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Permit

STATE OF NEW MEXICO
ENVIRONMENT DEPARTMENT

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

February 10, 1995

Dennis J. Erickson
Division Director, ESH-DO
University of California
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Joseph Vozella
Acting Asst. Area Manager
DOE/LAAO MS A316
Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Re: Compliance Evaluation Inspection, NM0028355,
Los Alamos National Laboratory

Dear Messrs. Erickson and Vozella:

Enclosed is a copy of the report on the Compliance Evaluation Inspection (CEI) that was conducted at Los Alamos National Laboratory on October 27-28, 1994. These inspections are conducted under the National Pollutant Discharge Elimination System (NPDES) permit program for the US Environmental Protection Agency (USEPA); copies of this inspection report will be sent to the USEPA Region 6 in Dallas for their review.

Due to time constraints, this CEI inspection focused only on certain areas of LANL's NPDES permit. The Sanitary Waste System Consolidation (SWSC) plant and the Radioactive Liquid Waste Treatment plant were main areas covered. The NPDES Compliance Inspection Report cover page (form EPA 3560) facility evaluation rating only reflects the evaluated areas of the permit.

Problems related to LANL's permit were discussed during the exit interview, and the findings of this inspection are further documented in this report. Please refer to the Narrative and Further Explainations sections of the report for more details.

Please thank Mr. Steve Rae, Mr. Mike Saladen and Mr. Alex Puglisi of the ESH-18 group for the assistance offered during this inspection. Each staff member of the facilities visited was very helpful and cooperative.

If there are any questions regarding this inspection report, I can be reached at 827-0387.

Sincerely,

David Beach
Point Source Regulation Section

pc: USEPA, Region 6, 2 copies
USEPA, Cecilia Kernodle, 6W-ET
NMED, District 2, Santa Fe
Steven Rae, LANL, ESH-18/WQ&H, MS K491

Gary Johnson
*Governor*

Mark Weidler
*Secretary*

15417

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EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Washington, D.C. 20460

# NPDES Compliance Inspection Report

Form Approved
OMB No. 2040-0003
Approval Expires 7-31-85

## Section A: National Data System Coding

| Transaction Code | NPDES | yr/mo/day | Inspect. Type | Inspector | Fac Type |
|---|---|---|---|---|---|
| 1 N 2 5 3 | N M 0 0 2 8 3 5 5 11 | 12 9 4 1 0 2 7 17 | 18 C | 19 S | 20 4 |

Remarks: M U L T I - M E D I A I N S P E C T I O N

Reserved: 67 69 | Facility Evaluation Rating: 70 3 | BI: 71 N | QA: 72 N | 73 74 | Reserved: 75 80

## Section B: Facility Data

| Name and Location of Facility Inspected | Entry Time | Permit Effective Date |
|---|---|---|
| LOS ALAMOS NATIONAL LABORATORY<br>LOS ALAMOS, NEW MEXICO 87545 | [X] AM [ ] PM<br>08:46 OCT. 27, 1994 | AUGUST 1, 1994 |
| | Exit Time/Date<br>16:45 OCT. 28, 1994 | Permit Expiration Date<br>OCTOBER 31, 1998 |

| Name(s) of On-Site Representative(s) | Title(s) | Phone No(s) |
|---|---|---|
| STEVEN RAE | ACTING GROUP LEADER, ESH-18 | (505) 665-1859 |
| MIKE SALADEN | STAFF MEMBER, ESH-18 | (505) 665-6085 |
| ALEX PUGLISI | STAFF MEMBER, ESH-18 | (505) 667-4882 |

| Name, Address of Responsible Official | Title | Contacted |
|---|---|---|
| DENNIS J. ERICKSON<br>UNIVERSITY OF CALIFORNIA<br>LOS ALAMOS NATIONAL LABORATORY<br>P.O. BOX 1663, MS K491<br>LOS ALAMOS, NM 87545 | DIVISION DIRECTOR, ESH-DO<br>Phone No.<br>(505) 667-4218 | [X] Yes [ ] No |

## Section C: Areas Evaluated During Inspection

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| M | Permit | S | Flow Measurement | N | Pretreatment | S | Operation and Maintenance |
| M | Records/Reports | M | Laboratory | S | Compliance Schedule | M | Sludge Disposal |
| S | Facility Site Review | S | Effluent/Receiving Waters | M | Self-Monitoring Program | U | Other: Sampling |

## Section D: Summary of Findings/Comments (Attach additional sheets if necessary)

1. Outfall 13S DMR data for September 94 does not reflect the benchsheet data.
2. Several bypasses of raw sewage from collection systems and liftstations which serve the SWSC facility have occurred.
3. The monitoring frequency of 1/week was not met for the pH parameter in August 94 for Outfall 13S.
4. The calibration of the flow meter at Outfall 13S is not monitored on a regular basis.
5. The laboratory at Johnson Controls is referencing the 17th Edition of Standard Methods which is no longer approved.
6. Sewage sludge showed a wide range of values, indicative of non-representative sampling.
7. It is not clear in the permit whether the discharge to Sandia Canyon (former Outfall 01S) is a permitted discharge.
8. Although the Radioactive Liquid Waste Treatment plant at TA-50 is well operated and maintained it is reportedly reaching the end of its useful life.
9. This multi-media inspection was done in conjuction with NMED Hazardous and Radioactive Material Bureau which conducted a RCRA compliance inspection of LANL (Permit ID NM 0890010515) on September. 9-22, 1994.

| Name(s) and Signature(s) of Inspector(s) | Agency/Office/Telephone | Date |
|---|---|---|
| DAVID BEACH | NMED/SWQB (505) 827-0387 | 2/7/95 |
| RICHARD POWELL<br>ANN M. YOUNG | NMED/SWQB (505) 827-2798<br>NMED/SWQB (505) 827-2823 | 2/9/95 |
| Signature Of Reviewer | Agency/Office | Date |

## Regulatory Office Use Only

| Action Taken | Date | Compliance Status |
|---|---|---|
| | | [ ] Noncompliance<br>[ ] Compliance |

EPA Form 3560-3 (Rev. 3-85) Previous editions are obsolete

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**Department of Energy - University of California**
**Los Alamos National Laboratory, NM0028355**
**COMPLIANCE EVALUATION INSPECTION, OCTOBER 27-28, 1994**



## SUMMARY

A Compliance Evaluation Inspection (CEI) was conducted at the Department of Energy - University of California Los Alamos National Laboratory (DOE/LANL) on October 27-28, 1994 by David Beach, Richard Powell and Ann M. Young of the New Mexico Environment Department (NMED), Surface Water Quality Bureau. This inspection was conducted for the US Environmental Protection Agency (US EPA), Region VI, under the National Pollutant Discharge Elimination System (NPDES) permit program, in accordance with the federal Clean Water Act. These inspections are conducted under contract with the USEPA and are used to evaluate compliance with the NPDES permit program. This inspection report is based on information supplied by the DOE/LANL staff or contractor representatives, observations made by the NMED inspectors, and records and reports kept by the permittee, the contractor, or NMED.

Facilities which were inspected include: the Sanitary Wastewater Systems Consolidation (SWSC) Facility (outfalls 13S), the Radioactive Liquid Waste Treatment Facility at TA-50 (outfall 051), the storage tanks and flow measuring system for the Radioactive Liquid Waste Treatment Facility at TA-21, the Steam Plant at TA-16 (outfall 2A-007), and the Printed Circuit Board Plant at TA-22 (outfall 128).

A brief summary of the findings include:

1. Several recordkeeping and reporting deficiencies were noted at the Johnson Control laboratory. The data reported on the DMR did not reflect the data on the bench sheets. The sampling frequency for the pH parameter at outfall 13S was not met in August, 1994.

2. Samples of sludge from the SWSC facility were not representative, as shown by a wide range of results for the lead parameter. One composite's result was above 40 CFR Part 503's ceiling concentration for lead.

3. Bypasses of raw sewage from the collection system which serves the SWSC facility have occurred. Proper corrective action was taken.

4. The Radioactive Waste Treatment Plant at TA-50 is greater than 30 years old and structural integrity problems are becoming a concern.

5. It is not clear whether the effluent discharged from TA-3 (former outfall 01S) into Sandia Canyon is permitted under the current permit; moreover, the effluent being discharged into Sandia Canyon is not necessarily represented by the quality nor the quantity of effluent monitored at Outfall 13S.

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**DETAILS**

The NMED inspectors arrived at DOE/LANL at 8:46 hours on October 27, 1994, and contacted the Acting Group Leader of the Environmental Safety and Health Branch, Steven Rae, who is currently signing the Discharge Monitoring Reports (DMR) as Principle executive officer or authorized agent. Mr. Rae was presented credentials and informed of the purpose of the inspection. The inspectors were informed that the DOE Los Alamos Area Office (DOE/LAAO) would have to be contacted and informed of the inspectors presence, and that security badges would have to be obtained if outfalls in secured areas would be inspected. Steven Rae contacted the responsible officials' offices for both DOE and the University of California. The inspectors proceeded to check-in at the DOE LAAO, accompanied by ESH-18 representatives. All of DOE's representatives were unavailable at that time due to a previously scheduled meeting, so the inspectors were escorted to the badge house to obtain security badges. All the necessary paper work was filled out for obtaining security badges to be available for the following day. The inspectors initiated the inspection starting with the unsecured areas of TA-46 and TA-50.

An exit interview was held on October 28, 1994 at 1600 hours. A sign up sheet of attendees is attached (see Attachment D). The problems noted during the inspection were discussed with the permittee and with Johnson Controls[1] staff. The inspectors concluded the inspection and left the facility at 16:45 hours, October 28, 1994.

**BACKGROUND**

LANL is a federal facility owned by the Department of Energy and managed by the University of California. The primary mission of the laboratory is research leading to the design and development of nuclear weapons. Non-nuclear research is also conducted a LANL in the areas of life sciences, earth sciences, chemistry, physics, and environmental sciences LANL occupies 43 square miles, has 1,200 buildings with 7.5 million square feet of space in 50 technical areas. There are over 9,000 people employed by either the University of California or by outside contractors.

LANL is regulated by the NPDES permit program. The permit number NM0028355 was assigned jointly to the University of California and the Department of Energy as co-permittees. The laboratory was recently issued a new permit which became effective on August 1, 1994 and expires October 25, 1998. This permit allows LANL to

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1. Johnson Controls is a contractor to DOE/LANL that operates the SWSC facility and analytical laboratory.

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discharge wastewater from 124 different outfalls into various tributaries of the Rio Grande in segments 2-111 and 2-118 of the Rio Grande Basin.

Wastewater discharged by LANL can be categorized as either sanitary, non-radioactive industrial, or radioactive industrial. Several wastewater treatment facilities have been constructed which process the various wastewaters before they are discharged to the environment. Sanitary wastewater is treated by the recently constructed Sanitary Waste System Consolidation (SWSC) plant. Radioactive industrial wastewater is treated at radioactive industrial treatment plants located at technical areas TA-21 and TA-50, and non-radioactive wastewater such as that generated by the steam plants, power plant, or cooling tower condensate is typically treated on-site before being discharged.

Several Administrative Orders (AO) have been issued to the University of California Corporation of LANL by EPA Region 6 for violations of the NPDES permit program. The latest AO Docket No. VI-94-1242 replaces a previous AO Docket No. VI-94-1210 and addresses violations of the compliance schedule for the High Explosives (HE) Wastewater Treatment Project (Category 05A); the compliance schedule is contained in AO Docket VI-92-1306. Administrative Order Docket VI-92-1242 sets a new schedule for compliance of the HE Wastewater Treatment Project and requires the permittee continue submitting quarterly progress reports until the final compliance date of the compliance order, October 31, 1997.

**TREATMENT UNITS**

**TA-46 SWSC, Outfall 13S**

There are 40 lift stations in the collection system serving the SWSC Facility. The facility (see diagram in Attachment C) was constructed in 1992, with the intent to consolidate the treatment of domestic sewage from the various areas of LANL, and to eliminate the NPDES outfalls from the previously separate domestic sewage treatment facilities. Since LANL is located on a series of mesas separated by deep canyons, lift stations were constructed to direct the raw wastewater to the new SWSC facility. These lift stations are either on automatic alarm systems or visible/audible alarm systems, and are visited routinely by the security patrol staff 24 hours per day.

The raw wastewater arriving at the facility enters the entrance works building and is measured by a 9 inch Parshall flume, and then receives primary treatment by either a manual or a mechanical bar screen. The mechanical bar screen is the usual mode of operation, but should a breakdown occur, the wastewater would eventually overflow into the manual bar screen channel. The facility has a series of drains that lead to a sump at the low end of the plant.

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Any water collected at the sump is pumped back to the entrance works just ahead of the bar screen. The pH of the influent is continuously monitored just after the bar screen. The next treatment unit is the aerated grit chamber, located just outside the building. There are two grit removal pumps that are controlled by a sophisticated computer program, as are many other units of this very modern facility. Grit and screenings are temporarily stored in a hopper, and then are transported to the site of the now demolished TA-3 wastewater treatment plant, where they are stockpiled in a bermed and lined area.

The flow enters a splitter box and can be diverted to either/or both flow equalization basins. If the monitored influent pH indicates that soda ash is needed due to the influent's low alkalinity, it is currently added manually at the splitter box. By November, 1994, construction of an automatic soda ash feeder was scheduled to start.

Two Flyght pumps controlled by the computer program lift the flow from the equalization basins into the first cell of the aeration basin system; one pump runs continuously, the other as needed. The Return Activated Sludge (RAS) is also pumped into this first cell. The Dissolved Oxygen is set at a low level in the first cell to encourage nitrification/denitrification. The DO is monitored and ranges from 0.2 mg/l down to 0.0. The blowers are activated by the computer program to maintain the DO in this range.

The flow continues in series through two other aeration basin cells, with increased DO levels. The second cell is maintained at about 0.8 mg/l DO, and the final aeration cell at about 1.8 mg/l DO. There is considerable flexibility within this entire treatment system, and each cell can be separated and taken off line, with the flow diverted to the other units.

There is a fourth aeration cell that is not currently used in the treatment process, but it is kept filled with treated effluent. The blower provides too much air for the treatment units, so the excess air is diverted to this fourth cell for elimination. There are a total of three blowers for the entire aeration basin system, only one of which is on line. There are three blowers for the flow equalization basins, only one of which is run intermittently.

There are air lift pumps serving the aeration basin cells, and flow can be recirculated from one basin to another. A portion of the flow was being recirculated as mixed liquor back to the first cell where nitrification/denitrification was occurring.

The flow enters one of two secondary clarifiers. RAS from the secondary clarifier is returned by air lift pumps to the first aeration basin cell.

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The second secondary clarifier is used as a sludge thickener unit. Some Waste Activated Sludge is diverted each day to this unit, and is allowed to settle. The supernatant is decanted through the use of a small submersible pump into an empty sludge drying bed. The sand in the drying bed filters the supernatant and the filtered water flows into the sump and is returned to the head of the plant.

Flow from the secondary clarifier can be diverted to a lined holding pond or through the chlorine contact chamber. Currently, the flow was diverted to the chlorine contact chamber. The flow out of the contact chamber was being measured through a 6 inch Parshall flume and Drexelbrook flow recorder and totalizer system. There is a drop box and an outfall at this site into Cañada del Buey; this outfall, 13S, has never been used. Instead, the treated wastewater was being diverted to the holding pond.

The 13S outfall, although never used, can receive treated wastewater from either the chlorine contact chamber or from the holding pond. The wastewater currently flows by gravity into the reuse wet well pits, and all of the wastewater is pumped up to TA-3. There are two reuse pumps to lift the wastewater to the TA-3 site; only one is needed for the flow. The wastewater can come directly from the chlorine contact chamber or from the holding pond into the reuse pits. Also, additional chlorine can be added as the wastewater is pumped up to TA-3.

At TA-3, the site of one of the former wastewater treatment plants, the flow enters a large reuse storage tank to serve as makeup water for the power plant, and eventually becomes part of the effluent at outfall 001, or serves as makeup water for cooling tower blowdown, evaporative coolers, chillers, etc., eventually becoming part of the effluent at outfall category 03A.

Excess wastewater from the SWSC facility not needed at the reuse storage tank flows into Sandia Canyon by way of former outfall 01S. This wastewater discharge to Sandia Canyon is neither sampled nor measured at this location. Instead, the quality and quantity of the wastewater are measured and sampled just ahead of the effluent 6 inch Parshall flume at the SWSC facility, and are reported under outfall 13S on the DMRs, although outfall 13S has never been used. The wastewater can be degraded by being retained in the holding pond and additional chlorine can be added prior to the discharge to Sandia Canyon. These changes in effluent quality are not adequately addressed in the current permit. In addition, because of the flexibility of the configuration at the SWSC facility, treated but not disinfected wastewater can be diverted to the holding pond, thence pumped to former outfall 01S. Chlorine can be injected while the wastewater is being pumped, but the quality of the effluent, the concentration of chlorine, and the effectiveness of the kill (should the wastewater be coming directly from the secondary clarifier) are not known before discharge to Sandia Canyon.

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The SWSC facility has the plumbing in place to dechlorinate, but is not required to meet a total residual chlorine in the current NPDES permit and is not dechlorinating at this time.

There are 16 sand-filled sludge drying beds at the SWSC facility. Three are used for filtering the supernatant from the sludge thickener (second secondary clarifier), and the remaining 13 beds are used for sludge. Polymer is added in the waste line to enhance the dewatering of the sludge on the drying beds. Decant water as well as underdrain water are returned by way of the sump at the low end of the facility, where all collected water, including storm water and any runoff from the dried sludge stockpiles, is pumped back to the head of the plant.

There is approximately 9 months worth of stockpiled sludge at the SWSC facility at this time, plus some old sludge from the former WWTP at the TA-3 site, and some sludge removed from the holding pond. The last land application of dried sludge took place in April, 1994 and it was land applied by an AgChem sludge spreader at the TA-54 site, which is LANL's radioactive waste disposal site. The sludge stockpiles are individually identified at the SWSC facility and are tracked from the bed to the stockpile, then to the final disposal site. Composite samples are collected while the sludge is on the individual beds. The most recent sludge that was land applied at the TA-54 site came from beds 7 and 15, and was found to be high in lead and zinc. This will be discussed under the Further Explanations portion of this report.

**TA-50 - Main Radioactive Liquid Waste Treatment Facility, Outfall 051**

LANL operates a Radioactive Liquid Waste Treatment Facility at TA-50 (see diagram in Attachment C) to treat approximately 20 - 21 million liters/year of liquid radioactive wastes generated by numerous other technical areas, including various research laboratories and manufacturing facilities. Liquid waste is first delivered to an initial pH adjustment (with NaOH) tank located in the basement of the main building, then to one of two (one 75,000 gallon and one 25,000 gallon) concrete, sub-surface influent storage tanks, or a 100,000 gallon back-up storage tank, located outside of the main building at TA-50. The collection system is comprised of some 70 collection sumps interconnected by approximately five miles of double walled pipe. These collection sumps are equipped with conductivity probes to detect rising water levels in the sump. Rising water levels trigger an alarm on the main control panel at TA-50. In response to an alarm, staff is dispatched to the appropriate collection sump to determine the cause of the alarm and to take any required actions or make necessary repairs to alleviate the problem. Since not all producers of radioactive liquid waste at this complex are connected to this collection system, additional waste is delivered to TA-50 by vacuum truck.

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Waste is batch treated at this plant by drawing untreated waste from the 75,000 gallon influent tank, under normal circumstances. The plant usually treats liquid waste five days/week for two to six hours/day. Liquid waste is pumped from the 75,000 storage tank (or the 25,000 or 100,000 gallon tank as necessary) to the first of two flash mixers, where iron sulfate and food grade lime (to raise the pH to 10.5 S.U.) are added. From the first flash mixer, waste is pumped to the first of two clariflocculators, then to a second flash mixer for further mixing and addition of iron sulfate and lime. Partially treated waste is then pumped to the second clariflocculator. Clarified effluent is directed to a multi-media (sand and anthracite coal) gravity filter for final filtering and treatment with carbon dioxide, to lower the pH to 6.7 S.U. Treated effluent is gravity fed to one of two 25,000 gallon effluent storage tanks prior to discharge via outfall 051. These two sub-surface, covered effluent storage tanks are filled in series. Switch over from one tank to the other is manual but an overflow pipe, which is located approximately two feet from the top, connects the two tanks. Also, when treated effluent levels in either of the tanks reaches 75% full, an alarm is sounded on the control panel of the main plant, which is manned continuously when the plant is operating.

Approximately once/month when the sludge blanket at the bottom of the clariflocculators reaches a two - six foot depth, sludge is drawn down and directed to a sludge storage tank. Back wash from the gravity filter is also directed to this sludge tank. From this storage tank, sludge is pumped to a rotary vacuum filter where sludge is attracted and attached to perlite on a rotating drum. The perlite/sludge material is scraped off of the drum and placed in 55 gallon plastic lined drums and hauled to TA-54 for proper disposal. Filtrate is recirculated to the head of the plant where it re-enters the waste stream.

In addition to the above mentioned collection system alarms, the treatment plant itself is computer-monitored, with alarms located throughout the plant. Audio and visual alarms located on the main control panel are activated when any chemical parameter throughout the treatment process exceeds set levels, when tank and/or pipe leaks develop or if liquid waste levels exceed set levels, etc. Computer monitors display the locations of problem areas and staff are dispatched to determine the cause of the alarm, and to take appropriate actions and/or effect repairs as required. Also, the plant is serviced by two separate power grids, where if one fails the other grid is activated, as well as by a portable generator and a back-up battery system capable of operating the plant for approximately six hours.

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**TA-21 - Radioactive Liquid Waste Treatment Facility (Outfall 051)**

This facility receives radioactive liquid wastes generated by a small number of facilities located north of Los Alamos Canyon. A brief visit was made to this site, mainly to observe the storage tanks and flow measurement devices located here.

Effluent from TA-21 is stored in two 12,500 gallon steel, above ground storage tanks located outside of the main building, adjacent to a public road and a short distance south of DP Canyon. These tanks do not have a permitted discharge to the environment. All liquid waste is directed to the 25,000 gallon influent storage tank at TA-50, where it is re-treated and discharged through outfall 051. There is no spill containment for these tanks which, if vandalized or otherwise develop leaks, would discharge across the above mentioned public access road and into DP Canyon.

Flow measurement is accomplished by the use of two (one on each 12,500 gallon tank) Ashcroft bubble meters. These meters measure the fluid level in each tank in meters. Calibrations are done (one/year) using a tape measure to check the level from the top of the tank. Since there is considerable room for error in this type of flow measurement device and since the pipe used to transport these wastes to TA-50 is single walled with no leak detection system, there exists a fairly high potential of loss to the environment in this system.

**TA-22 - Printed Circuit Board Plant, Outfall 128**

This facility manufactures printed circuit boards using a photo-etch process. Wastewater is produced both from the NaOH stripping and FeCl etching processes. These two processes together account for approximately 75% of the effluent to outfall 128. The remaining 25% is once through cooling water from the plastic shop. The NaOH stripping process is a two rinse process which produces effluent from the second rinse. The FeCl etching process is a five rinse process which produces effluent from the fifth (final) rinse tank. Treatment occurs in the first three tanks. Process rinse water in tank #2 is treated with CaOH to raise the pH to 9.5-10.5 S.U. to precipitate metals. The sludge from this tank is loaded into 55 gallon drums and disposed of as hazardous waste at TA-54. Process rinse water in tank #3 is treated with HCl to lower the pH to 6.0-9.0 S.U. Spent process water from this facility is stored in several plastic tanks located within the building.

There is a small, continuous discharge through outfall 128 which is not associated with these processes. The permittee's Wastestream Characterization Study (WCS) identified the source of this unpermitted discharge as boiler blowdown.

The permittee intends to eliminate outfall 128 in the near future.

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NPDES Compliance Inspection Report **CHECKLIST**

| Los Alamos National Laboratory (LANL) | DATE 10-27-94 | PERMIT NO NM0028355 |
|---|---|---|

## SECTION A - PERMIT VERIFICATION

INSPECTION OBSERVATIONS VERIFY THE PERMIT S ☐ M ■ U ☐ N/A ☐ *(FURTHER EXPLANATION ATTACHED Y)*

DETAILS

1. CORRECT NAME AND MAILING ADDRESS OF PERMITTEE. Y ■ N ☐ N/A ☐

IF NO
Name
Address

2. CURRENT COPY OF PERMIT ON SITE. Y ■ N ☐ N/A ☐
3. FACILITY IS AS DESCRIBED IN PERMIT. Y ■ N ☐ N/A ☐
4. NOTIFICATION GIVEN TO EPA/STATE OF NEW DIFFERENT OR INCREASED DISCHARGES. Y ☐ N ☐ N/A ■
5. NUMBER AND LOCATION OF DISCHARGE POINTS AS DESCRIBED IN PERMIT. *(See further explanations)* Y ☐ N ■ N/A ☐
6. NAME AND LOCATION OF RECEIVING WATERS CORRECT. Y ■ N ☐ N/A ☐
7. ALL DISCHARGES ARE PERMITTED. *(Permit is not clear if former outfall 01S is permitted; other unpermitted outfalls are identified in WCS.)* Y ☐ N ■ N/A ☐

## SECTION B - RECORDKEEPING AND REPORTING EVALUATION

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT S ☐ M ■ U ☐ N/A ☐ *(FURTHER EXPLANATION ATTACHED Y)*

DETAILS: *(Need improvement in QA/QC for data reported on DMR's at SWSC plant)*

1. ANALYTICAL RESULTS CONSISTENT WITH DATA REPORTED ON DMRs. S ☐ M ☐ U ■ N/A ☐
2. SAMPLING AND ANALYSES DATA ADEQUATE AND INCLUDE. S ■ M ☐ U ☐ N/A ☐
   a) DATES, TIME(S) AND LOCATION(S) OF SAMPLING Y ■ N ☐ N/A ☐
   b) NAME OF INDIVIDUAL PERFORMING SAMPLING Y ■ N ☐ N/A ☐
   c) ANALYTICAL METHODS AND TECHNIQUES. *(Quoting 17th Ed. of Standard Methods for SWSC plant analysis)* Y ■ N ☐ N/A ☐
   d) RESULTS OF ANALYSES AND CALIBRATIONS. Y ■ N ☐ N/A ☐
   e) DATES AND TIMES OF ANALYSES. Y ■ N ☐ N/A ☐
   f) NAME OF PERSON(S) PERFORMING ANALYSES. Y ■ N ☐ N/A ☐
   g) INSTANTANEOUS FLOW AT GRAB SAMPLE LOCATIONS. Y ■ N ☐ N/A ☐
3. MONITORING RECORDS MAINTAINED FOR A MINIMUM OF THREE YEARS. Y ■ N ☐ N/A ☐
4. LABORATORY EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS ADEQUATE. S ■ M ☐ U ☐ N/A ☐
5. PLANT RECORDS INCLUDE SCHEDULES, DATES OF EQUIPMENT MAINTENANCE AND REPAIR. S ■ M ☐ U ☐ N/A ☐
6. QUALITY ASSURANCE RECORDS KEPT ON FILE. Y ■ N ☐ N/A ☐
7. EFFLUENT LOADINGS CALCULATED USING DAILY EFFLUENT FLOW AND DAILY ANALYTICAL DATA. *(See DMR calculations for SWSC plant)* Y ☐ N ■ N/A ☐
8. PRETREATMENT RECORDS ADEQUATE. S ☐ M ☐ U ☐ N/A ■

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# NPDES Compliance Inspection Report

**CHECKLIST**

| Los Alamos National Laboratory (LANL) | DATE 10-27-94 | PERMIT NO NM0028355 |
|---|---|---|

## SECTION C - OPERATIONS AND MAINTENANCE

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED — S ■ M ☐ U ☐ N/A ☐ (FURTHER EXPLANATION ATTACHED Y)

DETAILS: *( Bypasses in the collection system, proper corrective action taken )*

| | |
|---|---|
| 1. TREATMENT UNITS PROPERLY OPERATED AND MAINTAINED. | S ■ M ☐ U ☐ N/A ☐ |
| 2. STANDBY POWER OR EQUIVALENT PROVIDED | S ■ M ☐ U ☐ N/A ☐ |
| 3. ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE. | S ■ M ☐ U ☐ N/A ☐ |
| 4. ALL NEEDED TREATMENT UNITS IN SERVICE. | S ■ M ☐ U ☐ N/A ☐ |
| 5. SPARE PARTS AND SUPPLIES INVENTORY MAINTAINED | S ■ M ☐ U ☐ N/A ☐ |
| 6. ADEQUATE NUMBER OF QUALIFIED OPERATORS PROVIDED. | S ■ M ☐ U ☐ N/A ☐ |
| 7. ESTABLISHED PROCEDURES AVAILABLE FOR TRAINING NEW OPERATORS. | S ■ M ☐ U ☐ N/A ☐ |
| 8. OPERATION AND MAINTENANCE MANUAL AVAILABLE. | Y ■ N ☐ N/A ☐ |
| 9. STANDARD OPERATING PROCEDURES AND SCHEDULES ESTABLISHED *(Extensive SOP's have been developed)* | Y ■ N ☐ N/A ☐ |
| 10. HAVE BYPASSES/OVERFLOWS OCCURRED AT THE PLANT OR IN THE COLLECTION SYSTEM IN THE LAST YEAR? | Y ■ N ☐ N/A ☐ |
| IF SO, HAS THE REGULATORY AGENCY BEEN NOTIFIED? | Y ■ N ☐ N/A ☐ |
| HAS CORRECTIVE ACTION BEEN TAKEN TO PREVENT ADDITIONAL BYPASSES/OVERFLOWS? | S ■ M ☐ U ☐ N/A ☐ |
| 11. HAVE ANY HYDRAULIC OVERLOADS OCCURRED AT THE TREATMENT PLANT? | Y ☐ N ■ N/A ☐ |
| IF SO, DID PERMIT VIOLATIONS OCCUR AS A RESULT? | Y ☐ N ☐ N/A ■ |

## SECTION D - SELF-MONITORING (SAMPLING)

PERMITTEE SAMPLING MEETS PERMIT REQUIREMENTS — S ☐ M ☐ U ■ N/A ☐ (FURTHER EXPLANATION ATTACHED Y)

DETAILS:

| | |
|---|---|
| 1. SAMPLES TAKEN AT SITE(S) SPECIFIED IN PERMIT | Y ■ N ☐ N/A ☐ |
| 2. LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES. | Y ■ N ☐ N/A ☐ |
| 3. FLOW PROPORTIONED SAMPLES OBTAINED WHEN REQUIRED BY PERMIT. | Y ■ N ☐ N/A ☐ |
| 4. SAMPLING AND ANALYSES COMPLETED ON PARAMETERS SPECIFIED IN PERMIT | Y ■ N ☐ N/A ☐ |
| 5. SAMPLING AND ANALYSES PERFORMED AT FREQUENCY SPECIFIED IN PERMIT. *(Not for pH analysis at Outfall 13S for August 1994)* | Y ☐ N ■ N/A ☐ |
| 6. SAMPLE COLLECTION PROCEDURES ADEQUATE: | S ☐ M ■ U ☐ N/A ☐ |
| a) SAMPLES REFRIGERATED DURING COMPOSITING. | Y ■ N ☐ N/A ☐ |
| b) PROPER PRESERVATION TECHNIQUES USED. | Y ■ N ☐ N/A ☐ |
| c) CONTAINERS AND SAMPLE HOLDING TIMES CONFORM TO 40 CFR 136.3. *(TTO analysis does not meet holding time for Outfall 051)* | Y ☐ N ■ N/A ☐ |
| 7. IF MONITORING AND ANALYSES ARE PERFORMED MORE OFTEN THAN REQUIRED BY PERMIT, ARE THE RESULTS REPORTED IN PERMITTEE'S SELF-MONITORING REPORT? | Y ☐ N ■ N/A ☐ |

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## NPDES Compliance Inspection Report

**CHECKLIST**

| Los Alamos National Laboratory (LANL) | DATE 10-27-94 | PERMIT NO NM0028355 |
|---|---|---|

### SECTION E - SELF-MONITORING (FLOW MEASUREMENT)

PERMITTEE FLOW MEASUREMENT MEETS PERMIT REQUIREMENTS S ■ M ☐ U ☐ N/A ☐ (FURTHER EXPLANATION ATTACHED Y)

DETAILS:

1. PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED. S ■ M ☐ U ☐ N/A ☐
   TYPE OF DEVICE (6" Parc, all flume at SWSC plant, Drexelbrook at TA-50 Rad plant, Ashcroft bubbler at TA-21 Rad plant)
2. FLOW MEASURED AT EACH OUTFALL AS REQUIRED. (None at TA-3 to Sandia Canyon) Y ■ N ☐ N/A ☐
3. SECONDARY INSTRUMENTS (TOTALIZERS, RECORDERS, ETC.) PROPERLY OPERATED AND MAINTAINED. S ■ M ☐ U ☐ N/A ☐
4. CALIBRATION FREQUENCY ADEQUATE. (DATE OF LAST CALIBRATION (SWSC 10/28/94)) S ■ M ☐ U ☐ N/A ☐
   CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE Y ■ N ☐ N/A ☐
   RECORDS MAINTAINED OF CALIBRATION PROCEDURES. (Had not been done previously at SWSC plant) Y ■ N ☐ N/A ☐
5. FLOW ENTERING DEVICE WELL DISTRIBUTED ACROSS THE CHANNEL AND FREE OF TURBULENCE. Y ■ N ☐ N/A ☐
6. HEAD MEASURED AT PROPER LOCATION. Y ■ N ☐ N/A ☐
7. FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGE OF FLOW RATES. Y ■ N ☐ N/A ☐

### SECTION F - SELF-MONITORING (LABORATORY)

PERMITTEE LAB PROCEDURES MEET PERMIT REQUIREMENTS S ☐ M ■ U ☐ N/A ☐ (FURTHER EXPLANATION ATTACHED Y)

DETAILS: (All "void" analyses need to be clearly indicated for SWSC plant data)

1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.8(b) FOR SLUDGE) (Quoting SM 17th ED. for SWSC plant data) Y ☐ N ■ N/A ☐
2. IF ALTERNATIVE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED. Y ☐ N ■ N/A ☐
3. SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT S ■ M ☐ U ☐ N/A ☐
4. QUALITY CONTROL PROCEDURES ADEQUATE. (Errors in reporting DMR's for SWSC plant data, Control Charts not used at TA-50 Rad plant) S ☐ M ☐ U ■ N/A ☐
5. DUPLICATE SAMPLES ARE ANALYZED 10 % OF THE TIME. (100 % of time for BOD, TSS, and FC) Y ■ N ☐ N/A ☐
6. SPIKED SAMPLES ARE ANALYZED 10 % OF THE TIME. Y ■ N ☐ N/A ☐
7. COMMERCIAL LABORATORY USED. Y ■ N ☐ N/A ☐

LAB NAME Johnson Controls World Services, Inc TELEPHONE (505) 667-0104

LAB ADDRESS PO Box 50 Los Alamos, NM 87544-0050

PARAMETERS ANALYZED pH, BOD, TSS, Fecal Coliform

### SECTION G - EFFLUENT/RECEIVING WATERS OBSERVATIONS.

EFFLUENT/RECEIVING WATERS MEETS PERMIT REQUIREMENTS S ■ M ☐ U ☐ N/A ☐ (FURTHER EXPLANATION ATTACHED N)

| OUTFALL NO. | OIL SHEEN | GREASE | TURBIDITY | VISIBLE FOAM | FLOAT SOLIDS | COLOR | OTHER |
|---|---|---|---|---|---|---|---|
| 13S | - | - | - | - | - | - | NO DISCHARGE |
| TA-3 | NO | NO | NO | NO | NO | CLEAR | Not Monitored |
| 02a-007 | NO | NO | NO | NO | NO | CLEAR | |
| Former 01S | | | | | | | DISCHARGING |

OBSERVATIONS Cattail area in Sandia Canyon below TA-3's outfall former 01S

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NPDES Compliance Inspection Report

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## SECTION H - SLUDGE DISPOSAL

SLUDGE DISPOSAL MEETS PERMIT REQUIREMENTS S☐ M■ U☐ N/A☐ (FURTHER EXPLANATION ATTACHED Y)

DETAILS

1. SLUDGE MANAGEMENT ADEQUATE TO MAINTAIN EFFLUENT QUALITY. S■ M☐ U☐ N/A☐
2. SLUDGE IS REGULATED UNDER 40 CFR 503. Y■ N☐ N/A☐
   a) SLUDGE RECORDS MAINTAINED AS REQUIRED BY 40 CFR 503. S☐ M■ U☐ N/A☐
   b) SLUDGE MEETS 40 CFR 503 STANDARDS. (After re-sampling and re-analysis.) S☐ M■ U☐ N/A☐
   c) SLUDGE DISPOSAL: LAND APPLICATION ■ SURFACE DISPOSAL ☐ MUNICIPAL LANDFILL ☐ STOCKPILE ☐ OTHER ☐

COMMENTS: Sampling of sludge was not "representative" as required in 40 CFR Part 503.8(a).

## SECTION I - SAMPLING INSPECTION PROCEDURES

(FURTHER EXPLANATION ATTACHED N)

1. SAMPLES COLLECTED IN ACCORDANCE WITH PERMIT. Y☐ N☐ N/A■
2. TYPE OF SAMPLE OBTAINED: GRAB ☐ COMPOSITE ☐ METHOD: FREQUENCY
3. SAMPLES PRESERVED. Y☐ N☐ N/A■
4. FLOW PROPORTIONED SAMPLES OBTAINED. Y☐ N☐ N/A■
5. SAMPLE OBTAINED FROM FACILITY'S SAMPLING DEVICE. Y☐ N☐ N/A■
6. SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE. Y☐ N☐ N/A■
7. SAMPLE SPLIT WITH PERMITTEE. Y☐ N☐ N/A■
8. CHAIN-OF-CUSTODY PROCEDURES EMPLOYED. Y☐ N☐ N/A■

OBSERVATIONS/RESULTS

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FURTHER EXPLANATIONS, PAGE 1

Note: The sections are arranged according to the format of the attached NPDES Compliance Report Checklist, rather than being ranked in order of importance.

## Section A - Permit Verification

Permit Requirement- for Permit Verification

The permit's Outfall 13S has the following language (Page 15 of Part I):

> *Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): Following the final treatment, prior to the point of discharge from the TA-46 SWSC Plant by gravity flow to Canada del Buey (Latitude 35°51'7" and Longitude 106°16'27"); and prior to the point of discharge from the TA-46 SWSC Plant into the effluent reuse line to Sandia Canyon (Latitude 35°52'29" and Longitude 106°18'38"); and to outfalls utilizing treated effluent as specified in Outfall 001 and Category 03A (*6).*
>
> **6 Treated effluent from the SWSC plant shall be controlled utilizing Best Management Practices in such a manner as to enhance and maintain wetland areas in Sandia Canyon and Canada del Buey, and to minimize the movement of effluent off site.*

Finding - for Permit Verification

1. Treated effluent is pumped from the SWSC plant up to TA-3, where the former domestic sewage treatment plant was located (formerly outfall 01S), and is stored there either for reuse or to be discharged into Sandia Canyon. The pumped water can come either from the holding pond at the SWSC plant, where some degradation of effluent quality can take place due to storage, or it can come from the end of the chlorine contact chamber at the SWSC plant directly. In either case, additional chlorine can be added as the wastewater is being pumped up to TA-3.

The piping at the SWSC plant allows wastewater from the secondary clarifier to be discharged directly to the holding pond, bypassing the chlorine contact chamber.

The wastewater discharged into Sandia Canyon through former outfall 01S, which is in actuality the only outfall being utilized at this time for the excess (i.e., not reused) wastewater from the SWSC plant, is not being monitored, and it is not necessarily representative of either the quality nor the quantity produced by the SWSC plant, nor is it necessarly <u>after</u> the last treatment unit.

Therefore, the inspector recommends that outfall 01S be reinstated with its own effluent flow monitoring requirement, sampling requirements and effluent limits.

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**FURTHER EXPLANATIONS, PAGE 2**

2. Since there never has been, and the permittee's representative indicated there is no intention to initiate, a discharge from the SWSC plant's outfall 13S, the permit's condition that the treated effluent:

> *enhance and maintain wetland areas in Sandia Canyon and Canada del Buey*

is not being met for Canada del Buey.

3. There is a typographical error under Outfall 13S, Monitoring Requirements. *1 for the BOD parameter refers to "Report"; it should be *2, which refers to the definition of "Composite sample" in Part II. Note the permittee was collecting a composite sample for the BOD parameter.

4. The loading values for Outfall 13S are based on a flow of 0.40 MGD, while the SWSC facility has a design flow of 0.6 MGD.

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FURTHER EXPLANATIONS, PAGE 3

Section G - Records and Reports

Permit Requirements - for Records and Reports

Under Part III, Section B. Proper Operation and Maintenance, 3. a., in part:

> . . . *Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.*

Findings - for Records and Reports

The data on the bench sheets were not reflected on the Discharge Monitoring Report submitted for September, 1994.

The pH in September, 1994 was incorrectly reported. The maximum pH value was not reported. There was no documentation for the maximum value that was reported. See the DMR Calculation Sheets (Attachment A) for specifics. The BOD and TSS values reported on the September, 1994 DMR did not correspond to the data presented on the bench sheets.

The errors did not change the compliant status of the effluent quality, but the errors are indicative of poor laboratory controls and inadequate quality assurance procedures.

Additional samples were collected for the BOD parameter in September, 1994. Some data were voided by the laboratory, for genuine reasons, but the bench sheets associated with these invalidated results were not clearly marked as invalid. As can be seen from the September 1994 DMR Calculation Sheet for the BOD parameter, different data were presented to the inspector than those apparently used for the DMR calculations, resulting in different results. Again, this did not change the compliant status of the effluent, but such errors need to be corrected.

When the inspector reviewed the pH parameter data, she found an additional pH analysis that had not been reported. The September, 1994 DMR reported the number of analyses as 6, while excluding the one that the inspector had found, so one more analysis not presented to the inspector must have been included in the report but not presented to the inspector. The compliant status of the effluent was not changed by these errors, but **the entire self-monitoring program needs to be evaluated by the permittee to assure that all the conditions of the NPDES permit, including those related to records keeping and reporting and to quality assurance, are being consistently met.**

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FURTHER EXPLANATIONS, PAGE 4

Section C - Operation & Maintenance

Permit Requirements - for Operation and Maintenance

The permit prohibits bypass under Part III, Section B 4.c., Prohibition of Bypass.

Finding - for Bypasses

There have been several bypasses of raw sewage from the collection system and lift stations that serve the SWSC facility. There are 40 lift stations within the system. Those bypasses occurring from July 1, 1994 to October 27, 1994 are summarized from data supplied by LANL staff.

July 20, 1994, force main rupture, approximately 35,000 gallons of raw sewage at TA-61;
July 20, 1994, 100 gallons of raw sewage at TA-3-30;
August 15, 1994, 600 gallons of raw sewage at TA-18 from a ruptured main;
Sept. 11, 1994, 100 gallons of sewage at TA-21;
Sept. 20, 1994, <50 gallons of raw sewage from TA-35-402 liftstation
October 12, 1994, 300-500 gallons of raw sewage at TA-3-261
October 27, 1994, 2000 gallons of sewage at TA-61-23.

These incidences were reported as required. The extensive collection system with its 40 lift stations requires rigorous preventive maintenance to assure a reliable system virtually free from bypasses. The collection system has not yet achieved that state of reliability.

Permit Requirements - for Operation and Maintenance

Under Part III, Section B. Proper Operation and Maintenance, 3. a., in part:

*The permittee shall at all times properly maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by permittee as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants and will achieve compliance with the conditions of this permit. . . .*

Finding - for Operation and Maintenance

**TA-50** - Although the effluent from this facility has been generally compliant in the past (insufficient effluent analyses since the issuance of a new permit for this facility exists to make this determination for future discharges), this is a very old plant close to the end of its design life. The structural integrity of the clariflocculators is such that seeps occur from the tank walls. This leakage is collected in troughs attached to the outside tank

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walls and is plumbed to the plant headworks. Generally, this plant is well operated and maintained, but given structural problems in the plant, the sensitive nature of the wastes treated here, and the long lead times for construction of new facilities, the permittee should address the problems of this facility as a fairly high priority item.

## Section D - Self-Monitoring (Sampling)

Permit Requirements - for Sampling

The permit requires, in Part I, Outfall 13S, (page 15 of Part I), Monitoring Requirements, in part:

> *The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week by grab sample.*

Finding - for Sampling

The monitoring frequency of 1/week was not met for the pH parameter in August, 1994.

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## Section E - Self-Monitoring (Flow Measurement)

Permit Requirements - for Flow Measurement

The permit requires, in Part III, Section C. Monitoring and Records, 6. Flow Measurement, in part:

> *Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. . . .*

Finding - for Flow Measurement

The permittee had not been checking the calibration of the totalizer of outfall 13S, which is the unit used for DMR reporting. Staff performed the calibration check on October 28, 1994, the date of this inspection, and found the totalizer to be approximately 6% too low, but within the ±10% allowed in Part III, Section C. Monitoring and Records, 6. Flow Measurement.

**TA-22** - The permittee is required to "continuously/record" flows from outfall 128. There is a small, unpermitted discharge (identified as boiler blowdown in the WCS) through this outfall that is not monitored except as a part of the main effluent discharge from this facility, which is not continuous. The Stevens recorder installed at this outfall was last calibrated in March, 1994. This old recorder is apparently not very accurate, especially at low flows and needs to be replaced. However, the permittee plans to eliminate this outfall in the near future.

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FURTHER EXPLANATIONS, PAGE 7

Section F - Self-Monitoring (Laboratory)

Permit Requirements - for Laboratory

The permit requires, in Part III, Section C, 5. Monitoring Procedures, in part:

> *a. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit or approved by the Regional Administrator.*

and

The permit requires, under Part III, Section B. Proper Operation and Maintenance, 3. a., in part:

> *. . . Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.*

Findings - for Laboratory

1. On January 31, 1994, the 18th Edition of "Standard Methods for the Examination of Water and Wastewater" (Standard Methods) was approved under 40 CFR Part 136. The permittee's bench sheets quoted the method being used for the analysis of NPDES parameters for Outfall 13S was the 17th Edition of Standard Methods.

2. The DMR Calculation Sheets (Attachment A), document several errors for the BOD, TSS, and pH data reported for September, 1994. Appropriate quality assurance procedures should have been employed to eliminate these errors.

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## Section H - Sludge Disposal

Permit Requirement - for Sludge Disposal

This facility is a Class I facility as defined under Section 503.9 (c), in part:

> *. . . and any treatment works treating domestic sewage, as defined in 40 CFR 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator . . .*

The reporting requirements are due by February 19, 1995, and annually thereafter.

For Outfall 13S, the SWSC plant, the permit references Part II, Paragraph K. Sewage Sludge requirements. In part:

> *b. The permittee shall handle and dispose of sewage sludge in accordance with all applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants which may be present.*

and, *c. . . . one year following promulgation of the technical standards for sludge use and disposal, the facility must be in compliance with all requirements regardless of whether the permit is modified to incorporate these standards.*

Promulgation of 40 CFR Part 503 was on February 19, 1993; one year later was February 19, 1994.

40 CFR Part 503, Subpart B, sludge disposed under the land application option, lists the Ceiling Concentration for lead in Table 1 of Section 503.13, as 840 mg/kg. 503.13 (a) specifically prohibits the land application of bulk sewage sludge ". . . if the concentration of any pollutant in the sewage sludge exceeds the ceiling concentration for the pollutant in Table 1 of § 503.13." 503.13 b. Table 2, lists the Cumulative Loading allowed for the land application of sludge that has any level higher than 503.13 b. Table 3.

Part II, Section K. d. 2. states:

> Disposal of sewage sludge shall not cause discharge to waters of the United States or cause non-point source pollution of waters of the United States.

Findings - for Sludge Disposal

In summary, some sludge that initially tested high for lead was land applied, under Subsection B of 40 CFR Part 503, as a final cover soil enhancer over a radioactive waste landfill cap at TA-54

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in April, 1994. The dried sludge was sampled on Dec. 8, 1993 as a 20-aliquot per bed composite from each of two drying beds, #7 and #15. One of the composite samples that was analyzed was found to contain 930 mg/kg of lead. The permittee resampled the sludge, now located in two stockpiles representing beds #7 and #15, before it was land applied; the analyses showed lower values for lead, below the Ceiling Concentration in Table 1, so the permittee disposed of the sludge by land application. The second set of samples, representing drying beds #7 and #15 resulted in 750 mg/kg from bed #7 and 320 mg/kg, from bed #15. The Cumulative Loading Rates listed in Table 2 had apparently not been determined at the time of this inspection.

The permittee expressed confidence to the inspector that the values received from the laboratory were accurate. Therefore, the discrepancy seems to point to a sampling error, because the samples were not "representative" (40 CFR Part 503.8 a.) of the quality of the sludge.

In addition to improving the sampling program and the quality control/quality assurance program to assure that all samples are representative of the sludge quality, the permittee should investigate and eliminate the source of any contamination that limits the disposal options. The SWSC facility is designed for the treatment of domestic wastewater, not industrial wastes. Besides the high lead level, zinc was also elevated, at 5100 mg/kg. The Ceiling Limit for zinc in Table 1 is 7500 mg/kg. All other parameters except lead and zinc met the limits of 503.13's Table 3.

Please also see the inspection form for 40 CFR Part 503 for more findings and details. In reference to 503.14, Management Practices, and Part II, Section K. d. 2. of the permit, the landfill cap had a drainage channel constructed in it, to prevent the cap from being cut by runoff. This channel lead to a nearby natural drainage.

The recordkeeping and reporting requirements under Sections 503.17 and 503.18 apply for the sludge that was land applied at TA-54. Other disposal methods utilized under 503 that were not necessarily reviewed during this inspection are also required to be reported.