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FILE COPY

March 13, 2009

Laura B. Paul, President
Franklin Steel Company
4460 Lake Forest Drive, Suite 230
Cincinnati, OH 45242

Re: FRANKLIN STEEL COMPANY (a.k.a. Columbus Steel Drum)
Franklin County
Project I.D. No. 125-001368-005
Final RCRA Facility Investigation Report Approval

Dear Ms. Paul:

The Ohio Environmental Protection Agency (EPA) has reviewed the *Changes to the Addendum to the Final RCRA Facility Investigation (RFI) Report* received on March 5, 2009 from RMT, Inc., on behalf of the Franklin Steel Company. The Final RFI Report summarizes the investigation and baseline risk assessment, both human health and ecological, performed at the former Franklin Steel site located at 1385 Blatt Boulevard, Blacklick in Franklin County, Ohio. The March 2009 changes to the addendum to the RFI report revised the reference notes for Tables 2 and 3; and the remedial action objectives (RAOs) for the exposure scenarios listed in Tables 8.1a and 8.1b. Ohio EPA finds the addendum changes acceptable.

Therefore, Ohio EPA considers Franklin Steel's June 2008 RFI Report as Final for the purpose of moving forward with the Corrective Measures Study based on the incorporation into the report of the following referenced submissions that modify its baseline risk assessment:

- Franklin Steel's April 2008 risk assessment assumptions document and its Ohio EPA's May 2008 comment letter.
- Franklin Steel's October 2008 remedial action objectives that summarize the remedial action goals for both the human health and ecological risk assessments of the RFI Report's baseline risk assessment.
- Franklin Steel's January 2009 and March 2009 submittals combined to create the RFI Report's revised addendum to modify the human health risk assessment.

RMT

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March 4, 2009

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MAR 05 2009

OHIO EPA/CDO

Mr. David M. O'Toole, Jr.
Site Coordinator
DERR, Ohio EPA Central District Office
122 South Front Street
Columbus, Ohio 43215

Subject: Response to February 23, 2009 Ohio EPA Comment Letter of the Addendum to the Final RCRA Facility Investigation Report, Franklin Steel Company, Blacklick, Ohio

Dear Mr. O'Toole:

On behalf of Franklin Steel Company (Franklin Steel), RMT, Inc. (RMT) has prepared this response to the February 23, 2009 Ohio EPA comment letter for the Addendum to the Final RCRA Facility Investigation (RFI) report. This response includes the required changes to Tables 8.1a, 8.1b, 2 and 3 of RMT's January 26, 2009 RFI addendum to the baseline risk assessment of the RFI report. The following addresses each table revision and the revised tables are attached.

Table 8.1a, Summary of Commercial/Industrial Site Specific RAOs for Soil, Sediment, Surface Water and Groundwater COCs:

1. RMT has revised the lead value from 750 mg/kg to 710 mg/kg to reflect the Ohio EPA's September 26, 2008 letter.

2. RMT has revised the chemical list to include the correct spelling of "Dibenzo(a,h)fluoranthene."

3. RMT has revised the listed RAO values for groundwater to match the U.S. EPA August 2007 Drinking Water Standards maximum contaminant levels for arsenic (0.01 milligrams per liter (mg/L)), beryllium (0.004 mg/L), cadmium (0.005 mg/L), and lead (0.015 mg/L).

4. RMT has revised the listed RAO values for groundwater to match the U.S. EPA Region 9 Preliminary Remediation Goals for tap water for nickel (0.73 mg/L), vanadium (0.036 mg/L), and manganese (0.88 mg/L).

5. RMT has revised the chemical list for groundwater to include "1,1-dichloroethane" with an establish RAO of 7.0 micrograms per liter to match the U.S. EPA's August 2006 Drinking Water Standards.

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Table 8.1b, Summary of Trespasser Site Specific RAOs for Soil, Sediment, Surface Water, and Groundwater COCs:

1. RMT has revised the lead value from 750 mg/kg to 710 mg/kg to reflect the Ohio EPA's September 26, 2008 letter.

2. RMT has revised the chemical list to include the correct spelling of "Dibenzo(a,h)fluoranthene."

Table 2, Calculated Background Concentrations – Sediment:

1. RMT has revised Table 2 to include a foot stating the following, per Ohio EPA's request:

   "The calculated background values in this table replace the sediment background concentrations listed in Table 8.3 of the June 2008 RFI Report".

Table 3, Calculated Background Concentrations – Surface Water:

1. RMT has revised Table 3 to include a foot stating the following, per Ohio EPA's request:

   "The calculated background values in this table replace the surface water background concentrations listed in Table 8.2 of the June 2008 RFI Report".

With this submittal, Franklin Steel concludes that the RFI report is approved by Ohio EPA. Please feel free to contact me at (614) 793-0026 with any questions or comments you may have concerning this response letter. Thank you for your support on this project.

Sincerely,

RMT, Inc.

Larry S. Smith, P.E.
Senior Client Service Manager

Attachments

cc: Thomas S. Leigh, RMT – Columbus
Laura Paul, Franklin Steel
Rich Fahey, Vorys, Sater, Seymour and Pease
Paul Coval, Vorys, Sater, Seymour and Pease
Central Files

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TABLE 8.1a (revised 1/2009)
SUMMARY OF COMMERCIAL/INDUSTRIAL WORKER SITE SPECIFIC REMEDIAL ACTION OBJECTIVES
FOR SOIL, SEDIMENT, SURFACE WATER AND GROUNDWATER COCs
Franklin Steel, Blacklick, Ohio

COC[1]	Soil						
	Units	Noncancer risk value HQ = 1 Site Worker	Cancer risk value ELCR = 1E-06 Site Worker	Cancer risk value ELCR = 1E-05 Site Worker	RAOs[2]	ARAR	Background[4]
Arsenic	mg/kg	61	3.9	39	39	NA	18
Chromium	mg/kg	N/A	N/A	N/A	450	NA	17
Iron	mg/kg	142,800	N/A	N/A	100,000	NA	27,101
Lead	mg/kg	N/A	N/A	N/A	710	NA	24
Aroclor 1254	mg/kg	4.1	2.9	29	0.74	NA	ND
2,4-dinitrophenol*	mg/kg	204,000	5.8	58	NA	NA	ND
4-Nitrophenol*	mg/kg	204,000	5.8	58	NA	NA	ND
Benzo(a)anthracene	mg/kg	6,120	7.9	79	2.1	NA	ND
Benzo(a)pyrene	mg/kg	6,120	0.79	7.9	0.21	NA	ND
Benzo(b)fluoranthene	mg/kg	6,120	7.9	79	2.1	NA	ND
Benzo(k)fluoranthene	mg/kg	6,120	79.4	794	21.1	NA	ND
Bis(2-ethylhexyl)phthalate	mg/kg	4,080	414	4,140	120	NA	ND
Dibenzo(a,h)fluoranthene	mg/kg	6,120	0.79	7.9	0.21	NA	ND
Indeno(1,2,3-cd)pyrene	mg/kg	6,120	7.9	79	2.1	NA	ND
N-nitrosodipheylmine*	mg/kg	204,000	1,163	11,633	NA	NA	ND
Naphthalene*	mg/kg	4,080	5.8	58	NA	NA	ND
Ethylbenzene*	mg/kg	20,400	5.8	58	NA	NA	NA
Trichloroethene	mg/kg	8,160	2.0	20	0.11	NA	ND
Toluene*	mg/kg	16,230	5.8	58	NA	NA	ND
Xylenes, total	mg/kg	40,800	N/A	N/A	420	NA	ND
COC[1]	Sediment						
	Units	Noncancer risk value HQ = 1 Site Worker	Cancer risk value ELCR = 1E-06 Site Worker	Cancer risk value ELCR = 1E-05 Site Worker	RAOs[2,3]	ARAR	Background[4]
Arsenic	mg/kg	61	3.9	39	18	NA	7.2
Cadmium	mg/kg	N/A	5.8	58	0.90	NA	1.5
Chromium	mg/kg	N/A	N/A	N/A	40	NA	22
Copper	mg/kg	N/A	N/A	N/A	34	NA	33
Lead	mg/kg	N/A	N/A	N/A	34	NA	33
Mercury	mg/kg	20	N/A	N/A	0.12	NA	0.066
Nickel	mg/kg	N/A	N/A	N/A	42	NA	39
Zinc	mg/kg	N/A	N/A	N/A	160	NA	128
Anthracene	mg/kg	61,200	N/A	N/A	0.057	NA	ND
Benzo(a)anthracene	mg/kg	6,120	7.9	79	0.11	NA	ND
Benzo(a)pyrene	mg/kg	6,120	0.79	7.9	0.15	NA	ND
Benzo(b)fluoranthene*	mg/kg	6,120	7.9	79	NA	NA	38
Chrysene	mg/kg	N/A	785	7,853	0.17	NA	ND
Dibenzo(a,h)fluoranthene	mg/kg	6,120	0.79	7.9	0.033	NA	ND
Fluoranthene	mg/kg	8,160	N/A	N/A	0.42	NA	49
Fluorene	mg/kg	8,160	N/A	N/A	0.077	NA	ND
Indeno(1,2,3-cd)pyrene*	mg/kg	6,120	7.9	79	NA	NA	ND
Phenanthrene	mg/kg	N/A	N/A	N/A	0.20	NA	ND
Pyrene	mg/kg	N/A	N/A	N/A	0.20	NA	40
Bis(2-ethylhexyl)phthalate	mg/kg	4,080	414	4,140	9.3	NA	110
Total, PAHs	mg/kg	N/A	N/A	N/A	1.6	NA	ND

TABLE 8.1a (revised 1/2009)
SUMMARY OF COMMERCIAL/INDUSTRIAL WORKER SITE SPECIFIC REMEDIAL ACTION OBJECTIVES
FOR SOIL, SEDIMENT, SURFACE WATER AND GROUNDWATER COCs
Franklin Steel, Blacklick, Ohio

COC[1]	Surface Water						
	Units	Noncancer risk value HQ = 1 Site Worker	Cancer risk value ELCR = 1E-06 Site Worker	Cancer risk value ELCR = 1E-05 Adult Worker	RAOs[2,3]	ARAR	Background[4]
Aluminum	mg/L	204	N/A	N/A	0.25	NA	0.25
Barium	mg/L	41	N/A	N/A	0.22	NA	0.076
Copper	mg/L	N/A	N/A	N/A	0.010	NA	0.0094
Cyanide	mg/L	4.1	N/A	N/A	0.012	NA	0.0018
Lead	mg/L	N/A	N/A	N/A	0.0064	NA	0.0012
Manganese	mg/L	29	N/A	N/A	0.10	NA	0.045
Zinc	mg/L	N/A	N/A	N/A	0.12	NA	0.022
Benzo(a)pyrene	µg/L	6,120	0.79	7.9	0.014	NA	ND
Benzo(b)fluoranthene*	µg/L	6,120	7.9	79	NA	NA	ND
Benzo(k)fluoranthene*	µg/L	6,120	79	790	NA	NA	ND
Fluoranthene	µg/L	8,160	N/A	N/A	0.80	NA	ND
Pyrene	µg/L	6,120	N/A	N/A	4.6	NA	ND

COC[1]	Groundwater						
	Units	Noncancer risk value HQ = 1 Adult Worker	Cancer risk value ELCR = 1E-06 Adult Worker	Cancer risk value ELCR = 1E-05 Site Worker	RAOs[2]	ARAR	Background[4]
Aluminum	mg/L	204,000	N/A	N/A	3.6	NA	0.27
Antimony	mg/L	N/A	N/A	N/A	0.006	NA	0.0048
Arsenic	mg/L	61	3.9	39	0.01	NA	0.00072
Barium	mg/L	40,800	N/A	N/A	2.0	NA	0.065
Beryllium	mg/L	408	0.69	6.9	0.004	NA	0.085
Cadmium	mg/L	N/A	N/A	N/A	0.005	NA	0.0014
Lead	mg/L	N/A	N/A	N/A	0.015	NA	0.00009
Manganese	mg/L	4,896	N/A	N/A	0.88	NA	0.23
Nickel	mg/L	N/A	N/A	N/A	0.73	NA	0.029
Thallium	mg/L	N/A	N/A	N/A	0.002	NA	0.0010
Vanadium	mg/L	N/A	N/A	N/A	0.036	NA	0.00042
Zinc	mg/L	N/A	N/A	N/A	5.0	NA	0.072
Benzo(a)anthracene	µg/L	N/A	7.9	79	0.092	NA	ND
Benzo(b)fluoranthene	µg/L	N/A	7.9	79	0.092	NA	ND
Bis(2-ethylhexyl)phthalate	µg/L	4,080	414	4,140	6.0	6	5.8
Dibenzo(a,h)fluoranthene	µg/L	N/A	0.79	8	0.0092	NA	ND
1,1-Dichloroethane	µg/L	N/A	N/A	N/A	7.0	NA	ND
2,4-Dinitrotoluene	µg/L	N/A	N/A	N/A	7.3	NA	ND
Indeno(1,2,3-cd)pyrene	µg/L	N/A	7.9	79	0.092	NA	ND
Chloroethane	µg/L	N/A	N/A	N/A	4.6	NA	ND
Chloroform	µg/L	N/A	12	118	0.17	NA	ND
Methylene Chloride	µg/L	12,240	314	3,135	4.3	NA	6.4
Vinyl Chloride	µg/L	612	2.9	29	2.0	2	ND

1 = Risk and hazard index driving compound per media, except where noted.
2 = Ohio EPA accepted Remedial Action Objective per RMT's October 16, 2008 letter of communication.
3 = Ecological driven Remedial Action Objectives
4 = Background value based on most representative calculation value per Ohio EPA Guidance (2004b), US EPA ProUCL (2007) and/or calculated median values.

* - Non driver compound, no RAOs developed for this parameter
mg/kg = milligrams per kilogram
µg/L = micrograms per liter
mg/L = milligrams per liter
COCs = Chemicals of Concern
HQ = Hazard Quotient
ELCR = Excess Lifetime Cancer Risk
PAHs = polycyclic aromatic hydrocarbons
RAOs = Remedial Action Goals
NA = Not available
N/A = Not applicable, limited toxicity data available (defaults to established RAO)
ND = Not detected

TABLE 8.1b (revised 1/2009)
SUMMARY OF TRESPASSER SITE SPECIFIC REMEDIAL ACTION OBJECTIVES
FOR SOIL, SEDIMENT AND SURFACE WATER COCs
Franklin Steel, Blacklick, Ohio

COC[1]	Soil						
	Units	Noncancer risk value HQ = 1 Trespasser	Cancer risk value ELCR = 1E-06 Trespasser	Cancer risk value ELCR = 1E-05 Trespasser	RAOs[2]	ARAR	Background[4]
Arsenic	mg/kg	1,548	43	430	39	NA	18
Chromium	mg/kg	N/A	N/A	N/A	450	NA	17
Iron	mg/kg	4.0E+06	N/A	N/A	100,000	NA	27,101
Lead	mg/kg	N/A	N/A	N/A	710	NA	24
Aroclor 1254	mg/kg	107	34	336	0.74	NA	ND
2,4-dinitrophenol*	mg/kg	6.5E+06	69	690	NA	NA	ND
4-Nitrophenol*	mg/kg	6.0E+06	62	690	NA	NA	ND
Benzo(a)anthracene	mg/kg	1.2E+05	68	677	2.1	NA	ND
Benzo(a)pyrene	mg/kg	1.2E+05	6.8	68	0.21	NA	ND
Benzo(b)fluoranthene	mg/kg	1.2E+05	68	677	2.1	NA	ND
Benzo(k)fluoranthene	mg/kg	1.2E+05	677	6,772	21.1	NA	ND
Bis(2-ethylhexyl)phthalate	mg/kg	85,054	3,797	37,971	120	NA	ND
Dibenzo(a,h)fluoranthene	mg/kg	1.2E+05	6.8	68	0.21	NA	ND
Indeno(1,2,3-cd)pyrene	mg/kg	1.2E+05	68	677	2.1	NA	ND
N-nitrosodipheylmine*	mg/kg	5.5E+06	13,807	138,070	NA	NA	ND
Naphthalene*	mg/kg	7.9E+04	49	58	NA	NA	ND
Ethylbenzene*	mg/kg	5.5E+05	69	690	NA	NA	NA
Trichloroethene	mg/kg	1.7E+05	133	1329	0.11	NA	ND
Toluene*	mg/kg	4.4E+05	69	690	NA	NA	ND
Xylenes, total	mg/kg	8.5E+05	N/A	N/A	420	NA	ND

COC[1]	Sediment						
	Units	Noncancer risk value HQ = 1 Trespasser	Cancer risk value ELCR = 1E-06 Trespasser	Cancer risk value ELCR = 1E-05 Trespasser	RAOs[2,3]	ARAR	Background[4]
Arsenic	mg/kg	1,548	21	207	18	NA	7.2
Cadmium	mg/kg		35	353	0.90	NA	1.5
Chromium	mg/kg	N/A	N/A	N/A	40	NA	22
Copper	mg/kg	N/A	N/A	N/A	34	NA	33
Lead	mg/kg	N/A	N/A	N/A	34	NA	33
Mercury	mg/kg	283	N/A	N/A	0.12	NA	0.066
Nickel	mg/kg	N/A	N/A	N/A	42	NA	39
Zinc	mg/kg	N/A	N/A	N/A	160	NA	128
Anthracene	mg/kg	5.3E+05	N/A	N/A	0.057	NA	ND
Benzo(a)anthracene	mg/kg	52,501	30	300	0.11	NA	ND
Benzo(a)pyrene	mg/kg	52,501	3.0	30	0.15	NA	ND
Benzo(b)fluoranthene*	mg/kg	52,501	30	300	NA	NA	38
Chrysene	mg/kg	52,501	2,997	29,966	0.17	NA	ND
Dibenzo(a,h)fluoranthene	mg/kg	52,501	3.0	30	0.033	NA	ND
Fluoranthene	mg/kg	70,000	N/A	N/A	0.42	NA	49
Fluorene	mg/kg	70,000	N/A	N/A	0.077	NA	ND
Indeno(1,2,3-cd)pyrene*	mg/kg	52,501	30	300	NA	NA	ND
Phenanthrene	mg/kg	N/A	N/A	N/A	0.20	NA	ND
Pyrene	mg/kg	N/A	N/A	N/A	0.20	NA	40
Bis(2-ethylhexyl)phthalate	mg/kg	38,399	1,714	17,142	9.3	NA	110
Total, PAHs	mg/kg	N/A	N/A	N/A	1.6	NA	ND

COC[1]	Surface Water						
	Units	Noncancer risk value HQ = 1 Trespasser	Cancer risk value ELCR = 1E-06 Trespasser	Cancer risk value ELCR = 1E-05 Trespasser	RAOs[2,3]	ARAR	Background[4]
Aluminum	mg/L	5.6E+06	N/A	N/A	0.25	NA	0.25
Barium	mg/L	1.1E+06	N/A	N/A	0.22	NA	0.076
Copper	mg/L	N/A	N/A	N/A	0.010	NA	0.0094
Cyanide	mg/L	N/A	N/A	N/A	0.012	NA	0.0018
Lead	mg/L	N/A	N/A	N/A	0.0064	NA	0.0012
Manganese	mg/L	6.5E+05	N/A	N/A	0.10	NA	0.045
Zinc	mg/L	N/A	N/A	N/A	0.12	NA	0.022
Benzo(a)pyrene	µg/L	1.2E+08	6,772	67,724	0.014	NA	ND
Benzo(b)fluoranthene*	µg/L	1.2E+08	67,725	677,250	NA	NA	ND
Benzo(k)fluoranthene*	µg/L	1.2E+08	677,254	6,772,540	NA	NA	ND
Fluoranthene	µg/L	70,000	N/A	N/A	0.80	NA	ND
Pyrene	µg/L	52,500	N/A	N/A	4.6	NA	ND

1 = Risk and hazard index driving compound per media, except where noted.
2 = Ohio EPA accepted Remedial Action Objective per RMT's October 16, 2008 letter of communication.
3 = Ecological driven Remedial Action Objectives
4 = Background value based on most representative calculation value per Ohio EPA Guidance (2004b), US EPA ProUCL (2007) and/or calculated median values.

* - Non driver compound, no RAOs developed for this parameter
mg/kg = milligrams per kilogram
µg/L = micrograms per liter
mg/L = milligrams per liter
COCs = Chemicals of Concern
HQ = Hazard Quotient
ELCR = Excess Lifetime Cancer Risk
PAHs = polycyclic aromatic hydrocarbons
RAOs = Remedial Action Goals
NA = Not available
N/A = Not applicable, limited toxicity data available (defaults to established RAO)
ND = Not detected

TABLE 2

CALCULATED BACKGROUND CONCENTRATIONS - SEDIMENT[1,2]

Franklin Steel, Blacklick, Ohio

Chemical	Units	Background Upper Confidence Limit[3]	Background Upper Cutoff Value[4]
Metals			
Aluminum	mg/kg	15,748	30,460
Arsenic	mg/kg	ISS	7.2*
Barium	mg/kg	140*	234
Beryllium	mg/kg	ISS	0.39*
Cadmium	mg/kg	ISS	1.5*
Calcium	mg/kg	ISS	5,005*
Chromium	mg/kg	22	39
Cobalt	mg/kg	13	21
Copper	mg/kg	33	50
Cyanide	mg/kg	ISS	0.26
Iron	mg/kg	21,900*	55,700
Lead	mg/kg	33	58
Magnesium	mg/kg	5,822	10,000
Manganese	mg/kg	497	691
Mercury	mg/kg	ISS	0.066*
Nickel	mg/kg	39	72
Potassium	mg/kg	2,943	5,924
Selenium	mg/kg	ISS	1.6
Silver	mg/kg	ISS	0.24
Sodium	mg/kg	ISS	75*
Thallium	mg/kg	ISS	0.58
Vanadium	mg/kg	61	87
Zinc	mg/kg	ISS	128*
SVOCs			
Benzo(b)fluoranthene	µg/kg	ISS	38**
Fluoranthene	µg/kg	ISS	49*
Pyrene	µg/kg	ISS	40**
bis(2-Ethylhexyl) phthalate	µg/kg	ISS	110**
VOCs			
Methylene chloride	µg/kg	ISS	0.121**

Notes:

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

ISS - Unable to compute meaningful and reliable data based on inadequate sample size.

1 - Background calculations based on 5 soil sample locations.

2 - The calculated background values in this table replace the sediment background concentrations listed in Table 8.3 of the June 2008 RFI Report.

3 - Upper Confidence Limit calculated based on United States EPA - ProUCL Version 4.0 (2007).

4 - Upper Cutoff Values calculated based on Ohio EPA - DERR (2004b) Final Guidance document. Background Calculations Methodology

where U = Q3 + 1.5 x (Q3-Q1).

* - Median value considered more representative of data set

** - single detection in background for parameter

TABLE 3

CALCULATED BACKGROUND CONCENTRATIONS - SURFACE WATER[1,2]

Franklin Steel, Blacklick, Ohio

Chemical	Units	Median Background Value[3]	Background Upper Cutoff Value[4]
Metals			
Aluminum	mg/L	0.25	1.5
Antimony	mg/L	0.00026*	0.00026*
Arsenic	mg/L	0.0031*	0.0031*
Barium	mg/L	0.076	0.12
Beryllium	mg/L	0.000072*	0.000072*
Cadmium	mg/L	0.000055*	0.000055*
Calcium	mg/L	64	91
Chromium	mg/L	0.0014*	0.0014*
Cobalt	mg/L	0.0011*	0.0011*
Copper	mg/L	0.0094	0.011
Cyanide	mg/L	0.0018*	0.0018*
Iron	mg/L	0.28	2.2
Lead	mg/L	0.0012*	0.0012*
Magnesium	mg/L	18	27
Manganese	mg/L	0.045	0.32
Mercury	mg/L	0.000037*	0.000037*
Nickel	mg/L	0.0047*	0.0047*
Potassium	mg/L	4.2	6.9
Sodium	mg/L	34	48
Thallium	mg/L	0.000066*	0.000066*
Vanadium	mg/L	0.0044*	0.0044*
Zinc	mg/L	0.022*	0.022*
VOCs			
Acetone	µg/L	ISS	26*

Notes:

mg/L = milligrams per liter

µg/L = micrograms per liter

ISS - Unable to compute meaningful and reliable data based on inadequate sample size.

1 - Background calculations based on 4 soil sample locations.

2 - The calculated background values in this table replace the surface water background concentrations listed in Table 8.2 of the June 2008 RFI Report.

3 - Median background value. Dataset too small to support Upper Confidence Limit (ProUCL) calculations.

4 - Upper Cutoff Values calculated based on Ohio EPA - DERR (2004b) Final Guidance document. Background Calculations Methodology
where U = Q3 + 1.5 x (Q3-Q1).

* - single detection in background for parameter

OhioEPA

State of Ohio Environmental Protection Agency

Central District Office

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FILE COPY

February 23, 2009

Laura B. Paul, President
Franklin Steel Company
4460 Lake Forest Drive, Suite 230
Cincinnati, OH 45242

Re: FRANKLIN STEEL COMPANY (a.k.a. Columbus Steel Drum)
Franklin County
Project I.D. No. 125-001368-005
Addendum to Final RCRA Facility Investigation Report

Dear Ms. Paul:

The Ohio Environmental Protection Agency (EPA) has reviewed the *Addendum to June 2008 RCRA Facility Investigation (RFI) Report* received on January 26, 2008 from RMT, Inc., on behalf of the Franklin Steel Company. The RFI addendum modifies the baseline risk assessment being developed for the former Franklin Steel facility located at 1385 Blatt Boulevard, Blacklick in Franklin County as follows:

- Re-calculated background values for soil, surface water, ground water and sediment as listed in Tables 1 – 4

- Summarized cancer risks and noncancer hazards for the active operations area, in-active operations area and Unzinger's Ditch in Table 6-39.

- Summarized remedial action objectives (RAOs) for the site's commercial/industrial worker and the off-site trespasser in Tables 8.1a and 8.1b.

Ohio EPA approves the RFI addendum's re-calculated background concentrations presented in Tables 1 – 4, and the cancer risk and noncancer hazards summary listed in Table 6-39. However, the RFI addendum's Table 8.1a and Table 8.1b both require the following changes before being considered final. In addition, Table 2 and Table 3 both require minor changes.

Please submit the revised Table 8.1a, Table 8.1b, Table 2 and Table 3 to Ohio EPA by March 11, 2009. Should you have any questions or comments, please contact me at (614) 728-5040.

Sincerely,

David M. O'Toole Jr.

David M. O'Toole, Jr.
Site Coordinator
Division of Emergency and Remedial Response
Central District Office

c: DERR/CDO/RR File
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DMO/nsm Addendum to Final RFI Report

RMT

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JAN 27 2009
OHIO EPA/CDO

January 26, 2009

Mr. David M. O'Toole, Jr.
Site Coordinator
DERR, Ohio EPA Central District Office
122 South Front Street
Columbus, Ohio 43215

Subject: Addendum to June 2008 RCRA Facility Investigation Report, Franklin Steel Company, Blacklick, Ohio

Dear Mr. O'Toole:

On behalf of Franklin Steel Company (Franklin Steel), RMT, Inc. (RMT) has prepared this document as an addendum to the June 2008 Revised – DRAFT RCRA Facility Investigation (RFI) report. This addendum has been prepared based on Ohio EPA's December 2, 2008 letter requesting four items be addressed in the baseline risk assessment of the RFI report. The following addresses each item and provides revised or new data tables as requested.

1. Recalculated Background Concentrations

Ohio Environmental Protection Agency (Ohio EPA) requested that all background data for the Franklin Steel site be recalculated and presented in four new tables. Prior to recalculating the background values, data were evaluated for outliers using the standard United States (US) EPA ProUCL Version 4.0 (2007) protocol. All outliers were removed from the data sets prior to proper statistical analysis. Statistical values were then generated using the recommended Ohio EPA - Division of Emergency and Remedial Response (DERR), Background Calculation Methodology, Final Guidance Document (2004b). In addition, in an effort to provide comparison to this methodology, background data were also evaluated using two other methodologies; 1) the US EPA ProUCL, and 2) the calculation of the data set median values. The representative recalculated background values for soil, sediment, surface water and groundwater are found in the enclosed Tables 1, 2, 3 and 4, respectively.

Due to the poor sample size, more often than not, the representative background value was that value which was below the maximum value of the data set. This value was usually the US EPA ProUCL calculated value. The Ohio EPA DERR calculation methodology, even with removing the outliers, more often generated an upper cut off value (*i.e.*, "U") greater than the maximum value within the data set. However, if both the US EPA ProUCL and the Ohio EPA DERR calculation were higher than that of the maximum data set value, the median value was considered more representative of the data set.

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It is a general rule that a data set must contain at least 8 to 10 observations (US EPA ProUCL), or 12 observations (in the case of Ohio EPA DERR Guidance), in order to generate reliable and meaningful statistics and/or estimates. In the case of the Franklin Steel background database, only certain soil and groundwater parameters met these criteria. Data sets containing small sample sizes (*i.e.*, less than 8 observations) do not allow the use of standard statistical analysis procedures without inconsistencies, error, and/or over estimation. Therefore, due to the small sample size of some of the Franklin Steel background data sets, professional judgment was used to determine the most representative calculation method for analysis.

2. Revised RFI Report Table 6-39, Summary of Cancer risks and Noncancer Hazards

Table 6-39 has been revised, as stated in note 1, that calculated cancer risk and noncancer hazard indices include all applicable site data including those areas depicted as "hot spots" within the Revised – DRAFT RFI report (RMT, 2007). Table 6-39 is attached.

3. Revised RFI Report Table 8.1a and 8.1b (new)

Table 8.1a, Summary of Human Health Site Specific Remedial Action Objectives for Soil, Sediment, Surface Water and Groundwater COCs, was revised to incorporate both the driver compounds and the associated approved human health risk remedial action objectives (RAOs) as listed in Table 1 of RMT's October 16, 2008 document. Please note that a few of the COCs for soil do not have RAOs as they are not driver compounds for the Corrective Measures Study (CMS). Table 8.1b, was added to address the RAOs for the trespasser receptor, and was prepared the same as Table 8.1a. These tables are attached.

In a letter dated September 26, 2008 from Ohio EPA, groundwater RAOs were recommended for the Franklin Steel site. Franklin Steel accepts the recommended values, except for antimony, barium, thallium, zinc, bis(2-ethylhexyl)phthalate, and vinyl chloride, which are below their applicable US EPA Maximum Contaminant Level (MCL). In the revised tables provided with this addendum document, Franklin Steel has set the RAOs equal to the applicable MCL value.

4. Revised RFI Tables 8.2 and 8.3

Tables 8.2 and 8.3 have been revised to incorporate the modified background surface water and sediment values, respectively, as presented in the enclosed Table 2 (sediment) and Table 3 (surface water), and the approved RAO values as presented in the RMT October 16, 2008 letter communication. These tables are attached.

The additional and revised tables enclosed do not affect the conclusions of the RFI report or the conclusions and recommended alternative for the CMS report.

Please feel free to contact me at (614) 793-0026 with any questions or comments you may have concerning this addendum the June 2008 RFI report. Thank you for your support on this project.

Sincerely,

RMT, Inc.

Larry S. Smith, P.E.
Senior Client Service Manager

Attachments

cc: Thomas S. Leigh, RMT – Columbus
Laura Paul, Franklin Steel
Rich Fahey, Vorys, Sater, Seymour and Pease
Paul Coval, Vorys, Sater, Seymour and Pease
Central Files

TABLE 1

CALCULATED BACKGROUND CONCENTRATION - SOILS[1]

Franklin Steel, Blacklick, Ohio

Chemical	Units	Background Upper Confidence Limit[2]	Background Upper Cutoff Value[3]
Metals			
Aluminum	mg/kg	12,371	16,375
Arsenic	mg/kg	18	34
Barium	mg/kg	150	240
Beryllium	mg/kg	0.90	1.1
Cadmium	mg/kg	1.1	1.4
Calcium	mg/kg	10,985	24,533
Chromium	mg/kg	17	21
Cobalt	mg/kg	13	22
Copper	mg/kg	29	52
Iron	mg/kg	27,101	41,350
Lead	mg/kg	24	34
Magnesium	mg/kg	6,621	12,230
Manganese	mg/kg	903	1,699
Mercury	mg/kg	ISS	0.046
Nickel	mg/kg	35	66
Potassium	mg/kg	1,181	1,461
Selenium	mg/kg	7.2*	7.2*
Silver	mg/kg	ISS	0.72*
Thallium	mg/kg	1.1	1.7
Vanadium	mg/kg	38	43
Zinc	mg/kg	102	174
SVOCs			
Di-n-butylphthalate	µg/kg	ISS	50*

Notes:

mg/kg = milligrams per kilogram

µg/kg = *micrograms per kilogram*

ISS - Unable to compute meaningful and reliable data based on inadequate sample size.

1 - Background calculations based on 23 soil sample locations.

2 - Upper Confidence Limit calculated based on United States EPA - ProUCL Version 4.0 (2007).

3 - Upper Cutoff Values calculated based on Ohio EPA - DERR (2004b) Final Guidance document. Background Calculations Methodology

where U = Q3 + 1.5 x (Q3-Q1).

* - Median value considered more representative of data set

TABLE 2

CALCULATED BACKGROUND CONCENTRATIONS - SEDIMENT[1]

Franklin Steel, Blacklick, Ohio

Chemical	Units	Background Upper Confidence Limit[2]	Background Upper Cutoff Value[3]
Metals			
Aluminum	mg/kg	15,748	30,460
Arsenic	mg/kg	ISS	7.2*
Barium	mg/kg	140*	234
Beryllium	mg/kg	ISS	0.39*
Cadmium	mg/kg	ISS	1.5*
Calcium	mg/kg	ISS	5,005*
Chromium	mg/kg	22	39
Cobalt	mg/kg	13	21
Copper	mg/kg	33	50
Cyanide	mg/kg	ISS	0.26
Iron	mg/kg	21,900*	55,700
Lead	mg/kg	33	58
Magnesium	mg/kg	5,822	10,000
Manganese	mg/kg	497	691
Mercury	mg/kg	ISS	0.066*
Nickel	mg/kg	39	72
Potassium	mg/kg	2,943	5,924
Selenium	mg/kg	ISS	1.6
Silver	mg/kg	ISS	0.24
Sodium	mg/kg	ISS	75*
Thallium	mg/kg	ISS	0.58
Vanadium	mg/kg	61	87
Zinc	mg/kg	ISS	128*
SVOCs			
Benzo(b)fluoranthene	µg/kg	ISS	38**
Fluoranthene	µg/kg	ISS	49*
Pyrene	µg/kg	ISS	40**
bis(2-Ethylhexyl) phthalate	µg/kg	ISS	110**
VOCs			
Methylene chloride	µg/kg	ISS	0.121**

Notes:

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

ISS - Unable to compute meaningful and reliable data based on inadequate sample size.

1 - Background calculations based on 5 soil sample locations.

2 - Upper Confidence Limit calculated based on United States EPA - ProUCL Version 4.0 (2007).

3 - Upper Cutoff Values calculated based on Ohio EPA - DERR (2004b) Final Guidance document. Background Calculations Methodology

where U = Q3 + 1.5 x (Q3-Q1).

* - Median value considered more representative of data set

** - single detection in background for parameter

TABLE 3

CALCULATED BACKGROUND CONCENTRATIONS - SURFACE WATER[1]

Franklin Steel, Blacklick, Ohio

Chemical	Units	Median Background Value[2]	Background Upper Cutoff Value[3]
Metals			
Aluminum	mg/L	0.25	1.5
Antimony	mg/L	0.00026*	0.00026*
Arsenic	mg/L	0.0031*	0.0031*
Barium	mg/L	0.076	0.12
Beryllium	mg/L	0.000072*	0.000072*
Cadmium	mg/L	0.000055*	0.000055*
Calcium	mg/L	64	91
Chromium	mg/L	0.0014*	0.0014*
Cobalt	mg/L	0.0011*	0.0011*
Copper	mg/L	0.0094	0.011
Cyanide	mg/L	0.0018*	0.0018*
Iron	mg/L	0.28	2.2
Lead	mg/L	0.0012*	0.0012*
Magnesium	mg/L	18	27
Manganese	mg/L	0.045	0.32
Mercury	mg/L	0.000037*	0.000037*
Nickel	mg/L	0.0047*	0.0047*
Potassium	mg/L	4.2	6.9
Sodium	mg/L	34	48
Thallium	mg/L	0.000066*	0.000066*
Vanadium	mg/L	0.0044*	0.0044*
Zinc	mg/L	0.022*	0.022*
VOCs			
Acetone	µg/L	ISS	26*

Notes:

mg/L = milligrams per liter

µg/L = micrograms per liter

ISS - Unable to compute meaningful and reliable data based on inadequate sample size.

1 - Background calculations based on 4 soil sample locations.

2 - Median background value. Dataset too small to support Upper Confidence Limit (ProUCL) calculations.

3 - Upper Cutoff Values calculated based on Ohio EPA - DERR (2004b) Final Guidance document. Background Calculations Methodology
where U = Q3 + 1.5 x (Q3-Q1).

* - single detection in background for parameter

TABLE 4

BACKGROUND CHEMICAL CONCENTRATIONS - GROUNDWATER[1]

Franklin Steel, Blacklick, Ohio

Chemical	Units	Background Upper Confidence Limit[2]	Background Upper Cutoff Value[3]
Metals			
Aluminum	mg/L	0.27	0.45
Antimony	mg/L	ISS	0.0048*
Arsenic	mg/L	0.0059	0.00072**
Barium	mg/L	0.055	0.065
Beryllium	mg/L	0.085	0.0004
Cadmium	mg/L	ISS	0.0014
Calcium	mg/L	164	204
Chromium	mg/L	ISS	0.00024**
Cobalt	mg/L	ISS	0.0032***
Copper	mg/L	0.0062	0.0070
Iron	mg/L	0.091	0.10
Lead	mg/L	0.0015	0.00009****
Magnesium	mg/L	46	59
Manganese	mg/L	0.23	0.56
Mercury	mg/L	0.00014	0.000035****
Nickel	mg/L	0.029	0.064
Potassium	mg/L	3.31	7.5
Selenium	mg/L	ISS	0.0087****
Silver	mg/L	0.0081	0.0005**
Sodium	mg/L	69	138
Thallium	mg/L	0.0011	0.0010
Vanadium	mg/L	ISS	0.00042**
Zinc	mg/L	0.072	0.13
SVOCs			
bis(2-Ethylhexyl) phthalate	µg/L	ISS	5.8
VOCs			
Carbon disulfide	µg/L	0.32	0.25
Methylene chloride	µg/L	ISS	6.4

Notes:

mg/L = milligrams per liter

µg/L = micrograms per liter

ISS - Unable to compute meaningful and reliable data based on inadequate sample size.

1 - Background calculations based on 13 filtered (1999 - 2000) and 11 low-flow (2000 - 2008) samples from monitoring well S107-MW02.

2 - Upper Confidence Limit calculated based on United States EPA - ProUCL Version 4.0 (2007).

3 - Upper Cutoff Values calculated based on Ohio EPA - DERR (2004b) Final Guidance document. Background Calculations Methodology
where U = Q3 + 1.5 x (Q3-Q1).

* - Highest detection in background, majority of results are non detect.

** - Non detected in background, lowest detection limit presented

*** - Median value considered more representative of data set

**** - Single detection in background for parameter

TABLE 6-39 (revised 1/2009)
SUMMARY OF CANCER RISKS AND NONCANCER HAZARDS[1]
Franklin Steel, Blacklick, Ohio

Exposure Point	Exposure Scenario	Exposure Medium	Central Tendency			High End		
			Noncancer Hazard Quotient	Cancer Risk		Noncancer Hazard Quotient	Cancer Risk	
Active Operations Area	Site worker	Surface Soil	0.35	0.00028	(3E-04)	1.6	0.0037	(4E-03)
		Sediment	0.09	0.00040	(4E-04)	0.40	0.0063	(6E-03)
		Surface Water	0.23	0.00058	(6E-04)	1.0	0.011	(1E-02)
		Total	0.66	0.001	(1E-03)	3.1	0.021	(2E-02)
	Construction/Utility Worker	Surface Soil	0.12	0.00009	(9E-05)	2.4	0.0032	(3E-03)
		Subsurface Soil	0.08	0.000037	(4E-05)	1.7	0.0035	(3E-03)
		Sediment	0.19	0.00087	(9E-04)	4.0	0.059	(6E-02)
		Surface Water	0.17	0.0013	(1E-03)	1.3	0.041	(4E-02)
		Ground Water	0.02	0.000047	(5E-05)	0.18	0.00478	(5E-03)
		Total	0.58	0.0023	(2E-03)	10	0.11	(1E-01)
In-Active Operations Area	Construction/Utiltiy Worker	Surface Soil	0.021	0.00000026	(3E-07)	0.41	0.000016	(2E-05)
		Subsurface Soil	0.027	0.00000050	(5E-07)	0.62	0.000041	(4E-05)
		Total	0.048	0.00000077	(8E-07)	1.0	0.000058	(6E-05)
	Child Trespasser	Surface Soil	0.017	0.00000019	(2E-07)	0.08	0.0000010	(1E-06)
		Total	0.017	0.00000019	(2E-07)	0.08	0.0000010	(1E-06)
	Adolescent Trespasser	Surface Soil	0.005	0.000000058	(6E-08)	0.04	0.00000049	(5E-07)
		Total	0.005	0.000000058	(6E-08)	0.04	0.00000049	(5E-07)
Unzinger's Ditch	Child Trespasser	Sediment	0.11	0.00038	(4E-04)	0.50	0.0016	(2E-03)
		Surface Water	0.53	0.0044	(4E-03)	2.1	0.018	(2E-02)
		Total	0.64	0.0048	(5E-03)	2.6	0.019	(2E-02)
	Adolescent Trespasser	Sediment	0.07	0.00027	(3E-04)	0.51	0.0015	(2E-03)
		Surface Water	0.40	0.0036	(4E-03)	1.6	0.014	(1E-02)
		Total	0.47	0.0039	(4E-03)	2.1	0.016	(2E-02)
Acceptable Risk or Hazard			1	0.00001	(1E-05)	1	0.00001	(1E-05)

Notes:
1 - Calculated risk and hazard indices include all applicable soil, sediment, surface water and groundwater site data, including those areas depicted as "hot spots" within the Draft RFI.
COPCs = chemicals of potential concern

TABLE 8.1a (revised 1/2009)
SUMMARY OF COMMERCIAL/INDUSTRIAL WORKER SITE SPECIFIC REMEDIAL ACTION OBJECTIVES
FOR SOIL, SEDIMENT, SURFACE WATER AND GROUNDWATER COCs
Franklin Steel, Blacklick, Ohio

COC[1]	Soil						
	Units	Noncancer risk value HQ = 1 Site Worker	Cancer risk value ELCR = 1E-06 Site Worker	Cancer risk value ELCR = 1E-05 Site Worker	RAOs[2]	ARAR	Background[4]
Arsenic	mg/kg	61	3.9	39	39	NA	18
Chromium	mg/kg	N/A	N/A	N/A	450	NA	17
Iron	mg/kg	142,800	N/A	N/A	100,000	NA	27,101
Lead	mg/kg	N/A	N/A	N/A	750	NA	24
Aroclor 1254	mg/kg	4.1	2.9	29	0.74	NA	ND
2,4-dinitrophenol*	mg/kg	204,000	5.8	58	NA	NA	ND
4-Nitrophenol*	mg/kg	204,000	5.8	58	NA	NA	ND
Benzo(a)anthracene	mg/kg	6,120	7.9	79	2.1	NA	ND
Benzo(a)pyrene	mg/kg	6,120	0.79	7.9	0.21	NA	ND
Benzo(b)fluoranthene	mg/kg	6,120	7.9	79	2.1	NA	ND
Benzo(k)fluoranthene	mg/kg	6,120	79.4	794	21.1	NA	ND
Bis(2-ethylhexyl)phthalate	mg/kg	4,080	414	4,140	120	NA	ND
Dibenzo(a,h)fluotanthene	mg/kg	6,120	0.79	7.9	0.21	NA	ND
Indeno(1,2,3-cd)pyrene	mg/kg	6,120	7.9	79	2.1	NA	ND
N-nitrosodipheylmine*	mg/kg	204,000	1,163	11,633	NA	NA	ND
Naphthalene*	mg/kg	4,080	5.8	58	NA	NA	ND
Ethylbenzene*	mg/kg	20,400	5.8	58	NA	NA	NA
Trichloroethene	mg/kg	8,160	2.0	20	0.11	NA	ND
Toluene*	mg/kg	16,230	5.8	58	NA	NA	ND
Xylenes, total	mg/kg	40,800	N/A	N/A	420	NA	ND
COC[1]	Sediment						
	Units	Noncancer risk value HQ = 1 Site Worker	Cancer risk value ELCR = 1E-06 Site Worker	Cancer risk value ELCR = 1E-05 Site Worker	RAOs[2,3]	ARAR	Background[4]
Arsenic	mg/kg	61	3.9	39	18	NA	7.2
Cadmium	mg/kg	N/A	5.8	58	0.90	NA	1.5
Chromium	mg/kg	N/A	N/A	N/A	40	NA	22
Copper	mg/kg	N/A	N/A	N/A	34	NA	33
Lead	mg/kg	N/A	N/A	N/A	34	NA	33
Mercury	mg/kg	20	N/A	N/A	0.12	NA	0.066
Nickel	mg/kg	N/A	N/A	N/A	42	NA	39
Zinc	mg/kg	N/A	N/A	N/A	160	NA	128
Anthracene	mg/kg	61,200	N/A	N/A	0.057	NA	ND
Benzo(a)anthracene	mg/kg	6,120	7.9	79	0.11	NA	ND
Benzo(a)pyrene	mg/kg	6,120	0.79	7.9	0.15	NA	ND
Benzo(b)fluoranthene*	mg/kg	6,120	7.9	79	NA	NA	38
Chrysene	mg/kg	N/A	785	7,853	0.17	NA	ND
Dibenzo(a,h)fluotanthene	mg/kg	6,120	0.79	7.9	0.033	NA	ND
Fluoranthene	mg/kg	8,160	N/A	N/A	0.42	NA	49
Fluorene	mg/kg	8,160	N/A	N/A	0.077	NA	ND
Indeno(1,2,3-cd)pyrene*	mg/kg	6,120	7.9	79	NA	NA	ND
Phenanthrene	mg/kg	N/A	N/A	N/A	0.20	NA	ND
Pyrene	mg/kg	N/A	N/A	N/A	0.20	NA	40
Bis(2-ethylhexyl)phthalate	mg/kg	4,080	414	4,140	9.3	NA	110
Total, PAHs	mg/kg	N/A	N/A	N/A	1.6	NA	ND

TABLE 8.1a (revised 1/2009)
SUMMARY OF COMMERCIAL/INDUSTRIAL WORKER SITE SPECIFIC REMEDIAL ACTION OBJECTIVES
FOR SOIL, SEDIMENT, SURFACE WATER AND GROUNDWATER COCs
Franklin Steel, Blacklick, Ohio

COC[1]	Surface Water						
	Units	Noncancer risk value HQ = 1 Site Worker	Cancer risk value ELCR = 1E-06 Site Worker	Cancer risk value ELCR = 1E-05 Adult Worker	RAOs[2,3]	ARAR	Background[4]
Aluminum	mg/L	204	N/A	N/A	0.25	NA	0.25
Barium	mg/L	41	N/A	N/A	0.22	NA	0.076
Copper	mg/L	N/A	N/A	N/A	0.010	NA	0.0094
Cyanide	mg/L	4.1	N/A	N/A	0.012	NA	0.0018
Lead	mg/L	N/A	N/A	N/A	0.0064	NA	0.0012
Manganese	mg/L	29	N/A	N/A	0.10	NA	0.045
Zinc	mg/L	N/A	N/A	N/A	0.12	NA	0.022
Benzo(a)pyrene	µg/L	6,120	0.79	7.9	0.014	NA	ND
Benzo(b)fluoranthene*	µg/L	6,120	7.9	79	NA	NA	ND
Benzo(k)fluoranthene*	µg/L	6,120	79	790	NA	NA	ND
Fluoranthene	µg/L	8,160	N/A	N/A	0.80	NA	ND
Pyrene	µg/L	6,120	N/A	N/A	4.6	NA	ND

COC[1]	Groundwater						
	Units	Noncancer risk value HQ = 1 Adult Worker	Cancer risk value ELCR = 1E-06 Adult Worker	Cancer risk value ELCR = 1E-05 Site Worker	RAOs[2]	ARAR	Background[4]
Aluminum	mg/L	204,000	N/A	N/A	3.6	NA	0.27
Antimony	mg/L	N/A	N/A	N/A	0.0060	NA	0.0048
Arsenic	mg/L	61	3.9	39	0.045	NA	0.00072
Barium	mg/L	40,800	N/A	N/A	2.0	NA	0.065
Beryllium	mg/L	408	0.69	6.9	0.0073	NA	0.085
Cadmium	mg/L	N/A	N/A	N/A	0.0018	NA	0.0014
Lead	mg/L	N/A	N/A	N/A	NA	NA	0.00009
Manganese	mg/L	4,896	N/A	N/A	NA	NA	0.23
Nickel	mg/L	N/A	N/A	N/A	0.073	NA	0.029
Thallium	mg/L	N/A	N/A	N/A	0.002	NA	0.0010
Vanadium	mg/L	N/A	N/A	N/A	0.0036	NA	0.00042
Zinc	mg/L	N/A	N/A	N/A	5.0	NA	0.072
Benzo(a)anthracene	µg/L	N/A	7.9	79	0.092	NA	ND
Benzo(b)fluoranthene	µg/L	N/A	7.9	79	0.092	NA	ND
Bis(2-ethylhexyl)phthalate	µg/L	4,080	414	4,140	6.0	6	5.8
Dibenzo(a,h)fluotanthene	µg/L	N/A	0.79	8	0.0092	NA	ND
2,4-Dinitrotoluene	µg/L	N/A	N/A	N/A	7.3	NA	ND
Indeno(1,2,3-cd)pyrene	µg/L	N/A	7.9	79	0.092	NA	ND
Chloroethane	µg/L	N/A	N/A	N/A	4.6	NA	ND
Chloroform	µg/L	N/A	12	118	0.17	NA	ND
Methylene Chloride	µg/L	12,240	314	3,135	4.3	NA	6.4
Vinyl Chloride	µg/L	612	2.9	29	2.0	2	ND

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* - Non driver compound, no RAOs developed for this parameter
mg/kg = milligrams per kilogram
µg/L = micrograms per liter
mg/L = milligrams per liter
COCs = Chemicals of Concern
HQ = Hazard Quotient
ELCR = Excess Lifetime Cancer Risk
PAHs = polycyclic aromatic hydrocarbons
RAOs = Remedial Action Goals
NA = Not available
N/A = Not applicable, limited toxicity data available (defaults to established RAO)
ND = Not detected

TABLE 8.1b (revised 1/2009)
SUMMARY OF TRESPASSER SITE SPECIFIC REMEDIAL ACTION OBJECTIVES
FOR SOIL, SEDIMENT AND SURFACE WATER COCs
Franklin Steel, Blacklick, Ohio

COC[1]	Soil						
	Units	Noncancer risk value HQ = 1 Trespasser	Cancer risk value ELCR = 1E-06 Trespasser	Cancer risk value ELCR = 1E-05 Trespasser	RAOs[2]	ARAR	Background[4]
Arsenic	mg/kg	1,548	43	430	39	NA	18
Chromium	mg/kg	N/A	N/A	N/A	450	NA	17
Iron	mg/kg	4.0E+06	N/A	N/A	100,000	NA	27,101
Lead	mg/kg	N/A	N/A	N/A	750	NA	24
Aroclor 1254	mg/kg	107	34	336	0.74	NA	ND
2,4-dinitrophenol*	mg/kg	5.5E+06	69	690	NA	NA	ND
4-Nitrophenol*	mg/kg	5.0E+06	62	690	NA	NA	ND
Benzo(a)anthracene	mg/kg	1.2E+05	68	677	2.1	NA	ND
Benzo(a)pyrene	mg/kg	1.2E+05	6.8	68	0.21	NA	ND
Benzo(b)fluoranthene	mg/kg	1.2E+05	68	677	2.1	NA	ND
Benzo(k)fluoranthene	mg/kg	1.2E+05	677	6,772	21.1	NA	ND
Bis(2-ethylhexyl)phthalate	mg/kg	85,054	3,797	37,971	120	NA	ND
Dibenzo(a,h)fluotanthene	mg/kg	1.2E+05	6.8	68	0.21	NA	ND
Indeno(1,2,3-cd)pyrene	mg/kg	1.2E+05	68	677	2.1	NA	ND
N-nitrosodiphenylmine*	mg/kg	5.5E+06	13,807	138,070	NA	NA	ND
Naphthalene*	mg/kg	7.9E+04	49	58	NA	NA	ND
Ethylbenzene*	mg/kg	5.5E+05	69	690	NA	NA	NA
Trichloroethene	mg/kg	1.7E+05	133	1329	0.11	NA	ND
Toluene*	mg/kg	4.4E+05	69	690	NA	NA	ND
Xylenes, total	mg/kg	8.5E+05	N/A	N/A	420	NA	ND
COC[1]	Sediment						
	Units	Noncancer risk value HQ = 1 Trespasser	Cancer risk value ELCR = 1E-06 Trespasser	Cancer risk value ELCR = 1E-05 Trespasser	RAOs[2,3]	ARAR	Background[4]
Arsenic	mg/kg	1,548	21	207	18	NA	7.2
Cadmium	mg/kg		35	353	0.90	NA	1.5
Chromium	mg/kg	N/A	N/A	N/A	40	NA	22
Copper	mg/kg	N/A	N/A	N/A	34	NA	33
Lead	mg/kg	N/A	N/A	N/A	34	NA	33
Mercury	mg/kg	283	N/A	N/A	0.12	NA	0.066
Nickel	mg/kg	N/A	N/A	N/A	42	NA	39
Zinc	mg/kg	N/A	N/A	N/A	160	NA	128
Anthracene	mg/kg	5.3E+05	N/A	N/A	0.057	NA	ND
Benzo(a)anthracene	mg/kg	52,501	30	300	0.11	NA	ND
Benzo(a)pyrene	mg/kg	52,501	3.0	30	0.15	NA	ND
Benzo(b)fluoranthene*	mg/kg	52,501	30	300	NA	NA	38
Chrysene	mg/kg	52,501	2,997	29,966	0.17	NA	ND
Dibenzo(a,h)fluotanthene	mg/kg	52,501	3.0	30	0.033	NA	ND
Fluoranthene	mg/kg	70,000	N/A	N/A	0.42	NA	49
Fluorene	mg/kg	70,000	N/A	N/A	0.077	NA	ND
Indeno(1,2,3-cd)pyrene*	mg/kg	52,501	30	300	NA	NA	ND
Phenanthrene	mg/kg	N/A	N/A	N/A	0.20	NA	ND
Pyrene	mg/kg	N/A	N/A	N/A	0.20	NA	40
Bis(2-ethylhexyl)phthalate	mg/kg	38,399	1,714	17,142	9.3	NA	110
Total, PAHs	mg/kg	N/A	N/A	N/A	1.6	NA	ND
COC[1]	Surface Water						
	Units	Noncancer risk value HQ = 1 Trespasser	Cancer risk value ELCR = 1E-06 Trespasser	Cancer risk value ELCR = 1E-05 Trespasser	RAOs[2,3]	ARAR	Background[4]
Aluminum	mg/L	5.6E+06	N/A	N/A	0.25	NA	0.25
Barium	mg/L	1.1E+06	N/A	N/A	0.22	NA	0.076
Copper	mg/L	N/A	N/A	N/A	0.010	NA	0.0094
Cyanide	mg/L	N/A	N/A	N/A	0.012	NA	0.0018
Lead	mg/L	N/A	N/A	N/A	0.0064	NA	0.0012
Manganese	mg/L	6.5E+05	N/A	N/A	0.10	NA	0.045
Zinc	mg/L	N/A	N/A	N/A	0.12	NA	0.022
Benzo(a)pyrene	µg/L	1.2E+08	6,772	67,724	0.014	NA	ND
Benzo(b)fluoranthene*	µg/L	1.2E+08	67,725	677,250	NA	NA	ND
Benzo(k)fluoranthene*	µg/L	1.2E+08	677,254	6,772,540	NA	NA	ND
Fluoranthene	µg/L	70,000	N/A	N/A	0.80	NA	ND
Pyrene	µg/L	52,500	N/A	N/A	4.6	NA	ND

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