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Baker

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January 3, 2002

Mr. Jim Dunn
OHM / IT
11560 Great Oaks Way, Suite 500
Alpharetta, Georgia 30022

Re: Contract Task Order (CTO) 0219
Site 84 Investigation – IDW Disposal
MCB, Camp Lejeune, North Carolina

Dear Mr. Dunn:

This letter describes sample collection activities, results, and recommendations for the disposal of liquid investigative derived waste (IDW) presently stored at Site 84, Marine Corps Base Camp Lejeune, North Carolina. The IDW consists of a total of approximately 600 gallons of water that was generated during well development and sample purging for the investigation conducted in August 2001. Currently, the liquid IDW is being stored in eleven 55-gallon drums located at Site 84.

Sample Collection and Analysis

One composite sample was collected from the drums, and was given the sample identification IR84-IDW. The sample consisted of eleven aliquots, one from each drum that was proportional to respective volumes. Water for all the analytes was poured from the composite sample collection container directly into the sample bottles. Sample IR84-IDW was analyzed for target compound list (TCL) volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), PCBs, Herbicides, Pesticides, target analyte list (TAL) metals, total suspended solids, total dissolved solids, and RCRA characteristics (Corrosivity, Flashpoint, Reactive Cyanide, and Reactive Sulfide). The analytical results are summarized on Table 1. A complete laboratory results package is included in Attachment A.

Results

Table 1 shows the contaminants that were detected in this sample. Table 1 also shows the detected concentrations compared to North Carolina Water Quality 2L Standards and the Federal MCL drinking water standard. The VOC Chloroform exceeds the 2L standards. The only SVOC detected (bis [2-Ethylhexyl] phthalate) exceeded both the MCL and the North Carolina 2L standards. The pesticide Heptachlor was detected above the 2L standards. There were four metals detected in sample IR84-IDW above allowable limits. Aluminum and Thallium were detected above the Federal MCL standard, and Iron and Manganese were detected above both the MCL and 2L standards. Suspended solids and total dissolved solids were detected in low concentrations.

Recommendations

VOCs, SVOCs, Pesticides, and Metals were detected above regulatory limits. As such, Baker recommends that the liquid IDW be removed from the eleven drums by Baker personnel and transported to the groundwater treatment facility located at Lot 203. This would be contingent upon review of the data and concurrence.

If you have any questions or comments regarding the information we have, please do not hesitate to contact me at 412-269-2055, or Mr. David D. Schilling at 412-269-6137. Baker personnel will contact you over the next few weeks to coordinate disposal activities at Lot 203.

Sincerely,

BAKER ENVIRONMENTAL, INC.

Jeffery Tepsic, P.G.
Project Manager

pcl
cc: Kirk Stevens, LANTDIV
Chris Bozzini, CH2M HILL
Rick Raines, MCB, Camp Lejeune
Scott Bailey, CH2M HILL

TABLE 1
INVESTIGATION DERIVED WASTE ANALYTICAL RESUTLS
REMEDIAL INVESTIGATION, CTO-219, SITE 84
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID SAMPLE DATE	IR84-IDW 08-07-2001	Groundwater Protection 2 L Standards	Federal MCL standard
VOLATILES (ug/L)			
Chloroform	0.61 J	0.19	80 P
Toluene	1.1 J	1000	1000
SEMIVOLATILES (ug/L)			
bis(2-Ethylhexyl) phthalate	13	3	6
PCBs (ug/L)			
Endosulfan I	0.025 J	NE	NE
Heptachlor	0.021 J	0.008	0.4
beta-BHC	0.067 PG	NE	NE
METALS (μg/L)			
Aluminum	6500	NE	200 S
Antimony	8.4 B	NE	NE
Arsenic	4.4 B	50	50
Barium	730	2000	2000
Calcium	45100	NA	NA
Chromium	6.7 B	50	100
Iron	28400	300	300
Lead	4.3	15	15 al
Magnesium	4100 B	NA	NA
Manganese	230	50	50
Nickel	16 B	100	NE
Potassium	4500 B	NA	NA
Selenium	6.7	50	50
Sodium	14400	NA	NA
Thallium	10	NE	2
Vanadium	7.2 B	NE	NE
Zinc	220	2100	5000 S
CONVENTIONAL			
Corrosivity	6.3		
Flashpoint (^{0}F)	>180		
Reactive Cyanide (mg/kg)	12 B		
Reactive Sulfide (mg/kg)	26 B		
Total Dissolved Solids (mg/L)	240	500	500
Total Suspended Solids (mg/L)	120		

Notes:

NA	= Not Applicable
NE	= Not Established
J	= Value Estimated
PG	= Actual Value is less than 40% of estimated value
B	= Value Estimated
P	= Proposed level
S	= Secondary Drinking Water Standard
al	= Action level

ATTACHMENT A
INVESTIGATION DERIVED WASTE ANALYTICAL RESUTLS
REMEDIAL INVESTIGATION, CTO-219, SITE 84
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	IR84-IDW
SAMPLE DATE	08-07-2001
VOLATILES (ug/L)	
1,1,1-Trichloroethane	0.5 U
1,1,2,2-Tetrachloroethane	0.83 U
1,1,2-Trichloroethane	1 U
1,1-Dichloroethane	0.53 U
1,1-Dichloroethene	0.8 U
1,2-Dibromoethane (EDB)	0.73 U
1,2-Dichloroethane	0.7 U
1,2-Dichloroethene (total)	0.93 U
1,2-Dichloropropane	0.57 U
2-Butanone	1.4 U
2-Hexanone	1.5 U
4-Methyl-2-pentanone	0.77 U
Acetone	70 B
Benzene	0.53 U
Bromodichloromethane	0.57 U
Bromoform	0.6 U
Bromomethane	0.67 U
Carbon disulfide	0.67 U
Carbon tetrachloride	0.4 U
Chlorobenzene	0.47 U
Chloroethane	0.87 U
Chloroform	0.61 J
Chloromethane	0.43 U
Dibromochloromethane	0.87 U
Ethylbenzene	0.4 U
Isopropyl ether	2.3 U
Methyl tert-butyl ether	0.43 U
Methylene chloride	1.1 U
Styrene	0.5 U
Tetrachloroethene	0.77 U
Toluene	1.1 J
Trichloroethene	0.47 U
Vinyl chloride	0.5 U
Xylenes (total)	1.1 U
cis-1,3-Dichloropropene	0.4 U
trans-1,3-Dichloropropene	0.9 U

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MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	IR84-IDW
SAMPLE DATE	08-07-2001

SEMIVOLATILES (ug/L)	
1,2,4-Trichlorobenzene	0.65 U
1,2-Dichlorobenzene	0.81 U
1,3-Dichlorobenzene	0.83 U
1,4-Dichlorobenzene	0.77 U
2,2'-Oxybis(1-Chloropropane)	0.78 U
2,4,5-Trichlorophenol	1.2 U
2,4,6-Trichlorophenol	1.7 U
2,4-Dichlorophenol	0.85 U
2,4-Dimethylphenol	0.85 U
2,4-Dinitrophenol	3 U
2,4-Dinitrotoluene	0.79 U
2,6-Dinitrotoluene	0.57 U
2-Chloronaphthalene	0.85 U
2-Chlorophenol	1 U
2-Methylnaphthalene	0.64 U
2-Methylphenol	1.1 U
2-Nitroaniline	0.7 U
2-Nitrophenol	2.1 U
3,3'-Dichlorobenzidine	0.93 U
3-Nitroaniline	0.71 U
4,6-Dinitro-2-methylphenol	1.3 U
4-Bromophenyl phenyl ether	0.88 U
4-Chloro-3-methylphenol	0.99 U
4-Chloroaniline	0.61 U
4-Chlorophenyl phenyl ether	0.79 U
4-Methylphenol	1.3 U
4-Nitroaniline	1.3 U
4-Nitrophenol	1.9 U
Acenaphthene	0.8 U
Acenaphthylene	0.71 U
Anthracene	0.68 U
Benzo(a)anthracene	0.7 U
Benzo(a)pyrene	0.73 U
Benzo(b)fluoranthene	0.94 U
Benzo(ghi)perylene	0.85 U
Benzo(k)fluoranthene	0.84 U

ATTACHMENT A
INVESTIGATION DERIVED WASTE ANALYTICAL RESUTLS
REMEDIAL INVESTIGATION, CTO-219, SITE 84
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	IR84-IDW
SAMPLE DATE	08-07-2001

SEMIVOLATILES (ug/L) cont'd	
Butyl benzyl phthalate	0.88 U
Carbazole	0.82 U
Chrysene	0.75 U
Di-n-butyl phthalate	0.67 U
Di-n-octyl phthalate	1.1 U
Dibenz(a,h)anthracene	0.79 U
Dibenzofuran	1.1 U
Diethyl phthalate	0.65 U
Dimethyl phthalate	0.76 U
Fluoranthene	0.81 U
Fluorene	1 U
Hexachlorobenzene	0.74 U
Hexachlorobutadiene	0.73 U
Hexachlorocyclopentadiene	1.1 U
Hexachloroethane	0.74 U
Indeno(1,2,3-cd)pyrene	0.63 U
Isophorone	0.63 U
N-Nitrosodi-n-propylamine	0.67 U
N-Nitrosodiphenylamine	1.4 U
Naphthalene	0.75 U
Nitrobenzene	0.81 U
Pentachlorophenol	2.4 U
Phenanthrene	0.82 U
Phenol	2.6 U
Pyrene	1.1 U
bis(2-Chloroethoxy)methane	0.87 U
bis(2-Chloroethyl) ether	0.97 U
bis(2-Ethylhexyl) phthalate	13

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SAMPLE ID	IR84-IDW
SAMPLE DATE	08-07-2001
PCBs (ug/L)	
4,4'-DDD	0.0064 U
4,4'-DDE	0.0074 U
4,4'-DDT	0.0072 U
Aldrin	0.0064 U
Dieldrin	0.0069 U
Endosulfan I	0.025 J
Endosulfan II	0.0066 U
Endosulfan sulfate	0.007 U
Endrin	0.0087 U
Endrin aldehyde	0.0064 U
Endrin ketone	0.0066 U
Heptachlor	0.021 J
Heptachlor epoxide	0.0068 U
Methoxychlor	0.0084 U
PCB-1016	0.018 U
PCB-1221	0.094 U
PCB-1232	0.16 U
PCB-1242	0.3 U
PCB-1248	0.22 U
PCB-1254	0.096 U
PCB-1260	0.065 U
Toxaphene	0.23 U
alpha-BHC	0.0059 U
alpha-Chlordane	0.0067 U
beta-BHC	0.067 PG
delta-BHC	0.006 U
gamma-BHC (Lindane)	0.0062 U
gamma-Chlordane	0.0065 U

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INVESTIGATION DERIVED WASTE ANALYTICAL RESUTLS
REMEDIAL INVESTIGATION, CTO-219, SITE 84
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	IR84-IDW
SAMPLE DATE	08-07-2001
METALS (mg/L)	
Aluminum	6.5
Antimony	0.0084 B
Arsenic	0.0044 B
Barium	0.73
Beryllium	0.00054 U
Cadmium	0.00028 U
Calcium	45.1
Chromium	0.0067 B
Cobalt	0.0013 U
Copper	0.0042 U
Iron	28.4
Lead	0.0043
Magnesium	4.1 B
Manganese	0.23
Mercury	0.000069 U
Nickel	0.016 B
Potassium	4.5 B
Selenium	0.0067
Silver	0.0015 U
Sodium	14.4
Thallium	0.01
Vanadium	0.0072 B
Zinc	0.22
CONVENTIONAL	
Corrosivity	6.3
Flashpoint (^{0}F)	>180
Reactive Cyanide (mg/kg)	12 B
Reactive Sulfide (mg/kg)	26 B
Total Dissolved Solids (mg/L)	240
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