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MCRD PARRIS ISLAND
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LETTER REGARDING INVESTIGATION DERIVED WASTE MANAGEMENT FROM
INVESTIGATION OF MEDIA AT SITE 1, SITE 2, SITE 3, AND SITE 12 WITH ATTACHMENTS
MCRD PARRIS ISLAND SC
12/22/1998
TETRA TECH NUS

**TETRA TECH NUS, INC.**

661 Andersen Drive ■ Pittsburgh, Pennsylvania 15220-2745
(412) 921-7090 ■ FAX (412) 921-4040 ■ www.tetrattech.com

PITT-12-8-151

December 22, 1998

Project Numbers 7394 & 7803

Ms. Susan Peterson, Project Manager
South Carolina Department of Health and Environmental Controls
Bureau of Land and Waste Management
Columbia, South Carolina 29201

Subject: IDW Management
From Investigation of Media at SWMUs 1,2,3, and 10
MCRD Parris Island, South Carolina

Reference: a. CTOs 0020 and 0053
b. CLEAN Contract No. N62467-94-D-0888

Dear Ms. Peterson:

TtNUS has completed field work identified in the RCRA Facility Investigation/Remedial Investigation Work Plan for Sites/SWMUs 1,2,3, and 15, SWMU 41, and Site 12/SWMU 10 at MCRD Parris Island. As part of this work and in accordance with the work plan, Investigation Derived Waste (IDW) consisting of soils, solid wastes, and waters were collected and containerized in 55-gallon drums. The IDW generated on base was consolidated on Horse Island and the IDW generated on Jericho Island was consolidated on Jericho Island.

At this time, the analytical data has been received and evaluated. The analytical data used to characterize the water and soil IDW is presented in Tables 1 and 2, respectively. Based on the characterization, the IDW would not be considered a RCRA hazardous waste.

In accordance with the work plan, a comparison of the individual site drummed soil results with Region III Residential RBCs was conducted. A summary of exceedances is presented as follows.

Drummed IDW Soils (mg/kg)

Chemical	EPA Reg. III RBC	Site/SWMU 1 - IDW soils	Site/SWMU 2 - IDW soils	Site/SWMU 3 - IDW soils	Site 12/SWMU 10 - IDW soils
Benzo(a)pyrene	0.087	0.36J	-	0.15J	-
Dibenzo(a,h)anthracene	0.087	0.13J	-	-	-
Arsenic	0.43	6.6	2.2	3.8	1.3

Note that background arsenic soil and sediment results ranged from 1.2 to 12 mg/kg. Therefore the arsenic results presented are considered to be background, and not site related contamination.

Based on this evaluation in accordance with the Work Plan, Site/SWMU 2 and Site 12/SWMU 10 soils can be spread back at their respective sites. Site/SWMU 3 IDW soils were observed to contain soil waste (paper and plastic, etc) and therefore are considered inherently waste like. Therefore, Site/SWMU 3 drummed soils will be disposed off site in an approved solid waste landfill.

At this time, TtNUS is also requesting permission to spread soils from Site/SWMU 1 drilling activities at Site/SWMU 1. The basis for this request is that the drummed Site/SWMU 1 soils are not inherently waste like, but rather consist of soils/sediments. Also, the RBC exceedances are relatively minor (a factor of 1 to 3 above the criteria and only for two PAHs). The industrial use scenario criteria for these two PAHs is 0.78 mg/kg. Using the industrial criteria, there would be no RBC exceedances. Also, access to the site is currently limited, and these soils would be addressed in the future with the site.

TtNUS is proposing to place the drummed Site/SWMU 1 soils at the location of PAI-01-SS-008, (see attached Figure). This area is a depression approximately 4 feet deep and approximately 70 horizontal and 12 vertical feet from the high water shoreline. This location is also capable of holding of the volume of Site/SWMU 1 drummed soils, without creating a mound. In addition, this surface soil location represents an area where PAHs, pesticides, and 13 metals exceed human health or ecological screening values. As a result, placement of these soils at this location will reduce potential impacts to receptors.

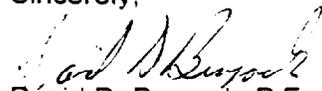
Liquid IDW will be treated at the Depot's wastewater treatment plant.

Susan Peterson
SCDHEC
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If you have any questions or comments, please call me at 412-921-8375.

Sincerely,


David D. Brayack, P.E.
Project Manager

ddb

Enclosure

cc: Ms. D. Evans-Ripley, SOUTHDIV (w/o enclosure)
Mr. T. Harrington, MCRD Parris Island
Mr. K. Lapierre, EPA
Mr. A. Sanford, SOUTHDIV
Ms. W. Wroblewski (w/o enclosure)
Mr. M. Perry (w/o enclosure)
Mr. J. Brown (with enclosure)
File: 7394
File: 7803

CHARACTERIZATION OF WATER IDW WITH RCRA CRITERIA
MCRD PARRIS ISLAND, SOUTH CAROLINA

Page 1 of 2

Fraction	RCRA Criteria	MAXIMUM GROUNDWATER CONCENTRATION				DECON FLUID	
		Site 1	Site 2	Site 3	Site 12	Sites 1, 2 and 3	Site 10
Volatiles (ug/L)							
1,1-DICHLOROETHENE	700	-	-	-	-	-	-
1,2-DICHLOROETHANE	500	-	-	-	-	-	-
2-BUTANONE (METHYL ETHYL KETONE)	200,000	3.4 J	-	-	-	7.5 J	38 J
BENZENE	500	-	-	21 J	-	-	-
CARBON TETRACHLORIDE	500	-	-	-	-	-	-
CHLOROBENZENE	100,000	-	-	130	-	-	-
CHLOROFORM	6,000	0.9 J	2.9	0.3 J	4.5	-	-
TETRACHLOROETHENE	700	-	-	-	-	-	-
TRICHLOROETHENE	500	-	-	-	0.4 J	-	-
VINYL CHLORIDE	200	-	-	-	-	-	-
SVOCs (ug/L)							
1,4-DICHLOROBENZENE	7,500	-	-	10	-	-	-
2,4,5-TRICHLOROPHENOL	400,000	-	-	-	-	-	-
2,4,6-TRICHLOROPHENOL	2,000	-	-	-	-	-	-
2,4-DINITROTOLUENE	130	-	-	-	-	-	-
2-METHYLPHENOL (o-CRESOL)	200,000	1 J	-	-	-	2 J	3 J
3-METHYLPHENOL (m-CRESOL)	200,000	NA	NA	NA	NA	NA	NA
4-METHYLPHENOL (p-CRESOL)	200,000	-	-	73	-	-	2 J
HEXACHLOROBENZENE	130	-	-	-	-	-	-
HEXACHLOROBUTADIENE	500	-	-	-	-	-	-
HEXACHLOROETHANE	3,000	-	-	-	-	-	-
NITROBENZENE	2,000	-	-	-	-	-	-
PENTACHLOROPHENOL	100,000	-	-	-	-	-	-
PYRIDINE	5,000	-	-	-	-	NA	NA
PCBs/Pesticides (ug/L)							
2,4,5-TP (SILVEX)	1,000	-	-	-	-	NA	NA
2,4-D	10,000	-	-	-	-	NA	NA
CHLORDANE	30	-	-	-	-	NA	NA
ENDRIN	20	-	-	-	-	-	-
GAMMA-BHC (LINDANE)	400	-	-	-	-	-	-
HEPTACHLOR	8	-	-	-	-	-	-
HEPTACHLOR EPOXIDE	8	-	-	-	-	-	-
METHOXYCHLOR	10,000	-	-	-	-	-	-

CHARACTERIZATION OF WATER IDW WITH RCRA CRITERIA
MCRD PARRIS ISLAND, SOUTH CAROLINA

Fraction	RCRA Criteria	MAXIMUM GROUNDWATER CONCENTRATION				DECON FLUID	
		Site 1	Site 2	Site 3	Site 12	Sites 1, 2 and 3	Site 10
TOXAPHENE	500	-	-	-	-	-	-
Metals (ug/l)							
ARSENIC	5,000	4.4	1.7	34.5	35.4	8.5	5.2
BARIUM	100,000	1,230	243	901	901	194	218
CADMIUM	1,000	2.7	-	-	9.2	3.9	-
CHROMIUM	5,000	26.9	15.2	27	25.2	48.8	7
LEAD	5,000	36.4	-	-	-	171	-
MERCURY	200	-	-	-	-	-	-
SELENIUM	1,000	-	-	-	7.1 J	-	-
SILVER	5,000	-	-	-	-	-	-
Water Quality Parameters							
BIOCHEMICAL OXYGEN DEMAND (mg/l)	None	NA	NA	NA	NA	< 5	< 5
CHEMICAL OXYGEN DEMAND (mg/l)	None	NA	NA	NA	NA	50	44
CHLORIDE (mg/l)	None	20,000	12,000	10,000	17,000	NA	NA
FECAL COLIFORM	None	NA	NA	NA	NA	< 10	< 100
FLOURIDE (mg/L)	None	300	26	200	19	NA	NA
HARDNESS as CaCO3 (mg/l)	None	6,300	4,200	3,900	6,200	NA	NA
NITRATE/NITRITE, AS N (mg/l)	None	0.06	6.8 J	-	0.3	NA	NA
OIL & GREASE (mg/l)	None	NA	NA	NA	NA	-	-
PH	None	5.89 - 7.88	4.74 - 8.10	6.18 - 7.14	5.11 - 6.81	10.2	7.1
SULFATE (mg/l)	None	1,500	1,500	1,300	2,200	NA	NA
TOTAL DISSOLVED SOLIDS (mg/l)	None	35,000	23,000	17,000	31,000	1200	4,200
TOTAL ORGANIC CARBON (mg/l)	None	45	8.1	74	24	NA	NA
TOTAL SUSPENDED SOLIDS (mg/l)	None	270	59	92	150	45	16
Misc. Parameters							
Reactivity		NA	NA	NA	NA	No	No
Corrosivity (pH)	2 < pH > 12.5	No	No	No	No	No	No

A "-" indicates that a positive detection was not observed
NA - Not analyzed

TABLE 2

**Soil IDW Results - Maximum Detections
MCRD Parris Island**

Groundwater Fraction	RCRA Criteria (ug/L)	Soils ⁽¹⁾⁽²⁾⁽³⁾			
		Site 1	Site 2	Site 3	Site 12
VOCs					
1,1-DICHLOROETHENE	700	-	-	-	-
1,2-DICHLOROETHANE	500	-	-	-	-
2-BUTANONE	200,000	-	-	-	-
BENZENE	500	-	-	2 J	-
CARBON TETRACHLORIDE	500	-	-	-	-
CHLOROETHENE	100,000	2 J	-	54	-
CHLOROFORM	6,000	-	-	-	-
TETRACHLOROETHENE	700	-	-	-	-
TRICHLOROETHENE	500	-	-	-	-
VINYL CHLORIDE	200	-	-	-	-
SVOCs					
1,4-DICHLOROBENZENE	7,500	-	-	-	-
2,4,5-TRICHLOROPHENOL	400,000	-	-	-	-
2,4,6-TRICHLOROPHENOL	2,000	-	-	-	-
2,4-DINITROTOLUENE	130	-	-	-	-
2-METHYLPHENOL	200,000	-	-	-	-
3-METHYLPHENOL	200,000	NA	NA	NA	NA
4-METHYLPHENOL	200,000	-	-	41 J	-
HEXACHLOROBENZENE	130	-	-	-	-
HEXACHLOROBUTADIENE	500	-	-	-	-
HEXACHLOROETHANE	3,000	-	-	-	-
NITROBENZENE	2,000	-	-	-	-
PENTACHLOROPHENOL	100,000	-	-	-	-
PYRIDINE	5,000	NA	NA	NA	NA
PCBs/Pesticides					
CHLORDANE	30	NA	NA	NA	NA
ENDRIN	20	-	-	-	-
GAMMA-BHC (LINDANE)	400	-	-	-	-
HEPTACHLOR	8	-	-	-	-
HEPTACHLOR EPOXIDE	8	-	-	-	-
METHOXYCHLOR	10,000	-	-	-	-
TOXAPHENE	500	-	-	-	-
2,4,5-TP (SILVEX)	1,000	NA	NA	NA	NA
2,4-D	10,000	NA	NA	NA	NA
TCLP Metal Leachate Data					
ARSENIC	5,000	24.1	-	-	-
BARIIUM	100,000	1,090	715	928	755
CADMIUM	1,000	2	-	2.5	-
CHROMIUM	5,000	-	6.8	16.2	11.4
LEAD	5,000	80.6	-	35.2	24.7
MERCURY	200	2.2	-	-	-
SELENIUM	1,000	-	-	-	-
SILVER	5,000	-	-	-	-
Misc. Parameters					
Reactivity		No	No	No	No
Corrosivity (pH)	2 < pH > 12.5	No (8.2)	No (7.7)	No (9.4)	No (9.9)

(1) VOCs, SVOCs, PCB, and pesticide results reported in ug/kg. Assuming 100 percent leaching to extraction fluid, results would be would be less than RCRA criteria.

(2) TCLP leachate data reported in ug/L.

(3) A "-" indicates that a positive detection was not observed.

NA - Not analyzed