

Ground-Water Monitoring Of Lower Los Alamos Canyon  
Meeting Notes February 19, 1993

ITEM

1 AIP/: The following concerns were presented:  
NMED

o Perched alluvial monitoring

: lack of wells below Guaje-Los Alamos confluence

. Source contamination has been associated with Rendija, Barrancas, Guaje and Los Alamos Canyons

LANL: Seeps at mouth of Los Alamos Canyon near Otowi bridge suffice for monitoring of perched alluvial system. These seeps have been sampled along with surface water samples.

AIP/: What is the suspected source for these seeps?

LANL: The alluvial ground water.

AIP/: It was noted that surface water samples versus NMED alluvial water samples do not necessarily have the same water chemistry. PC0-1, an alluvial ground water environmental surveillance (ES) sampling station, was compared to a surface sampling location, Pajarito ES station.

LANL: Geochemically, active versus inactive properties may cause variation. Also, seasonality should be considered.

2 AIP/: : lack of wells below Bayo-Los Alamos confluence  
NMED

. Source contamination has been associated with Bayo and Los Alamos Canyons

NMED has visited the locations of the totavi alluvial monitoring wells. The wells appear inadequate to monitor the alluvial ground water as they are located far away from the stream channel.

BIA: These are UST investigation monitoring wells. The samples from these wells resemble sewage water.



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**ITEM**

- 3 AIP/:       o Perched zone monitoring  
                  : lack of perched zone delineation  
                  : lack of wells in perched zones

LANL:       What degree of delineation is adequate (one mile, quarter mile)? What are the goals?  
From an environmental restoration approach there is a necessity for characterization.

AIP/:       We will better define these goals for DOE/LANL in a subsequent communication. (See Attachment A. to this letter)  
NMED

- 4           o "Main" aquifer monitoring  
                  : lack of monitoring wells, EPA recommended.

LANL:       LA-1 just penetrates the main aquifer and may serve as a monitoring well. What zones should be screened?

AIP/:       The uppermost portion of the aquifer.  
NMED       An overhead was shown of a typical EPA recommended monitoring well. Small diameter (2-4 in) with screen lengths ranging from 15 to 25 feet.

LANL:       Why are there concerns for monitoring in the main aquifer?

- 5 AIP/:       o Los Alamos - Guaje municipal production wells  
                  : improper cementation within annulus of wellbore may not provide adequate isolation of individual zones of saturation.

One concern is that in LA-1, LA-2 and LA-3 the well records indicate that improper cementation within the annulus of the wellbore may not provide adequate isolation of individual zones of saturation.

LANL:       State engineer has already approved plugging of these wells. What are your concerns?

AIP/:       Partly from the past; monitoring wells should be installed downgradient from those production wells that contain gravel pack around the annulus of the wellbore.  
NMED

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LANL: LA-1 and LA-3 are to be plugged. LA-2 will be used for road construction and then to be turned over to San Ildefonso.

- 6 AIP/:  
NMED      o Cs(137) detection in LA-2.

There apparently was no intention to resample. A sample should be collected and sent to an appropriate lab with adequate detection limits.

- 7 AIP/:      o Hydrologic connection between the different zones of saturation undetermined.

LANL: Discussed Cs(137) detection limit methodology and plans to lower detection limits.

AIP/: Noted that the State lab is also unable to meet appropriate Cs detection limits.

LANL: Discussed OU 1049 (canyons) organization.

Presented proposed water-monitoring at OU 1098 (TA-41, TA-2).

## ATTACHMENT A

As a result of the 2/19/93 meeting, NMED's AIP staff was requested to specify how it would propose to adequately monitor the perched-alluvial aquifers to ensure that contaminants are not leaving the laboratory boundary. It must be emphasized that these are purely technical recommendations made by Agreement in Principle staff and are not associated with any regulatory components of the Environment Department's Hazardous and Radioactive Materials Bureau. Listed below are recommended locations:

**Los Alamos Canyon, downstream of Pueblo-Los Alamos Canyon confluence near Lab boundary (Fig. 1):**

**Los Alamos Canyon, downstream of Guaje-Los Alamos Canyon confluence (Fig. 1):**

**Ancho Canyon, downstream of the confluence above Ancho Spring (Fig. 1):**

Recommended transects across the perched-alluvial systems are shown in figure 1. It is recommended that at least three wells be installed per transect. Recommended methodology can be found in the Resource Conservation and Recovery Act, Technical Enforcement Guidance Document (TEGD). Paired wells may be necessary if the depth of the aquifer can not be fully monitored within TEGD recommended screen lengths. The ultimate decision for the siting of monitoring wells on San Ildefonso property rests with the Pueblo and access to these wells would be on a Pueblo permission-only basis.

If saturated conditions are not encountered upon completion of one monitoring well in the perched-alluvial aquifer downstream of the Pueblo-Los Alamos Canyon confluence, it is recommended that monitoring wells be drilled into the perched basalt-conglomerate aquifer. Also, it is suggested that three monitoring wells be installed in Ancho Canyon (Fig. 1) contingent upon completion of one monitoring well encountering saturated conditions. If saturated conditions are encountered, two additional wells would be installed transversely across the stream channel.

The installation of the above named alluvial monitoring-wells will increase our confidence that contaminants are not leaving the Laboratory boundary via the perched-alluvial aquifer system and provide an "early warning" system for this pathway. A future recommendation will be for a phased ground-water monitoring design, installation and sampling program to be implemented at LANL to provide a sufficient regional and comprehensive ground-water monitoring system.

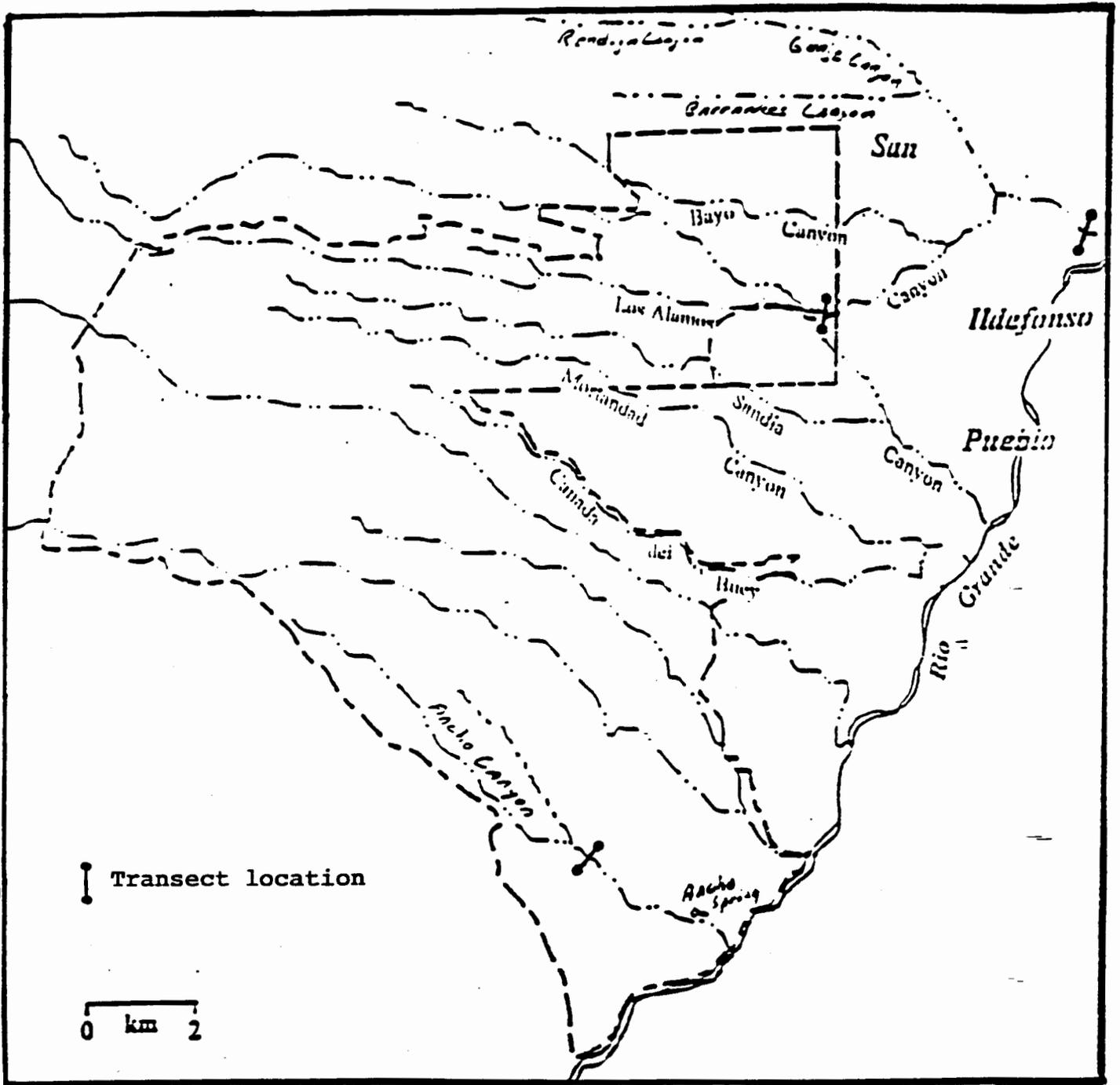


Figure 1. Monitoring well transect locations.

Amendment to summary of 2/19/93 meeting notes: Ground-Water Monitoring Issues in Lower Los Alamos Canyon.

ITEM

- 4           LANL           LA-1A just penetrates the main aquifer and may serve as a monitoring well. What zones should be screened?
- 6           AIP/:           o Hydrologic connection between the different zones of saturation undetermined.
- 7           AIP/:           o Cs(137) detection in LA-2.  
          NMED

There apparently was no intention to resample. A sample should be collected and sent to an appropriate lab with adequate detection limits.