Los Alamos Environmental Restoration Records Processing Facility

ER Record I.D.* 0015271

DATE RECEIVED: 07-17-92 PROCESSOR: LD

LOS ALAMOS

LOS ALAMOS NATIONAL LABORATORY

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

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

DOCUMENT TO: H.F. Schulte DOCUMENT DATE: 07/28/71

ORIGINATOR NAME: JB Pandwski ORGANIZATION: GMX-3

SYMBOL: — PAGE COUNT: 26

SUBJECT/TITLE: Group GMX-3 Effluents

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	Minutes	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)	PRS NO(S)	ADS NO(S)	STRUCTURE NO(S)/MDA
LIST RELEVANT TECH AREA(S)	LIST RELEVANT PRS(S)	LIST RELEVANT ADS NO(S)	LIST RELEVANT STRUCTURE NO(S)/MDA
16	—	1082	16-7 16-10 16-27 16-54 16-58 16-59 16-61 16-65 16-73 16-88 16-89 16-90 16-91 16-92 16-93 16-119 16-164 16-191 16-200 16-203 16-206 16-207 16-208 16-209 16-220 16-221 16-223 16-224 16-225 16-226 16-261 16-263 16-277 16-278 16-281 16-283 16-285 16-286 16-300 16-303 16-304 16-305 16-308 16-319 16-341 16-342 16-343 16-344 16-345 16-360 16-410 16-411 16-413 16-414 16-415 16-417 16-425
11			
28			
37			

30818

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

WBS NO(S)	DOCUMENT TO	ORIGINATOR NAMES
LIST RELEVANT WBS NO(S). 1.5.7	LIST MULTIPLE RECIPIENTS. —	LIST MULTIPLE ORIGINATORS. PG Salgado

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) TABLE: TABLES 1-5 GMX-3 Buildings

B) Appendix A Completed Forms "Survey of Effluent Stream"

C) Form Los Alamos Scientific Laboratory Survey of Effluent Streams

D) Appendix B Materials of Concern Supplied to Site Buildings

E) Table Listing of Miscellaneous Material Versus Buildings Group GMX-3 Dated 7/28/71

F) Table Listing of Metals and Metal Salts Versus Building Dated 7/28/71

G) Table Listing of Gases and Acids Versus Building Group GMX-3 Dated 7/28/71

ER Records Index Form Attachment Sheet for ER Record I.D. #: [illegible]

Part II Attachment: Complete all fields; indicate if not applicable or appropriate. Please write legibly.

TECH AREA(S)	PRS NO(S)	ADS NO(S)	STRUCTURE NO(S)
LIST RELEVANT TECH AREA(S) HERE.	LIST RELEVANT PRS NO(S) HERE.	LIST RELEVANT ADS NO(S) HERE.	LIST RELEVANT STRUCTURE NO(S) HERE.
—	—	—	16-437 - 16-462 - 16-463 16-476 - 16-477 - 16-478 16-489 - 16-515 - 16-516 16-517 - 16-518 - 16-519 16-520 - 16-525 - 11-1 11-2 - 11-3 - 11-4 11-6 - 11-24 - 11-25 11-30 - 11-36 - 28-1 28-2 - 28-3 - 28-4 28-5 - 37-1 - 37-2 37-3 - 37-4 - 37-5 37-6 - 37-7 - 37-8 37-9 - 37-10 - 37-11 37-12 - 37-13 - 37-14 37-15 - 37-16 - 37-17 37-18 - 37-19 - 37-20 37-21 - 37-22 - 37-23 37-24 - 37-25 - 37-26 37-27 - 16-260 - 16-265 16-267 - 16-280 - 16-301 16-302 - 16-307 - 16-410 16-430 - 16-450 - 16-460 16-193 - 16-202 - 16-222 16-306 - 16-340 - 16-370 16-386 - 16-387 - 16-388 16-389 - 16-390 - 16-392 16-394 - 16-399 - 16-401 16-412 - 16-16 - 16-180 16-192 - 16-195 - 16-210 16-530 - 16-531 - 16-532 16-533 - 16-534 - 16-535 16-540 - 16-542 - 16-550

Part III Attachment: Complete all fields; indicate if not applicable or appropriate. Please write legibly.

WBS NO(S)	DOCUMENT TO	ORIGINATOR NAMES
LIST RELEVANT WBS NO(S) HERE.	*LIST MULTIPLE RECIPIENTS HERE.*	*LIST MULTIPLE ORIGINATORS HERE.*

ER # 5903

H) Table Listing of Solvents versus building Group GMX-3 dated 7/28/71

I) Table Listing of Solvents versus buildings Group GMX-3 dated 7/28/71

J) Table Material disposed of by burning at Group GMX-3 Disposal Areas dated 7/28/71

K) Table Group GMX-3 Waste Disposal dated 7/28/71

KEYWORDS: Circle relevant KEYWORDS from the list below for ER Record #: 0005903

MISCELLANEOUS (List other indexing criteria as necessary; please write legibly): Tech Area,

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)
Archeology
Archive
Area
Arsenic
Asbestos
Asphalt
Assessment
Audit

Bacteria
Barium
Baseline
BCP (Baseline Change Proposal)
Beds
Bermed Area
Beryllium
Beta
Biology
Blank
Boiler
Boneyard
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
Clothing
Closure
CMI/RA (Corrective Measures Implementation/Remedial Action)
CMS/FS (Corrective Measures Study/ Feasibility Study)
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

Data
Deadline
Debris
Decision Analysis
Decommission
Decontamination
Deficiency
Deliverables
Demolition
Description
Detection
Detonation
Development
Discharge
Disposal
Documentation
DOE (Department of Energy)
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
Farm
FAX
Fence
Field
Figure
Filter
FIMAD (Facility for Information Management, Analysis, and Display)
Finding
Fire
Firing Site
Fiscal
Five Year Plan
Flowchart
Fluid
Form
Framework
Free
Fuel

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

Handling
Hazardous
Health
HE (High Explosive)
History
Hole
Home Owner

HSWA (Hazardous and Solid Waste Amendments)
Hydrology
Hygiene

Implementation
Implosion
Impoundment
Inactive
Incinerator
Industrial
Injection Well
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 Environmental Division)
NMEID (New Mexico Environmental Improvement Division)
NOD (Notice of Deficiency)
Non-explosive
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

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
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
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 Detonation Site
Screening
Scrubber
Security
Seep
Seminar
Semivolatile
Septic
Sewer
Shaft
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

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 Tanks)
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 SCIENTIFIC LABORATORY
OF THE UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO 87544

(26)

OFFICE MEMORANDUM

TO : H. F. Schulte

DATE : July 28, 1971

VIA : Jesse Aragon

FROM : J. B. Panowski and P. G. Salgado

AUG 3 '71 AM

SUBJECT : GROUP GMX-3 EFFLUENTS

SYMBOL : GMX-3

Reference : Memorandum from Harry F. Schulte to Group Leaders, dated April 12, 1971, subject "Effluents from AEC Facilities"

H-8 FILE	
H. S. J.	✓
J. H. D.	

In response to the reference memorandum, we have surveyed effluent materials from Group GMX-3 operations. In accordance with the agreement reached in our meeting on May 20, 1971, we are reporting these effluents (1) as best estimates from specific buildings, which are large users of solvents and explosives or users of materials of special concern and (2) as an itemized breakdown of material issued to individual buildings.

GMX-3 has a large number of buildings and auxiliary facilities. So that you will not have to reduce the information from a formidable number of "Survey of Effluent Stream" forms, we are providing the following information:

Table 1 Numbers of GMX-3 buildings that emit no or negligible effluent

Table 2 Numbers of GMX-3 buildings that emit explosives, solvents, or gases in moderate amounts

Table 3 Numbers of GMX-3 buildings that emit large amounts of explosives, solvents, gases, or materials of particular concern

Table 4 Numbers of GMX-3 structures that are associated with the Burning Ground and disposal facilities

Table 5 Numbers of GMX-3 buildings that are the responsibility of agencies other than GMX-3

Appendix A Forms for buildings listed under Items 3 and 4, above

Appendix B Quantities of "materials of concern" supplied to GMX-3 buildings, including those listed under Item 2, above

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JUL 17 1992

In assessing the effluent from GMX-3, the data on the forms should be given credence over the list of materials delivered. In these cases, records of usage at the buildings indicate that the material delivered, in excess of that used, is still on hand. In cases where there are no forms, the effluent may be considered to be equal to those materials delivered.

As shown in Appendix B, the GMX-3 effluents of major concern are solvents and high explosives because of the quantity of material involved. Approximately 3600 gallons of various solvents are delivered to our operating buildings over a six-month period. These solvents leave the buildings by various routes, but we feel that virtually all this material either evaporates into the atmosphere within a short distance, perhaps half a mile, of the site boundaries or is burned as part of our disposal activities. With respect to waste explosives, we burn approximately 50,000 pounds during a six-month period and estimate that another 125 pounds is carried a short distance downstream in our sump effluent.

In an attempt to get some perspective for the scope of the GMX-3 effluent problem, we have compared the site solvent and HE effluent with that of an automobile as shown below.

EFFLUENT COMPARISONS

A. GMX-3	Disposal (6 months)	Rate (lbs/hr, 24-hr day)
Solvents	3,570 gal (@ 7 lbs/gal)	5.7
HE	49,400 lbs	11.3
	Total	17.0
Products	Hydrocarbons, C, CO_2, N_2, H_2O, NO_x	

B. One automobile (15 miles/gal; Gasoline at 0.7 g/cm³ or 5.9 lbs/gal)

	Disposal (one hour)	Rate (lbs/hr)
Gasoline	4 gal	23.6
Products	Hydrocarbons, C, CO, CO_2, N_2, NO_x, SO_2, H_2O, $Pb(C_2H_5)_4$	

C. Summary

GMX-3	17.0 lbs/hr
One automobile	23.6 lbs/hr

This information is the best available at this time and we are sending it to you with the thought that such interim information may be useful in outlining the scope of the overall problem. We expect to have additional quantitative information after analysis of liquid and soil samples from our effluent streams. These data will be forwarded to you when available.

J. B. Panowski

P. G. Salgado

JBP/PGS/sf

Enclosures: As cited above

cc: E. H. Eyster
R. W. Drake
D. D. Meyer
C. W. Christenson
H. S. Jordan
Jesse Aragon
C. R. West
GMX-3 Reading File
File (2)

TABLE 1

GMX-3 BUILDINGS FROM WHICH
POLLUTION EFFLUENTS ARE EFFECTIVELY NEGLIGIBLE

TA-16- 7	TA-16-209	TA-16-343	TA-16-520	TA-37- 7
10	220	344	525	8
27	221	345	TA-11- 1	9
54	223	360	2	10
58	224	400	3	11
59	225	411	4	12
61	226	413	6	13
65	261	414	24	14
73	263	415	25	15
88	277	417	30	16
89	278	435	36	17
90	281	437	TA-28- 1	18
91	283	462	2	19
92	285	463	3	20
93	286	476	4	21
99	300	477	5	22
164	303	478	TA-37- 1	23
191	304	489	2	24
200	305	515	3	25
203	308	516	4	26
206	319	517	5	27
207	341	518	6	
208	342	519		

TABLE 2

GMX-3 BUILDINGS THAT EMIT SMALL OR MODERATE AMOUNTS
OF EXPLOSIVES, SOLVENTS, GASES,
OR OTHER MATERIALS OF PARTICULAR CONCERN
(No forms are provided.)

TA-16- 7	TA-16-267	TA-16-307	TA-16-450
92	280*	303*	460
260	301*	410	
265	302*	430*	

* Effluent from building consists of small quantities of solvents and HE that are carried to the sump and reported as burned.

TABLE 3

GMX-3 BUILDINGS THAT EMIT LARGE QUANTITIES OF EXPLOSIVES, SOLVENTS, GASES, OR OTHER MATERIALS OF PARTICULAR CONCERN
(Forms are provided.)

TA-16-193	TA-16-306
202	340
222	370

TABLE 4

GMX-3 BURNING GROUND AND DISPOSAL STRUCTURES

TA-16-386	TA-16-389	TA-16-394
387	390	399
388	392	401
		412

TABLE 5

BUILDINGS ASSOCIATED WITH GMX-3 FOR WHICH POLLUTION EFFLUENTS WILL BE REPORTED BY OTHER AGENCIES

TA-16- 16	TA-16-531	TA-16-540
180	532	542
192	533	560
195	534	
210	535	
530		

APPENDIX A

Completed Forms "Survey of Effluent Streams"

LOS ALAMOS SCIENTIFIC LABORATORY

R-S U14899

Do not write this space

Survey of Effluent Streams

Group GMX-3 Tech Area 16 Building 193

Accounting Number(s) _____

Nature of Effluent Streams: Gas _____ Liquid X Solid ____ Other _____

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: None

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack _____ Industrial Sewer _____

Sanitary Sewer X Storm Sewer _____

Trash Container Type: _____

Other: _____

Disposal Method: Atmospheric Dispersal _____ Sewage Plant _____

Waste Process Plant _____ Chemical Dump _____

Sewage Lagoon _____ Surface of Ground _____

Contaminated Burial Area _____ Septic Tank _____

Community Landfill _____ Other _____

Volume of Effluent: Known _____ Estimated _____

Contaminants (see list)	Estimated Discharge
Detergent (250 lbs/mo)	Awaiting analysis
Bleach - Purex (13 gal/mo)	" "
Aerosol - OT (1/2 lb/10 gal of water once a month)	" "

* See below

Monitoring Equipment on Effluent Stream: No X Yes _____

Describe _____

Remarks There is no detectable HE in the wash water (< 1 ppm)

* Ammonium Phosphate Dibasic (16 lbs/10 gal of water once a month) - Awaiting analysis

R-S U14899

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Survey of Effluent Streams

Group GMX-3 Tech Area 16 Building 202, Rm 114

Do not write in this space

Accounting Number(s)

Nature of Effluent Streams: Gas X Liquid ___ Solid ___ Other ___

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: None

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack ___ Industrial Sewer ___

Sanitary Sewer ___ Storm Sewer ___

Trash Container Type: ___

Other: Exhaust duct

Disposal Method: Atmospheric Dispersal X Sewage Plant ___

Waste Process Plant ___ Chemical Dump ___

Sewage Lagoon ___ Surface of Ground ___

Contaminated Burial Area ___ Septic Tank ___

Community Landfill ___ Other ___

Volume of Effluent: Known ___ Estimated 500 ft^3/yr

Contaminants (see list)	Estimated Discharge
Brazing alloy(Easy Flo)	1 lb/yr
Acetylene	500 ft^3/yr

Monitoring Equipment on Effluent Stream: No X Yes ___

Describe ___

Remarks One lb/yr of alloy is used. Only a small fraction of the alloy is volatile. The acetylene is burned and the products of combustion are emitted to the atmosphere.

R-S U14899

LOS ALAMOS SCIENTIFIC LABORATORY

Survey of Effluent Streams

Do not write in this space.

Group GMX-3 Tech Area 16 Building 202 Room 114

Accounting Number(s) _____

Nature of Effluent Streams: Gas X Liquid ____ Solid ____ Other ____

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: None

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack _____ Industrial Sewer _____

Sanitary Sewer _____ Storm Sewer _____

Trash Container Type: _____

Other: Charging Refrigeration Unit

Disposal Method: Atmospheric Dispersal X Sewage Plant _____

Waste Process Plant _____ Chemical Dump _____

Sewage Lagoon _____ Surface of Ground _____

Contaminated Burial Area _____ Septic Tank _____

Community Landfill _____ Other _____

Volume of Effluent: Known _____ Estimated 30 lb/yr

Contaminants (see list)	Estimated Discharge
Freon	30 lb/yr

Monitoring Equipment on Effluent Stream: No X Yes _____

Describe _____

Remarks This is the amount of Freon that must be added to the refrigeration unit to replace that which leaks and evaporates.

R-S 0148995

LOS ALAMOS SCIENTIFIC LABORATORY

Survey of Effluent Streams

Do not write in this space

Group GMX-3 Tech Area 16 Building 202 Room 114

Accounting Number(s) _____

Nature of Effluent Streams: Gas ____ Liquid X Solid ____ Other ____

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: None

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack ____ Industrial Sewer ____

Sanitary Sewer ____ Storm Sewer ____

Trash Container Type: Wiping rags

Other: ____

Disposal Method: Atmospheric Dispersal X Sewage Plant ____

Waste Process Plant ____ Chemical Dump ____

Sewage Lagoon ____ Surface of Ground ____

Contaminated Burial Area ____ Septic Tank ____

Community Landfill ____ Other ____

Volume of Effluent: Known 1 gal/mo Estimated ____

Contaminants (see list)	Estimated Discharge
Chlorothene	1 gal/mo
Petroleum Distillate	0.2 gal/mo
Muriatic Acid	0.1 gal/yr

Monitoring Equipment on Effluent Stream: No X Yes ____

Describe ____

Remarks These materials are used to wipe and clean surfaces.

R-S 014899

LOS ALAMOS SCIENTIFIC LABORATORY

Survey of Effluent Streams

Do not write in this space

Group GMX-3 Tech Area TA-16 Building 222

Accounting Number(s) _____

Nature of Effluent Streams: Gas ____ Liquid X Solid ____ Other ____

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: None

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack ____ Industrial Sewer X

Sanitary Sewer ____ Storm Sewer ____

Trash Container Type: ____

Other: ____

Disposal Method: Atmospheric Dispersal ____ Sewage Plant ____

Waste Process Plant ____ Chemical Dump ____

Sewage Lagoon ____ Surface of Ground X

Contaminated Burial Area ____ Septic Tank ____

Community Landfill ____ Other ____

Volume of Effluent: Known ____ Estimated 40 gal/wk

Contaminants (see list)	Estimated Discharge Diluted (Undiluted)
Acetic acid	5 gal/wk (approx 500 lb/yr)
Hydroquinone	7 lb/wk (approx 90 lb/yr)
Sodium Sulfite and Sodium Metaborate	40 lb/wk (approx 500 lb/yr)

* See below

Monitoring Equipment on Effluent Stream: No X Yes ____

Describe ____

Remarks Effluent is fixer (20 gal/wk) and developer (20 gal/wk) film processing solutions. The discharge, about once every three months, is accompanied by voluminous quantities of water.

* Potassium Bromide 1-1/2 lb/wk (approx 20 lb/yr)

R-S 014899

LOS ALAMOS SCIENTIFIC LABORATORY

Survey of Effluent Streams

Group GMX-3 Tech Area 16 Building 222

Do not write in this space.

Accounting Number(s)

Nature of Effluent Streams: Gas X Liquid Solid Other

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: None

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack Industrial Sewer

Sanitary Sewer Storm Sewer

Trash Container Type:

Other: Coolant leakage

Disposal Method: Atmospheric Dispersal X Sewage Plant

Waste Process Plant Chemical Dump

Sewage Lagoon Surface of Ground

Contaminated Burial Area Septic Tank

Community Landfill Other

Volume of Effluent: Known Estimated 150 lb/yr

Contaminants (see list)	Estimated Discharge
Sulfur Hexafluoride	

Monitoring Equipment on Effluent Stream: No X Yes

Describe

Remarks This material is used as a coolant in radiograph equipment. It is replaced as it leaks.

R-S 014899

LOS ALAMOS SCIENTIFIC LABORATORY

Survey of Effluent Streams

Do not write in this space.

Group GMX-3 Tech Area 16 Building 306

Accounting Number(s)

Nature of Effluent Streams: Gas ____ Liquid (1) ____ Solid ____ Other (2) Solvent Vapor

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: (1) Sump, (2) None.

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack ____ Industrial Sewer ____

Sanitary Sewer ____ Storm Sewer X (1)

Trash Container Type: ____

Other: Hoods (2)

Disposal Method: Atmospheric Dispersal X (2) Sewage Plant ____

Waste Process Plant ____ Chemical Dump ____

Sewage Lagoon ____ Surface of Ground X (1)

Contaminated Burial Area ____ Septic Tank ____

Community Landfill ____ Other Sump (1)

Volume of Effluent: Known ____ Estimated 1000 gal/day

Contaminants (see list)	Estimated Discharge /6 mo (gallons)
Acetone	220
Chlorothene	55

* See below

Monitoring Equipment on Effluent Stream: No ____ Yes ____

Describe ____

Remarks Most of the indicated discharge is water.

* Methylene chloride 10

iv.

R-S U14899

LOS ALAMOS SCIENTIFIC LABORATORY

Survey of Effluent Streams

Group GMX-3 Tech Area 16 Building 340

Do not write in this space

Accounting Number(s)

Nature of Effluent Streams: Gas ____ Liquid X Solid ____ Other ____

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: Sump

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack ____ Industrial Sewer X

Sanitary Sewer ____ Storm Sewer ____

Trash Container Type: ____

Other: ____

Disposal Method: Atmospheric Dispersal ____ Sewage Plant ____

Waste Process Plant ____ Chemical Dump ____

Sewage Lagoon ____ Surface of Ground X

Contaminated Burial Area ____ Septic Tank ____

Community Landfill ____ Other ____

Volume of Effluent: Known ____ Estimated X

Contaminants (see list)	Estimated Discharge/6 mo (gallons) **
H Cl	4
Acetone	700
n-Butyl acetate	120

* See below

Monitoring Equipment on Effluent Stream: No X Yes ____

Describe ____

Remarks These solvents will, in a short time, evaporate into the atmosphere, although, perhaps 90% of them leave as liquids.

* Ammonium sulfate	500
Methyl ethyl ketone	750
Toluene	10
Methanol	110

** With about 442,000 gallons of water

R-S U14899

LOS ALAMOS SCIENTIFIC LABORATORY

Survey of Effluent Streams

Group GMX-3 Tech Area 16 Building 370

Do not write in this space

Accounting Number(s) _____

Nature of Effluent Streams: Gas ____ Liquid X Solid ____ Other ____

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: None

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack ____ Industrial Sewer ____

Sanitary Sewer ____ Storm Sewer ____

Trash Container Type: ____

Other: Metal chips to salvage

Disposal Method: Atmospheric Dispersal ____ Sewage Plant ____

Waste Process Plant ____ Chemical Dump ____

Sewage Lagoon ____ Surface of Ground ____

Contaminated Burial Area ____ Septic Tank ____

Community Landfill ____ Other Burn

Volume of Effluent: Known 1 gal/mo Estimated ____

Contaminants (see list)	Estimated Discharge
Kerosene	1 gal/mo

Monitoring Equipment on Effluent Stream: No X Yes ____

Describe ____

Remarks ____

LOS ALAMOS SCIENTIFIC LABORATORY

Survey of Effluent Streams

Do not write in this space.

Group GMX-3 Tech Area 16 Building 370

Accounting Number(s) _____

Nature of Effluent Streams: Gas ____ Liquid X Solid ____ Other ____

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: None

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack ____ Industrial Sewer ____

Sanitary Sewer ____ Storm Sewer X

Trash Container Type: ____

Other: ____

Disposal Method: Atmospheric Dispersal ____ Sewage Plant ____

Waste Process Plant ____ Chemical Dump ____

Sewage Lagoon ____ Surface of Ground X

Contaminated Burial Area ____ Septic Tank ____

Community Landfill ____ Other ____

Volume of Effluent: Known ____ Estimated 15 gal/mo

Contaminants (see list)	Estimated Discharge
Trichloroethylene	15 gal/mo

Monitoring Equipment on Effluent Stream: No X Yes ____

Describe ____

Remarks ____

R-S 0248991

LOS ALAMOS SCIENTIFIC LABORATORY

Survey of Effluent Streams

Do not write in this space

Group GMX-3 Tech Area 16 Building 370

Accounting Number(s)

Nature of Effluent Streams: Gas X Liquid Solid Other

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: None

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack X Industrial Sewer

Sanitary Sewer Storm Sewer

Trash Container Type:

Other:

Disposal Method: Atmospheric Dispersal X Sewage Plant

Waste Process Plant Chemical Dump

Sewage Lagoon Surface of Ground

Contaminated Burial Area Septic Tank

Community Landfill Other

Volume of Effluent: Known Estimated 3840 ft^3/yr

Contaminants (see list)	Estimated Discharge
Acetylene	3840 ft^3/yr

Monitoring Equipment on Effluent Stream: No X Yes

Describe

Remarks The acetylene is burned.

R-S U14699

LOS ALAMOS SCIENTIFIC LABORATORY

Survey of Effluent Streams

Group GMX-3 Tech Area 16 Building Burning Ground Area (1) Do not write in this space.

Accounting Number(s)

Nature of Effluent Streams: Gas X Liquid X Solid X Other Solvent Vapor

(Fill out one sheet for each effluent stream)

Effluent Treatment: Type: Combustible material is burned.

Discharge Point: (Identify and show sketch on reverse if more than one per building)

Stack _____ Industrial Sewer _____

Sanitary Sewer _____ Storm Sewer _____

Trash Container Type: _____

Other: Burning pits and filter vessels (1)

Disposal Method: Atmospheric Dispersal X Sewage Plant _____

Waste Process Plant _____ Chemical Dump _____

Sewage Lagoon _____ Surface of Ground _____

Contaminated Burial Area _____ Septic Tank _____

Community Landfill _____ Other Restricted Landfill

Volume of Effluent: Known _____ Estimated _____

Contaminants (see list)	Estimated Discharge (lbs/6 mo)
Explosives	49,500 (2)
Barium nitrate	3,000
~~HE contaminated oil and solvents~~	~~3,000 (2)~~
Uranium alloys	54 (3)
Kerosene	165 (4)

Monitoring Equipment on Effluent Stream: No X Yes X (3)

Describe (1) TA-16-412, 387, 388, 389, 392, 399, 401, 406

(2) A detailed listing of material burns, quantities burned, and smoke densities is attached.

(3) Uranium alloy burns monitored and documented. Residues are monitored, collected, and buried at Mesita del Buey.

Remarks

(4) This material is burned and the products of combustion are evolved.

APPENDIX B

Materials of Concern Supplied to S-Site Buildings

July 28, 1971

LISTING OF MISCELLANEOUS MATERIALS VERSUS BUILDINGS
GROUP GMX-3
(November 1970 through April 1971)

	Quantity (lbs)				
Building TA-16-	193	222	340	450	460
Material					
Ammonium Phosphate	75				
Ammonium Sulfate			500		
Diethylene Triamine				1.1	1.1
Hydroquinone		45.5			
Chlorine Bleach	3				
Phosphate Dibasic	96				
Detergents	1500				

July 28, 1971

LISTING OF METALS AND METAL SALTS VERSUS BUILDINGS
GROUP GMX-3
(November 1970 through April 1971)

Material	Quantity (lbs)				
Building TA-16-	193	202	222	370	460
Nickel (Foil)	1.4				
E-Z-Flo Brazing Alloy		0.5		0.25	
Cupric Oxalate					1
Cupric Oxide					3
Sodium Bichromate					2
Sodium Sulfite - Sodium Metaborate			260		
Magnesium Perchlorate			10		0.25
Potassium Bromide					1
Potassium Hydroxide					6

July 28, 1971

LISTING OF GASES AND ACIDS VERSUS BUILDINGS
GROUP GMX-3
(November 1970 through April 1971)

	Quantity (lbs)					
Building TA-16-	202	222	340	370	450	460
Material						
Acetylene	17			130		16
Carbon Dioxide					100	
Freon 13	15					
Acetic Acid (Glacial)		270				10
Hydrochloric (Muriatic) Acid	0.4	36	33			24
Hydrobromic Acid						0.07

July 28, 1971

LISTING OF SOLVENTS VERSUS BUILDINGS
GROUP GMX-3
(November 1970 through April 1971)

Material	Quantity (gal)						
Building TA-16-	7	202	260	306	340	460	Unidentified
Met-l-it	1	2					
Freon-PCA Solvent	55			2			
Dimethyl Sulfoxide			94				
Acetone				220	700	139	
Chlorothene		6		55			165
Methylene Chloride				55	72		
n-Butyl Acetate					330		
Chloroform					3	12	
1, 2-Dichloroethane					54.6	0.66	
Dimethylformamide					110	3.3	
Isopropyl Alcohol					72		
n-Octane							1.3
1, 1, 2, 2, Tetrachloroethane							0.99

July 28, 1971

LISTING OF SOLVENTS VERSUS BUILDINGS
GROUP GMX-3
(November 1970 through April 1971)

	Quantity (gal)						
Building TA-16-	7	340	370	389	410	460	Unidentified
Material							
Ethyl Acetate		10.9					
Methanol		110					
Methyl Ethyl Ketone		750					
Toluene		110					
Trichloroethylene			90				55
Kerosene				165			
Ethylene Glycol					10		
Carbon Tetrachloride						4	
Chlorobenzene						0.2	
n-Hexane						0.5	55
Methylcyclohexane						1.1	
Ethanol							55
Petroleum Distillate	1.2						

July 28, 1971

MATERIALS DISPOSED OF BY BURNING AT GROUP GMX-3 DISPOSAL AREAS (November 1970 through April 1971)

Materials	Quantity (lbs) Burning Ground	Quantity (lbs) Incinerator
Explosives	49,500	
Barium Nitrate	3,000	
Oil and Solvents (HE contaminated)	3,000	
Uranium Alloys	54	
Trash	7,500	143,000

July 28, 1971

GROUP GMX-3 WASTE DISPOSAL
(October 15, 1970 through April 15, 1971)

	Burning Frequency (burns/yr)	Burning Frequency Average (burns/wk)	Weight of Material Burned (lbs/yr)	Weight of Material Burned Average (lbs/wk)	Burning Time (min/burn)	Burning Time (min/wk)	Smoke Density, Ringlemann Scale	Period Smoke Density Exceeds Ringlemann No. 1 (min/wk)
Dry HE	130	2.5	45,000	900	10	25	<1	0
HE sump waste	88	1.7	54,000	1,000	10	17	<1	0
Frequency of burns		3.2						
Amount of burns			99,000	1,900				
Contaminated trash	30	0.6	15,000	290	45	27	2 to 3	27
Contaminated oil and solvents	8	0.15	6,000	115	60	9	3 to 4	9
Contaminated combustible waste				405				
Incinerator burns	52	1.0	286,000	5,500	120	120	2 to 3	120
Total waste burns				7,805		198		156

END OF REFILMING

Date 12/2/93

Operator