Maki Iatridis

From: Linn Havelick [Linn.Havelick@is.mines.edu]
Sent: Friday, September 17, 2004 3:23 PM
To: Phil Stoffey
Cc: david.harmon@state.co.us; Maki Iatridis; Anne Walker
Subject: Data on Bagged Soils

Hi Phil:

Attached is the data table we received from New Horizons. However, I would like to express some of the serious concerns I have regarding the data contained in the table.

1. The gamma meter readings are expressed in ranges rather than specific counts associated with each sample.

2. The lack of specific gamma counts associated with laboratory samples makes any correlation between the field meter readings and laboratory data impossible to achieve.

3. The samples collected, analyzed, and reported in this table are not truly representative of the contents of the bags. For instance, I believe that samples were collected in the field from those soil areas showing the highest gamma readings rather than areas representative of what was loaded into the bags.

4. Large numbers of bags were not sampled in any manner for individual or composite analysis. Therefore, no data whatsoever is available for the great majority of the bags.

5. The ISOCS instrument was operated by Canberra at the CSMRI Site. The ISOCS values shown in the Ra-226 column in the attached table are not the Ra-226 values reported by Canberra. The values in the table were calculated by New Horizons using other Canberra-reported data. CSM has not reviewed the data for quality or correctness.

6. The few samples for which laboratory (Paragon) data are available appear to have no useable correlation with the ISOCS-reported data.

7. CSM plans to do additional sampling of the bagged soils to obtain valid, representative data on the nature of the soils. For the reasons discussed above, I am uncomfortable placing any reliance on the data in the New Horizons table and feel that better data can be obtained through future work.

Linn

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NEW HORIZONS ENVIRONMENTAL CONSULTANTS, INC.

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August 24, 2004
Project #2135

via facsimile transmission

Linn Havelick
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Golden, CO 80401

Re: **Class I Soil Screening Data; Project IH 04-010C;**
CSMRI Environmental Assessment & Response - Phase II

Dear Linn:

Pursuant to your recent request, New Horizons Environmental Consultants, Inc. is providing the attached table which summarizes the screening data for Class I Soils which were excavated at the CSMRI site. Screening data was used to guide excavation control as outlined in the approved *Sampling & Analysis Plan* (SAP) dated March 29, 2004 and the approved *Task Plan* (dated March 31, 2004). Laboratory reports will be forwarded under separate cover.

If you have any questions, feel free to contact me at (303) 647-1055.

Sincerely,

Robert Krumberger
Project Manager

attachment

CSMRI Class I Soil Screening Data

Area	Sample ID	Type Code	Gamma Meter Readings (Range)		Radium (ISOCS)	Radium (Paragon)	Notes
			cpm	cpm	pCi/g	pCi/g	
A	A25	1	> 15,000		3.2		
A	A26	1	> 15,000		1.4		
B	B04	1	> 15,000		12		
B	B2	1	> 15,000		44		
E	E05	2	13,441	31,290	12		
E	E32	2	16,780	36,074	34	88	
E	E014	2	13,987	43,093	16		
E	E014S	2	13,987	43,093	16		
H	H-10-2	2	12,000	450,000	433	950	
H	H-10-2S	2	12,000	450,000	437		
H	H-Exc	2	12,000	450,000	157		
H	H-Gray-3	2	12,000	450,000	251		
H	H-Layer	2	12,000	450,000	463		
H	H-Pink-1	2	12,000	450,000	2.6		
H	H-YC2-3	2	12,000	450,000	60		
H	H-YC3-2	2	12,000	450,000	2.5		
H	H-SDA	2	12,000	450,000	1.5	3.01	
H	H01	1	26,550	27,415	13		
H	H01	1	26,550	27,415	25		Increased count time
H	H01 lc	1	26,550	27,415	24		Increased count time
H	H07	1	12,285	30,157	17	17.4	
H	H07S	1	12,285	30,157		25.8	
H	H13	1	26,803	40,742	91		
H	H52	2	12,000	15,000	8.9		
H	H66	2	12,000	15,000	6.2		
H	H75	2	14,505	18,205	9.2		
H	H85	2	12,843	21,166	5.5		
H	H85 S	2	12,843	21,166	5.5		
H	H97	2	14,103	227,495	7.0		
H	H107-117	2	11,433	15,913	3.0	6.03	
H	H126	2	13,197	28,253	8.9		
H	H137	2	11,902	25,846	13		
H	H158-168	2	10,496	104,110	1.4		
H	H170	2	11,780	64,937	15		
H	H187	2	11,543	68,907	2.4		
H	H190-199	2	15,483	64,796	1.8		
H	H214	2	11,650	55,000	18	39.9	
H	H214S	2	11,650	55,000	16		
H	H226	2	13,660	17,000	15		
H	H236	2	13,524	43,000	21	139	
H	H245	2	15,536	44,092	24		
H	H256	2	16,000	33,467		9.9	
H	H256S	2	16,000	33,467	3.6	9.3	
H	H268	2	11,380	50,886	24		
H	H278	2	12,024	19,700	3.9		
H	H284	2	17,621	91,843	6.4		
H	H301	2	15,330	310,000	5.8		
H	H304	2	15,330	310,000	400		
I	BI17	1	10,709	25,981	2.4	5.27	
I	BI37	1	10,124	27,212	8.4	17	
I	BI42	1	10,130	13,125	1.1	1.76	
I	I11	1	10,709	63,420	79		
I	I12	1	10,709	63,420	80		
I	I16	1	10,709	63,420	36		

CSMRI Class I Soil Screening Data

Area	Sample ID	Type Code	Gamma Meter Readings (Range)		Radium (ISOCS)	Radium (Paragon)	Notes
			cpm	cpm	pCi/g	pCi/g	
I	I18	1	10,709	63,420	0.41		
I	I5	1	10,709	63,420	0.85		
I	Area I Bottom	3			19	34.6	
J	J01	1	10,155	15,431	25		
J	J04	1	10,155	15,431	15		
K	BK08	1	13,128	59,543	27		
K	Area K Bottom	3			17	43.4	
Pits	SDA06Y	3	32,606	537,798	689	1170	Reported as SDA064

Sample Type Codes

1 - Ex situ sample - excavation control using meter readings

2 - In situ sample - excavation control included meter readings and in situ samples

3 - In situ sample - soil still in place