# STATE OF COLORADO

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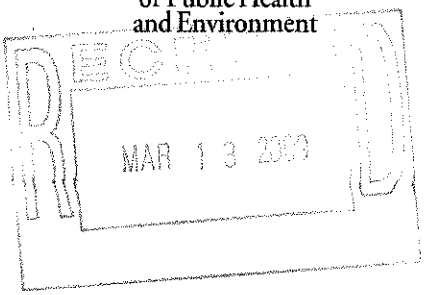


March 10, 2009

Mr. Paul L. Casey, P.E.
Casey Resources, Inc.
4890 Kipling Street
Wheat Ridge, Colorado 80033

Re: Comments on Draft Work Plan for Valmont Butte Property, 3000 North 63rd Street, Boulder, Colorado

Dear Mr. Casey,

On March 2, a draft work plan and schedule was submitted for proposed work at the Valmont Butte Site in Boulder, Colorado. Edgar Ethington of the Radiation Control Division and myself have had the opportunity to go over the proposed work plan and provide the following comments for consideration with respect to Radiation Control Division and the Voluntary Cleanup Program's concerns.

Work Plan Identification and Confirmation of Soils Requiring Long Term Management Valmont Butte Property 3000 North 63rd Street Boulder, Colorado and dated March 2, 2009.

**Preliminary Voluntary Cleanup Schedule**

While the schedule proposed does not meet the most recent extension of the Radioactive Materials License, CDPHE understands that certain tasks take longer than others. Your proposed work includes further more detailed investigations as the areal boundaries of site related contamination above a commercial risk use scenario. CDPHE can proceed along with the proposed schedule and will update one further extension in December 2009 as long as the timeline schedule as shown is being met and that progress is ongoing. That being said, if work is not progressing, the current deadline of Jan 2010 will be enforced.

## §3.1 Scope of Work

Is the commercial / recreational use of this property appropriate?

For a commercial scenario, a lead concentration of 800 ppm or less is ok. Arsenic needs to be less than 1.6 ppm, unless a site specific background study is conducted and an alternative arsenic number is proposed.

A screening level of 60 uR/hr was proposed in the work plan. The regulation based screening number for radiation dose needs to be 48 uR/hour or less to achieve an annual dose rate of 100 mRem.

Additionally, commercial development on the property is fine as long as there are no proposed buildings or structures situated on the capped impoundments. A parking lot situated on the impoundments would be appropriate.

## §3.3 Sample locations

Concerning the areas of additional characterization where increased dose or contamination are known: what is the justification for a sampling grid of 50 feet? MARSIM uses a 10 meter grid for evaluation.

What is the justification for increasing the sampling grid in the areas beyond the tailings impoundment? The probability that an area of contamination will be missed increases with this technique.

## §3.4 Field Screening Procedures

You will need to demonstrate a good correlation between the XRF measurements and laboratory measurements. $R>0.8$. Both lead and arsenic will need to be done.

If you are going to use the Ludlum Model 3 to screen the site quantitatively, then you will need to calibrate the system to radium and check the site with an energy-sensitive detector and multichannel analyzer for interfering radiation.

## §3.4.1 XR F Screening

I am very interested in the comparison of the in-the-field screening results and the processed and controlled geometry measurements. I have found the latter to have much more reliable results when correlated with laboratory analysis. In-situ measurements with the XRF have not been very reliable.

It was inferred in the work plan that the correlation test between XRF and Laboratory measurements will be on a composite sample run on XRF compared to that same sample or a split of that composite sent to the laboratory. That does not test for the correlation for an insitu-XRF sample and an associated laboratory sample. If an insitu-XRF sample is run, a grab point sample from that spot should be sent in for confirmatory laboratory data. This should be done at a number of locations that would statistically show satisfactory correlation between the two data sets. Twelve is the minimum statistical number, if the population has a simple normal distribution.

In whatever manner that XRF is used and associated laboratory confirmation, XRF and Lab samples for comparison need to from the same sample aliquot. A grab sample for XRF analysis can not be correlated to a composite sample with laboratory analysis, even if the single XRF point is one of many points in that composite sample.

Composite samples will be one kilogram or more passing a ¼ inch screen.

Start with a 10% laboratory comparison. You also need blanks, dupes, and spikes (one in 20) each, along with the standard laboratory QC. If the correlation is good, then the laboratory percentage can be reduced.

**§3.4.1 Radiation Screening**

The radiations detection system will be calibrated and checked before starting the survey.

Justify background locations' physical similarity to the survey site.

Why not use a GPS & data logger with the radiation detector system to document the survey? It is easy to produce a map and is more reliable than visual spotting.

**§3.5 Surface Soil Sampling**

What is the justification for an initial soil sample only of the first half inch of soil? Typically, the first six inches are sampled. Samples will be at least 1 kilogram screened through a ¼ inch screen.

**§3.9 Decontamination**

Is the Arvada water treatment facility permitted to take the water described? Why isn't the Boulder treatment facility being used?

If you have any questions, please contact myself at (303) 692-3311 or Edgar Ethington at (303) 692-3438.

Sincerely,

Mark Rudolph
Voluntary Cleanup and Brownfields Program

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| Cc: | Elizabeth Tempkin, Esq. | TWHL |
| | Edgar Ethington | CDPHE |
| | Terry McGowan | Casey Resources, Inc |
| | Site File | Radiation Control -Valmont Butte |