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Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

to Gary Eller, INC-DO, MS J519
THRU *my* Ron Conrad, HSE-8, MS K490

DATE: June 5, 1991

MAIL STOP/TELEPHONE: K490/7-0815

FROM: Phil Fresquez, HSE-8 *my*

SYMBOL: HSE-8:91-956

SUBJECT: **SAMPLING ACTIVITIES AT TA-49 (AREA 2)**

As per your request, I am enclosing soil and vegetation data that was collected around the perimeter of Area 2 at TA-49 on September 9, 1987. Also, you will find data from soil collected from gopher hole diggings (mounds) on March 28 and on April 16, 1991.

In general, of the 20 soil surface samples collected around the perimeter of Area 2 in September, two of them showed elevated levels of gross alpha (80 pCi/g) and Pu-239 1660 pCi/g) activity. These samples were collected on the northeastern side of the asphalt pad. A phoswich survey over the same area showed 7142 counts/100 seconds (background is 3400 counts/100 seconds). Also, positive readings were measured along the drainage channel northeast of Area 2.

Ten soil samples from gopher hole diggings (mounds) were collected around the perimeter of Area 2 in March 1991. One soil sample, also collected from the northeastern corner of the asphalt pad, exhibited elevated alpha activity (135 pCi/g). Consequently, the sample was submitted to the Health and Environmental Chemistry Group (HSE-9) for the analysis of Am-241, Pu-238, Pu-239,240 and total U. Results show levels of Am-241 at 37.7 pCi/g, Pu-238 at 24.1 pCi/g and Pu-239,240 at 43.1 pCi/g. Total U has not been determined at this time.

In April of 1991, additional soil samples were collected from the same gopher hole mound that was previously sampled in March. An additional sample was collected to determine the nature and extent of RCRA regulated wastes, if any. As expected, soil samples showed elevated alpha activity of up to 1,234 pCi/g. However, there was no evidence of volatile, semivolatile or PCB compounds. Additionally, TCLP metals were all below EPA action level guidelines.

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G. Eller
HSE-8:91-956

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June 5, 1991

PF:RC/gr

Enc. a/s

Cy: Roger Ferenbaugh, HSE-8, w/enc., MS K490
Richard Romero, HSE-8, w/enc., MS K490
Circ. File

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Sept. 9, 1987 Data.

TA-49 Area 2 09/09/87

Asphalt Pad 164' long x 127' wide

1.) Soil sample point #7 (surface) collected at N.E. corner of Area 2 outside exclusion fence exhibited 80 pCi/g alpha activity characterized as PU-239 by HSE-9.

2.) HSE-9 Chem Lab Replication of same sample exhibited 41 pCi/g and 1.66 nCi/g respectively. (Non-homogenous; highly particulate).

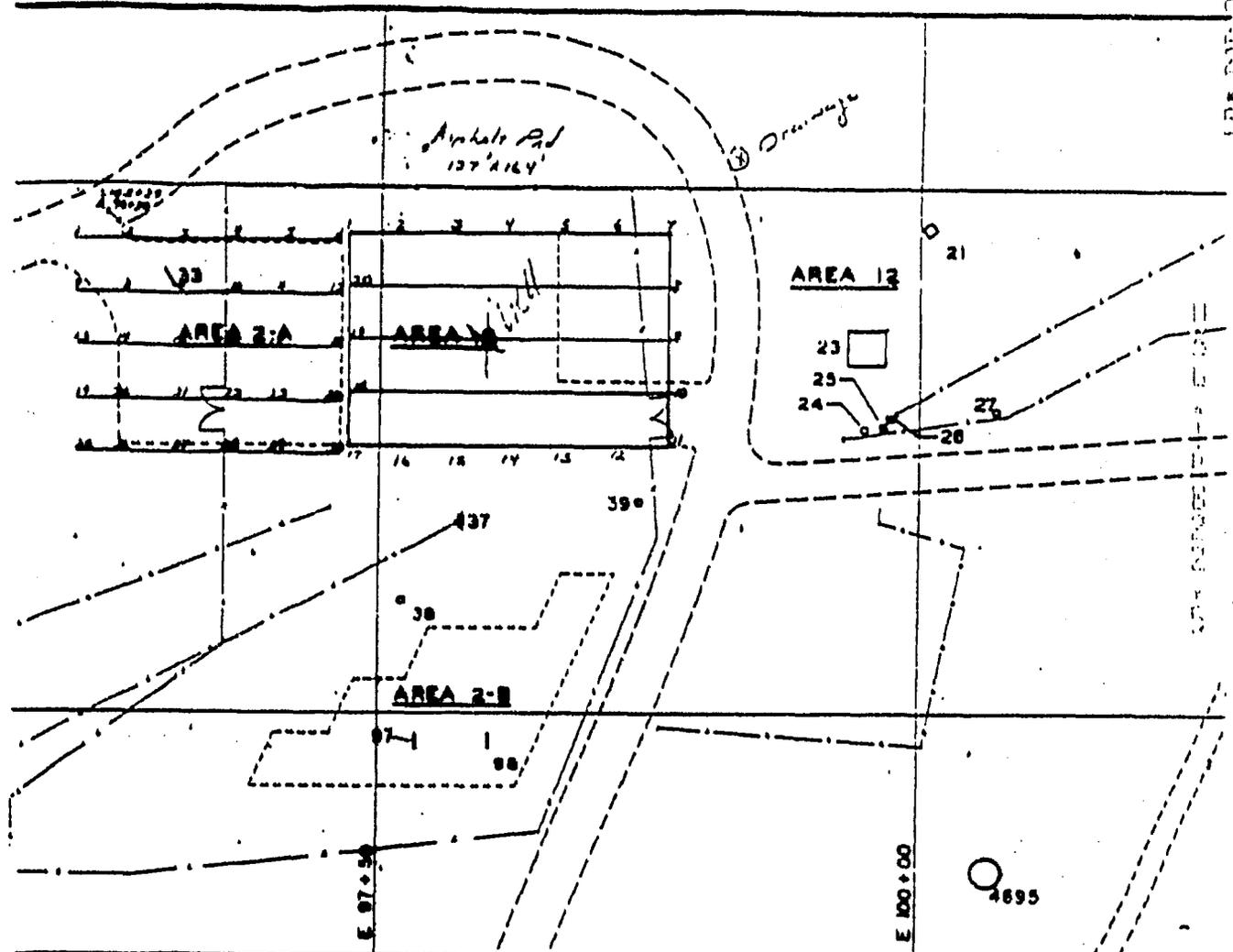
3.) Phoswich Survey - BKG = 3400 counts/100 seconds (TA-49) Soil sample point #7 exhibited 7142 counts/100 seconds (2X greater).

4.) Davidson Germanium Analyzer set at 60 keV, Am-241 peak with 3 meter radius in-situ capability exhibited 6228 counts/1000 seconds at soil sample point #7. BKG = 0 counts/1000 seconds (Don VanEtten). Natural drainage north and east of soil sample point #7 exhibits positive "migration" pattern.

5.) Soil sample point #9 (50 feet south of soil sample point #7) exhibited 44 uG/g Be. All other samples (20 total) averaged 5 uG/g Be. No elevated levels of U were identified.

6.) Vegetation sample point #9 exhibited 24 pCi/g PU-239. All other samples (20 total) averaged < .1 pCi/g.

7.) 20 each soil and vegetation samples were collected at 25 foot intervals along the perimeter of the asphalt pad at Area 2. Predominant vegetation species identified at Area 2 include Chamisa (*Chrysothamnus* spp.), Goldenweed (*Chrysopsis foliosa*), Mullein (*Verbascum thapsus*), and False Tarragon (*Artemisia dracuncululus*). Sampling stations permanently marked with 3 foot aluminum stakes and surveyed in according to LA Grid and New Mexico State Plane (NMSP) coordinate system.



AREAS NOS 2, 2-A, 2-B & AREA NO. 12

1" = 50' (Reference Original Maps)

25' Grid (7.62 meters)

Point 1 S 105+22 E 97+35 LA Grid System

Reference L.A. Notebook A003530 R. Romano

LWG-R 5126

J. Ahlquist Grid Point A S 105+22 E 97+33 (1979)

- ① Sample # 1 at S 105+22 E 97+20 (1987)
 Samples collected on perimeter of asphalt pad.

TA-49-1

4 ft west Crown Area 2' Flay #7

TA-49-2

6 ft east 7' south from corner of fence drive

TA-49-3

on Flay #8

TA-49-4

on Flay #9

TA-49-5

on Flay #10

TA-49-6

on ditch east of #7

TA-49-7

on ditch NE of fence corner

TA-49-8

" " 10' east of culvert

TA-49-9

" " east edge of culvert

TA-49-10

" " 15' west of culvert

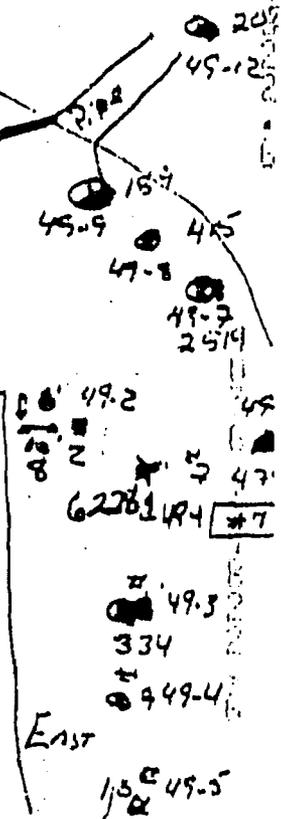
TA-49-11

" " 20' west of culvert

TA-49-12

12' NE or down ditch of culvert outfall

AREA 2



AREA 2

Gemaspec

Germanium

Davidson Analyzer 60 keV 24" Am only

3 meter radius

⊙ New line (use it) moments