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STATE OF COLORADO

Bill Owens, Governor
Douglas H. Benevento, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
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Phone (303) 692-2000
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Located in Glendale, Colorado

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Laboratory Services Division
8100 Lowry Blvd.
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Colorado Department
of Public Health
and Environment

August 26, 2004

Mr. Asimakis (Maki) Iatrides
Berg Hill Greenleaf & Ruscitti LLP
1712 Pearl Street
Boulder, Colorado 80302

Re: RML-617-01 Creekside Site, Letters discussed at August 24, 2004 meeting.

Dear Mr. Iatrides:

Enclosed are the two letters discussed at the August 24, 2004 meeting. One letter is from New Horizons and the other letter is the response.

If you have any questions with regards to this letter, please call me at 303-692-3452.

Sincerely,

Philip S. Stoffey
Project Manager
Hazardous Materials and Waste Management Division
Colorado Department of Public Health and Environment

Enclosure: letters

Cc: Linn Havelick -CSM
Dave Harmon, Esq. -AGO
Jerry Goad, Esq. -AGO
File 617-01 –3.2

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July 28, 2004

Re: RML #617-01, CSMRI- Creekside- Response to your letter of July 8, 2004

Mr. Jonathon Spencer
President
New Horizons Environmental Consultants. Inc.
6585 s. Wright Street
Littleton, Colorado 80127-4806

Dear Mr.Spencer:

This letter is to acknowledge that the *Characterization Survey Work Plan* (SCWP) dated July 23, 2001 prepared by URS Corporation with later revisions incorporated into the CSWP was reviewed and approved by CDPHE as indicated in your letter.

Please contact me at 303-692-3452 if you have any questions regarding this letter.

Yours Truly,

Philip S. Stoffey
Project Manager
Remediation Program
Hazardous Materials and Waste Management Division

Cf: RML # 617-01 CSMRI - Creekside file # 3

NEW HORIZONS ENVIRONMENTAL CONSULTANTS, INC.

6585 S. WRIGHT STREET LITTLETON, CO 80127-4806
TELEPHONE: (303) 932-2220 FAX: (303) 932-2221

July 8, 2004
Project #2135

via facsimile transmission

Phil Stoffey, Environmental Protection Specialist
Colorado Dept. of Public Health & Environment
4300 Cherry Creek Drive S.
Denver, CO 80246

Re: **CSMRI Phase II Remediation; Golden, CO**

Dear Phil:

As you are aware, New Horizons is currently working with the Colorado School of Mines on the above-referenced project. The 6-acre Site is located on the south side of Clear Creek, east of U.S. Highway 6 in Golden, CO; a chain-link fence restricts access to the Site, except for a small area located south of 12th Street known as the Clay Pits area. In 2002, New Horizons conducted a limited site characterization which served to implement the tasks outlined in the *Characterization Survey Work Plan* (CSWP) dated July 23, 2001 prepared by URS Corporation.

In accordance with our recent conversation, New Horizons would appreciate you providing us with your professional opinion regarding the validity of the methodologies which were used 1) to characterize the nature and extent of contamination and 2) to calculate soil volume estimates at the CSMRI site. (As you recall, both the CSWP and these methodologies were previously reviewed and approved by CDPHE.) An overview of these methodologies is provided below.

Characterization

The surface gamma survey at the CSMRI site consisted of dividing the site into an approximate 3.3-meter *x* 3.3-meter grid and recording a 10-second gamma reading inside each grid. Each survey coordinate was recorded using a global positioning system (GPS) unit. Additional readings were collected in areas that exhibited elevated gamma readings to better define the extent of the anomaly. If the resulting data indicated areas of incomplete coverage, additional points were surveyed to achieve the desired survey density. A total of 3,282 survey points were measured during the surface gamma survey. Data exported from the GPS software was subsequently combined with the survey data to produce detailed site maps showing surface gamma readings using Surfer® 8 contouring and 3D surface mapping software.

To evaluate the areas of elevated gamma readings, a geostatistics package provided with the Surfer software was utilized. Kriging was selected for representing the gamma survey because it is a flexible gridding method that typically produces vivid visual maps of data trends. The kriging option chosen for the analysis was universal (or trend) kriging using a linear variogram model. Block kriging was selected to limit the amount of weight given to single point information.

In addition to the gamma survey, surface soil samples were collected at 165 locations in accordance with the approved SAP and using guidance provided in the Multi-Agency Radiation Site Survey & Investigation Manual (MARSSIM). The Site was divided into 12 sections with up to 10 samples collected from each section. Once the boundaries were established, sample locations were selected by randomly placing markers in the area. Additional samples were collected in areas where the gamma survey indicated elevated gamma readings.

Following the surface investigation, a combination of 36 trenches/test pits and 28 borings were used to investigate the subsurface soils at the Site. The test pit subsurface investigation primarily focused on those areas where drains or pipelines had previously penetrated building flooring and other visually suspect areas identified following concrete and asphalt removal. Borings were primarily focused in those areas with elevated surface gamma readings. In each case, subsurface soil samples were collected from soil layers exhibiting elevated gamma readings.

Volume Estimates

Based on the results of the block kriging and analysis of the surface and subsurface soil samples and visual observation, an estimate of the volume of Class 1 / Class 2 soils was made. The volume was calculated by drawing a rectangular footprint around those areas exhibiting either elevated surface gamma readings or elevated surface sample activity and multiplying the area by the appropriate average depth of elevated material as determined by the subsurface sample results.

We appreciate your interest in this project and look forward to working with you and the School to complete this project in a timely manner.

If you have any questions, please feel free to contact me at (303) 932-2220.

Sincerely,

Jonathan Spencer, P.E., DEE
President / Principal Engineer

AUG 3 0 2004