2.40E-08	2.15E-09	3.60E-08	3.22E-09
Barium	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Benzene	1.00E+00	0.01	5.50E-02	5.50E-02	2.40E-08	7.16E-10	1.32E-09	3.94E-11
Benzo(a)anthracene	1.00E+00	0.13	7.30E-01	7.30E-01	2.40E-08	9.30E-09	1.75E-08	6.79E-09
Benzo(a)pyrene	1.00E+00	0.13	7.30E+00	7.30E+00	2.40E-08	9.30E-09	1.75E-07	6.79E-08
Benzo(b)fluoranthene	1.00E+00	0.13	7.30E-01	7.30E-01	2.40E-08	9.30E-09	1.75E-08	6.79E-09
Benzo(g,h,i)perylene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Benzo(k)fluoranthene	1.00E+00	0.13	7.30E-02	7.30E-02	2.40E-08	9.30E-09	1.75E-09	6.79E-10
Cadmium	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Carbazole	1.00E+00	0.1	2.00E-02	2.00E-02	2.40E-08	7.16E-09	4.80E-10	1.43E-10
Chromium (total)	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Chrysene	1.00E+00	0.13	7.30E-03	7.30E-03	2.40E-08	9.30E-09	1.75E-10	6.79E-11
Copper	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Dibenz(a,h)anthracene	1.00E+00	0.13	7.30E+00	7.30E+00	2.40E-08	9.30E-09	1.75E-07	6.79E-08
Dibenzofuran	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Fluoranthene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Fluorene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	7.30E-01	7.30E-01	2.40E-08	9.30E-09	1.75E-08	6.79E-09
Iron	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Lead	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Manganese	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Mercury	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Naphthalene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
p-Cresol (4-Methylphenol)	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Phenanthrene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Phenol	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Pyrene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Thallium	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Toluene	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Total PCBs	1.00E+00	0.14	2.00E+00	2.00E+00	2.40E-08	1.00E-08	4.80E-08	2.00E-08
Total Xylenes	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Trichloroethene	1.00E+00	0.01	1.30E-02	1.30E-02	2.40E-08	7.16E-10	3.12E-10	9.30E-12
Vanadium	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA
Zinc	1.00E+00	NA	NA	NA	2.40E-08	NA	NA	NA

TABLE
POTENTIAL CARCINOGENIC RISK
DERMAL CONTACT AND
INGESTION OF SUBSURFACE AND SURFACE SOIL
FOR FUTURE CONSTRUCTION WORKER - RME
NEW MIAMI, BUTLER COUNTY, OHIO

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	Risk (per mg/kg)	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk	EPC (mg/kg)	Risk
1,1-Biphenyl	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.20E+03	NC
2,3,7-8 TCDD TEQ	3.92E-03	2.68E-06	1.05E-06	5.42E-06	2.12E-06	NCOPC	NCOPC	8.55E-06	3.35E-06	1.42E-05	5.56E-06	2.09E-05	8.20E-06	2.59E-06	1.02E-06
2-Methylnaphthalene	NC	4.24E+01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.04E+01	NC	5.11E+02	NC
Acenaphthene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.24E+01	NC
Acenaphthylene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.44E+01	NC	5.17E+02	NC
Aluminum	NC	1.55E+04	NC	2.53E+04	NC	1.91E+04	NC	1.10E+04	NC	3.49E+04	NC	1.90E+04	NC	1.48E+04	NC
Anthracene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.36E+02	NC
Antimony	NC	NCOPC	NCOPC	3.61E+00	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.05E+02	NC	NCOPC	NCOPC
Arsenic	3.92E-06	1.12E+01	4.37E-07	8.56E+00	3.36E-07	8.32E+00	3.26E-07	2.45E+01	9.60E-07	4.17E+00	1.63E-07	9.35E+00	3.67E-07	8.60E+00	3.37E-07
Barium	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.01E+02	NC	NCOPC	NCOPC
Benzene	1.36E-09	1.26E+01	1.71E-08	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.21E+00	9.80E-09	3.02E-02	4.10E-11	1.56E+01	2.14E-08
Benzo(a)anthracene	2.43E-06	6.63E+01	1.66E-06	2.72E+00	6.61E-08	7.50E+00	1.82E-07	1.09E+00	2.65E-08	9.50E-01	2.31E-08	3.57E+01	8.68E-07	3.35E+02	8.15E-06
Benzo(a)pyrene	2.43E-07	5.86E+01	1.42E-05	3.75E+00	9.11E-07	6.60E+00	1.60E-06	9.50E-01	2.31E-07	4.17E+00	1.01E-06	2.79E+01	6.79E-06	2.70E+02	6.57E-05
Benzo(b)fluoranthene	2.43E-08	4.58E+01	1.11E-06	5.51E+00	1.34E-07	7.40E+00	1.80E-07	9.10E-01	2.21E-08	4.30E+00	1.04E-07	2.28E+01	5.55E-07	2.14E+02	5.21E-06
Benzo(g,h,i)perylene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.40E+01	NC	1.31E+02	NC
Benzo(k)fluoranthene	2.43E-09	5.54E+01	1.35E-07	NCOPC	NCOPC	7.70E+00	1.87E-08	NCOPC	NCOPC	3.15E+00	7.66E-09	2.68E+01	6.51E-08	2.24E+02	5.44E-07
Cadmium	NC	1.88E+01	NC	3.33E+00	NC	NCOPC	NCOPC	7.40E+00	NC	5.41E+00	NC	1.50E+00	NC	8.02E-01	NC
Carbazole	6.23E-10	2.29E+01	1.42E-08	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.41E+01	8.77E-09	2.23E+02	1.39E-07
Chromium (total)	NC	3.79E+01	NC	1.76E+01	NC	2.09E+01	NC	3.97E+01	NC	3.65E+01	NC	1.15E+02	NC	2.06E+01	NC
Chrysene	2.43E-10	6.51E+01	1.58E-08	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.27E+01	7.95E-09	3.07E+02	7.47E-08
Copper	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.09E+02	NC	NCOPC	NCOPC	5.80E+01	NC	NCOPC	NCOPC
Dibenz(a,h)anthracene	2.43E-07	1.22E+01	2.95E-06	5.80E-01	1.41E-07	1.90E+00	4.62E-07	5.70E-01	1.39E-07	5.20E-01	1.26E-07	3.38E+00	8.20E-07	4.78E+01	1.16E-05
Dibenzofuran	NC	3.92E+01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.14E+01	NC	3.72E+02	NC
Fluoranthene	NC	1.78E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	9.31E+01	NC	9.10E+02	NC
Fluorene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.70E+01	NC	6.03E+02	NC
Indeno(1,2,3-cd)pyrene	2.43E-08	3.26E+01	7.96E-07	1.10E+00	2.67E-08	5.40E+00	1.31E-07	1.50E+00	3.65E-08	1.52E+00	3.69E-08	1.32E+01	3.20E-07	1.31E+02	3.18E-06
Iron	NC	1.07E+05	NC	3.84E+04	NC	2.66E+04	NC	2.03E+04	NC	4.71E+04	NC	5.18E+04	NC	3.88E+04	NC
Lead	NC	1.08E+03	NC	NCOPC	NCOPC	NCOPC	NCOPC	1.64E+02	NC	NCOPC	NCOPC	8.44E+01	NC	8.13E+01	NC
Manganese	NC	2.61E+03	NC	2.26E+03	NC	2.47E+03	NC	8.41E+02	NC	4.56E+03	NC	3.29E+03	NC	1.67E+03	NC
Mercury	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	9.90E-01	NC	NCOPC	NCOPC	3.81E-01	NC	2.17E+00	NC
Naphthalene	NC	3.55E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.14E+02	NC	2.86E+03	NC
p-Cresol (4-Methylphenol)	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.60E+03	NC
Phenanthrene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.32E+02	NC	1.39E+03	NC
Phenol	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.20E+03	NC
Pyrene	NC	1.23E+02	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.68E+01	NC	6.97E+02	NC
Thallium	NC	1.30E+00	NC	8.20E-01	NC	6.40E-01	NC	1.30E+00	NC	NCOPC	NCOPC	NCOPC	NCOPC	6.00E+00	NC
Toluene	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.48E+01	NC	NCOPC	NCOPC	1.94E+01	NC
Total PCBs	6.60E-08	4.29E+01	2.92E-06	1.49E+00	1.01E-07	1.30E+00	8.84E-08	3.15E-01	2.14E-08	1.40E-01	9.52E-09	3.86E-01	2.63E-08	2.90E+00	1.97E-07
Total Xylenes	NC	3.00E+01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.27E+02	NC	NCOPC	NCOPC	3.52E+01	NC
Trichloroethene	3.21E-10	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.50E-02	2.09E-11	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	NC	3.25E+01	NC	2.40E+01	NC	2.97E+01	NC	3.06E+01	NC	2.76E+01	NC	3.24E+01	NC	2.35E+01	NC
Zinc	NC	3.91E+03	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.82E+02	NC	NCOPC	NCOPC
	Total Risk:		2.43E-06		1.74E-06		2.98E-06		1.47E-06		1.55E-06		9.96E-06		9.52E-05

Notes:
EPC - Exposure Point Concentration.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.

NEW MIAMI, BUTLER COUNTY, OHIO
BASELINE HUMAN HEALTH RISK ASSESSMENT
NONCARCINOGENIC ASSESSMENT - HAZARD INDEX CALCULATION (SUBCHRONIC)
DERMAL CONTACT AND
INGESTION OF SUBSURFACE AND SURFACE SOIL
FOR FUTURE CONSTRUCTION WORKER - RME

Chemical	Unit Concentration In Soil (mg/kg-soil)	Dermal - Soil Absorption Adjustment Factor	Oral Subchronic Reference Dose (mg/kg-day)	Dermal Subchronic Reference Dose (mg/kg-day)	ADDing Future Construction Worker - RME (mg/kg-day)	ADDder Future Construction Worker - RME (mg/kg-day)	Unit Hazard Index - Ingestion	Unit Hazar Index Dermal Cc
1,1-Biphenyl	1.00E+00	0.01	5.00E-02	5.00E-02	1.68E-06	5.01E-08	3.36E-05	1.00E-
2,3,7-8 TCDD TEQ	1.00E+00	0.03	1.00E-09	1.00E-09	1.68E-06	1.50E-07	1.68E+03	1.50E+
2-Methylnaphthalene	1.00E+00	0.13	4.00E-03	4.00E-03	1.68E-06	6.51E-07	4.20E-04	1.63E-
Acenaphthene	1.00E+00	0.13	6.00E-01	6.00E-01	1.68E-06	6.51E-07	2.80E-06	1.09E-
Acenaphthylene	1.00E+00	0.13	6.00E-01	6.00E-01	1.68E-06	6.51E-07	2.80E-06	1.09E-
Aluminum	1.00E+00	0.001	1.00E+00	1.00E+00	1.68E-06	5.01E-09	1.68E-06	5.01E-
Anthracene	1.00E+00	0.13	3.00E+00	3.00E+00	1.68E-06	6.51E-07	5.60E-07	2.17E-
Antimony	1.00E+00	0.001	4.00E-04	6.00E-05	1.68E-06	5.01E-09	4.20E-03	8.35E-
Arsenic	1.00E+00	0.03	3.00E-04	3.00E-04	1.68E-06	1.50E-07	5.60E-03	5.01E-
Barium	1.00E+00	0.001	2.00E-01	1.40E-02	1.68E-06	5.01E-09	8.40E-06	3.58E-
Benzene	1.00E+00	0.01	1.20E-02	1.20E-02	1.68E-06	5.01E-08	1.40E-04	4.17E-
Benzo(a)anthracene	1.00E+00	0.13	3.00E-01	3.00E-01	1.68E-06	6.51E-07	5.60E-06	2.17E-
Benzo(a)pyrene	1.00E+00	0.13	3.00E-01	3.00E-01	1.68E-06	6.51E-07	5.60E-06	2.17E-
Benzo(b)fluoranthene	1.00E+00	0.13	3.00E-01	3.00E-01	1.68E-06	6.51E-07	5.60E-06	2.17E-
Benzo(g,h,i)perylene	1.00E+00	0.13	3.00E-01	3.00E-01	1.68E-06	6.51E-07	5.60E-06	2.17E-
Benzo(k)fluoranthene	1.00E+00	0.13	3.00E-01	3.00E-01	1.68E-06	6.51E-07	5.60E-06	2.17E-
Cadmium	1.00E+00	0.001	1.00E-03	2.50E-05	1.68E-06	5.01E-09	1.68E-03	2.00E-
Carbazole	1.00E+00	NA	NA	NA	1.68E-06	NA	NA	NA
Chromium (total)	1.00E+00	0.001	1.50E+00	1.95E-02	1.68E-06	5.01E-09	1.12E-06	2.57E-
Chrysene	1.00E+00	0.13	3.00E-01	3.00E-01	1.68E-06	6.51E-07	5.60E-06	2.17E-
Copper	1.00E+00	0.001	3.70E-02	3.70E-02	1.68E-06	5.01E-09	4.54E-05	1.35E-
Dibenz(a,h)anthracene	1.00E+00	0.13	3.00E-01	3.00E-01	1.68E-06	6.51E-07	5.60E-06	2.17E-
Dibenzofuran	1.00E+00	0.01	4.00E-03	4.00E-03	1.68E-06	5.01E-08	4.20E-04	1.25E-
Fluoranthene	1.00E+00	0.13	4.00E-01	4.00E-01	1.68E-06	6.51E-07	4.20E-06	1.63E-
Fluorene	1.00E+00	0.13	4.00E-01	4.00E-01	1.68E-06	6.51E-07	4.20E-06	1.63E-
Indeno(1,2,3-cd)pyrene	1.00E+00	0.13	3.00E-01	3.00E-01	1.68E-06	6.51E-07	5.60E-06	2.17E-
Iron	1.00E+00	0.001	7.00E-01	7.00E-01	1.68E-06	5.01E-09	2.40E-06	7.16E-
Lead	1.00E+00	NA	NA	NA	1.68E-06	NA	NA	NA
Manganese	1.00E+00	0.001	1.40E-01	5.60E-03	1.68E-06	5.01E-09	1.20E-05	8.95E-
Mercury	1.00E+00	0.001	3.00E-03	2.10E-04	1.68E-06	5.01E-09	5.60E-04	2.39E-
Naphthalene	1.00E+00	0.13	2.00E-01	2.00E-01	1.68E-06	6.51E-07	8.40E-06	3.26E-
p-Cresol (4-Methylphenol)	1.00E+00	0.1	5.00E-01	5.00E-01	1.68E-06	5.01E-07	3.36E-06	1.00E-
Phenanthrene	1.00E+00	0.13	3.00E+00	3.00E+00	1.68E-06	6.51E-07	5.60E-07	2.17E-
Phenol	1.00E+00	0.1	3.00E-01	3.00E-01	1.68E-06	5.01E-07	5.60E-06	1.67E-
Pyrene	1.00E+00	0.13	3.00E-01	3.00E-01	1.68E-06	6.51E-07	5.60E-06	2.17E-
Thallium	1.00E+00	0.001	6.67E-04	6.67E-04	1.68E-06	5.01E-09	2.52E-03	7.51E-
Toluene	1.00E+00	0.01	8.00E-01	8.00E-01	1.68E-06	5.01E-08	2.10E-06	6.26E-
Total PCBs	1.00E+00	0.14	5.00E-05	5.00E-05	1.68E-06	7.01E-07	3.36E-02	1.40E-
Total Xylenes	1.00E+00	0.01	2.00E-01	2.00E-01	1.68E-06	5.01E-08	8.40E-06	2.50E-
Trichloroethene	1.00E+00	0.01	5.00E-01	5.00E-01	1.68E-06	5.01E-08	3.36E-06	1.00E-
Vanadium	1.00E+00	0.001	7.00E-03	1.82E-04	1.68E-06	5.01E-09	2.40E-04	2.75E-
Zinc	1.00E+00	0.001	3.00E-01	3.00E-01	1.68E-06	5.01E-09	5.60E-06	1.67E-

TABLE
POTENTIAL HAZARD INDEX (SUBCHRONIC)
DERMAL CONTACT AND
INGESTION OF SUBSURFACE AND SURFACE SOIL
FOR FUTURE CONSTRUCTION WORKER - RME
NEW MIAMI, BUTLER COUNTY, OHIO

		Northern Parcel										Southern Parcel			
	Reference	AOC 1		AOC 2		AOC 21 and AOC 18		AOC 19		Block A		Southern Parcel (a)		AOC 13	
Chemical	HI (per mg/kg)	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ	EPC (mg/kg)	HQ
1,1-Biphenyl	3.46E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.20E+03	4.15E-02
2,3,7-8 TCDD TEQ	1.83E+03	2.68E-06	4.90E-03	5.42E-06	9.91E-03	NCOPC	NCOPC	8.55E-06	1.56E-02	1.42E-05	2.60E-02	2.09E-05	3.83E-02	2.59E-06	4.74E-03
2-Methylnaphthalene	5.83E-04	4.24E+01	2.47E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.04E+01	1.19E-02	5.11E+02	2.98E-01
Acenaphthene	3.88E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.24E+01	1.65E-04
Acenaphthylene	3.88E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.44E+01	1.34E-04	5.17E+02	2.01E-03
Aluminum	1.68E-06	1.55E+04	2.60E-02	2.53E+04	4.26E-02	1.91E+04	3.21E-02	1.10E+04	1.85E-02	3.49E+04	5.88E-02	1.90E+04	3.20E-02	1.48E+04	2.49E-02
Anthracene	7.77E-07	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	4.36E+02	3.39E-04
Antimony	4.28E-03	NCOPC	NCOPC	3.61E+00	1.55E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.05E+02	4.50E-01	NCOPC	NCOPC
Arsenic	6.10E-03	1.12E+01	6.80E-02	8.56E+00	5.22E-02	8.32E+00	5.07E-02	2.45E+01	1.49E-01	4.17E+00	2.54E-02	9.35E+00	5.70E-02	8.60E+00	5.24E-02
Barium	8.75E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.01E+02	1.76E-03	NCOPC	NCOPC
Benzene	1.44E-04	1.28E+01	1.82E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.21E+00	1.04E-03	3.02E-02	4.35E-06	1.58E+01	2.27E-03
Benzo(a)anthracene	7.77E-06	6.83E+01	5.30E-04	2.72E+00	2.11E-05	7.50E+00	5.83E-05	1.09E+00	8.47E-06	9.50E-01	7.38E-06	3.57E+01	2.77E-04	3.35E+02	2.60E-03
Benzo(a)pyrene	7.77E-06	5.86E+01	4.55E-04	3.75E+00	2.91E-05	6.60E+00	5.13E-05	9.50E-01	7.38E-06	4.17E+00	3.24E-05	2.79E+01	2.17E-04	2.70E+02	2.10E-03
Benzo(b)fluoranthene	7.77E-06	4.58E+01	3.55E-04	5.51E+00	4.28E-05	7.40E+00	5.75E-05	9.10E-01	7.07E-06	4.30E+00	3.34E-05	2.28E+01	1.77E-04	2.14E+02	1.67E-03
Benzo(g,h,i)perylene	7.77E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.40E+01	1.08E-04	1.31E+02	1.02E-03
Benzo(k)fluoranthene	7.77E-06	5.54E+01	4.30E-04	NCOPC	NCOPC	7.70E+00	5.98E-05	NCOPC	NCOPC	3.15E+00	2.45E-05	2.68E+01	2.08E-04	2.24E+02	1.74E-03
Cadmium	1.88E-03	1.88E+01	3.54E-02	3.33E+00	6.26E-03	NCOPC	NCOPC	7.40E+00	1.39E-02	5.41E+00	1.02E-02	1.50E+00	2.81E-03	8.02E-01	1.51E-03
Carbazole	NC	2.29E+01	NC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.41E+01	NC	2.23E+02	NC
Chromium (total)	1.38E-06	3.79E+01	5.21E-05	1.76E+01	2.42E-05	2.09E+01	2.88E-05	3.97E+01	5.46E-05	3.65E+01	5.02E-05	1.15E+02	1.58E-04	2.06E+01	2.83E-05
Chrysene	7.77E-06	6.51E+01	5.05E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.27E+01	2.54E-04	3.07E+02	2.39E-03
Copper	4.55E-05	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.09E+02	4.94E-03	NCOPC	NCOPC	5.80E+01	2.64E-03	NCOPC	NCOPC
Dibenz(a,h)anthracene	7.77E-06	1.22E+01	9.44E-05	5.80E-01	4.51E-06	1.90E+00	1.48E-05	5.70E-01	4.43E-06	5.20E-01	4.04E-06	3.38E+00	2.62E-05	4.78E+01	3.71E-04
Dibenzofuran	4.32E-04	3.92E+01	1.69E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.14E+01	9.26E-03	3.72E+02	1.61E-01
Fluoranthene	5.83E-06	1.78E+02	1.04E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	9.31E+01	5.42E-04	9.10E+02	5.30E-03
Fluorene	5.83E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.70E+01	2.15E-04	6.03E+02	3.51E-03
Indeno(1,2,3-cd)pyrene	7.77E-06	3.28E+01	2.55E-04	1.10E+00	8.54E-06	5.40E+00	4.19E-05	1.50E+00	1.17E-05	1.52E+00	1.18E-05	1.32E+01	1.02E-04	1.31E+02	1.02E-03
Iron	2.41E-06	1.07E+05	2.58E-01	3.84E+04	9.24E-02	2.66E+04	6.41E-02	2.03E+04	4.88E-02	4.71E+04	1.13E-01	5.18E+04	1.25E-01	3.88E+04	9.34E-02
Lead	NC	1.08E+03	NC	NCOPC	NCOPC	NCOPC	NCOPC	1.64E+02	NC	NCOPC	NCOPC	8.44E+01	NC	8.13E+01	NC
Manganese	1.29E-05	2.61E+03	3.37E-02	2.26E+03	2.92E-02	2.47E+03	3.19E-02	8.41E+02	1.08E-02	4.56E+03	5.87E-02	3.29E+03	4.24E-02	1.67E+03	2.16E-02
Mercury	5.84E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	9.90E-01	5.78E-04	NCOPC	NCOPC	3.81E-01	2.22E-04	2.17E+00	1.26E-03
Naphthalene	1.17E-05	3.55E+02	4.14E-03	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.14E+02	1.32E-03	2.86E+03	3.33E-02
p-Cresol (4-Methylphenol)	4.38E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.60E+03	6.98E-03
Phenanthrene	7.77E-07	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.32E+02	1.02E-04	1.39E+03	1.08E-03
Phenol	7.27E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	2.20E+03	1.60E-02
Pyrene	7.77E-06	1.23E+02	9.56E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	7.68E+01	5.97E-04	6.97E+02	5.41E-03
Thallium	2.52E-03	1.30E+00	3.28E-03	8.20E-01	2.07E-03	6.40E-01	1.62E-03	1.30E+00	3.28E-03	NCOPC	NCOPC	NCOPC	NCOPC	6.00E+00	1.51E-02
Toluene	2.16E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	5.48E+01	1.18E-04	NCOPC	NCOPC	1.94E+01	4.19E-05
Total PCBs	4.76E-02	4.29E+01	2.04E+00	1.49E+00	7.09E-02	1.30E+00	6.19E-02	3.15E-01	1.50E-02	1.40E-01	6.67E-03	3.86E-01	1.84E-02	2.90E+00	1.38E-01
Total Xylenes	8.85E-06	3.00E+01	2.59E-04	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	1.27E+02	1.10E-03	NCOPC	NCOPC	3.52E+01	3.04E-04
Trichloroethene	3.46E-06	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	6.50E-02	2.25E-07	NCOPC	NCOPC	NCOPC	NCOPC
Vanadium	2.67E-04	3.25E+01	8.69E-03	2.40E+01	6.42E-03	2.97E+01	7.94E-03	3.06E+01	8.17E-03	2.76E+01	7.37E-03	3.24E+01	8.67E-03	2.35E+01	6.28E-03
Zinc	5.61E-06	3.91E+03	2.19E-02	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	NCOPC	3.82E+02	2.14E-03	NCOPC	NCOPC
	Total HI:		2.55E+00		3.38E-01		2.51E-01		2.89E-01		3.09E-01		8.06E-01		9.49E-01

Notes:
EPC - Exposure Point Concentration.
HI - Hazard Index.
HQ - Hazard Quotient.
NC - Not calculated, no dose-response value available.
NCOPC - Not a compound of potential concern in this area/medium.
(a) All of Southern Parcel except AOC 13.