

TA 03

# Los Alamos

NATIONAL LABORATORY

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

Date: January 18, 2000  
In Reply Refer To: ESH-18/WQ&H:00-0004  
Mail Stop: K497  
Telephone: (505) 665-1859

Ms. Barbara Hoditschek  
Surface Water Quality Bureau  
New Mexico Environment Department  
P. O. Box 26110  
Santa Fe, New Mexico 87502

Ms. Phyllis Bustamante  
Ground Water Quality Bureau  
New Mexico Environment Department  
P. O. Box 26110  
Santa Fe, New Mexico 87502

**SUBJECT: GENERIC NOTICE OF INTENT (NOI) TO DISCHARGE POTABLE WATER, STEAM CONDENSATE, AND LINE DISINFECTION DISCHARGES**

Dear Ms. Hoditschek and Ms. Bustamante:

Los Alamos National Laboratory's Water Quality and Hydrology Group (ESH-18) received your letter dated November 30, 1999, regarding the Generic NOI for potable water, steam condensate, and line disinfection discharges at the Laboratory (See Attachment 1). Per your request, the following information is provided so that you can complete your review of the Generic NOI.

1. The Laboratory will submit administrative records for planned releases of greater than 1000 gallons of potable water, steam condensate, and line disinfection water in lieu of NOIs. These discharges consist primarily of potable water that meets SDWA standards and applicable WQCC standards. These discharges do not generally contain any contaminants of concern except for possibly chlorine at levels <0.5 mg/l, which is required for potable water disinfection under New Mexico Water Quality Supply Regulations. The potable water discharges originate from the Los Alamos Water Supply System, which is owned by the Department of Energy (DOE), and operated by the County of Los Alamos. The steam condensate discharges originate from leaks in the TA-3 and TA-21 steam distribution and condensate return lines operated by the Laboratory. The above mentioned discharges do not pose a threat to human health or the environment. Please note, the Generic NOI does not cover discharges of potable water generated from County of Los Alamos activities (i. e. water distribution leaks on County property, fire hydrant flushing, etc.).
2. Water Quality and Hydrology Group (ESH-18) personnel will review all releases under the Generic NOI for potential impact to Solid Waste Management Units (SWMUs) and Potential Release Site (PRSs). Best Management Practices (BMPs) will be implemented during potable water discharges, as needed, to assure that no erosion or detrimental environmental impacts occur as a result of the discharge.
3. Administrative records for unplanned releases of potable water and steam condensate will be provided as outlined in the Laboratory's Generic NOI for Potable Water, Steam Condensate, and Line Disinfection (WQ&H:98-0060), dated April 14, 1998 (See Attachment 2).



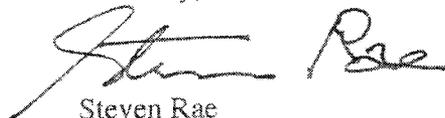
Administrative records will be provided to the New Mexico Environment Department's (NMED) Surface Water Quality Bureau, Ground Water Bureau, and Hazardous and Radioactive Materials Bureau for planned releases that do not impact a PRS or SWMU. The administrative records for planned releases will be submitted to NMED seven (7) days prior to discharge.

Notice for discharges that impact a PRS or SWMU will be handled by the Laboratory's Hazardous and Solid Waste Group (ESH-19). Additionally, NMED will be notified by ESH-18 of discharges that may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property as required by Section 1203 of the New Mexico Ground and Surface Water Quality Regulations (20 NMAC, 6.2), under the usual WQCC procedure.

It is my understanding that NMED will approve the Laboratory's Generic NOI, based upon our April 14, 1998 letter and the aforementioned information. Written confirmation from the NMED's SWQB and GWQB regarding this approval is requested. The Laboratory appreciates your support in developing a method to stream-line the submittals of NOIs for potable water, steam condensate, and line disinfection discharges.

Please contact Mike Saladen at 665-6085 or Harvey Decker at 665-2014 if you have questions or need additional information.

Sincerely,



Steven Rae  
Group Leader  
Water Quality and Hydrology Group

MS/rm

Attachments: a/s

Cy: J. Davis, NMED/SWQB, w/o att., Santa Fe, New Mexico  
M. Leavitt, NMED/GWB, w/o att., Santa Fe New Mexico  
J. Bearzi, NMED/HRMB, w/o att., Santa Fe, New Mexico  
J. Vozella, DOE/LAAO, w/o att., MS A316  
M. Johansen, DOE/LAAO, w/att., MS A316  
S. Moore, Benchmark, w/o att., MS A199  
M. Talley, Benchmark, w/att., MS A199  
T. Gunderson, DLDOPS, w/o att., MS A100  
D. Erickson, ESH-DO, w/o att., MS K491

Ms. Hoditschek and Ms. Bustamante  
ESH-18/WQ&H:00-0004

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January 18, 2000

Cy (continued):

M. Saladen, ESH-18, w/o att., MS K497  
H. Decker, ESH-18, w/att., MS K497  
J. White, ESH-19, w/att., MS K490  
Barr, ESH-19, w/o att., MS K498  
J. Gourdoux, FWO-FIRE, w/att., MS M713  
D. Woitte, UC-GEN, w/o att., MS A187  
WQ&H File, w/o att., MS K497  
CIC-10, w/o att., MS A150

ATTACHMENT 1



GARY E. JOHNSON  
GOVERNOR

State of New Mexico  
**ENVIRONMENT DEPARTMENT**  
Ground Water Quality Bureau  
Harold Runnels Building  
1190 St. Francis Drive, P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-2918 phone  
(505) 827-2965 fax



PETER MAGGIORE  
Secretary

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

November 30, 1999

Steven Rae, Group Leader ESH 18  
Los Alamos National Laboratory  
Mail Stop K497  
Los Alamos, New Mexico 87545

**RE: Notice of Intent for Potable Water Discharges at the Los Alamos National Laboratory**

The New Mexico Environment Department (NMED), Ground Water Quality Bureau (GWQB) and the Surface Water Quality Bureau (SWQB) have received Notice of Intent (NOI) for discharges of potable water dated April 14, 1999 and has been working with the Los Alamos National Laboratory (LANL) staff to develop a method to streamline the submittal of NOIs for potable water. In order to proceed with the processing of these NOIs for LANL, the NMED requires the following commitments:

1. That DOE/LANL submit Administrative Records for Potable Water Releases (copy enclosed) in lieu of NOIs. In addition, the Administrative Records forms must also contain the following statements:
  - a. potable water meets the EPA drinking water MCLs and applicable WQCC standards,
  - b. potable water comes from a drinking water supply and has not been exposed to any contaminants, and
  - c. potable water from fire hydrant flushes, fire suppression, and steam condensate meets all WQCC standards. DOE/LANL should have available upon request, water quality data supporting these statements.
2. NMED also requests that DOE/LANL commit to the following mitigation actions for all potable water releases:
  - a. potable water discharges addressed under the NOI will not impact any RCRA Solid Waste Management Units (SWMUs), Potential Release Sites (PRSs), or

Mr. Rae  
November 30, 1999  
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- Area of Concerns (AOCs) such that it will cause transport or release of contaminants, and
- b. Best Management Practices (BMPs) will be implemented during potable water discharges to assure that no erosion or detrimental environmental impacts occur as a result of the discharge. BMPs used will be clearly defined in the Administrative Notification.

All Administrative Records must be submitted to the GWQB and SWQB and the Hazardous and Radioactive Materials Bureau shall be copied. The records must be received by the agencies seven (7) days prior to the discharge.

Once NMED has received the information requested in this letter, NMED will proceed with the processing of the potable water NOI. If you have any questions, please contact Barbara Hoditschek at 827-0596 or Phyllis Bustamante at 827-0166.

Sincerely,

  
Barbara Hoditschek  
Surface Water Quality Bureau

  
Phyllis Bustamante  
Ground Water Quality Bureau  
Pollution Prevention Section

enc: Administrative Record for Potable Water Releases

xc: James Davis, Chief, SWQB  
Marcy Leavitt, Chief, GWQB  
James Bearzi, Chief, HRMB  
Benito Garcia, District Manager, NMED District II

Los Alamos National Laboratory  
Administrative Record for Potable Water Releases

Responsible Facility/User Group:

Contact Person:

Phone #:

Pager #:

Discharge Location:

Discharge Occurred:

Discharge Discovered:

Discharge Stopped:

Corrective Actions: NA

Nearest Water Course and/or Canyon Affected:

Source and cause of discharge:

Material spilled: Potable Water

Estimated amount: 20,000 gallons

Notification:

NMED: B. Hoditschek

DOI: B. Eng

TIME:

TIME:

DATE:

DATE:

Cleanup Started:

NA

Cleanup Finished

NA

Weather conditions:

Written Report Delivered:

Date:

Comments:

Written Notification completed by: H. Decker, ESH-18

ATTACHMENT 2

**Los Alamos**  
NATIONAL LABORATORY

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

Date: April 14, 1998  
In Reply Refer To: ESH-18/WQ&H:98-0060  
Mail Stop: K497  
Telephone: (505) 665-1859

Mr. Jim Davis  
Surface Water Quality Bureau  
New Mexico Environment Department  
P.O. Box 26110  
Santa Fe, New Mexico 87502

Ms. Marcy Leavitt  
Ground Water Protection Bureau  
New Mexico Environment Department  
P.O. Box 26110  
Santa Fe, New Mexico 87502

**SUBJECT: GENERIC NOTICE OF INTENT (NOI) TO DISCHARGE  
POTABLE WATER, STEAM CONDENSATE, AND LINE DISINFECTION**

Dear Mr. Davis and Ms. Leavitt:

Enclosed is a Generic Notice of Intent to Discharge (NOI) which is being submitted to the New Mexico Environment Department (NMED) under Section 1201 of the New Mexico Ground and Surface Water Quality Protection Regulations (20 NMAC 6.2). At the request of the New Mexico Environment Department, Surface Water Quality Bureau (NMED/SWQB), the following existing Generic NOIs have been combined and updated to include additional information: (1) NOI for potable water supply system, dated October 31, 1991; (2) NOI for water line disinfection within the potable water supply system, dated March 27, 1992; and, (3) NOI for Technical Area (TA)-3, and TA-21 steam distribution and condensate return systems dated March 24, 1992. Additionally, discharges of *de minimus* quantities from potable water, steam condensate, and heating ventilation and air conditioning (HVAC) type discharges are also listed for coverage under this document.

This NOI covers discharges from the Los Alamos Water Supply System, which is owned by the U. S. Department of Energy (DOE) and operated by Los Alamos National Laboratory (LANL). The Los Alamos Water Supply System provides water to the Laboratory, Los Alamos Townsite, and White Rock, and includes production wells, transmission lines, storage tanks, booster pump stations, and other related facilities. This NOI also covers discharges from fire protection systems, emergency showers, steam transmission lines, condensate return pipelines, steam manholes, valves and other potential infrequent discharge sources. This NOI does not cover the distribution systems or water main disinfection activities at Los Alamos Townsite and White Rock, which are owned and operated by the County of Los Alamos.

The goal of this NOI is to reduce migration of contaminants into watercourses and to minimize movement of historically contaminated sediment from watercourses to the Rio Grande. This is achieved by identifying and managing potable water, steam condensate and similar discharges in a controlled manner.

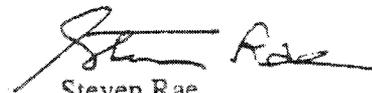
April 14, 1998

These discharges primarily consist of potable water that meet SDWA standards. These discharges do not generally contain any contaminants of concern except for possibly chlorine at levels < 0.5 mg/l, which is required for potable water disinfection under NM Water Quality Supply Regulations. Accordingly, these discharges do not pose a threat to human health or the environment. Since these discharges are not included in the Laboratory's National Pollutant Discharge Elimination System (NPDES) Permit, NMED has indicated that they may be covered under an NOI reporting system. Details of the proposed reporting system are included in the NOI.

Also, enclosed is the information concerning the Generic NOI which was requested in your letters of October 20, 1997, and October 29, 1997. This information is organized under Appendix 1 through 18.

Please call Mike Saladen (665-6085) or Carla Jacquez (665-4050) of the Laboratory's Water Quality and Hydrology Group (ESH-18) if you need additional information concerning the enclosed Generic NOI.

Sincerely,



Steven Rae,  
Group Leader  
Water Quality and Hydrology Group

CJ:MS:SR/em

Enclosures: a/s

Cy: E. Kelly, Director, WWM/NMED, Santa Fe, NM., w/o enc.  
S. Yanicak, NMED-DOE OB, w/o enc., MS J993  
R. Ford-Schmid, NMED-DOE OB, Santa Fe, N.M., w/o enc.  
B. Hoditschek, NMED/SWQB, Santa Fe, NM, w/enc.  
K. Hill, NMED/HRMB, Santa Fe, NM, w/o enc.  
P. Bustamante, NMED/GWPB, Santa Fe, NM, w/o enc.  
E. Spencer, EPA Region 6, Dallas, TX, w/o enc.  
S. Wilson EPA Region 6, Dallas, TX, w/o enc.  
D. Erickson, ESH-DO, w/o enc., MS K491  
M. Saladen, ESH-18, w/enc., MS K497  
C. Jacquez, ESH-18, w/o enc., MS K497  
H. Decker, ESH-18, w/o enc., MS K497  
M. Brown, JCNNM, w/o enc., MS A199  
D. Woitte, UC/Gen, w/o enc., MS A187  
B. Koch, DOE/LAAO, w/o enc., MS A316  
M. Nicolini, FSS-21, w/o enc., MS D426  
WQ&H File, w/o enc., MS K497  
CIC-10, w/o enc., MS A150

## NOTICE OF INTENT

### I. NAME AND ADDRESS OF THE FACILITY MAKING THE DISCHARGES.

Los Alamos National Laboratory  
P. O. Box 1663, Mail Stop A120  
Los Alamos, New Mexico 87545  
Attention: Dennis Erickson, Director  
Environment, Safety & Health Division

### II. LOCATION OF THE DISCHARGE (IN TOWNSHIP, RANGE AND SECTION, IF AVAILABLE).

1. **Water Supply System Discharges:** Much of the potable water supply system is located within the boundaries of the Los Alamos National Laboratory and within existing easements and rights-of-way required for the location and operation of the water supply system. This includes production wells, transmission lines, storage tanks, booster pump stations, and other related facilities. (See Water System Map, Appendix 1.)
2. **Water Line Disinfection:** Discharges from the disinfection of water lines and related facilities are located within the boundaries of the Los Alamos National Laboratory and the rights-of-way required for the location and operation of the water supply system. (See Water System Map, Appendix 1.)
3. **Steam Distribution and Condensate Return Systems:** Discharges from the Technical Area (TA) 3, and TA-21 steam distribution and condensate return systems are located within the boundaries of the Los Alamos National Laboratory. (See Steam System Maps, Appendices 2, 3, and 4.)
4. **Fire Protection System:** Discharges from the fire protection system are located within the boundaries of the Los Alamos National Laboratory. A map book containing the latest fire protection system is available for inspection at the ESH-18 Water Quality and Hydrology Group Office. See Appendix 5 for the Fire Hydrant List, Appendix 6 for the Sprinkler System List, and Appendix 7 for an excerpt from current 5-Year Fire Department Contract.
5. **Infrequent Discharges of Potable Water, Steam Condensate and Heating Ventilation and Air Conditioning (HVAC) Condensate:** Infrequent discharges from water heater pressure relief valves (PRV's), steam system PRV's and equipment such as air conditioners, evaporative coolers and back flow preventers (BFP's) are located within the boundaries of the Los Alamos National Laboratory. Many of these discharge points have been identified and documented under the Waste Stream Characterization Program. These types of discharges normally occur due to equipment failure (PRV and BFP discharges) or during the summer months when air conditioning and evaporative cooling systems are in use (HVAC condensate). See Appendix 17 for a listing of these discharge sources.

### III. THE MEANS OF DISCHARGE (TO LAGOON, FLOWING STREAM, WATERCOURSE, ARROYO, SEPTIC TANK, OTHER).

All discharges may be contained on tops of mesas or flow into various ephemeral tributaries to the Rio Grande.

#### IV. THE ESTIMATED CONCENTRATION OF CONTAMINANTS IN THE DISCHARGE.

- 1. Water Supply System:** Potable water from the distribution system is analyzed periodically under the Laboratory's Safe Drinking Water Act Program. This data is included in the annual Environmental Surveillance Report for Los Alamos National Laboratory (submitted to NMED yearly under separate cover). Discharges of potable water may contain chlorine as required for disinfection under New Mexico Water Supply Regulations. Concentrations of chlorine in the potable water systems are generally less than 0.5 mg/l. (See LANL Disinfection of Water Piping Procedure, Appendix 8.)
- 2. Water Line Disinfection:** Potable water from the distribution system is tested periodically under the Laboratory's Safe Drinking Water Act (SDWA) Program. (See LANL SDWA Program Management Plan, Section 7.6.3, Page 67, Appendix 9.) Calcium Hypochlorite (HTH) or Sodium Hypochlorite Solution will be used to disinfect the lines followed by dechlorination with sodium thiosulfate for discharges over 100 gallons. (See MSDSs in Appendix 10.) The system will then be flushed with potable water. (See JCI Environmental Laboratory Procedure, Appendix 11.) Chlorine of generally less than 0.5 mg/l will be obtained during disinfection operations which is similar to the concentration of the Laboratory's potable water supply.
- 3. Steam Distribution and Condensate Return Systems:** Steam condensate has been analyzed from previous releases and submitted to the New Mexico Environment Department, Surface Water Quality Bureau. See conductivity measurements (Appendix 12); Steam condensate analytical data from NPDES Permit Application NM0890010515 (Appendix 13); and CST analytical chemistry (Appendix 14).
- 4. Fire Protection System:** Potable water from the distribution system is tested annually under the Laboratory's Safe Drinking Water Act Program. The only exception to the use of potable water for fire protection is at the TA-46 Sanitary Wastewater Systems Consolidation Plant where treated effluent is used instead of potable water. This discharge is handled under the Ground Water Discharge Plan for the TA-46-SWSC Facility. The treated effluent is tested monthly, and also meets the National Pollutant Discharge Elimination System (NPDES) Permit requirements for Outfall 13S at TA-46. Discharge Monitoring Reports (DMRs) for the 13S NPDES outfall are submitted to NMED monthly.
- 5. Infrequent discharges of Potable Water, Steam Condensate, and HVAC Condensate:** Potable water from the distribution system is analyzed periodically under the Laboratory's Safe Drinking Water Act Program. This data is included in the annual Environmental Surveillance Report for Los Alamos National Laboratory (submitted to NMED yearly under separate cover). Discharges of potable water also may contain chlorine as required for disinfection under New Mexico Water Supply Regulations. Concentrations of chlorine in the potable water systems are generally less than 0.5 mg/l. (See LANL Disinfection of Water Piping Procedure, Appendix 8.) Steam condensate has been analyzed from previous releases and submitted to the New Mexico Environment Department, Surface Water Quality Bureau. See conductivity measurements (Appendix 12); Steam condensate analytical data from NPDES Permit Application NM0890010515 (Appendix 13); and CST analytical chemistry (Appendix 14). Condensate from the HVAC systems is generally potable water from the supply system or atmospheric condensate and is expected to have no contaminants of concern.

## V. THE TYPE OF OPERATION FROM WHICH THE DISCHARGE IS DERIVED.

1. **Water Supply System:** Discharges from potable water supply system occur on an intermittent basis from the following sources:
  - a. From tank overflows, pipeline breaks, and from repairs performed on existing lines. Discharges from well construction operations are not included under this Generic NOI. Well discharges are addressed under the Laboratory's NPDES Program.
  - b. System Flushing: Flushing of the potable water supply system is required occasionally in order to properly maintain the system and to remove buildups of sand and other foreign materials. Flushing may be required from, transmission lines, storage tanks, booster pump stations, fire hydrants, and other related facilities in order to meet Safe Drinking Water Act requirements.
2. **Water Line Disinfection:** Discharges from the potable water supply system, during disinfection of water lines and related facilities occur on an intermittent basis from the following sources:
  - a. Discharges greater than 1000 gallons may be generated from newly constructed potable water lines. These discharges may occur from lines that have been removed from service for planned repairs or for maintenance that may expose them to potential contamination, and lines that under normal operation, continue to show the presence of coliform organisms.
  - b. Discharges less than 1000 gallons may be generated from installation of eye wash stations, water fountains, emergency wash showers, etc. Other discharges may occur from the operation, maintenance, and repair of small lines.
3. **Steam Distribution and Condensate Return Systems:** Discharges from the Laboratory's steam distribution systems and condensate return lines occur on an intermittent basis from the following sources:
  - a. **Pipeline Corrosion Leaks:** Due to an aging steam condensate system, the Laboratory has averaged approximately 1 major leak/month during 1997 (intermittent flow at approximately 2 gpm). Numerous smaller leaks (*de minimus* flows) from the steam distribution system and condensate return lines; and additional system-wide losses to the environment. (See Appendix 18.) The Laboratory has an active program to repair major condensate leaks, but the steam distribution and condensate return systems are old and deteriorated and need to be replaced. Upon discovery, major leaks are repaired in a timely manner. Operation and Maintenance Procedures for the steam distribution and condensate return systems are available on site.
  - b. **Pipeline Repair and Replacement:** On occasion, the steam distribution and condensate return flow lines have undergone emergency repairs due to physical failure which resulted in releases into the environment. The Laboratory has an operational pipeline repairs and replacement program to fix steam condensate pipeline breaks and leaks, with an annual budget of approximately \$500,000. A log will be maintained by the Laboratory in order to document each discharge from the pipeline repair and replacement projects.
  - c. **Pumping of Steam Manholes and Vaults:** Routine operation and maintenance requires steam condensate and storm water runoff accumulated in steam manholes or vaults to be removed before maintenance crews can begin work in these areas. Maintenance crews pump the steam condensate out of the steam manholes and vaults onto the ground. A yearly discharge of approximately 45,000 gallons from an estimated 150 events generating approximately 300 gallons each of steam condensate and storm water is released to the environment during this procedure. A log will be maintained by the Laboratory in order to document each discharge.

4. **Fire Protection System:** Discharges from the fire protection system are performed in order to meet fire protection requirements at the Laboratory and occur on an intermittent basis from the following sources:
- a. **Fire Hydrant Testing:** Approximately 475 fire hydrants are flow tested annually generating a discharge of approximately 2,000 gallons per test. A log of each test will be maintained by the Laboratory in order to document each discharge. (See Fire Hydrant List, Appendix 5.)
  - b. **2-inch Fire Drain Testing:** Approximately 290 automatic sprinkler systems are flow tested every three months. Approximately 10 automatic sprinkler systems located in nuclear facilities at TA-3, Building 29, TA-55, and TA-16, Building 205 are flow tested every two months. A discharge of approximately 250 gallons is required for each test. A log of each test will be maintained by the Laboratory in order to document each discharge. (See Sprinkler System List, Appendix 6.)
  - c. **Other Fire Protection Equipment:** Three fire pumps located at TA-55, TA-53, and TA-35 will be flow tested annually generating a discharge of approximately 32,500 gallons from each test.
  - d. **Standpipe Flushing:** Approximately 232 stand pipes located in hose cabinets, used for fire fighting purposes will be flushed starting in 1998. Thereafter, approximately one-fourth of them will be tested on an annual basis. Discharges of approximately 250 gallons per flushing are estimated.
  - e. **Monthly Flushing Performed on 19 Fire Hydrants:** The fire hydrants listed in Appendix 15 are flushed monthly, generating a total of 107,800 gallons per month. These hydrants are flushed for SDWA compliance in order to obtain a free chlorine residual of 0.1 to 0.5 ppm.
5. **Infrequent Discharges of Potable Water, Steam Condensate, and HVAC Condensate:** These discharges may be due to possible equipment malfunctions (discharges from PRV's, backflow preventers etc.) or normal Laboratory operations during the summer months when air conditioning units are normally in operation resulting in *de minimus* discharges to the environment.

## VI. THE ESTIMATED FLOW THAT MAY BE DISCHARGED.

1. **Water Supply System:** Discharges from the water supply system occur intermittently from the following sources:
- a. Tank overflows, pipeline breaks and repairs on existing lines; = 350,000 gallons
  - b. System flushing from production wells, transmission lines, storage tanks, booster pump stations, fire hydrants, etc.  
Approximately 20 events @ 20,000 gallons each  
(See Appendix 15, General NOI for LANL Hydrant Flushing.) = 400,000 gallons
- Total Estimated Annual Volume = 750,000 gallons

2. **Water Line Disinfection:** The number and volume of discharges from the Laboratory's disinfection activities change from year to year based on construction activities. Below is the estimated annual volume of the potential discharges from the potable water supply system during disinfection activities at the Laboratory:

a. <u>Discharges greater than 1000 gallons:</u>		
2 to 3 discharges/year estimated @ 10,000 gallons each	=	30,000 gallons
1 discharge/year estimated @ 200,000 gallons each	=	200,000 gallons
b. <u>Discharges less than 1000 gallons:</u>		
4 to 5 discharges/year estimated less than 1000 gallons each	=	5,000 gallons
100 to 150 discharges/year estimated @ 100 gallons each or less	=	<u>15,000 gallons</u>
<b>Total Estimated Annual Volume</b>	<b>=</b>	<b>250,000 gallons</b>

3. **Steam Distribution Systems and Steam Condensate Return Systems:** The following is the estimated annual volume of potential discharges (unplanned) from the steam distribution and condensate return systems at the Laboratory.

a. Pipeline corrosion leaks (intermittent flow); additional <i>de minimus</i> leaks; and total system distribution loss and releases from pipeline repair and replacement activities		
	=	595,748 gallons
b. Pumping of steam manholes and vaults.		
Approximately 150 events @ 300 gallons each	=	<u>45,000 gallons</u>
<b>Total Estimated Annual Volume</b>	<b>=</b>	<b>640,748 gallons</b>

4. **Fire Protection System:** The following is the estimated annual volume of the potential discharges from the potable water supply system at the Laboratory.

a. Fire Hydrant Testing: 475 hydrants @ 2,000 gallons each	=	950,000 gallons
b. 2-inch Fire Drain Testing: 1,220 tests @ 250 gallons each	=	305,000 gallons
c. Other Fire Protection Equipment: 3 pumps etc. @ 32,500 gallons each	=	97,500 gallons
d. Standpipes: 232 units @ 250 gallons each	=	58,000 gallons
e. Monthly Hydrant Flushing on 19 hydrants listed in Appendix 15	=	<u>1,293,600 gallons</u>
<b>Total Estimated Annual Volume</b>	<b>=</b>	<b>2,704,100 gallons</b>

5. **Infrequent Discharges of Potable Water, Steam Condensate, and HVAC Condensate:** Based on the infrequent and *de minimus* nature of these discharges no annual discharge amount is available for these sources.

## VII. THE ESTIMATED DEPTH TO GROUNDWATER (IF AVAILABLE).

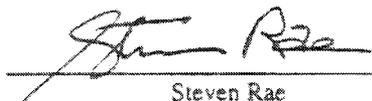
The estimated depth to the regional water table within the Laboratory boundaries ranges from approximately 600 feet in depth at the eastern edge of the Laboratory boundary to 1200 feet in depth at the western edge of the Laboratory boundary.

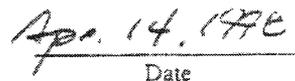
## VIII. MITIGATION ACTIONS.

All releases handled under this Generic NOI will be reviewed for impact to a Solid Waste Management Unit (SWMU) and/or Potential Release Site (PRS). The Laboratory will provide 24 hour verbal and 7 and 15 day written notifications for all discharges onto a SWMU or PRS. Contaminants from discharges of potable water, steam condensate, and fire suppression water are not expected to exceed WQCC Stream Standards. All planned discharge points will be reviewed for proximity and possible impact to a SWMU or PRS before discharge takes place. In addition, Best Management Practices (BMPs) will be evaluated and implemented for all discharges on a case by case basis. These activities will be coordinated with appropriate facility managers or contact personnel. (See LANL FM Program and FM list, Appendix 16.) BMP's are defined as schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMP's also include treatment requirements, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. In addition LANL has incorporated the AP 4.5 Program on a voluntary basis in order to delineate SWMUs and PRSs on or near a watercourse. This allows Laboratory staff to recommend and implement necessary BMPs in order to safeguard that no Contaminant of Potential Concern (COPC) is transported from a SWMU or PRS.

## IX. NOTIFICATION REQUIREMENTS FOR DOCUMENTING AND REPORTING DISCHARGES OF POTABLE WATER, STEAM CONDENSATE, FIRE PROTECTION SYSTEMS, AND LINE DISINFECTION WATER.

- (1) For discharges <1000 gallons, the FMU operator will keep a written log of each discharge.
- (2) ESH-18 will notify NMED of any unplanned discharges of >1000 gallons within 24 hours of discovery (including weekends).
- (3) ESH-18 will notify NMED 24 hours in advance for planned discharges of 1000 to 5000 gallons.
- (4) ESH-18 will notify NMED 72 hours in advance of any planned discharge >5000 gallons.
- (5) Any discharge that impacts a SWMU or PRS in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of the property will be reported by ESH-18 under WQCC Section 1203.
- (6) The Laboratory will submit a biannual written summary for all discharges handled under the Generic NOI Program (January 1 - June 30) (July 1 - December 31).

  
\_\_\_\_\_  
Steven Rae

  
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Date

## ATTACHMENT 1

- SWQB Comments and LANL's response to Draft Generic NOI for Potable Water, dated July 15, 1997

### GOAL OF THIS NOI:

The common goal should be to reduce migration of contaminants into watercourses and to minimize further movement of already contaminated sediment from watercourses to the Rio Grande by managing potable water discharges in a controlled manner.

- This paragraph has been modified and incorporated into the cover letter of the Generic NOI.

### GENERAL:

**NMED-SWQB requests a copy of the Laboratory's Safe Drinking Water Act Program**

- A copy of the Safe Drinking Water Act (SDWA) Program Management Plan is in Appendix 9.

### A. WATER SUPPLY SYSTEM (WSS):

1. **Do discharges from WSS's include activities such as new well construction? Briefly explain these activities.**
  - New well construction operations are not included under the Generic NOI, they are addressed under the Laboratory's NPDES Program, as a stand-alone NOI under separate cover, or are addressed in the NPDES Permit Reapplication.
2. **Describe how LANL will address preventing impacts of WSS releases to PRSs.**
  - See Generic NOI, Section VIII, MITIGATION ACTIONS.
3. **Provide NMED-SWQB with information on LANL'S corrective measures program to eradicate potable water releases from WSSs.**
  - The Laboratory has an on-going preventative maintenance program to address and prevent potable water releases at the Laboratory. The Laboratory has the System Control and Data Acquisition (SCADA) alarm system to monitor for leaks and spills from the WSS collection system which allows the Laboratory to respond to leaks/spills in a timely manner.
4. **Describe LANL's stabilization measures program to prevent releases to PRSs and/or watercourses.**
  - See Generic NOI, Section VIII, MITIGATION ACTIONS.

5. **SWQB requests a list of PRSs that may be impacted by WSSs.**

- Discharges are evaluated for impact to Potential Release Sites (PRSs) and Solid Waste Management Units (SWMUs) on a case-by-case basis. PRSs are identified in the Laboratory's Resource Conservation and Recovery Act (RCRA) Field Investigation (RFI) Work Plans.

6. **Describe or provide a flow chart of the procedure for informing NMED of releases to PRSs. Indicate responsible parties doing each phase of the process.**

- See Generic NOI, Section IX, NOTIFICATION REQUIREMENTS FOR DOCUMENTING AND REPORTING DISCHARGES OF POTABLE WATER, STEAM CONDENSATE, FIRE PROTECTION SYSTEMS, AND LINE DISINFECTION WATER. General language has been incorporated into the Generic NOI to address notification to NMED regarding releases from the potable water steam condensate, fire protection systems, and line disinfection activities at the Laboratory.

**B. WSS DISINFECTION**

1. **Explain how LANL will assure chlorine during disinfection operations will not impact watercourse habitat and/or NPDES requirements.**

- See Generic NOI, Section VIII, MITIGATION ACTIONS and Appendix 8, LANL Disinfection of Water Piping Procedure.

2. **Add "total" after gallons in a. and b. of this section.**

- See Generic NOI, Section VI, THE ESTIMATED FLOW TO BE DISCHARGED. Total estimated annual volumes are totaled at the bottom of each section.

3. **Describe LANL's stabilization measures to prevent releases of chlorine to watercourses.**

- The Laboratory dechlorinates prior to discharge. See Appendix 8, LANL Disinfection of Water Piping Procedure.

**C. STEAM DISTRIBUTION AND CONDENSATE RETURN SYSTEMS**

1. **Change "a. Pipeline Leaks" to read "a. On-going Pipeline Leaks", and provide SWQB with the Laboratory's corrective measures to eliminate these leaks (e. g., budget commitments, etc.).**

- See Generic NOI, Section V, 3a, THE TYPE OF OPERATION FROM WHICH THE DISCHARGE IS DERIVED and Section VI, 3a, THE ESTIMATED FLOW TO BE DISCHARGED. "Pipeline Leaks" has been changed to "Pipeline Corrosion Leaks." The Laboratory has an operational budget to fix steam condensate pipeline breaks and leaks of approximately \$500,000/year.

2. **Change "b. Pipeline Repair and Replacement" to read "b. Emergency Pipeline Repair and Replacement".**

- See Generic NOI, Section V, 3a. THE TYPE OF OPERATION FROM WHICH THE DISCHARGE IS DERIVED. We have retained the same heading. All pipeline repairs are completed in a timely manner. The text in the Generic NOI includes the following: On occasion, the steam distribution and condensate return flow lines have undergone emergency repairs due to physical failure which resulted in releases to the environment.

3. **NMED-SWQB requests biannual reporting (i.e., Jan 1- June 30 report due date is July 31, and July 1-December 31 report due date is Jan. 31) for both a. and b. activities/releases. In addition, provide annual status of the Laboratory's prevention/elimination program for these types of spills.**

- The Laboratory has agreed to submit biannual reports as noted in Generic NOI, Section IX (6), NOTIFICATION REQUIREMENTS FOR DOCUMENTING AND REPORTING DISCHARGES OF POTABLE WATER, STEAM CONDENSATE, FIRE PROTECTION SYSTEMS, AND LINE DISINFECTION WATER. In addition, LANL will provide status of the Laboratory's prevention/elimination program for these types of spills at the DOE/LANL/NMED monthly meetings.

4. **How many steam manholes and vaults are routinely maintained? Is the "potable water" at these locations analyzed to verify that it is actually "potable"? SWQB requests biannual reporting and annual reporting and annual status reports on corrective measures to eliminate these situations.**

- There are approximately 86 manholes and vaults routinely maintained on a quarterly basis. The discharges from steam manholes and vaults are derived from steam condensate and storm water and have not previously been analyzed. However, the Laboratory provided analytical data to EPA and NMED in the previous NPDES Permit Application. (See Appendix 13.) Also, Appendix 12 contains conductivity measurements that were performed at TA-3, SM22, Power Plant taken from 10/29/97 to 12/9/97. The Laboratory will include steam manhole and vault discharges as part of the biannual and annual status reporting for the Generic NOI. Corrective measures to eliminate these situations will also be addressed in the monthly DOE/LANL/NMED meetings.

5. **What measures in the form of erosion control, etc. are applied when this type of discharge is released to prevent releases to watercourse.**

- Best Management Practices (BMPs) are evaluated on a case-by-case basis and are implemented as appropriate. See Generic NOI, Section VIII, MITIGATION ACTIONS.

6. **Describe LANL's procedure for informing NMED of releases to PRSs as a result of these types of releases.**

- See Generic NOI, Section IX, NOTIFICATION REQUIREMENTS FOR DOCUMENTING AND REPORTING DISCHARGES OF POTABLE WATER, STEAM CONDENSATE, FIRE PROTECTION SYSTEMS, AND LINE DISINFECTION WATER.

#### D. FIRE PROTECTION SYSTEM

1. NMED-SWQB requests that the lists of active fire hydrants/sprinkler systems and fire pumps, include any PRSs that may be impacted by these releases, both intentional or otherwise. In addition describe what methods will be taken to prevent releases to PRSs.

- In Appendices 5 and 6 are lists of active fire hydrants and sprinkler systems at the Laboratory. Discharges from these systems are evaluated on a case-by-case basis. In the event that any of these discharges impacts a SWMU or PRS, corrective actions are addressed in Generic NOI, Section VIII, MITIGATION ACTIONS.

2. Is the Fire hydrant/fire drain/fire protection and system flushing a function taken care of by DOE/LANL personnel, or a County operation? If it is County, is there a written agreement between DOE/LANL and the County as to how these operations are to be conducted? If so, please furnish copy of this agreement to NMED-SWQB.

- Fire hydrant testing is conducted by the Los Alamos County personnel. See excerpt from the 5-Year Fire Department contract No. DE-AC32-93AL64100 memo dated 12/2/92 in Appendix 7. The new contract is currently under review by the DOE, Laboratory, and County personnel. LANL will provide NMED with a copy of the new contract upon finalization. In addition, 2-inch fire drain testing and system flushing are performed by JCI. This system function is overseen by the Laboratory Group FSS-8. Fire protection services are provided by the Laboratory Group FSS-21.

3. Explain why fire hydrants can't be tested and flushed at the same time? How often are the fire hydrants flushed to remove sand? Explain why flushing activities are not required to meet the Safe Drinking Water Act guidelines.

- Fire hydrants are flushed at the time of testing. The flushing consists of an approximately 30 second flow in order to remove any buildup of sand or debris in the system. All fire hydrants are tested/flushed once a year. Enclosed is a list and schedule of the 19 hydrants that are flushed more frequently in order to test for free chlorine residual. (See Appendix 15.) The Laboratory's flushing activities are conducted in coordination with the Laboratory's SDWA Program.

4. Describe LANL's procedure for reporting releases to PRSs due to these types of activities.

- See Generic NOI, Section VIII, MITIGATION ACTIONS.

#### E. ESTIMATED FLOW TO BE DISCHARGED

1. Indicate the heading "gals/yr." In the right hand column above the "gals. per discharge" listed for each of the release categories.

- See Generic NOI, Section VI, THE ESTIMATED FLOW TO BE DISCHARGED  
Estimated annual volumes are totalized at the bottom of each section.

2. Under Steam Distribution Systems and Steam Condensate Return System indicate a. as "On-going" Pipeline Leaks and b. as "Emergency" Pipeline Repair and Replacement. For c. the text indicated monthly discharges of 12,000 gallons which would be 144,000 gal/yr. Which scenario does LANL propose?

- See Generic NOI, Section V, 3a and b. THE TYPE OF OPERATION FROM WHICH THE DISCHARGE IS DERIVED. See changes made to this section.

3. Under Fire Protection: b., the text indicated 200 gals ea. not 250 gals. In addition the text describes bimonthly testing of 300 sprinklers. This would generate 1,800,000 gals./yr or  $2(300)(250)(12)$ .

- See Generic NOI, Section V, 4b. THE TYPE OF OPERATION FROM WHICH THE DISCHARGE IS DERIVED. The 200 gallons previously listed has been changed to read 250 gallons each.

4. Under Fire Protection System: d. System flushing. Is LANL proposing that only 20 of the 475 hydrants need flushing per year for a total of 400,000 gals./yr.

- See Generic NOI, Section VI, 1b. THE ESTIMATED FLOW TO BE DISCHARGED. System flushing is a separate activity from the hydrant flushing that is performed annually on fire hydrants when they are being tested. The list of 19 hydrants that are flushed more frequently is in Appendix 15.

#### F. NOTIFICATION REQUIREMENTS

1. Define FMU, identify contact person and give telephone numbers.

- See Laboratory Facility Management Program and Facility Manager List which includes contact person and telephone numbers in Appendix 16.

2. The Laboratory will be required to submit biannual written summaries for all discharges handled under this NOI as well as status reports on progress of programs associated with elimination /management of these discharge.

- The Laboratory has agreed to submit biannual reports as noted in Generic NOI, Section IX (6), NOTIFICATION REQUIREMENTS FOR DOCUMENTING AND REPORTING DISCHARGES OF POTABLE WATER, STEAM CONDENSATE, FIRE PROTECTION SYSTEMS, AND LINE DISINFECTION WATER. In addition, the status of the Laboratory's progress of programs associated with elimination/management of these discharges is addressed at the DOE/LANL/NMED monthly meetings.

3. SWQB requires information for potential impact to SWMU/PRSs due to these discharges be provided for consideration before a final decision on this NOI is made.

- The Laboratory will evaluate impact to SWMU/PRSs on a case-by-case basis. Also, see Generic NOI, Section VIII, MITIGATION ACTIONS.

4. It is not clear who at the Laboratory is responsible for the 24 hr. verbal, etc. due to discharges into/onto a PRS under 1203 of WQCC. A standard form is being used by ESH-18, however ER program is using different formats. This needs to be established before the NOI is finalized.

- Reporting requirements and responsibilities are identified in Generic NOI, Section IX, NOTIFICATION REQUIREMENTS FOR DOCUMENTING AND REPORTING DISCHARGES OF POTABLE WATER, STEAM CONDENSATE, FIRE PROTECTION SYSTEMS, AND LINE DISINFECTION WATER.

• **GWQB Comments and LANL's response to Draft Generic NOI for Potable Water**

- I. 2. **The location of the discharges from the Water Supply System (WSS), Water Line Disinfection (WLD), Steam Distribution and Condensate Return System (SDCRS) and Fire Protection System (FPS) is generally stated as within the boundaries of the Los Alamos National Laboratory (LANL). The location of large or continuous discharges was not provided nor was other information illustrating the proximity of the discharges to Potential Release Sites (PRSs).**

**Please submit a detailed map with the locations of individual or continuous (discharges through time) discharges greater than 10,000 gallons per year. The map should include locations of PRSs and other facilities where discharged water should be diverted in order to eliminate the mobilization of any Water Quality Control Commission (WQCC) Regulation 3103 constituent.**

- See maps that show the Laboratory Water System in Appendix 1, and Steam Condensate Systems in Appendices 2, 3, and 4. Because of the Laboratory's complex fire protection system, this information is not available in one map. However, we have included the Laboratory Fire Hydrant List in Appendix 5 and the Laboratory Sprinkler System List and their locations in Appendix 6. The Laboratory will provide NMED with information regarding the location of discharge as soon as it has been identified. Discharges from any of the above will be evaluated for impact to PRSs or SWMUs on a case-by-case basis. PRSs are identified in the Laboratory's RCRA Field Investigation (RFI) Work Plans. Best Management Practices (BMPs) will be implemented as appropriate. Also, see Generic NOI, Section VIII, MITIGATION ACTIONS.

- II. 3. **The means of discharge from the WSS, WLD, SDCRS, and FPS states that discharges will be made to mesa tops or into various tributaries to the Rio Grande. Information was not provided stating how discharged water will be prevented from flowing through PRSs.**

**Please submit the methods to be utilized to keep any discharged water from flowing through PRSs or other locations where there is the potential to mobilize WQCC 3103 constituents.**

- Methods for keeping discharge water from flowing through PRSs are in the Generic NOI, Section VIII, MITIGATION ACTIONS.

4. a. The estimated concentration of contaminants in the discharge from the WLD and the SDCRS was not adequately provided. It is stated in the NOI that Calcium Hypochlorite or Sodium Hypochlorite Solution will be used to disinfect lines and other related facilities. It is not stated in the NOI if chloride will be a byproduct of either disinfectant, and if so, what the expected residual chloride concentrations will be.

Please submit estimated chloride concentrations in discharge water that has been impacted with disinfection.

- Chloride will be a byproduct of calcium hypochlorite and sodium hypochlorite. The residual chloride concentration is estimated at 35 ppm based on JCI Laboratory Environmental Procedure, JENV Document 12-31-004. (See Appendix 11.) In addition, MSDSs for sodium hypochlorite and calcium hypochlorite and sodium thiosulfate have been attached in Appendix 10.

- b. The Draft Generic NOI states that steam condensate has been analyzed from previous releases and submitted to the NMED and that the analysis is attached. Analytical data was not included with the Draft Generic NOI and any data previously submitted may not adequately represent all discharges from SDCRS. The GWQB has not seen any evidence demonstrating that Total Dissolved Solids (TDS) do not concentrate in the steam condensate or that other constituents are not introduced.

The GWQB recommends that conductivity readings of wastewater at 25 degrees C be taken prior to every discharge. If the conductivity is greater than 1400 umhos/cm, the wastewater should be analyzed for TDS. If wastewater is greater than 1000 mg/L TDS, the wastewater should be analyzed for general chemistry and the ionic balance should be calculated. If cations and anions do not balance, the wastewater should be analyzed for metals. Wastewater with concentrations greater than WQCC 3103 concentrations should not be discharged without submitting an NOI to NMED and LANL has received a determination from NMED.

- Conductivity measurements were performed at TA-3, SM22, Power Plant from 10/29/97 to 12/9/97. (See Appendix 12.) JCI will continue to collect conductivity data. ESH-18 will review this data and will collect for TDS if appropriate. Conductivity measurements are below 1400 umhos/cm based on existing data.

- III. 5. The NOI states that the type of operations from which discharges are derived from the SDCRS are 12 major leaks with an approximate discharge of 18,000,000 gallons per year. Another source of wastewater is steam condensate and storm water runoff which accumulates in manholes or vaults. As stated previously, locations of discharges, methods to insure that discharged water will not migrate to or through PRSs, and water chemistry have not been provided.

Please submit the information requested in numbers 2-4 above. The GWQB recommends that all pipeline leaks be repaired for source control of discharged water that could eventually cause any contaminants to migrate. Samples of water from the leaks should be taken at least monthly and samples should be taken from manholes and vaults prior to discharge. Conductivity should be measured and the procedures outlined in #4 above should be followed if conductivity is greater than 1400 umhos/cm at 25 degrees C for both pipeline leaks and water collected in manholes and vaults.

- The revised estimated discharge from the SDCRS is 595,748 gallons per year. (See Appendix 18.) Analytical results taken from TA-3 MH 1041A are in Appendix 14. The Laboratory has an operational budget to repair steam condensate pipeline breaks and leaks, with an annual budget of approximately \$500,000. Upon discovery of a leak, the repairs are conducted in a timely manner. As stated previously, discharges are evaluated for impact to PRSs and SWMUs on a case-by-case basis and BMPs are implemented as appropriate. PRSs are identified in the Laboratory's RFI Work Plans. Based on existing data provided in Appendices 12, 13, and 14 sampling at manholes and vaults prior to discharge appears to be unnecessary.

**IV. 6. Notification requirements for documenting and reporting discharges to NMED are outlined in #8 of the Draft Generic NOI. The GWQB requests that sampling procedures outlined in #4 above are followed prior to any discharge, and conductivity is recorded.**

- The Laboratory's sampling protocol is outlined in responses II. and III. above.