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32151

Los Alamos
NATIONAL LABORATORY
memorandum

Environmental Restoration Project
Field Unit 4

(27)

To/MS: OU 1129 File, M321
From/MS: Lloyd Ulery, EES-13, J521
Thru/MS: Allyn Pratt, EES-13, J521 ARP
Phone/FAX: 7-0844/7-1934
Symbol: EES-13-ER-03-95-006
Date: March 29, 1995

Archive/Records Search for Data on "Calibration Chamber" TA-5-20

Joe Cramer and I have done a fairly complete search of H-Division, J-Division, and ENG-Division records. We also talked to several active and retired Los Alamos National Laboratory (LANL) and Zia Company personnel who were cognizant of the activities at TA-5 in 1959 and later in the 1970s.

The most significant information came from Jerry Dummer, retired H-1 group leader. His input led Joe and me to several sources of information. The most important facts are as follows.

- TLD badges were not calibrated in the calibration chamber.
- "Little Eva" was used at TA-5.
- "Godiva" was installed in the "calibration chamber" and used in experiments run by Group J-16.
- A 6-ft.-diameter shaft was backfilled sometime after July 2, 1976, and before 1985.
- It is not known (documented) whether the lead bricks remain in the calibration chamber.
- No drawings of the facility, TA-5-20, can be found. It appears by the completeness of records of Group J-6 and the Zia Company construction section for October and November 1959, that the calibration chamber was completed without drawings or a work order. Apparently Rae Blossom, J-6, coordinated the design and construction with Bill Francis of Zia Company.

Our notes and references are attached. They are as follows.

- Four pages of notes dated March 23, 1995, "Notes Related to 'Calibration Chamber TA-5-20.'"
- Monitor's log, "TA-5 Beta Site 'Little Eva,'" 10-27-59 through 1-28-60 (photocopy of stenographer's notebook).
- Monitor's log, "TA-5 Little Eva Book," 12-23-59 through 1-8-60 (photocopy of stenographer's notebook).
- Memo from Roy Reider, Safety Director, H-3 to Distribution, October 29, 1959, "Nuclear Criticality Safety Committee Meeting Record, October 26, 1959."
- "J-12 Little Eva Regulations," J-12-332U, October 20, 1959.
- Memo from Roy Reider, Safety Director H-3, to Distribution, November 9, 1959, "Nuclear Criticality Safety Committee Meeting Record, November 6, 1959."

Received by ER-RPF
MAR 31 1995

- Memo from Robert Martin, General Monitoring Section, H-1, to H-1 General Monitoring Section File, December 7, 1973, "Survey of TA-5 (Beta Site)."
- Memo from Jack Backastow, Safety Engineer, to Q-Division Files (Q-23), January 29, 1974, "Open Pits at TA-5 (Beta Site)."
- Memo from C. D. Blackwell, Alt. Leader, H-1 General and Materials Monitoring, to J. B. Montoya, Group Leader, Eng-3, June 10, 1976, "Radiation Contamination Survey of Structures at TA-5."
- Memo from Carl Buckland, Leader, General and Materials Monitoring Section, H-1, to Jerome E. Dummer, Group Leader, H-1, July 1, 1976, "H-1 General and Materials Monitoring Section Progress Report for June 1976."
- Memo from J. B. Montoya to Jim Parsons, ENG-4, July 2, 1976, "Technical Area 5 Clean Up."
- Record of Telecon, Keith Roberson, IT Corp/Dave Janecky, INC-7, February 25, 1992.

Cy:
Joe Crumer, EES-13, J521
Richard Koch, SAIC, J521
EES-13 ER file, J521
Records Processing Facility, EM-13, M707

NOTES RELATED TO "CALIBRATION CHAMBER TA-5-20"

1. FROM CEARP PHASE I WORKING DRAFT DEC. 1986 P. TA-5-2
   - AT TA-5-20 ONLY REMAINING STRUCTURE AFTER 1985 LOS ALAMOS SITE CLEANUP PROGRAM (LASCP) WAS 35' DEEP CONCRETE SHAFT WITH SIDE ROOM AT BOTTOM
   - FREE OF RADIATION CONTAMINATION
   - BACKFILLED IN LATE 1970s

2. INTERVIEW WITH JERRY DUMMER, FORMER H-1 GROUP LEADER, 03-07-95
   - TLD BADGES DID NOT EXIST UNTIL MID TO LATE '70s
   - RAY PEDERSON, MONITOR, WHITE ROCK, MAY KNOW ABOUT LEAD BRICKS
   - POSSIBLE CONTACTS, BOB CAMPBELL, BILL FRANCIS, FORMERLY WITH ZIA, DICK REITMANN, ELMER SOUDER.
   - FILM BADGES, NOT TLD, WERE CALIBRATED IN A BUNKER AT TA-5 ABOVE GROUND, QUIT IN '50s.
   - BETTY PERKINS TA-49 REPORT MAY HAVE INFO
   - PAJARITO PEOPLE (N-DIV) TOOK GODIVA TO BETA SITE – BILL STRATTON IS POSSIBLE CONTACT.
   - LITTLE EVA WAS USED AT TA-5 BEFORE GODIVA.

3. CEARP PHASE I DRAFT JULY 1987 – "THE UNDERGROUND CALIBRATION ~~CHAMBER~~ FACILITY WAS ORIGINALLY ~~[illegible]~~ CONSTRUCTED WITH LEAD BRICKS IN THE BACK CHAMBER (ZIA 1959-1961) WHETHER THESE WERE REMOVED BEFORE THE FACILITY WAS BACKFILLED IS NOT KNOWN".
   - OU 1129 RFI WORK PLAN MAY 1992 P. 3-16 – "FACILITY WAS ABANDONED BEFORE FEBRUARY 1974 AND BACKFILLED BEFORE 1985" — "WASTE MATERIALS AT THE SITE INCLUDE THE LEAD BRICKS THAT WERE LEFT IN THE CHAMBER DURING BACKFILLING (LANL 1940, 0145).
   - SWMU BOOKS SAY BRICKS WERE REMOVED – (SWMU BOOKS, LA-UR-90-3400)

4. "1959-1961 TA-49 EXPERIMENTS AND RELATED CONSIDERATIONS"
BY BETTY PERKINS NOV. 11, 1992 LA-12393-H (SRD)

NOTES RELATED TO REPORT'S CONTENT RELATED TO BETA SITE

- PEOPLE INVOLVED – BILL OGLE J-DIV, NEEL GLASS J-16.

- p. 171, p. 172 "IT WOULD BE EASIER IN THE MOCK-UP TO PLACE GODIVA UNDERGROUND AND TO PERFORM EXPERIMENTS AT THE SURFACE."

  HUGH DANTON, N-2 INVOLVED

  - COLLIMATING/DETECTION GEOMETRY EXPERIMENTS
  - SUPERVISION OF N-2
  - NEEL GLASS MEMO TO NUCLEAR CRITICALITY SAFETY COMMITTEE (SRD 11-5-59, B4D197635, TA-49 ONE-PAGE) "PROPOSAL FOR GODIVA EXPERIMENT."
  - BILL FRANCIS VIA DIARY ENTRIES – QUOTED

    10-24-59 – NEW PROJECT INVOLVING UNDERGROUND CHAMBER, STEEL CASING, ACCESS SHAFT ETC.

    10-30-59 – CONSTRUCTION BEGUN

    11-4-59 – CRIB CEILING & WALLS

    11-9-59 – JOB FINISHED, INSTALLED I-BEAMS, SET LEAD BRICKS

    11-16-59 – GODIVA INSTALLED, J-16 BEGAN EXPERIMENTS EXPOSING FOILS
    THOMAS WIMBERLY INVOLVED

5. "TA-49, A HISTORY OF MATERIALS AND REMAINING RESIDUALS (U)", BETTY PERKINS, ~~LA-CP~~ LA-CP-90-400, AUGUST 31-1990 (SRD)

P. 48 NOTES PERTAINING TO BETA SITE

"OCT 1959, BETA SITE," LITTLE EVA, A TYPE OF CRITICAL ASSEMBLY AND MOCKUP CONFIGURATIONS WERE USED IN MULTIPLICATION AND STEADY STATE EXPERIMENTS

5. (CONT)

P. 48 LADY GODIVA – PLACED UNDERGROUND – BURST – RESULTS MEASURED AT SURFACE – ^{235}U, ^{238}U FOILS.

"GODIVA" UNCLAD HIGHLY ENRICHED URANIUM IN NEAR SPHERICAL SHAPE.

6. ZIA DIARY, BILL FRANCIS 10/2/59 — 03/29/62
RECORDS CENTER TR7743
PROJECT 8726

P. 16 10-29-59 – ORDERED 72" CMP (CORRUGATED METAL PIPE) (ABQ)

10-31-59 SET CULVERT IN 6'-6" HOLE AT BETA SITE

DRILLERS WORKED ALL DAY COMPLETING 6'-6" X 35' DP HOLE.

2'-0" HOLE 15'-6" CTOC FROM BIG HOLE – ACTUAL 15'-0"

BLOSOM (RAE) WILL REDESIGN CONNECTING TUNNEL.

11-1-1959 PLACED CMP IN HOLE AND GROUTED IT

11-2-1959 FINISHED LADDER

11-3-1959 CONT'D SHOOTING & HUCKING TUFF AT BETA SITE 6"X6' WOOD LAGGING

P. 20 11-4-1959 SET 2 SQ. SETS & 3' OF LAGGING IN TUNNEL – 9½' OF TUNNEL

11-6-1959 INTERIOR ROOM COMPLETELY SCALED.

P. 23 11-8-1959 TINNERS COMPLETED EXH. SYSTEM & METAL CANOPY OF UNDERGD RM.

P. 23

11-8-59 (CONT.) FITTERS SET "CASED WATER COMPARTMENTS" & GROUTED IT IN PLACE

ELECTRICIANS CONTINUED RUNNING CONDUIT & FIXTURES IN SHAFT, TUNNEL & ROOM

11-9-59 JOB ACCEPTED BY LASL / ITEMS ADDED

11-10-59 POURED TOP OF 16" CASING - INSTRUCTIONS FROM BLOSSOM - 8" H X 24" SQ.

R. THORNE BRIEFED ON 4" I-BEAM SUPPORTS IN UNDERGD. CHAMBER

(CHANGE) 3" OPENING IN 16" CASING

11-12-59 4" I-BEAMS INSTALLED

11-13-59 IRON WORKERS SET "LEAD BRICKS IN BACK CHAMBER"

11-14-59 LADDER SAFETY ENCLOSURE FOR BETA SITE

11-16-59 RIGGERS / CARPENTERS INSTALLED "GODIVA" IN UNDERGRD. CHAMBER

11-23-59 SHORE J-16 TRAILER - ELECTRICIANS STARTED CONNECTING OLD WIRING TO EXISTING BUNKER - BETA SITE

I AM STILL SEARCHING FOR INFO ON DISPOSITION OF LEAD BRICKS, 6' HOLE BACKFILL AND DRAWINGS ON TA-5-20 CALIBRATION CHAMBER. IT LOOKS LIKE THAT THERE WERE NO DRAWINGS.

LLOYD ULERY
J. Cramer

G-3, 244

TA-5 BETA SITE - "LITTLE EVA"

BOOK NO. ..... FROM ..... TO .....

THE SPIRAL

Sight Saver

STENOGRAPHER'S NOTE BOOK

GREGG RULED 100-820

THE SPECIAL GREEN TINTED PAPER IN THIS NOTE BOOK ELIMINATES GLARE, SAVES THE EYES

(REG. U. S. PAT. OFF.)

SNIPPER EDGE

10-27-59

This book received at 12 noon this day.

During the forenoon stacking operations were carried out on Little Eva. Before leaving the Little Eva trailer after each stacking personnel were monitored for alpha contamination. So far none has been found. Booties, gloves and smocks are worn each time the trailer is entered.

The floor of the trailer is covered with paper.

As of 1800 today Little Eva has not gone critical.

As Oy containers were emptied the old tape was removed and they were sprayed with Krylon.

J-12 Personnel involved today are Wendell Biggers - Leon Brown

N-2 Personnel - Herbert Helmick

H-1 Personnel George Melton

Bruce Riebe.

All persons equipped with

dosimeters, Film badges, and Indium foils.

1315-1340 - Wendell Biggars - Bert Helmick - Riebe restacking lower portion.

1355-1415 - Wendell Biggars - Bert Helmick - George Melton restacking operation.

1440-1457 - Wendell Biggars - Bert Helmick - Ken Koker - Riebe - There is now ~22.5 Kg of Oxy. They are now replacing some of the plastic with Tin Papers on the floor in showing some contamination. Still none on personnel.

1520-1605 Restocking added more Tu. Four visitors and two from engineering taking measurements. No contamination no dosage

2100-2145 Tackpant more plastic added Tu. Still no dosage & no contamination Biggers Helmick & Riebe

2250-2310 Added last eight Dy cubes Biggers Helmick & Riebe

10-28-59

George and I spent the morning cleaning Little Eva trailer so carpenters could go in and reinforce the floor.

1350 The carpenters are finished. No contamination was found. A reading on the radiation level was background. No one as yet has had enough dosage on their

domestic to record.
We are now waiting on a crew
that is going to stack paraffin
shielding in the trailer.
7:00 - Stacked paraffin all afternoon
J-10 would stack a few and
J-12 would then check the
multiplication of Little Eva.
Little Eva has not been run
above delayed critical therefore
there has been no danger.
10-29-59
10-29-59
J-10 spent the day on stacking
the rest of the paraffin.
In the forenoon the floor of
Little Eva trailer was mopped
by a janitor as the paraffin
was being stacked at the time,
only the front half of the
trailer was mopped. Paper
was put down.

10-30-59

J-10 today well stock another shield of lead. Due to the snow transportation is rough today. Looks as though the tow truck will spend the day here.

Shields were completed and equipment was set up and tested up. No damage or contamination.

10-31-59

J-10 equipment was checked out and Little Ernie was set on delayed critical at 1200. We had voltage trouble and when that was fixed one scaler quit. Six runs were made and all but one was below delayed critical after running at delayed critical for 20 min. I went down with a beta gamma meter.

The reading on outside of the trailer at a point nearest the assembly the reading was 1 mr/hr. The reading between the center and lower block was 100 mr/hr.

We still have not detected any emits at the control trailer.

11-2-59

Spent the forenoon with Bard checking electronics at Little Eva trailer. Biggers, Brown, & Bob tried to make a run at 1500 but there are electrical troubles. George & Bard are now at Little Eva trailer.

1540 Repairs made and ready to go. Ran all afternoon before delayed critical.

11-3-59

Run all day at less than delayed critical.

11-4-59

We worked with Bill Baird checking and repairing equipment at both trailers. Biggers came out and told us they would not run. Secured at 1600.

11-5-59

Unstacked and restacked the parafin shield. Made a new lead shield. No runs were made. No contamination resulted. No dosimeter dosage.

11-6-59

Finished stacking lead. Tried a run. Bottom block would not raise. On checking to find the trouble it was discovered that

the weight of the lead shield had tilted the trailer enough that the bottom block would not seat. This was corrected and P-10 equipment stopped working. At this time, everything seems to be working. May make one run.

Contamination and dosage nil.

11-9-59

P-10 again today. This may be the last day for P-10.

Ran all morning. Bill Baird made some repairs in the afternoon. Left at 3:30.

11-10-59

Bill Baird and I waited here for P-10 to decide if they were going to do anything, left here at 3:30.

11-12-59

Nothing new today. Ran for J-10 at levels below delayed critical.

11-13-59

Mulcahy was here today while I took a breath sample for radon counting.

Warren & I saw what was done at Little Eva trailer. The Cy was removed and taken somewhere to be weighed & are assuming there was no contamination involved. The gamma dose to personnel would be low as the assembly still has not been taken to prompt critical.

11-15-59 (Sunday)

I was called by security and asked to come out as there was a hazards team found

that toluene was leaking from a detector in such quantity as to run out of the trailer. The detector was removed.

11-16-59
Removed Part of Parafin shield And All The head.
J-10 Checked out some of Their Equipment.

11-17-59
Removed All The Parafin. George and I cleaned the trailer and put down more paper. J-12 loaded the boxes with TV and ran some background counts.

11-18-59
Went to a conference with with J-12 & N-4. Afternoon J-12 got ready to stick OY.

11-19-59
Started stacking Oy'ox using
TU This time instead of Plastic
Stacked all off the room
on the center section a
layer is stacked then a
multiplication run is made.

11-20-59
Continued stacking and making multiplication
runs.

11-23-59
Personnel from N-4 came out to Beta
Site and set up their equipment for
their phase of this experiment. At
14:40 Little Eva was run at 2 watts

11-24-59 Started having electronic
difficulties and did not run.
12-2-59

12-3-59 Started Hi Vol samples at 10:30 AM to - 11 o'clock.
run was made at 15 Watts power.

12-4-59
Two 20 minute runs at 92 Watts power. Neutrons/cm²-sec at 250' west of trailer was 590 N/cm²-sec.
Beta & Gamma reading at 2' from the reactor was 12 R/hr.

12-7-59
Unstacked Little Eva reactor and transferred active material to Pajarito.

Melton - Rich

LGC

1-11-60

Stacked Little Eva at TP-49. Nothing unusual happened. It was left stacked overnight. Also we tried out J-10's replacement for Little Eva. It is an Oz ball in which they can place a neutron source.

1-12-60

We unstacked Eva and moved to Pete site and stacked. EG&G had two men here and also Joe Hayes and Morris were setting up their equipment. We ran at 1 watt and my meter read 5.5 N/sec/cm². At 2 watts it read 11 n/sec/cm².

1-13-60

Joe & Moe ran their new neutron measurement gadget and we finished with EG&G.

1-14-60

H-H brought out their plastic men

ran 10 watts Meter reading 40 n/sec/cm²

100 watts for 10 min " " 550 n/sec/cm²

in control tower.

1-15-60

Three ten minute runs at 100 watts, Converted pee wee read 550 n/sec/cm² G M instrument read 1 mr/hr.

1-18-60

Stood by for Baird and Dorsey in the afternoon. No runs.

1-19-60

Unstacked and moved to TF-49

1-20-60 Stacked at TF-49

1-21-60 Moved Back to Beta site

1-26-60 Flashed at Beta site

1-27-60 Making 10 min runs at 100 watts. I am trying to get some readings for Morris.

1-28-60 4 or 5 min runs at 1 KW. Gamma dose at 2 meters, 20 min after run was 1 R/hr. 15 R/hr at 12 inches. All dosimeter readings were quite low except my own which went off scale. I put on the safety blocks after each run.

The control trailer has been moved back to 1600 ft. The neutron readings with converted pee wee were as follows

with poly eth. + cd 650 n/sec/cm²
with bare probe 900 n/sec/cm²
with cd 100 n/sec/cm²

[illegible] [illegible]

G-3, 244

XA-5 Little Eva Book

THE SPIRAL

Sight Saver

STENOGRAPHER'S NOTE BOOK

GREGG RULED / GG-820

THE SPECIAL GREEN TINTED PAPER IN THIS NOTE BOOK ELIMINATES GLARE, SAVES THE EYES

REG. U. S. PAT. OFF.

GRIPPER EDGES

12-23-59
Stacked to multiplication of 500

12-24-59
Stacked to De
d Critical

12-29-59
Unstacked Little.
Moved The material
Stacked Using only Tu. Cut
gloves were [redacted] U49
After Stacking I showed Him
Were He Had 600 dmon His
This Wasn't much But I Ask
Where was He going to Wash
He Now wears gloves.
We Again Used Hammond's
Hand Cleaner, Which looks to M
As Though it Does Actually take
The Contamination OFF. I Have
tried This Myself, wiping My Hands
Several Times on Clean ~~clothes~~ Rag
Wiping until There is No Apperant
oil Either to Sight or Touch. I Also
Tried it on The Tu Disc From A

CORRECTION

START

G-3, 244

TA-5 Little Eva Book

BOOK NO.

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REG. U. S. PAT. OFF.

GRIPPER EDGES

12-23-59
Stacked to Multiplcation of 500

12-24-59
Stacked to Delayed Critical

12-29-59
Unstacked Little Eva and Moved The material to TA-49. Stacked Using only Tu. One Man Thought gloves were ~~[illegible]~~ Unnecessary. After Stacking I showed Him They Were. He Had 600 dm on His Fingers. This Wasn't much But I Asked Him Where was He going to Wash Them He Now wears gloves.

We Again Used Hammond's Hand Cleaner, Which looks to Me As Though it Does Actually take The Contamination off. I Have tried This Myself, wiping My Hands Several Times on Clean ~~clothes~~ Rags. Wiping until There is No Apperant oil Either to Sight or Touch. I Also Tried it on The Tu Disc From A

CORRECTION

END

Peewee When leaving Just a Thin Film on The Disc I could still get An Alpha Count.

This is Not Scientific But I Do Feel This Hand Cleaner Takes OFF Contamination.

No Dosage on The Dosimeters.

12-30-59

Stacked Oy with A source Which was RaBe - 25 mc & 8×10^5 Q.

Stacked Half of ~~Sy~~ Assembly with Tu. 17 n/sec/cm²

From This Point Tu Was Removed A Layer ~~By~~ At A time And Replaced with Oy Until Multiplication of 80. This takes All But 8 cubes of Oy. 54 n/sec/cm²

The Source Was Then Removed And RaBe #129 Was Used. This is 200 mc with A Q of 1.96×10^6. We Now Had 547 n/sec/cm². We left Immediatley.

Very little Gamma Dosage.

No contamination.

Unstacked The Assembly And Stored it Again.

While Stacking All workers Are Removed And only Three OF Us Are on Hand. I use A Beta Gamma meter with Shield Closed, A converted High Range Pee Wee, & A Pee Wee For Personnel Monitoring. I Place The Three Dissaster Dosimeters As Close As Possible to The Distance The Stackers Body Is From The Assembly This Turns out To Be Approximately Three Feet While The Stacker is 1.5 Feet To Two Feet.

12-31-59

Stacked To A Multiplication of 20, using 4 10^5 source. After The Stacking was Completed A 10^6 Source was Inserted. The Neuts Went up From 60 to 1500. 5 Mr/Hr Gamma. We left Quickly.

1-2-60

Unstacked Little Eva.

1-7-60

Stacked Little Eva today at ~~[illegible]~~ TH-491. Used a converted pee wee just back from the shop, as the cover was lowered onto the assembly. Neutron flux went up to 2300 n/sec/cm². However this time there was very good shielding on one half of the can. In our working area the flux was 30 n/sec/cm² at head level. (my head). No gamma problem, no contamination. I stayed as long as people were working there, then locked the doors and gave instructions to the guard.

1-8-60

Unstacked Little Eva.

TA-5 10/24/59 1 pgs. Record #1867 Used 17-Z LATA-5 C092 Reider 1959 04-0173 E.12 ID=881

OFFICE MEMORANDUM

TO : Distribution Date: October 29, 1959

FROM : Roy Reider, Safety Director

SUBJECT: NUCLEAR CRITICALITY SAFETY COMMITTEE MEETING RECORD, October 26, 1959

SYMBOL : N-3

1. The new members of the LASL Nuclear Criticality Safety Committee were introduced:

   William Stratton, N-2, replacing P. C. Fisher and Elizabeth Plassmann, W-7, replacing William Carter. These changes will be announced in the LASL Bulletin.

2. The recent criticality accident at Idaho Falls was announced with such skimpy details as were available at this time. The report will be circulated to the Committee members upon receipt.

3. Hugh Paxton described the function and use of Little Eva. The Little Eva Regulations, as prepared by J-12, October 22, 1959 (J-12-332U-Rev. 1) and Experimental Plan J-12-1 were reviewed by the Committee. The Committee approves the operation of Little Eva by J-12 at Beta Site, as delineated in the above two documents with the following recommendations:

   a) Each new experiment will require a change in plan or new plan which must receive approval by the N-2 Safety Committee prior to operations.

   b) Restacking may be done only with N-2 personnel participating.

   c) Approval by the Nuclear Criticality Safety Committee is given until March 1, 1960 before which time the operations should be further reviewed.

   d) The Chairman of the N-2 Safety Committee is asked to audit the J-12 operation of Little Eva by November 15, 1959 and prepare a report for the Nuclear Criticality Safety Committee.

4. The Secretary [illegible] that a representative of the Safety Division of the AEC, ALOO, would visit LASL about the second week of November to review operations involving critical amounts of active material primarily to examine standard procedures.

5. The Committee discussed a recent request from the AEC for a description of procedures and facilities handling potentially critical amounts of active material. It was the Committee's recommendation that this problem could best be handled by a letter to all groups concerned asking them to

FILE BARCODE
00052790

INTEROFFICE ROUTING SLIP
LOS ALAMOS SCIENTIFIC LABORATORY

FROM Wendell Biggers, J-12 DATE 10/29/59 TELEPHONE

		Initials	Date
1.	Carl Bushland, J-1	CB	10/29/59
2.	Dean	WAM	
3.	Carl		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

☐ Immediate Action ☐ Necessary Action ☐ For Your Information
☐ Comment ☐ See Me ☐ Signature
☐ Prepare Reply ☐ For Approval ☐ Note, Initial and Return

Comments

J-Div, Memo & Reports 1959
G-1 Box 55

LASL STOCK #ST-2630

J-12-3320

October 20, 1959

J-12 LITTLE EVA REGULATIONS

Most of the regulations listed herein have been lifted from W-2-241, "Operating Regulations for the Pajarito Remote Control Laboratories", by Paxton, Mallory, and Horvath.

FILE BARCODE
00052791

I. DESCRIPTION OF REACTOR

Little Eva consists of three sections, one stationary and two movable, mounted on a drill-press stand located in a 10' x 20' trailer. The center section of the reactor is stationary and contains Oy, reflector, Oy servo rod and Tu shim block. The servo rod may be moved manually or automatically by demanding a given power level. The shim block is moved by a manual procedure. The upper section (safety block) is a reflector normally held in a raised position by springs but which may be lowered into contact with the center section by compressed air. The lower section (ram) contains Oy and reflector which can be raised by compressed air into contact with the center section.

The reactor control console will be in the van used to pull the trailer. On occasions it may be in another trailer or at the Rover control point.

II. REGULATIONS GOVERNING REACTOR OPERATION

A. Organizational and Operational Regulations

1. Each new experiment involving active material will be reviewed by the N-2 Safety Committee and by the J-12 Group Office. An experimental plan will be submitted by J-12 to J-70 for approval after being reviewed by the N-2 Safety Committee.

2. Such experiments will be conducted in guarded remote areas.

3. At least two J-12 personnel and a safety monitor (making a crew of three, minimum) must be present during any operation of the machine (when loaded).

4. When the reactor area is entered, at least two of there people must participate.

5. Each operating crew shall have a "crew chief". Until further notice this will be one of the following:

Wendell A. Biggers
Leon J. Brown.

6. If any crew member is dissatisfied with the safety of the operation, all operations must halt until all are convinced that operations may continue without risk.

7. No one shall be allowed nearer than 950' from the reactor during operation. This will be enforced by a security patrol.

8. A flashing red light will be on the reactor trailer at all times during operation. A 30 second audible signal shall be sounded before a run. A bell shall sound at intervals (~30 seconds) during operation.

9. No one shall enter the reactor trailer while the reactor is operable unless the console key is in the possession of one of the entering party. Entrance shall be made after the area has been monitored.

10. When personnel are in the trailer, mechanical stops shall be placed between the sections. These may be removed one at a time to check the mating of the sections with each other. There is a separate locked electrical control on each of the two movable sections which can be unlocked only by the same key as unlocks the operating console. When these two elements are locked, they may be operated only from the console; otherwise, they can be unlocked and operated individually only. An audible register operated from a neutron counter will be functioning whenever such checks are being made.

11. Excess material will be stored in an office safe in the "always safe" containers.

12. At the beginning of each days' operation, tests shall be made to assure proper performance of the safety monitoring systems and of the manually actuated SCRAM.

13. No assembly shall proceed in the presence of personnel unless the multiplication is below 10.

F. Equipment Regulations

1. Equipment in the reactor control location must include at least two neutron counters, one with an audible repiater. For operation at or above delayed critical, there shall be two automatic recorders for indicating neutron level. There shall be at least two adjustable monitors for automatic disassembly of the reactor. Portable radiation survey meters and film badges shall be provided.

2. Equipment or power failures shall result in a safe configuration. Control switches for assembly mechanisms shall be of the dead-man type. The reactor shall have two independent disassembly systems which can be triggered both manually and automatically by the radiation monitors. These SCRAMS shall produce a monotonically decreasing reactivity at a rate which exceeds that of assembly and shall result in a configuration with multiplication less than 10.

3. Radio communications will be maintained with the monitoring section of H-1, or in the case of Jackass Flats, with J-3.

C. Stacking Regulations

1. All stacking shall contain a Tu or plastic reflector or some combination of these.

2. Not more than 15 kg of Cy shall be placed in the reactor for the first multiplication check of a new stacking at which time a neutron source shall be located in the center of the most reactive section of the reactor.

3. Not more than 2 kg of Cy shall be added for each subsequent check until a plot of 1/M is obtained for extrapolation.

4. A 1/M plot shall be made and each reduction in 1/M shall be no greater than a factor of 2, ~~and each reactivity increase shall be less than 50 cents.~~

5. Although stacking is done by hand, all assembly is a remote operation. During the period of manually placing active material in the assembly, the multiplication shall be essentially ~~zero.~~ unity.

6. After stacking, the reproducibility of the geometry of the system shall be verified by a series of successful reassemblies.

TC 7 Oa

Reider 1959, E4-0174-
ER-ID # 882

OFFICE MEMORANDUM

Distribution

DATE: November 9, 1959

Roy Reider, Safety Director

NUCLEAR CRITICALITY SAFETY COMMITTEE MEETING RECORD, November 6, 1959

H-3

1. The Committee approved the use of Godiva at Beta Site under the provisions listed in secret letter of November 5, 1959, Neel W. Glass to Nuclear Criticality Safety Committee.

   The Committee believes no single remote untoward event (such as collapsed hole or total flooding) can cause a catastrophe, except during the short interval of burst ready condition, if a neutron source is immediate to the assembly at all other times.

   The U.S. Coast and Geodetic Survey will be asked for an opinion as to the possibility of flooding from subterranean waters. The Fire Department will be notified that any requirement for fire fighting in the vicinity should preclude the possibility of flooding the hole.

2. It was the opinion of the Committee, in the light of their limited knowledge of the instruments, that the Hurst Dosimeters do not supply enough special information in the event of a criticality accident to warrant the expense and complex administrative control for their proper use.

3. All procedures received from LASL groups as requested in a letter of October 30, 1959 from the NCSC to group leader list will be scrutinized by Committee members before submission to the AEC.

4. The impending visit of Everett Matthews, AEC, ALOO, scheduled for November 12 and 13 was announced. Matthews is to review criticality control procedures at LASL.

5. Classified letter of November 3, 1959, Eric Peterson (GMX-4) to Reider written in response to the NCSC letter of October 30, 1959 was reviewed by the Committee. The Committee suggested the letter a proper subject for consideration by the Director's Office, LASL.

6. Richard Bard, representing CMB-Division, introduced the subject of an active interest in criticality safety being provided by specialized personnel outside the operating group, such personnel to be referred to hereafter as Nuclear Safety Officers. Such personnel would supplement

OFFICIAL USE ONLY

72.050 TA-5 Record # 18011
17-Z
12/17/59

L LAMOS SCIENTIFIC LABORATORY
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2 pgs

OFFICE MEMORANDUM

TO : H-3 File (H-Division)

DATE: December 17, 1959

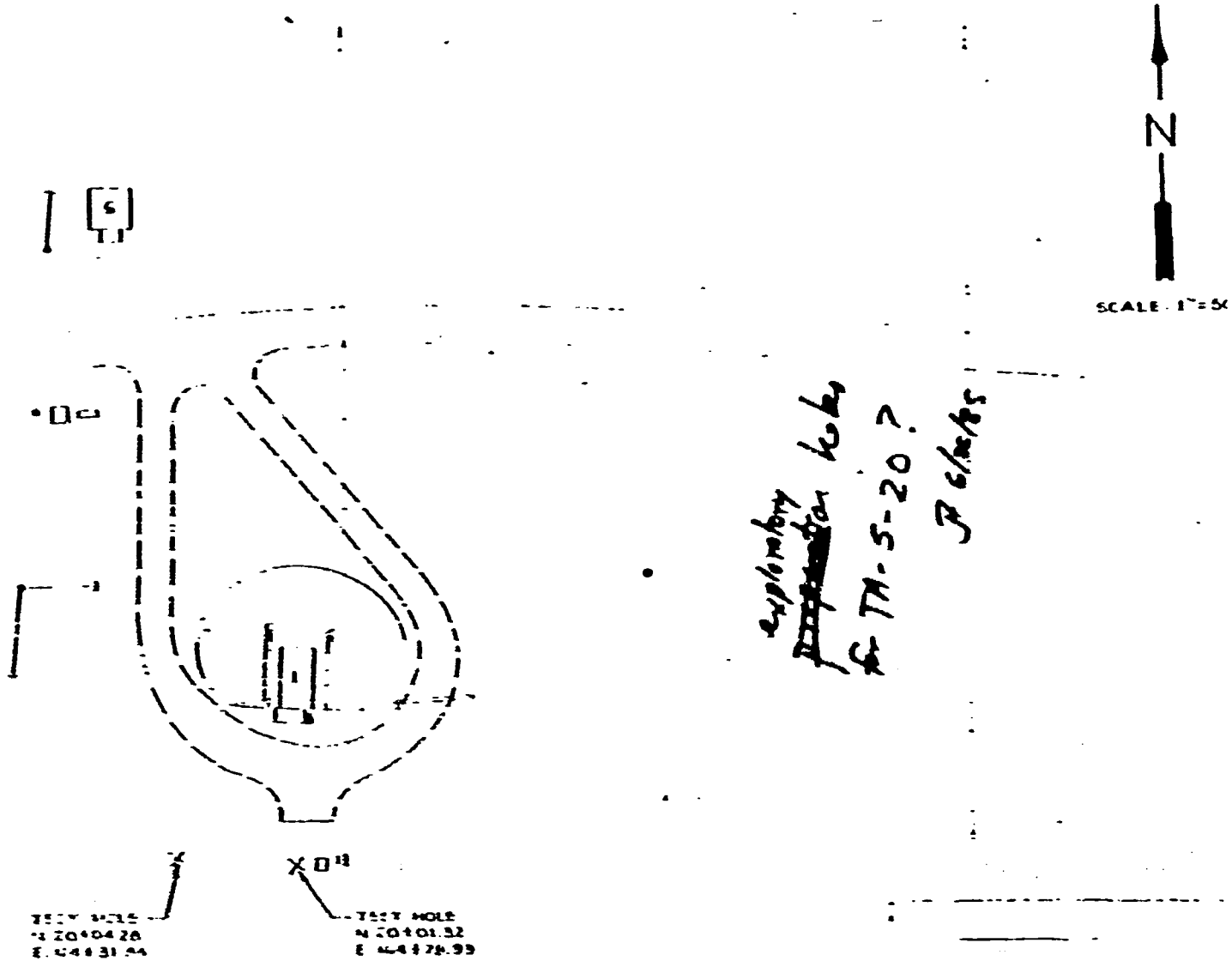
FROM : J. R. Penland

SUBJECT: BETA SITE SURVEY

SYMBOL : H-3

On December 2, 1959, I took five of the key Film Department personnel to Beta Site where they were shown the facilities of J-12 (Little Eva) by Bill Baird and J-16 (Godiva) by Neel Glass.

It was decided that conventional fire fighting procedures could be used everywhere except at Godiva. Here, care must be used to see that the shaft which houses Godiva is not flooded. In case the building over the shaft should burn, water can be used but preferable as a fog.



TIES FOR TEST HO
TA-5 BETA S11

12 11 59 12-28-59 F200-
T.G.R. H.H.

118

OFFICE MEMORANDUM

Accession # 04-0151
ERID # 86 B

TO : H-1 General Monitoring Section File

DATE: December 7, 1973

FROM : Robert Martin, General Monitoring Section, H-1

SUBJECT : SURVEY OF TA-5 (BETA SITE)

SYMBOL : H-1

Structures Beta-1, Beta-16 and Beta-21 at TA-5 were monitored on December 6, 1973, by Robert Martin and John Lucero. Beta-20 was locked and could not be entered.

Marv Linke of Eng-9 requested a monitoring survey of these structures to determine if material and/or equipment could be stored in Beta-1. No radioactive contamination was detected in any of the structures or on the ground (the Beta-16 barricade) and Marv was told this by telephone conversation. Instruments used were Ludlum Model 11 and E-500B.

Robert Martin

RM:ed

Note by Jerry on routing slip -"Info. only - Q-something wants to "tunnel" into the "barricade" (dirt mound).
J.

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Telephone Ext.

OFFICE MEMORANDUM

TO : J. B. Montoya, Group Leader, Eng-3 DATE: June 10, 1976

Thru : Richard Smale, Assoc. Group Leader, H-1

FROM : C. D. Blackwell, Alt. Leader, H-1 General & Materials Monitoring

SUBJECT : RADIATION CONTAMINATION SURVEY OF STRUCTURES AT TA-5

SYMBOL : H-1

MAIL STOP: 306

The following structures were monitored on the dates shown with the results listed for each structure.

• TA-5-1	Monitored on 5/4/76 - no detectable contamination
TA-5-7	" " " " " "
TA-5-9	" " " " " "
TA-5-15	" " " " " "
TA-5-16	" " " " " "
TA-5-17	" " " " " "
TA-5-11 TA-5-12	These are underground structures used for city water. Can't monitor but they are assumed uncontaminated.
TA-5-13	This is an acid septic tank filled with liquid. As per our telephone conversation, you were contacting Group H-7 for sampling for this structure.
TA-5-19	This is a platform located 26' above the ground on two poles. Too risky for personnel to monitor in place. When it is removed, it will be monitored and disposition determined at that time.
TA-5-20 TA-5-21	These structures were monitored on 5/6/76 and were free of detectable radioactivity.

There is a large amount of plate steel scattered about the mesa and it should be removed. Some of this is contaminated to the level of 2000 c/m alpha and 4.0 mR/h beta-gamma. It is believed the contaminant is uranium. These pieces of steel cannot be adequately monitored unless they are lifted clear of the ground. This will require lifting equipment as they weigh several hundred pounds each. They can be monitored at the time of removal without causing undue delay to the removal operation. The contaminated steel must go to the contaminated dump at TA-54 and it would be worthwhile to salvage the uncontaminated metal.

Charles D. Blackwell

Charles D. Blackwell

CDB:ed
CY: File thru C. Buckland, H-1 ✓ Cm

~~[illegible]~~

1/29/74 TA-5

Record # 1851 ATA - 6 0092
17-Z

[illegible]

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OFFICE MEMORANDUM

TO : Q-Divn Files (Q-23) DATE: 29 January 1974

FROM : Jack Bacastow, Safety Engineer

SUBJECT : OPEN PITS AT TA-5 (Beta Site)

SYMBOL : H-3

Friday a.m., January 25th, at request of R. Renfro, Q-23, I visited the subterrene site at TA-5 (Beta Site). He called to my attention the following:

1. An open concrete pit approx. 1 mx 1 m opening and at least 1 m deep, pit covered with rotten wooden cover. (Pit identified as TA-5-13)

2. There is an open shaft 1.83 m in diam and 10.67 m deep. Corrugated pipe lining of the shaft extends about .7 m above floor level affording some protection. There is a fixed vertical ladder (unguarded) going down into the shaft. Shaft is located in Building TA-5-20. There is a hole in the side of this building large enough for an adult to crawl through and the door to building is unlocked.

Both of the aforementioned items are a hazard to personnel working at site, security inspectors, and possible hikers coming up Cedro Canyon. The open shaft in TA-5-20 might tempt a more venturesome young person to climb down into to investigate. Q-23 has requested that these two open pits be covered, hole in side of Building TA-5-20 be covered and door secured in some manner.

Jim Parsons and Don Cameron of Eng-4 were contacted. Cameron and I went to TA-5 and looked at the problem. Don has set things in motion. Tegtmeier of Eng-4 wrote up a job request to do this under OSHA funding and H-3 has approved it. Building will be secured and standard metal grating available from Zia stock will be used for the covers. Warning sign will be attached to cover in TA-5-20 warning of the 10.67 m open shaft below. This cover will also be securely fastened in place so that it cannot be removed easily. Work should be completed this week.

[illegible] sign in place 2/5/74 J.H.B.

also filed in TA-5 Perimeter.

I visited site on Thursday Jan. 31st and found

c: Chrono

AEC and Security

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OFFICE MEMORANDUM

TO : Jerome E. Dummer, Group Leader, H-1 DATE: July 1, 1976

FROM : Carl Buckland, Leader, General & Materials Monitoring Section, H-1

SUBJECT : H-1 GENERAL & MATERIALS MONITORING SECTION PROGRESS REPORT FOR JUNE 1976

SYMBOL : H-1

MAIL STOP: 306

Attached is the June 1976 Progress Report for the H-1 General and Materials Monitoring Section.

Carl Buckland

Carl Buckland

CB:ed

CY: File ✓

SEE PAGE 2.

H-1 GENERAL AND MATERIALS MONITORING SECTION PROGRESS REPORT

FOR

JUNE 1976

I. ACTIVITIES

A. Section Projects - None

B. Plant Projects/Design Reviews

1. Reviewed SOPs from the following groups: M-2, M-6, WX-3, WX-5, P-6, P-Division Radiation Safety Rules, WX-2, E-1

   Also - a) Proposed SAR on "Treat Fuel Capsule Assembly Shipping Container"

   b) Security and Safety Requirements for Nuclear Explosive Device Shipments Between S-Site and the Los Alamos Airport

   c) Zia maintenance of Pyr-A-Larms containing ^{241}Am

   d) Surveillance of protective clothing through monitoring

2. A review was made of current procedures for processing potentially contaminated tritium sniffers. A new draft procedure was prepared.

3. Reviewed possibility of CNC-11 shipping a ^{252}Cf source anywhere in the world.

4. An update of the procedures for shipping some activated EPA components to Yugoslavia was prepared.

C. Special Problems, Evaluations and/or Studies

1. High exposure to two film badges, one planted and one personal, was investigated.

2. Recently, it was learned that the iridium targets used by M-2 at Phermex became activated. From the dose rates measured and the number of nCi produced, an estimate of the actual surface dose rate and at 30 cm was calculated for targets receiving 100 times the number of pulses. The activity was found to be ^{190}Ir and ^{192}Ir. The rate at 30 cm was calculated to be only .72 mR/h; however, the surface dose rate could reach ~2.0 r/h. The surface rate will be measured with more elaborate means after some additional targets are fabricated by CMB-6 and exposed.

3. At the request of M-2, a survey of the one megavolt Blumlein generator was made on 5/24 and 6/4 using a Model 444 Victoreen on the integrate scale. No radiation was detected under normal operating conditions.

On 6/4, the generator was operated in a vacuum which caused a breakdown of the voltage pulse when fired, thereby producing some detectable radiation. Three mR/pulse at 3 feet from the output end of the generator was measured. TLDs confirmed radiation only at the output end.

4. TLDs were planted on the screen of a Model 4015 computer display in J-16. No radiation was detected after 41 hours of running.

D. Problem Areas (Administrative, Technical) - None.

E. Training/Safety Meetings

Training - None except Coop's classes.

Safety Meeting - The section held a safety meeting on June 10.

F. Visitors, Trips, Meetings - No visitors or trips.

Meetings - June 8 - Concerning the final plans of shipping the EPA parts to Yugoslavia.

June 16 - With two Sandia people plus SP-DO over effect of heat buildup on weapon parts in shipping containers.

June 24 - Input presented to Agnew by all concerned groups in the forthcoming confinement shots at R-184.

II. OCCURRENCES AND ACCIDENTS

None.

III.

A. Survey/Test Frequency Statistics - See attached.

B. Tests Above LASL Guide - None.

C. Monthly Stack Effluent Report - Forwarded to Group Office under separate cover.

IV. MISCELLANEOUS

1. Structures at Beta Site were monitored for removal.

2. The Zia Shops area was monitored on Saturday, June 12. No contamination detected.

3. On Saturdays, June 19 and 26, some Zia vehicles were monitored. One Lowboy was found with a spot of 14,000 d/m alpha on the bed.

4. An above-average number of calls were received from NTS this period for advice concerning the shipment of radioactive materials.

5. An M-2 dry run confinement shot utilizing only D-38 was monitored on June 29. The fittings are all Pu contaminated, hence the need for H-1 surveillance.

III. A. SURVEY/TEST FREQUENCY STATISTICS

Section General & Materials Monitoring Period: From June 1, 1976 To June 30, 1976

	Type of Test or Survey	Number of Tests or Surveys Performed
1.	Beta/Gamma Survey	2394
2.	Neutron Survey	80
3.	Alpha Contamination Survey	23
4.	Beta/Gamma Contamination Survey	14
5.	Tritium Contamination Survey	1015
6.	Routine Air Test	14
7.	Special Air Test	Zero
8.	Nose Swipe Test	Zero
9.	Shipment Survey - On-site	8
10.	Shipment Survey - Off-site	49
11.	Salvage Surveys	45
12.	Weekly-monthly Surveys	4
13.		
14.		
15.		
16.		
17.		
18.		

IM-5 Montoya 1976, 04-0163
ER-ID# 879

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Telephone Ext:

OFFICE MEMORANDUM

TO : Jim Parsons, ENG-4

DATE: July 2, 1976

FROM : J. B. Montoya

SUBJECT : TECHNICAL AREA 5 CLEAN UP

SYMBOL : ENG-3

MAIL STOP: 624

Technical Area 5 was officially abandoned on December 18, 1959, and all costs of the structures were removed from LASL's records.

In March 1960 some of the abandoned structures were destroyed by fire. The rest of the structures remain because it was determined by the Albuquerque Operations office and the Los Alamos Area Office that removal cost would far exceed the expected recovery value.

It has now been determined by Group H-8 that the site should be cleaned for health and safety reasons. The removal of existing structures and the clean up of the site will be coordinated by ENG-4 and the costs will be charged to expense.

We strongly recommend that The Zia Company demolish the remaining structures and recycle the lumber and other usable materials through their salvage yard. The pump house and the underground water tank should remain abandoned in place. [redacted]

Site clean up should be coordinated with Group H-1 due to contamination found on some plate steel scattered about the mesa.

Attached are the health reports and descriptions of the structures.

ERDA concurs with the above action; a final report should be submitted when clean up is completed.

J B Montoya
J. B. Montoya
Group Leader, ENG-3
Records Management

JBM/bl

Attachments: a/s

cc: w/o attach
H. F. Althaus, ERDA/ENG
C. Blackwell, H-1 MS-694
R. Bradshaw, ENG-DO
W. Courtright, H-3 MS934
W. Crismon, ERDA/O/TP
J. Griffin, Jr., H-5 MS-486
LaMar Johnson, H-8 MS-490

ISD-5
File

Got a copy to be sure septic tank was removed. JA 6/12/85

Janecky 1772, 04-0234

INTERNATIONAL TECHNOLOGY CORPORATION

RECORD OF ☒ TELECON ☐ MEETING

Project Name	Number	Phase	Task	Subtask
	301215	14	C2	C1

Date: February 25, 92 | Time: 10:40 Am

CALL FROM ☐ NAME:
CALL TO ☐

Other Participants — Name/Location/Representing:

CALL FROM ☐ NAME:
CALL TO ☒ Dave Janecky

Telephone Number: 665-0253

Company Name: LANL

Address: INC-7

City

State | Zip Code

Topic: Solubility of lead (brick form)

Summary (Decisions & Specific Actions Required by Named Persons):

I called Dave Janecky to get information on the solubility of lead in natural systems. He confirmed what I thought: lead is soluble only under acidic conditions, which would not be encountered naturally, at least on Pajarito Mesa.

The lead bricks in the calibration chamber at TA-5 (SWMU 35-003) will not be the source of lead soil contamination.
5-003

Required Action:

Prepared by (Signature): Keith Rutledge

Distribution:
Original to Project File
Copy to Project Manager
Copy to Preparer

☐ Other Distribution (By Prepar
Carole Lojek
Allyn Pratt

92-300

PAGE 1 OF 1

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