



April 16, 1982

It is ANL's professional opinion that the points listed as potential issues could be raised during the planning and implementation of the proposed cleanup at Acid Canyon. Therefore, it is in the interests of the Program to resolve these potential points of contention at the earliest possible date so that the remedial action can proceed in a timely fashion.

As discussed in a phone conversation (Jake Alexander, ORO and Bob Vocke, ANL), we shall proceed to prepare a preliminary draft of an Environmental Assessment of the proposed cleanup at Acid Canyon. We recognize that it is desirable to complete the remedial action this coming Fall. Given the time requirements for review by ECD and for issuance of a record of decision by ECD, we agree that it is prudent to have a draft EA available for submission to ECD should, after reviewing the ADM, they advise that an EA will be necessary. This can be done at moderate cost to the Program (< \$10 K) because of the small extent of the action, our previous experience with producing a draft EA for Bayo Canyon, and the environmental data base that has been and will be provided by LANL. Additionally, if it is decided that a single EA should be published for the Bayo and Acid Canyon actions, having preliminary drafts will facilitate production of a combined EA. We will be able to initiate production of a preliminary draft as soon as we receive a copy of the draft alternatives environmental analysis to be provided by LANL later this month. We should be able to produce a preliminary draft within four weeks of receipt of the LANL analysis of the Acid Canyon alternatives.

It is our recommendation to ORO that the cover letter accompanying the ADM indicates that an EA level of NEPA documentation be prepared to support the action and resolve possible points of contention over environmental matters. Potential consequences from the action are not clearly non-significant without further analysis beyond mere description of what is to be done. Thus, under current DOE NEPA Compliance Guidelines (see Working Paper forwarded to R. L. Rudolph by Bob Vocke, 13 April 1982) an EA is the appropriate level of documentation. Further analyses of the Acid and Pueblo Canyons have been and are being carried out. An EA will focus these analyses onto the proposed action and provide resolution of potential issues so that the cleanup can proceed in a timely manner.

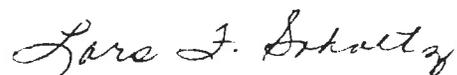
Again, ANL emphasizes that determinations of NEPA documentation must be obtained in the immediate future if documentation is to be completed and a record of decision reached by October. It is our estimate that a record of decision will be issued about 4 to 5 months after we submit a preliminary draft EA to ORO (see Working Paper referenced above). Thus, in order to meet these time constraints we must have sufficient lead time to prepare a preliminary draft by 1 June 1982 at the latest.

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If you have any questions or comments, please contact me at the above number.

Sincerely,

A handwritten signature in cursive script that reads "Lars F. Sohlt".

Lars F. Sohlt  
Division of Environmental Impact Studies

LFS:maz

cc: D. M. Gardiner  
J. M. Peterson  
C. J. Roberts  
R. W. Vocke

SUBJECT: Description of Proposed Remedial Action at  
Acid/Middle Pueblo Canyon Formerly Utilized Site

### Setting

Acid Canyon drains into Pueblo Canyon in Los Alamos County, north-central New Mexico (Figures 1-3). The formerly utilized site is situated at the head of the south fork of Acid Canyon, adjacent to the town of Los Alamos (Figure 2). The area is located approximately 40 km (25 mi) northwest of Santa Fe and 100 km (60 mi) north-northeast of Albuquerque. Several smaller towns and Native American pueblos exist within a 100-km radius of the site.

The boundary of the formerly utilized site encompasses approximately 1.0 ha (2.5 acres) (Figure 4). Most of this area is located on the mesa between Canyon Road and the southern rim of the south fork of Acid Canyon. The remaining area includes the cliff face, streambed, and stream banks of the south fork of Acid Canyon. The formerly utilized site area is bounded by a residential subdivision to the north and by the townsite of Los Alamos to the south.

Current uses of Acid/Pueblo Canyon include picnicking, trail riding, hiking, firearms practice, woodcutting, and pinyon nut gathering. Projected future use of the Acid/Pueblo Canyon area is as a recreation area under county ownership and management (Taylor 1982).

### Background

Untreated, liquid radioactive wastes were discharged into Acid Canyon starting in late 1943 or early 1944 and continued to be discharged through April 1951 (Ford, Bacon & Davis Utah Inc. 1981; Los Alamos Natl. Lab. 1981). Drainage from Acid Canyon flows into Pueblo Canyon and ultimately into lower Los Alamos Canyon and the Rio Grande (Figure 3). The majority of the contamination has been deposited in lower Pueblo Canyon, although contamination has been found throughout the drainage (Los Alamos Natl. Lab. 1981, Table VIII).

The waste effluents resulted from nuclear-weapons-development projects at Los Alamos that had been initiated by the Manhattan Engineer District (MED) and continued by the Atomic Energy Commission (AEC). The effluents contained radioactive isotopes from the research and processing operations. The discharges included radioisotopes of strontium, cesium, uranium, plutonium, americium, and tritium. A radioactive-waste-treatment plant was constructed on the rim of Acid Canyon and became operational in June 1951. The principal structures comprising the plant included a vehicle-decontamination facility and the waste-treatment plant (Figure 4).

Decommissioning and decontamination of the waste-treatment plant area began in October 1966. All contaminated building materials were disposed at the radioactive waste-burial site located at Los Alamos National Laboratory

(LANL). Contaminated sewer pipe and soil from the vehicle-decontamination facility were also disposed at LANL. Simultaneously, portions of Acid Canyon were decontaminated. Contaminated tuff and rock were removed from the cliff face, and some contaminated rock, soil, and sediment were removed from the canyon floor. By July 1967, the areas around the former waste-treatment plant site and in Acid Canyon were considered sufficiently free of contamination to allow unrestricted access. After decommissioning, the land was transferred from the U.S. Government to Los Alamos County by quit-claim deed on July 1, 1967. In subsequent years, the site of the waste-treatment plant has been covered with 2 to 3 m of uncontaminated fill.

It was recognized at the time of decommissioning that some radioactive materials probably remained at the site. Consequently, several followup radiological surveys were conducted over the years.

Monitoring programs were conducted by LANL personnel in 1945, 1946, and 1947 to study the untreated effluents that were discharged into Acid and Pueblo canyons as well as other canyons (Los Alamos Natl. Lab 1981). The results of these surveys showed that radionuclide concentrations decreased downgradient as the radionuclides were adsorbed or ion-exchanged with sediments in the stream channel and subsequently dispersed by natural runoff.

In 1976, the U.S. Energy Research and Development Administration identified the Acid/Pueblo Canyon site as an MED/AEC site. Consequently, LANL personnel began a resurvey for possible residual contamination. The radiological survey was completed in 1977, and the final report on the survey results was issued in May 1981 (Los Alamos Natl. Lab. 1981). The results of this survey indicated that the Acid/Pueblo Canyon site should be considered for remedial action under the U.S. Department of Energy's Formerly Utilized Site Remedial Action Program (FUSRAP).

Formal criteria have not yet been established for FUSRAP. Currently, a committee is reviewing criteria for use in the FUSRAP program. The areas of the Acid/Pueblo Canyon site to be considered for remedial action have been determined for this report using contaminated soil cleanup criteria adopted from Healy (1977) and Healy et al. (1979). The adopted criteria include 100 pCi/g for plutonium-239, 100 pCi/g for strontium-90, 80 pCi/g for cesium-137, and 40 pCi/g for uranium (Los Alamos National Lab. 1982, Keller 1982). These criteria were derived by assuming a dose of  $\leq 500$  mrem/yr received from near-surface contamination via external exposure, inhalation of contaminated air and particles, and ingestion of contaminated food and water (Healy et al. 1979). Healy et al. believe that these criteria are conservatively low.

#### Description of Proposed Action

The 1977 radiological survey identified radioactive contamination that remained above background levels at the site of the former waste-treatment facility and in the drainage of Acid and middle Pueblo Canyons (Los Alamos Natl. Lab. 1982, Table VIII). However, the only samples contaminated above cleanup criteria were found on the mesa top and in the drainage of Acid Canyon. The samples in the drainage of Acid Canyon are situated such that the only reasonable pathways of exposure are via external sources and inhalation. Under these conditions, received doses would not approach 500 mrem/yr. Therefore, the drainage of Acid Canyon was not considered to require cleanup.

The proposed action is to clean up the contamination on top of the mesa (Figure 4); the area is accessible, and contaminated materials will be removed and transported to a disposal site. Approximately 30 cm (1 ft) of contaminated materials will be removed from two areas on the top of the mesa (Figure 4) and trucked to the LANL waste-disposal site. An estimated 230 m<sup>3</sup> (300 yd<sup>3</sup>) of bulk materials will be produced.

The excavated and disrupted areas of the site will be allowed to stabilize and revegetate naturally. The rugged terrain and shallow soils make active rehabilitation impractical.

No permanent fencing or periodic maintenance will be required. Radiological monitoring will not be required except before, during, and immediately after completion of the remedial actions to ensure that all of the above-guideline contamination was removed. A crew of six could complete the remedial actions in 10 to 12 days (Ford, Bacon & Davis Utah Inc. 1981). After remedial actions are completed, the DOE will certify the site for unrestricted use.

#### Potential Issues

Several issues may arise during the course of the DOE action in regard to this site:

1. Adequacy of the radiological survey to establish an acceptably low likelihood that there are areas that exceed the remedial-action criteria levels.
2. Sufficiency of the remedial-action radiological criteria for the proposed action to protect public health and welfare under current conditions or in the event that further development occurs within the canyon.
3. Possible impact to the endangered peregrine falcons that nest on the north wall of Pueblo Canyon, several kilometers to the east of the formerly utilized site.
4. Changes in land use and property values resulting from the remedial action.
5. Public acceptance of the proposed remedial action plan.
6. Potential conflict of remedial action activities with current activities in the area.

These are considered the principal issues that may arise with implementation of the Acid/Middle Pueblo Canyon remedial action.

## REFERENCES

- Ford, Bacon & Davis Utah Inc. 1981. Formerly Utilized MED/AEC Sites Remedial Action Program. Engineering Evaluation of the Acid/Pueblo Canyon Site, Los Alamos, New Mexico. Final Report, FBDU 409-32. Salt Lake City, UT.
- Healy, J.W. 1977. An Examination of the Pathways from Soil to Man for Plutonium. Report No. LA-6741-MS. Los Alamos Scientific Laboratory. Los Alamos, NM.
- Healy, J.W., J.C. Rodgers, and C.L. Wienke. 1979. Interim Soil Limits for D&D Projects. LA-UR-79-1865-Rev. Los Alamos Scientific Laboratory, Los Alamos, NM.
- Keller, E.L. 1982. Criteria for Remedial Action at Acid/Pueblo and Bayo Canyons. Memorandum to R.L. Rudolph, Bechtel National, Inc., from Technical Services Division, Oak Ridge Operations, U.S. Department of Energy, Oak Ridge, TN. 17 March 1982.
- Los Alamos National Laboratory. 1981. Formerly Utilized MED/AEC Sites Remedial Action Program. Radiological Survey of the Site of a Former Radioactive Liquid Waste Treatment Plant (TA-45) and the Effluent Receiving Areas of Acid, Pueblo, and Los Alamos Canyons, Los Alamos, New Mexico. Final Report, DOE/EV-0005/30; LA-8890-ENV. Prepared for the U.S. Department of Energy.
- Los Alamos National Laboratory. 1982. Formerly Utilized MED/AEC Sites Remedial Action Program. Environmental Evaluation of the Acid/Middle Pueblo Canyon Alternatives. Draft Report, December 1981. Los Alamos, NM.
- Taylor, R.. 1982. Memorandum to William Crismon, Los Alamos Area Office, U.S. Department of Energy, from Chairman, Los Alamos County Board, Los Alamos, NM. 12 January 1982.

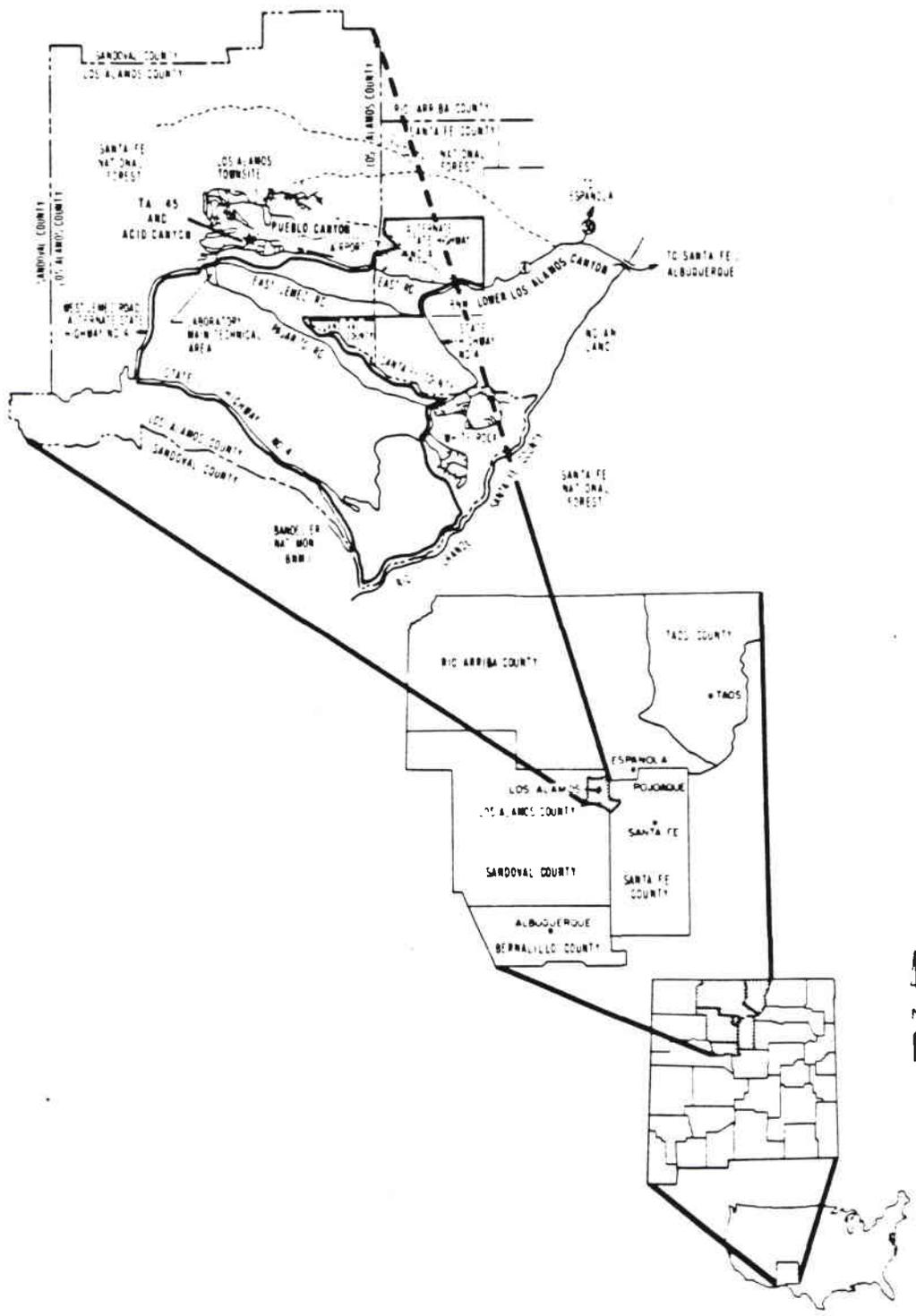


Figure 1. Regional Setting for Acid/Middle Pueblo Canyon Site. Source: Los Alamos National Laboratory 1981.



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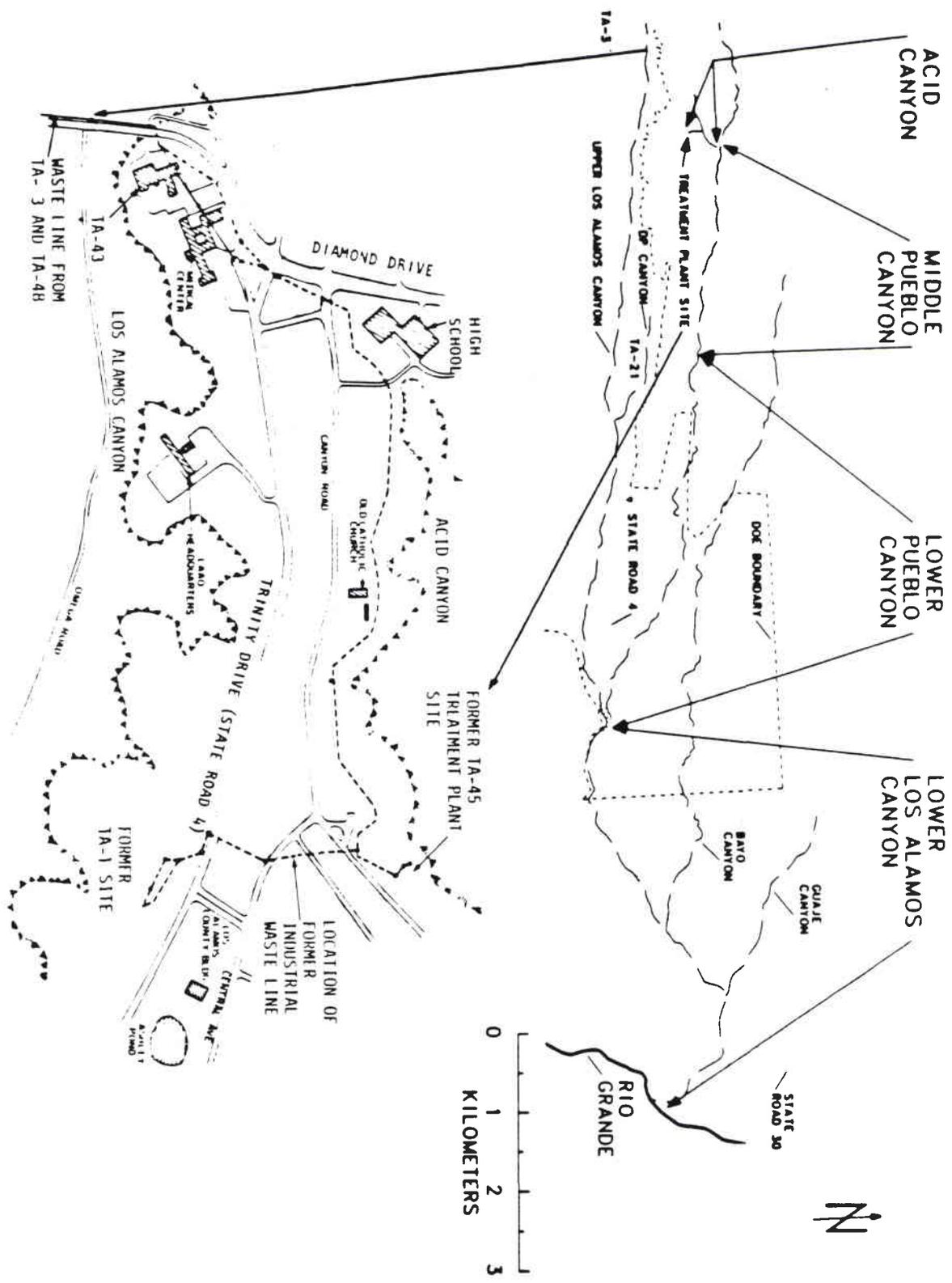


Figure 3. Former Treatment Plant Site in Relation to Effluent-Receiving Canyons.  
 Source: Los Alamos National Laboratory (1981).

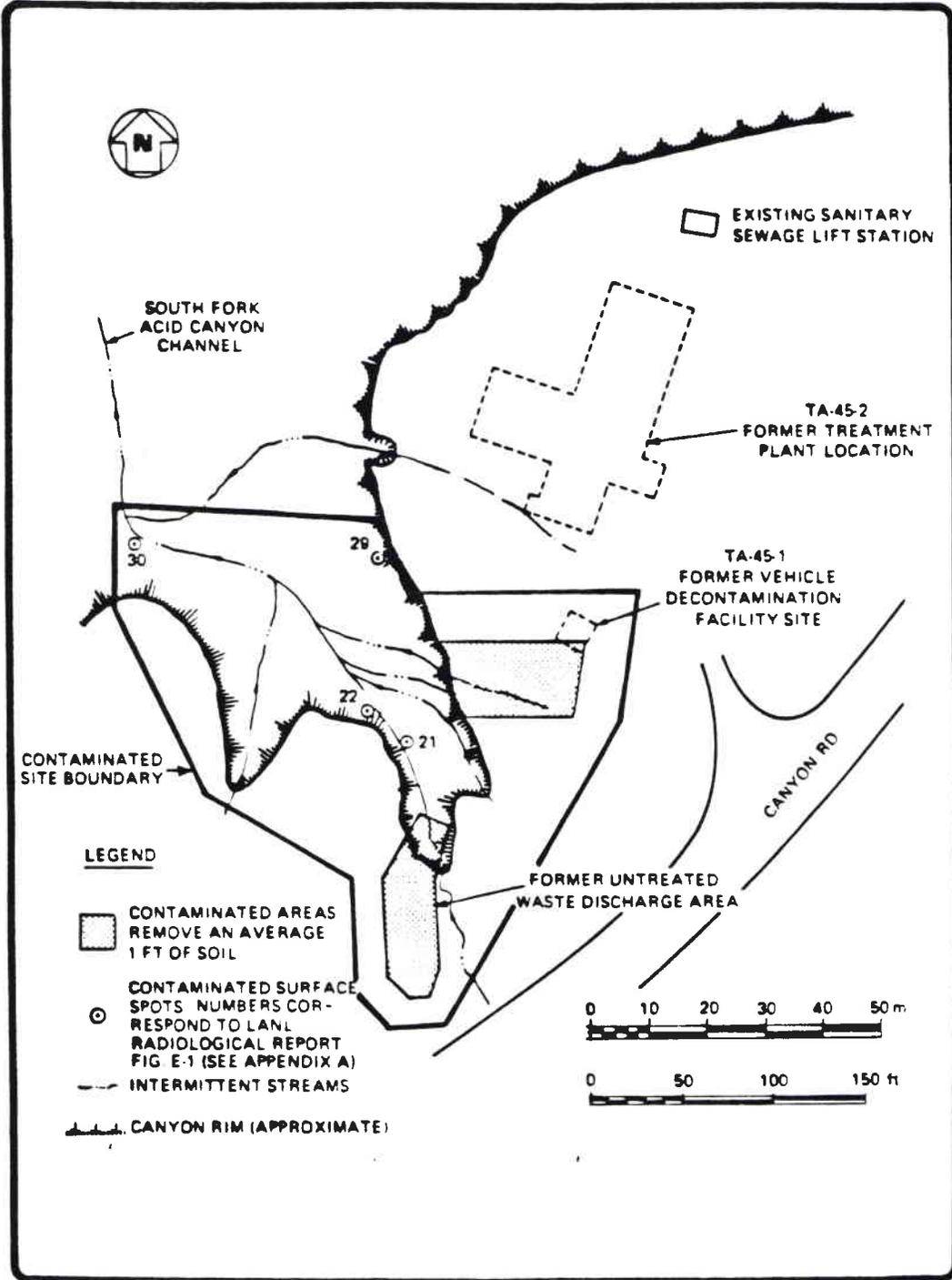


Figure 4. Designated Cleanup Areas of the Acid Canyon Site. Source: Ford, Bacon & Davis Utah Inc. (1981).