Los Alamos Environmental Restoration Records Processing Facility

ENTERED

# LOS ALAMOS

LOS ALAMOS NATIONAL LABORATORY

ENVIRONMENTAL RESTORATION
Records Processing Facility
ER Record Index Form
(Side 1 of 2)

ER Record I.D.# 0012471

DATE RECEIVED: 2/9/93 PROCESSOR: TMP

**Part I:** Complete all fields; indicate if not applicable or appropriate; please write legibly.

DOCUMENT TO: OU 1130 File DOCUMENT DATE: 05/29/92

ORIGINATOR NAME: Sharad Kelkar ORGANIZATION: EES-4

SYMBOL: EES-4-92-174 PAGE COUNT: 4

SUBJECT/TITLE: Meeting with Robert W. Drake

RECORD TYPE (Circle relevant type for primary record; type of attachments should be selected on *Keywords List*):

| | | | | |
|---|---|---|---|---|
| Analytical Data | FAX | Map | Plan | Study |
| Chain-of-Custody | Figure | Memo | Procedure | Telephone Record |
| Computer Output | Form | Microform | Purchase Request | Transcription |
| Contract | Interview | Notebook | Receipt Acknowledgment | Video |
| Controlled Distribution | Letter | Personal Notes | Report | Work Plan |
| Drawing | Logbook | Photo | Review | Other |

RECORD CATEGORY: P
(P for Programmatic or R for Reference)

RECORD PACKAGE #: —

RECORD FILMED (Y/N): Y

RECORD LOCATION: —
(Indicate location of record if not filmed.)

**Part II:** Complete all fields; indicate if not applicable or appropriate; please write legibly. Use *ER Record Index Form Attachment Sheet* if needed.

ATTACHMENTS FILMED (Y/N): Y
(Were attachments to this record filmed?)

LOCATION: —
(Indicate location of attachments.)

| TECH AREA(S) | ADS NO(S) | WBS NO(S) | STRUCTURE NO(S)/MDA |
|---|---|---|---|
| *LIST RELEVANT TECH AREA(S).* | *LIST RELEVANT ADS NO(S).* | *LIST RELEVANT WBS NO(S).* | *LIST RELEVANT STRUCTURE NO(S)/MDA.* |
| 12 | — | — | — |

31575

**Part III:** Complete all fields; indicate if not applicable or appropriate; please write legibly. Use *ER Record Index Form Attachment Sheet* if needed.

| PRS NO(S) | DOCUMENT TO | ORIGINATOR NAMES |
|---|---|---|
| *LIST RELEVANT PRS NO(S).* | *LIST MULTIPLE RECIPIENTS.* | *LIST MULTIPLE ORIGINATORS.* |
| — | — | — |

CORRECTION (Y/N): —
(Is this a correction to a record previously processed?)

CORRECTED #: —
(If answer is Yes, please give ER Record # for corrected record.)

CORRECTION DESCRIPTION (Optional): —

SUPERCEDE: — REPLACE: — DELETE: — ADD: — REVISE: —

ATTACHMENT LIST

A.) Letter; Sharad Kelkar; Drake; —; Amendment No. 1, addition to Sharad Kelkar notes of May 29, 1992. ; 06/22/92

**KEYWORDS**: Circle relevant KEYWORDS from the list below for ER Record #: 12471

**MISCELLANEOUS** (List other indexing criteria as necessary; please write legibly):
Composition B, RDX, HMX, Depleted Uranium (DU), PBX
Shrapnel, Helium, Amendment No-1, Berator, Octol

Abandon
Aboveground Tank
Absorption
Abstract
Accelerator
Access
Accident
Accumulation
Acid
Active
Administrative
**ADS** (Activity Data Sheet)
Adsorption
**AEC** (Atomic Energy Commission)
Aerial
Agenda
Agreement
Air
Alpha
Americium
Analysis
Analytical
**AOC** (Area of Concern)
Approval
Aquifer
**ARAR** (Applicable, Relevant, or Appropriate Requirements)
Archaeology
Archive
Area
Arsenic
Asbestos
Asphalt
Assessment
Audit

Backfill
Bacteria
Barium
Baseline
**BCP** (Baseline Change Proposal)
Beds
Bermed Area
Beryllium
Beta
Biology
Blank
Boiler
Boneyard
Bunker
Buried
Burn
Burn Site

Cadmium
Caisson
Calibration
Canyon
Capacitor
Caustic
**CEARP** (Comprehensive Environmental Assessment and Response Program)
Cement
**CERCLA** (Comprehensive Environmental Response, Compensation, and Liability Act)
Certification
Cesium
Chain of Custody
Chamber
Change Control
Change Order
Charge
Chart
Checklist
Chemical
Chromium
Cleanup
Clearance
Closure
Clothing
**CMI/RA** (Corrective Measures Implementation/Remedial Action)
**CMS/FS** (Corrective Measures Study/ Feasibility Study)
Cobalt
Comment
Committee
Community Relations
Compliance
Compressed Gas
Computer Modeling
Computer Output
Concern
Concrete
Concurrence
Configuration
Construction
Container
Containment
Contaminant
Contract
Control
Controlled Distribution
Core
Corrective Action
Correspondence
Criteria
Cyanide

Data
Deadline
Debris
Decision Analysis
Decommission
Decontamination
Deficiency
Deliverable
Demolition
Description
Detection
Detonation
Development
Discharge
Disposal
Documentation
**DOE** (Department of Energy)
Dose
**DQO** (Data Quality Objectives)
Draft
Drainage
Drainline
Drawing
Drilling
Drop Tower
Drum
Dry Well
Dump
Duplicates

Ecology
Effluent
**EIS** (Environmental Impact Statement)
Emission
Engineering
Environmental
**EPA** (Environmental Protection Agency)
Equipment
**ERDA** (Energy Research and Development Administration)
Erosion
Error
**ES&H** (Environment, Safety, and Health)
Estimate
Evacuation
Evaluation
Evaporator
Excavation
Exclusion
Exhaust
Experiment
Explosive
Exposure
Extension
Extraction

Facility
Fallout
Farm
FAX
Fence
Field
Figure
Filter
**FIMAD** (Facility for Information Management, Analysis, and Display)
Finding
Fire
Firing Site
Fiscal
Fission
Five-Year Plan
Flow
Flow chart
Fluid
Form
Framework
Free
Fuel
Fume

Gamma
Gas
Generation
Generic
Geochemistry
Geology
Geophysics
Glass Beaker
Glove Box
Graph
Guidance
Gun

Handling
Hazardous
Health
**HE** (High Explosive)
History
Hole
Home Owner
Hood
**HSWA** (Hazardous and Solid Waste Amendments)
Hydrology
Hygiene

Impact
Implementation
Implosion
Impoundment
Inactive
Incident
Incinerator
Industrial
Infiltration
Injection Well
Injury
Inorganic
Inspection
Installation
Interim
Interim Action
Internal
Interview
Inventory
Investigation
**IRM** (Interim Remedial Measure)
Isotope
**IWP** (Installation Work Plan)

Lab Job
Laboratory
Lagoon
Land
Landfill
Laundry
Leach
Lead
Leak
Legal

Letter
Limit
Lines
Liquid
List
Log
Logbook

Magazine
Management
Manhole
Map
Material
MDA (Material Disposal Area)
Media
Meeting
Memo
Mercury
Metal
Microform
Minimization
Minutes
MIS (Management Information System)
Mixed Waste
MOA (Memo of Agreement)
Model
Modification
Money (Allocation, Appropriation, Budget, Cost, Funding, etc.)
Monitoring
Monthly Report
Mortar Impact Area
MOU (Memo of Understanding)
MSA (Major System Acquisition)

NEPA (National Environmental Policy Act)
NFA (No Further Action)
Nitrate
NMED (New Mexico Environment Department)
NMEID (New Mexico Environmental Improvement Division)
NOD (Notice of Deficiency)
Nonexplosive
Notebook
Notification
NPDES (National Pollutant Discharge Elimination System)
NRC (Nuclear Regulatory Commission)
Nuclear

Observation
Off-gas
Oil
Open
Open Burning
Operation
Order
Organic
Organization
OSHA (Occupational Safety & Health Administration)
OU (Operable Unit)
Outfall
Outline

Pad
PA/RFA (Preliminary Assessment /RCRA Facility Assessment)
PCB (Polychlorinated Biphenyl)
Permit
Personal Notes
Personnel
Personnel Qualification
Photo
Pilot Study
Pipe
Pit
Plan
Plant
Plutonium
Pollution
Polonium
Polaroid
Potential
Presentation
Prevention
Priority
Procedure
Program
Programmatic
Project
Project Leader
Propellant
Property
Proposal
Protection
Protocol
PRS (Potential Release Site)
Public
Pump
Purchase Request

Quality
QA (Quality Assurance)
QP (Quality Procedure)
Quarterly Report

Radioactive
Radiochemistry
Radionuclide
Radium
Rationale
RCRA (Resource, Conservation, and Recovery Act)
Reactor
Receipt Acknowledgment
Recommendation
Reconnaissance
Records
Recovery
Recycle
Reduction
Reference
Regulation
Release
Remediation
Removal
Report
Request
Requirements
Research
Resin Bed
Resolution
Resource
Respirator
Response
Restoration
Restriction
Results
Review
Revision
RFI/RI (RCRA Facility Investigation/Remedial Investigation)
Risk
RPF (Records-Processing Facility)

Safety
Salamander
Salvage
Sample
Sampling Plan
Sanitary
Satellite
Schedule
Scope

Scrap
Scrap Detonation Site
Screening
Scrubber
Search
Security
Seep
Seminar
Semivolatile
Septic
Sewer
Shaft
Sheet
Shell
Shot
Silver
Site
Sludge
Soil
Solid
Solvent
SOP (Standard Operating Procedure)
SOW (Statement of Scope of Work)
Specific
Spill
Stack
Standard
Statistics
Steamline
Steel
Storage
Strontium
Structure
Study
Subcontractor
Subsurface
Summary
Sump
Support
Surface
Surveillance
Survey
Swipe
SWMU (Solid Waste Management Unit)
System

Table
Tank
Task
TCLP (Toxicity Characteristic Leaching Procedure)
TDD (Technical Document Description)

Technical
Technical Team
Technology
Telephone Record
Test Area
Testing
TLD (Thermoluminescent Dosimeter)
TOC (Table of Contents)
Townsite
Toxic
Tracking
Training
Transcription
Transfer
Transformer
Transport
Treatment
Trench
Trip Report
Tritium
TRU (Transuranic)
TSCA (Toxic Substances Control Act)
Tuballoy
Tuff

Underground
Uranium
Urine
USGS (United States Geological Survey)
UST (Underground Storage Tank)
Utility

Validation
Variance
VE (Value Engineering)
Ventilation
Verification
Video
Volatile
Volume

Warehouse
Waste
Water
WBS (Work Breakdown Structure)
Weapon
Well
Work
Working Group

Zinc

Los Alamos
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

(H)

# memorandum

TO: LANL-ER, OU 1130 FILE

DATE: MAY 29, 1992

FROM: Sharad Kelkar

MAIL STOP/ D - 443 / 7-4318

SYMBOL: EES-4-92-174

SUBJECT: MEETINGS WITH ROBERT W. DRAKE

Sharad Kelkar had meetings with Robert (Bob) W. Drake on January 10, 29 and 30, 1992. Bob's current addresses and phone numbers are:

[redacted]

and

[redacted]

These are the observations Bob made during the meetings:

O Bob joined the Manhatten Destrict in ....., the Laboratory in ..... and retired in ..... While at the Lab, he worked at GMX-DO and M-DO. during this time.

O He was on the Site Selection Committee headed by Stanley W. Burris in 1947-48. This committee laid out the plans for expansion of the Laboratory south of the Los Alamos canyon. Final site selection and group assignment was made by Bradbury and MacDougall. GMX-8 was assigned to the Kappa site.

O Areal surveys were done in 1971 and in the 1980's.

O **Talk to Wayne Campbell, Bill Mautz.**

O **Drop tests were done at Lower Slobbovia involving D38**

O For many years, Beratol was the slow explosive (finely ground Barium Nitrate with TNT), later changed to Boric acid.

O Composition B is 40% TNT, 60% RDX.

O RDX is hexanitrosol (C, N & H)

O HMX is similar to RDX but has 8 sided rings instead of 6 sided rings, much more energetic than RDX.

O Octol: HMX + TNT

O PBX are plastic bonded explosives, made since late 40's. Most common PBX is 9404.

O Since 70's, TATB (Triamino Trinitro Benzene) has been used.

O J division did an intense radioactive experiment on L site.

O Denser shrapnel travel farther. Fragments of fist size are uncommon. Fragments tumble in flight. Bigger pieces travel farther.

O GMX-11 (later became M-4) did experiments in vessels, may have taken particle size data, check with Doug Venable.

O GMX -8 was only a minor consumer of DU. GMX 4, 5, and 6 (EF, Phermex, and TA 39) were the big users.

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Received by ER-RPF
FEB 09 1993

# Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

# memorandum

TO:

DATE:

FROM:

MAIL STOP/

SYMBOL:

SUBJECT:

O Majority of GMX-8 experiments were bare HE, with no metals except Al.
O Less than 2% of the shots involved large amounts of metal.
O The biggest shot fired at Kappa site was 5000-6000 lb of Comp. B and TNT, bare.
O 1500 lb. shots may have been simulations of Mark V.
O There was a ~500lb shot in Sandia canyon that misfired. Did not throw HE pieces
more than 300 yards.
O Talk to H3 about debris and shrapnel (Ted Ehrenkranz).
O Talk to Bill Davis, Jim Travis, Lester Baggett, Chuck Boyle, Slim Boone, W. E. Deal

Approved conditionally, as stipulated in Amendment No. 1.

Robert W. Drake

Robert W. Drake, Consultant
[illegible]

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Pagosa Springs [illegible]
22 June 1992

This is Amendment No. 1, a stipulated addition to Sharad Kelkar's notes of May 29, 1992, of our meetings of January 10,29, and 30, 1992, and a condition of my approval thereof.

Robert W. Drake, Consultant
22 June 1992

Dear Sharad,

I hope my complete candor will not offend you. You would not wish me to less than direct, honest, and straightforward.

As I attempted to indicate to you in our telcon of 19 June 1992, your summary of "observations" made by me during our meetings of 10, 29, and 30 January 1992 troubled me. It is an extraordinary blend of trivial topics mixed with more profound and worthy matters.

As I have told you repeatedly, I will help you in any way I can. I will answer any question I can. If you ask me what RDX is, I will tell you (you did not get the answer right). (RDX is a nickname, not a code; it has appeared in the open literature for many decades). But any enterprising high school student who wants to know what it is can look it up with trivial resources. I am not about to tell you to do that, if nothing else, out of politeness. But if my professional peers detected that I had apparently revealed this profound information to you in exchange for a consultant's fee, I would be embarrassed beyond recall. Similarly, the identity of HMX, the recipe for Comp. B, Octol, etc.

My contribution to you and to your mission and goal should consist of facts not readily available to you and, preferably, things not readily available to you from a closer, and less expensive, source. For example, the apparently not-very-well-recorded history of Kappa Site, which I lived through 1948-1981. Or overviews of the history of GMX-8 (M-8), its mission, its principal talents and resources.

Some particulars warrant correction: I never "joined" the Manhattan Engineering District; it had long since been dissolved when I came to Los Alamos in 1948. The confusion may have come from the following facts, which I threw at you in a pretty hurried dose(!): I went to work (first, professionally) in February 1947 at the Explosives Research Laboratory, Bruceton, PA. It was a joint effort by the U.S. Bureau of Mines and Carnegie Institute of Technology under a National Defense Research Committee contract. The ERL Director was George B. Kistiakowski, formerly Professor of Chemistry at Harvard University (subsequently, after Los Alamos, head of Harvard Chem. Dept.) The Deputy Director was Duncan P. MacDougall, for whom I worked. In 1944, "Kisty" left Bruceton for a western destination (Los Alamos, to head X Division, undisclosed at the time). MacDougall became ERL Director. He and "Kisty" maintained a personal and professional relationship, and some of us at ERL, who had the necessary capabilities, did experiments at Bruceton directed at solving problems at Los Alamos (we did not know this at the time). I was one who conducted such experiments; in that sense, I did work for the MED.

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and after Agnew's reorganization of September 1970, for WX-DC. I never worked for M-DO (M Division is, of course, an off-shoot of GMX).

The Site Selection Committee was probably (I have decided, after much rethinking and soul searching) an arm of the LASL Tech Board, though its membership selection was undoubtedly MacDougall's (he came to Los Alamos in May 1948), rubberstamped by Bradbury. I was never a member of that Committee. When I came to Los Alamos (August 1948), the Site Selection Committee had essentially completed its work (means they had worked not more than three months) and--if we could just find some records--I think they probably submitted their final report and recommendations to the Tech Board in September 1948. One of my many new jobs as Technical Aide in GMX-DO was to implement those recommendations for the GMX Groups involved: GMX-1, 2, 3, 4, 5, 6, 7, 8 (later, also 11). That meant design of the site facilities (by various contractor Architect Engineers, as well as the LASL Dept. of Engineering), their construction (by competitive bid to AEC), and operation. In 1957 $, about $170 million. Kappa Site was one of the first three built.

(TA-20)

The relationship of the Sandia Canyon misfire to our mutual goal is obscure; it happens to be a not-well-remembered or -documented fact I know. I could as well have spoken of experiments in Pajarito Canyon (Gamma Site? TA-27 ?) that produced massive HE fragmentation (sic). H-3 files should be full of information on this contributed by me and Courtright. It has little to do with your Kappa Site mission.

I can't identify a Chuck Boyle; must be Chuck (Charles) Bagley.

Forgive my wordiness; you deserve to have the facts set straight, and I know I have fed you some overwhelming doses.

I don't work for nothing; an affidavit will accompany this for the costs!

Sincerely,

Robert W. Drake

Robert W. Drake

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