Los Alamos Environmental Restoration Records Processing Facility

ER Record I.D.# 37377

DATE RECEIVED: 12-21-92 PROCESSOR: HW

ENTERED

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.S. Jordan DOCUMENT DATE: 04-01-77

ORIGINATOR NAME: A.K. Stoker ORGANIZATION: H-8

SYMBOL: H8-77-242 PAGE COUNT: 3

SUBJECT/TITLE: Tritium Measurements On Sewage Treatment Plant 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	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.*
53	1100		
3	1114		
35	1129		
8	1157		
9	1157		
18	1093		
21	1106		
41	1098		
46	1140		
16	1082		
48	1129		

32150

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) Table, Tritium In Effluents From Sanitary Sewage Facilities HTO Concentration In pCi/ml, 06-05-76

KEYWORDS: Circle relevant KEYWORDS from the list below for ER Record #: 37377

MISCELLANEOUS (List other indexing criteria as necessary; please write legibly):
Subject File; Tritium

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

TR 7350

(3)

LOS ALAMOS SCIENTIFIC LABORATORY
UNIVERSITY OF CALIFORNIA
LOS ALAMOS, NEW MEXICO 87544

OFFICE MEMORANDUM

TO : H. S. Jordan, H-DO MS 690

DATE: April 1, 1977

FROM : A. K. Stoker, H-8 AKS

SUBJECT : TRITIUM MEASUREMENTS ON SEWAGE TREATMENT PLANT EFFLUENTS

SYMBOL : H8-77-242

MAIL STOP: 490

TIC
LHD
TIC
JRB

File - Tritium

As part of the monitoring program for effluents from the ~~sanitary sewage treatment facilities~~ serving both the Laboratory and the community areas, we have been making measurements for tritiated water. Some of the results were presented in the H-Division Quarterly Report for October-December, 1976. Some difficulties with the analytical laboratory procedures during the fall of 1976 (also described in the quarterly report) cast some doubt on detection limits for analyses made between August and November. This made it difficult to decide in borderline cases whether HTO was truly present in above background amounts. However, analyses performed after mid-December are considered reliable.

All HTO data on STP effluents available to date is presented in the attached table. As noted in the quarterly report, there seems to be little question that some tritium contamination is appearing in sanitary sewage treatment facilities serving some technical areas. The tritium observed at TA-53 is coming from a known source. However, there is apparently routine contamination entering the TA-3 and TA-35 treatment facilities. Intermittent contamination appears to have entered the TA-8, TA-9, TA-18, TA-21, TA-41, and TA-46 treatment facilities. There is no apparent contamination (considering the uncertainty of data from the questionable period) reaching the TA-16 and TA-48 treatment facilities.

This data raises several questions:

1. Why is the HTO contamination entering the sanitary waste collection system? Are health physics or waste segregation guides being improperly implemented by some working groups?

2. Do we need to consider the sanitary waste facilities as radioactive waste discharge points and include them in the On-Site Discharge Information System (ODIS) with attendant need to maintain records for Form 789s?

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DEC 21 1992

Another area of concern raised by the data is the possibility that tritiated water is entering the Pajarito Lagoons. During the last two sampling periods reported, HTO concentrations in samples from the Pajarito Lagoons were three to four times higher than would be expected from water supply measurements. Even considering that the lagoons accumulate some precipitation, they show HTO at levels higher than observed in surface waters. If the anomalous values persist over another month's sample, we will have a full calendar quarter of data and should probably consider a serious investigation to determine the source.

For perspective, we must keep in mind that none of the observed HTO levels are more than a fraction of a percent of applicable Concentration Guides. There is no question of concern over human health or safety or environmental impact resulting from release of the effluents. Rather, the question is "why is any tritium showing up in sanitary effluents?"

AKS/mlk

xc: J. E. Dummer, H-1 MS 692
T. K. Keenan, H-7 MS 518

TRITIUM IN EFFLUENTS FROM SANITARY SEWAGE FACILITIES

HTO CONCENTRATION IN pCi/mℓ

County Plants \ Sampling Period	1976 May 6-27	June 3-26	July 1-23	July 30 / Aug 20	Aug 26 / Sept 16	Sept 23 / Oct 15	Oct 21 / Nov 12	Nov 19 / Dec 10	1976 Dec 16 / 1977 Jan 6	Jan 13 / Feb 13
Pueblo STP	.8	.5	3.2	2.6	6.9	3.1	3.3	3.3	1.8	1.5
Bayo STP	.2	.5	1.7	2.3	6.4	2.9	5.8	3.9	1.5	1.5
White Rock STP	.9	.5	1.3	3.0	6.5	3.0	3.2	4.0	2.4	2.9
Pajarito Lagoons	.6	.8	1.5	2.6	10.0	3.7	3.3	3.9	6.8	8.1

LASL Plants \ Sampling Period	June 10-29	July 7-30	Aug 3-27	Sept 8-29	Oct 5-20	Dec	Jan
TA-3	4.8	8.3	4.2	8.9	17.0	9.8	38.5
TA-8	2.5	1.6	–	–	–	1.9	7.0
TA-9	11.0	11.0	5.6	8.1	5.3	6.2	2.6
TA-16	1.8	3.5	2.1	6.2	3.5	2.7	3.0
TA-18	11.0	–	–	8.6	–	–	–
TA-21	4.2	4.8	3.7	6.1	4.2	3.5	2.7
TA-35	9.2	14.0	4.5	29.0	37.0	–	40.1
TA-41	1.9	2.9	1.2	4.9	3.2	2.6	5.1
TA-46	2.5	2.7	2.4	4.6	3.6	2.6	4.8
TA-48	2.5	3.0	2.5	6.1	3.2	9.2	1.7
TA-53	7.1	8.8	7.3	5.7	–	–	29.0

	Mar-Apr						
Routine Sampling							
Regional Surface Water (Average 9 samples)	2.2		1.1		3.8		
Water Supply (Average 16 samples)	0.9		0.8		3.7	1.5-2.5*	
Concentration Guides							
Uncontrolled Area		3000					
Controlled Area		10000					

Cocktail Contamination Problem ~2 pCi/mℓ

*Tap water