Los Alamos
NATIONAL LABORATORY

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Date: July 7, 1998
In Reply Refer To: ESH-18/WQ&H:98-0227
Mail Stop: K497
Telephone: (505) 665-1859

3/1082/16

HSWA LANL

Ms. Phyllis Bustamante
Ground Water Protection Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502

Mr. Glenn Saums
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502

SUBJECT: ADDENDUM TO NOTICES OF INTENT TO DISCHARGE (NOI). WELL DEVELOPMENT WATER AND PURGE WATER ASSOCIATED WITH THE ENVIRONMENTAL RESTORATION PROGRAM'S PILOT CANYON STUDY

Dear Ms. Bustamante and Mr. Saums:

Los Alamos National Laboratory's Environmental Restoration Program wishes to add borehole R-25 to the Pilot Canyon Study NOI dated April 3, 1996 (enclosed). This well is part of the Laboratory's Hydrogeologic Workplan. The additional characterization borehole is to be located on the mesa top above Canon de Valle at Technical Area (TA) 16 (map enclosed). The depth for this observation borehole is planned to be 1550 ft, but the actual total depth may be adjusted as the investigation progresses to ensure that the characterization objectives are adequately addressed. Discharge volumes for the R-25 characterization borehole is expected to be approximately 1000 gallons per day, 3 days per week. A total of 40 discharge days are expected during the project for a total estimated discharge of 40,000 gallons. The proposed method of discharge is to the mesa top by means of using a water sprinkler system in order to disperse the water and prevent any runoff. The proposed discharge area has been reviewed by Environmental Restoration staff familiar with the area and determined to have no SWMU's or PRS's that could be impacted by this discharge. All requirements specified in the original NOI for purge/development water associated with these projects will be adhered to. All discharges will be performed in a manner that will eliminate any impact to a stream course, including BMP's as necessary.

Please call Harvey Decker (665-2014) or Steve Veenis (665-9735) of the Laboratories Water Quality and Hydrology Group (ESH-18) if you need any additional information.

Sincerely,

Steven Rae
Water Quality and Hydrology Group

6110

SR:HD/em

Cy: D. Erickson, ESH Division Director, wo/enc., MS K491
C. Jacquez, ESH-18, wo/enc., MS K497
M. Saladen, ESH-18, w/enc., MS K497
H. Decker, ESH-18, w/enc., MS K497
A. Crowder, ERM Golder, w/enc., MS M327
S. Yanicak, NMED DOE OB, w/enc., MS J993
J. Kieling, NMED/HRMB, w/enc., Santa Fe
P. Longmire, EES-5, w/enc., MS J534
A. Pratt, ER/ FPL, w/enc., MS J521
T. George, EM-ER, w/enc., MS M992
S. Veenis, ESH-18, w/enc., MS K497
ESH-18 NOI file, w/enc,.
WQ&H File, w/enc., MS K497
CIC-10, w/enc., MS A150

JUL 1998
RECEIVED

NOTICE OF INTENT

1. **Name and address of facility making the discharge.**

Los Alamos National Laboratory
P.O. Box 1663
Los Alamos, New Mexico 87545
Attn: Allyn Pratt, ER/FPL, MS J521

2. **Location of the discharge. (in Township, Range and section, if Available).**

The R-25 characterization borehole is to be constructed at Technical Area (TA)-16 east of MDA-P on the mesa top (see enclosed map). This well is part of the Laboratory's Hydrogeologic Workplan.

3. **The means of discharge. (to lagoon, Flowing stream, Water course, Arroyo, Septic tank, other).**

Discharge will be to the ground on the mesa top near the R-25 characterization borehole from well development, purging and during monitoring and sample collection activities. Discharge will be by means of a water sprinkler system in order to better disperse the discharge and to prevent any runoff. Additional Best Management Practices (BMP's) will also be implemented as necessary in order to prevent runoff.

4. **The estimated concentration of contaminants (if any) in the discharge.**

Prior to any discharge, field screening during drilling and/or purging activities will be performed to ensure that water discharged is free of contamination. If field screening instruments, or professional judgement (stains, odors, etc.) indicate that contaminants may be in the water, the liquid will not be discharged to the ground, but containerized and treated a suspect hazardous, radioactive or mixed waste. Surface waters in nearby Canon del Valle show concentrations of some constituents at levels above background . Two constituents, barium (2-3 ppm) and the high explosive RDX (>100 ppb) have been found at levels above the New Mexico maximum concentration level (MCL). Water collected from nearby springs has also been analyzed and found to contain barium, boron, HE and solvents at concentrations above background. chlorine, sodium, and manganese have also been found to be above regional background for spring waters.

5. **The type of operation from which the discharge is derived**

R-25 is part of the on-going study undertaken by Los Alamos National Laboratory in order to better understand the geologic and hydrologic characteristics of the vadose zone and regional aquifer.

6. **The estimated flow to be discharged per day.**

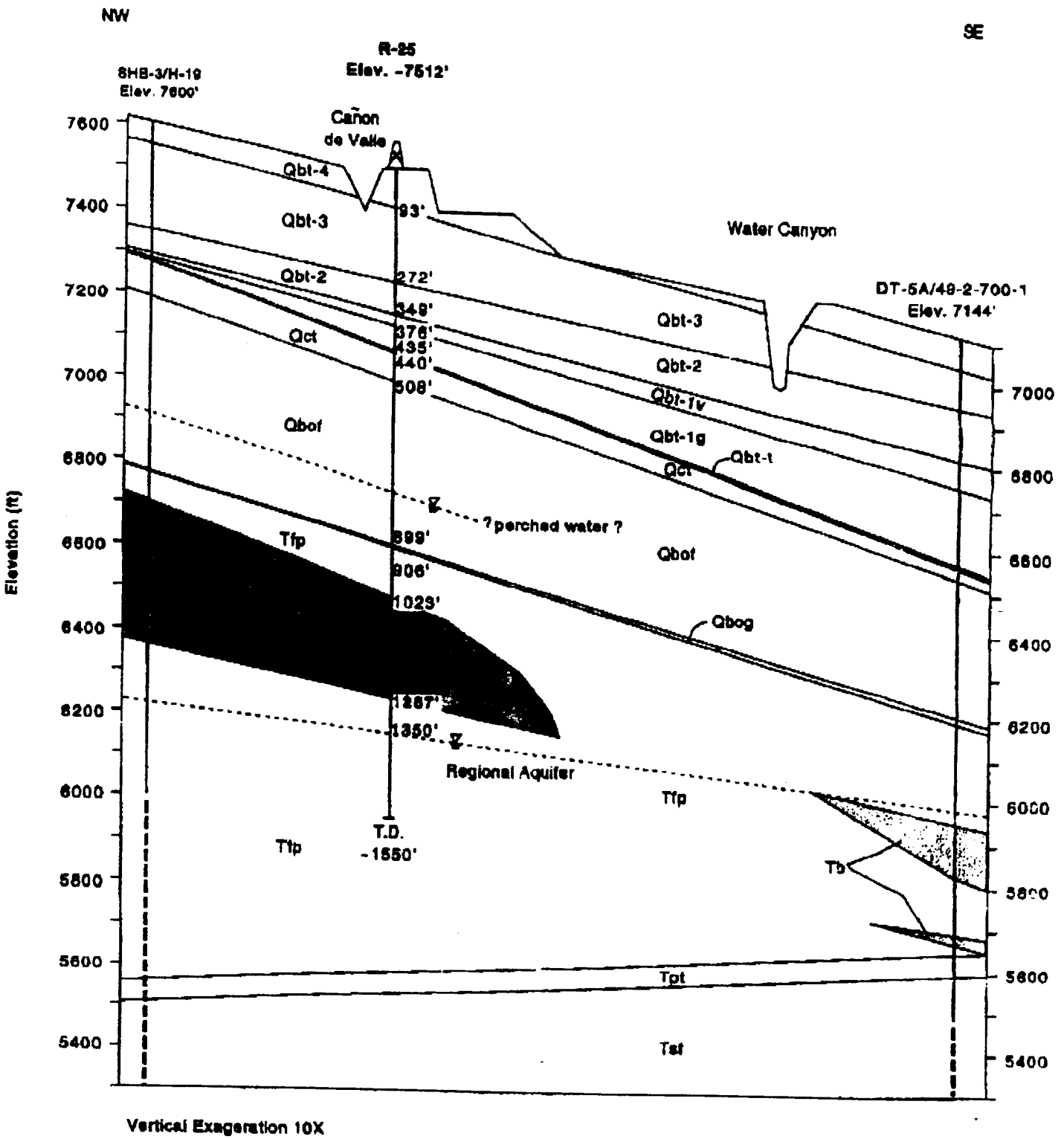
The estimated discharge amount is 1000 gallons per day three days per week. A total of forty discharge days is expected during this project.

7. **The estimated depth to Ground-Water (if available)**

Current information indicates that the regional aquifer exists at 1350 feet below the mesa top.

Signed: _____ for Steven Rae Date: 7/8/98

Group Leader, ESH-18


NW
SE
SHB-3/H-19
Elev. 7600'
R-25
Elev. -7512'
Cañon
de Valle
Water Canyon
DT-5A/49-2-700-1
Elev. 7144'
Elevation (ft)
7600
7400
7200
7000
6800
6600
6400
6200
6000
5800
5600
5400
Qbt-4
Qbt-3
Qbt-2
Qct
Qbof
Tfp
Qbt-1v
Qbt-1g
Qbt-t
Qbog
Tb
Tpt
Tsf
93'
272'
348'
376'
435'
440'
508'
899'
906'
1023'
1267'
1350'
T.D.
-1550'
?perched water ?
Regional Aquifer
Vertical Exageration 10X

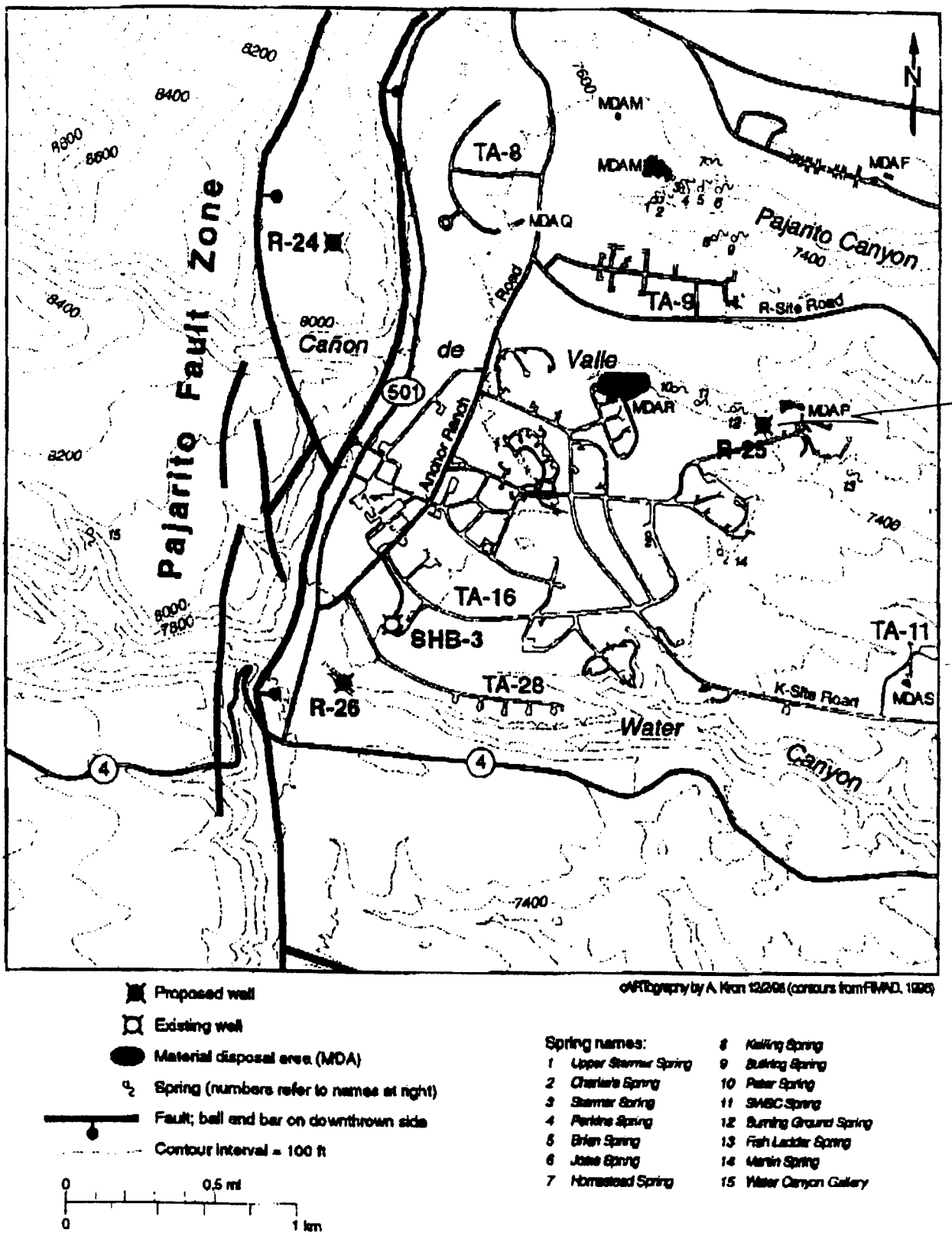


Figure 1. Map of southwest corner of Laboratory showing location of R-25 and other proposed regional aquifer wells relative to the Pajarito Fault zone and local springs.

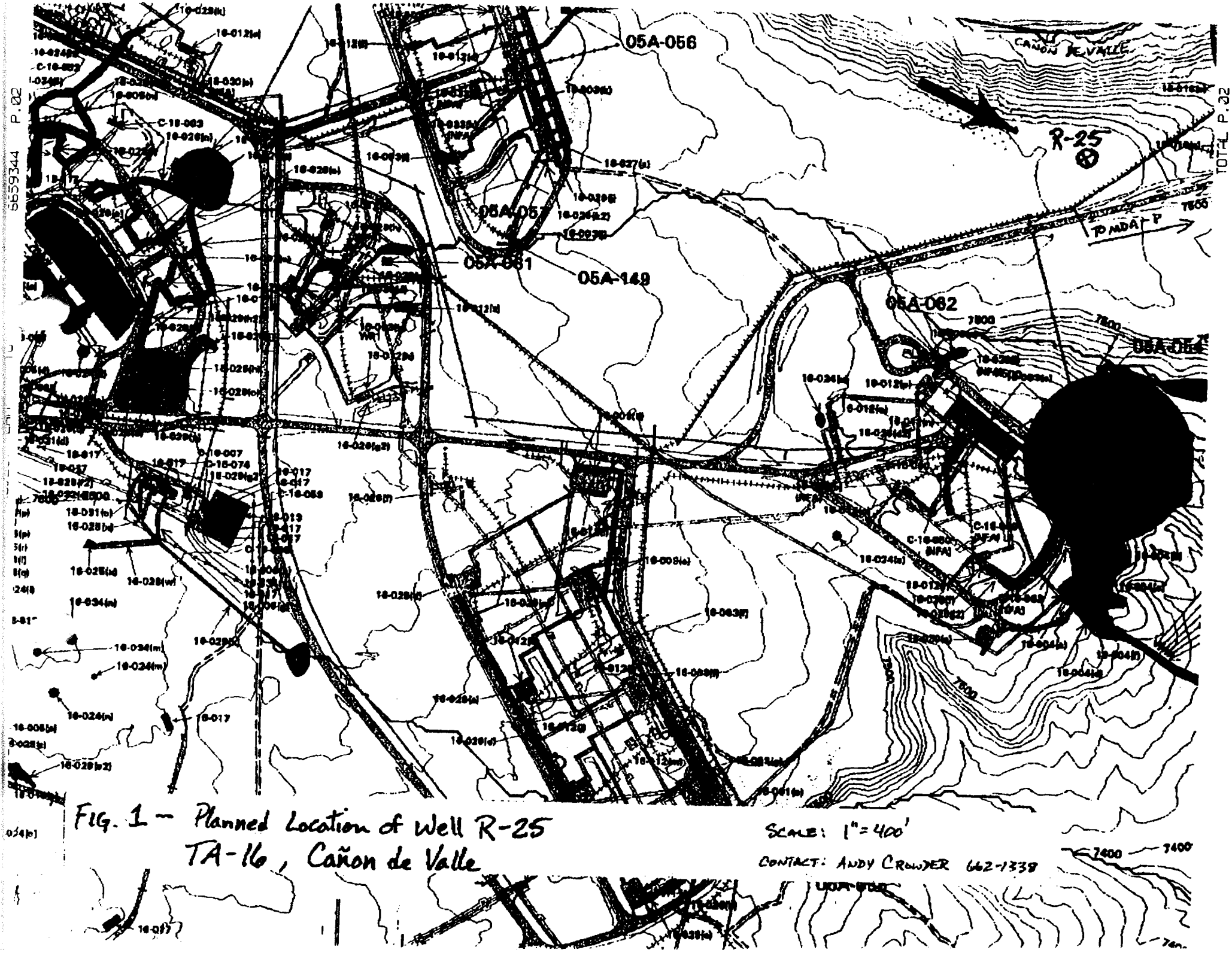


FIG. 1 — Planned Location of Well R-25
TA-16, Cañon de Valle

SCALE: 1" = 400'

CONTACT: ANDY CROWDER 662-1338

Los Alamos
NATIONAL LABORATORY

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Date: April 3, 1996
In Reply Refer To: ESH-18/WQ&H:96-0189
Mail Stop: K497
Telephone: (505) 665-1859

Ms. Marcy Leavitt
Ground Water Protection and Remediation Bureau
New Mexico Environment Department
1190 St. Francis Drive
Santa Fe, New Mexico 87502

Jim Piatt, Chief
Surface Water Quality Bureau
New Mexico Environment Department
1190 St. Francis Drive
Santa Fe, New Mexico 87502

SUBJECT: LOS ALAMOS NATIONAL LABORATORY, NOTICE OF INTENT TO DISCHARGE, PILOT CANYON STUDY

Dear Ms. Leavitt and Mr. Piatt:

Attached is a Notice of Intent to Discharge (NOI) for the Environmental Restoration (ER) Program's Pilot Canyon Study. This NOI is being submitted to both the Surface Water Quality Bureau and Ground Water Protection and Remediation Bureau of the New Mexico Environment Department (NMED) pursuant to Section 1-201 of the New Mexico Water Quality Control Commission (WQCCC) Regulations. The NOI covers intermittent discharges of 200 gallons of water per day, or less, from nine monitoring wells in Pueblo, Los Alamos and Sandia Canyons located at Los Alamos National Laboratory. This water will be applied to the surface of the ground and will result from well development and well purging during monitoring and sample collection activities. Please see the attached NOI, site map, and analytical results for more details.

Please call Alex Puglisi at 667-4882, or Janet Jacobson at 672-3666, if you need any additional information regarding the attached NOI or the ER Canyons Pilot Study.

Thank you for your attention in this matter.

Sincerely,

Steven Rae
Acting Group Leader
Water Quality and Hydrology Group

SR:AP/em

Attach: a/s

Cy: A. Puglisi, ESH-18, w/att., MS K497
A. Pratt, EES-13, w/att., MS J521
B. Gallaher, ESH-18, w/o att., MS K497
C. Nylander, ESH-18, w/o att., MS K497
M. Saladen, ESH-18, w/o att., MS K497
H. Decker, NMED/AIP, w/att., MS J993
K. Zamora, DOE/LAAO, w/o att., MS A316
B. Koch, DOE/LAAO, w/o att., MS A316
J. Jacobson, SAIC, w/att., MS J521
WQ&H File, MS K497
CRM-4, MS A150

4/4/97 - Approved

NOTICE OF INTENT

To Discharge well development water and well purge water associated with the Environmental Restoration Program's Canyons Pilot Study

1. **Name and address of the facility making the discharge.**

   Dennis J. Erickson
   Los Alamos National Laboratory
   P.O. Box 1663, MS K491
   Los Alamos, New Mexico 87545

2. **Location of the discharge (in Township, Range, and section, if available).**

   Various Locations:

   Pueblo Canyon (maps attached)
   POB-2, Alluvial well/borehole (to be less than 30 ft in depth)
   PO-2, Alluvial well/borehole (to be less that 30 ft in depth)
   PO-4, Alluvial well/borehole (to be less than 50 ft in depth)
   POI-4, Intermediate well/borehole (to be less than 250 ft in depth)

   Los Alamos (LA) Canyon (maps attached)
   LLAO-5, Alluvial well/borehole (to be less than 100 ft in depth)
   LAO-1.6, Alluvial well/borehole (to be less than 30 ft in depth)
   LLAO-1, Alluvial well/borehole (to be less than 100 ft in depth)
   LAO1-7, Intermediate well/borehole (to be less than 250 ft in depth)

   Sandia Canyon (map attached)
   SCO1-3, Intermediate well/borehole (to be approximately 550 ft in depth)

3. **The means of discharge (to lagoon, flowing stream, water course, arroyo,** septic **tank, other).**

   Discharge will be to the ground at the well sites where the Environmental Restoration Programs Canyons Pilot Study will be drilled, within specified reaches of Sandia, Pueblo and LA canyons. The discharges will result from well development and well purging, during monitoring and sample collection activities.

4. **The estimated concentration of contaminants in the discharge.**

   The sites chose for the wells are not within areas expected to be contaminated. Areas to be sampled are not expected to have contaminants present. Any added water used for well development will be deionized and free of contaminants. As an added precaution, prior to any discharge, field screening during the drilling, or purging activities will be performed to ensure that water discharged is free of contamination. If field screening instruments, or professional judgment (for instance, observation of evidence of soil stains, odors, etc.) indicate that gross quantities of

contaminants may be in the water, the liquid will not be discharged to the ground, but containerized and treated as suspect hazardous, radioactive, or mixed waste.

5. **The type of operation from which the discharge is derived.**

Investigations within the Laboratory's canyon areas are required by the Environmental Protection Agency (EPA) under the Resource Conservation and Recovery Act (RCRA) Hazardous and Solid Waste Amendments (HSWA) Module VII Permit for Los Alamos National Laboratory (the Laboratory). Los Alamos and Pueblo Canyons are part of the Environmental Restoration Program's (ER's) Operable Unit (OU) 1049, within Field Unit 4. These canyon areas of OU 1049 contain no Laboratory technical areas (TAs), solid waste management units (SWMUs), or potential release sites (PRSs). Investigations within the canyons will commence with an "expedited site-characterization", or the Pilot Study, consisting of selected field survey activities, sediment sampling and drilling and well installation activities. The ER Pilot Study in LA and Pueblo canyons will consist of geomorphic mapping, radiometric field surveys, sediment sampling, air particulate sampling stations, geophysical surveys and the installation of groundwater monitoring wells.

A total of nine monitoring wells (six alluvial and three intermediate depth) will be drilled, sampled and reamed in the specified reaches of the Pilot study. Core samples will be collected before and after each lithologic contact and analyzed for chemical and radiological constituents. The wells/boreholes will be completed as groundwater characterization wells in accordance with the *RCRA Ground Water Monitoring Technical Environment Guidance Document;* the *Laboratory's ER Standard Operating Procedures (SOPs) LANL-ER-SOP-4.01 Drilling Methods and Drill Site Management, LANL-ER-SOP-5.01 Monitor Well Construction, LANL-ER-SOP-5.02 Well Development, and LANL-ER-SOP-6.01 Purging of Wells for Representative Sampling of Ground Water;* and the *OU 1049 Task/Site Work Plan.* Copies of the four SOPs are attached.

6. **The estimated flow to be discharged per day.**

Less than 200 gallons of liquid will be discharged per active field day. An NOI Discharge Record will be maintained for every day a discharge occurs.

7. **The estimated depth to ground water (if available).**

The average depth to alluvial ground water from floor of Pueblo Canyon has not been extensively characterized and from the floor of LA Canyon is 0-25 ft. The estimated depth to the main aquifer from the floor of Pueblo Canyon is approximately 760 ft to 590 ft and from the floor of LA Canyon is approximately 970 ft to 722 ft.

Signed Steve Rae Date: Mar. 28, 1996

Group Leader, ESH-18

Allegra Pratt Mar 29, 1996

Project Leader ER