

JUN 15 1994

Docket No. 030-20934

License No. 37-23341-01

Borough of Royersford
ATTN: Michael Claflin
Superintendent, Wastewater
Treatment Facility
300 Main Street
P. O. Box 188
Royersford, PA 19468

Dear Mr. Claflin:

**SUBJECT: 1993 QUARTERLY WASTEWATER DISCHARGE REPORTS FROM
INS CORPORATION AND RESULTS OF 1993 QUARTERLY
TLD DIRECT RADIATION ENVIRONMENTAL MONITORING AT THE
ROYERSFORD WASTEWATER TREATMENT FACILITY**

Enclosed are the results of analyses of discharges made by the INS Corporation to the Royersford Wastewater Treatment Facility during the months of January through December 1993. Also enclosed are the results of the TLD dosimeters used to monitor environmental radiation levels during the periods of January 8 through May 6, 1993; May 6 through July 13, 1993; July 13 through October 7, 1993; and October 7, 1993 through February 4, 1994. Please contact me or Betsy Ullrich at (610) 337-5040 if you have any questions.

Your cooperation with us is appreciated.

Sincerely,

**Original Signed By:
Mohamed M. Shanbaky**

Mohamed M. Shanbaky, Chief
Research and Development Section
Division of Radiation Safety
and Safeguards

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Enclosures:

1. First Quarter 1993 Wastewater Discharge Report
2. Second Quarter 1993 Wastewater Discharge Report
3. Third Quarter 1993 Wastewater Discharge Report
4. Fourth Quarter 1993 Wastewater Discharge Report
5. First Quarter 1993 TLD Direct Radiation Environmental Monitoring Record
6. Second Quarter 1993 TLD Direct Radiation Environmental Monitoring Record
7. Third Quarter 1993 TLD Direct Radiation Environmental Monitoring Record
8. Fourth Quarter 1993 TLD Direct Radiation Environmental Monitoring Record

cc:

Public Document Room (PDR)
Nuclear Safety Information Center (NSIC)
Commonwealth of Pennsylvania

Commonwealth of Pennsylvania
Department of Environmental Resources
ATTN: Margaret Reilly
P. O. Box 2063
Harrisburg, PA 17120

Commonwealth of Pennsylvania
Department of Environmental Resources
ATTN: Ivna Shanbaky
555 North Lane
Suite 6010
Conshohocken, PA 19428

Interstate Nuclear Services
ATTN: Michael Bovino
Manager, Health Physics and Engineering
295 Parker Street
P. O. Box 51957
Springfield, MA 01151

Interstate Nuclear Services
ATTN: H. Burns
Plant Manager
401 North Third Avenue
Royersford, PA 19468

Borough of Royersford

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bcc:

Region I Docket Room (w/concurrences)

E. Ullrich, RI

M. Shanbaky, RI

D. Chawaga, RI

~~DRSS:RI~~
~~Ullrich/amw~~

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DRSS:RI
Shanbaky

MS
6/15/94

INS CORPORATION
QUARTERLY WASTEWATER DISCHARGE REPORT
ROYERSFORD, PA

January 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	1.65E-7	.06
Cs-137	8.33E-7	.21
Co-60	1.53E-6	.15
Mn-54	8.91E-7	.03
Zn-65	3.40E-7	.01

February 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	1.93E-7	.06
Cs-137	8.50E-7	.21
Co-60	1.50E-7	.15
Mn-54	6.51E-7	.02
Zn-65	6.59E-7	.02

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March 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	9.33E-7	.31
Cs-137	1.85E-6	.46
Co-60	6.44E-7	.06
Mn-54	1.81E-7	.01
Zn-65	2.53E-7	.01
Co58	9.36E-8	<.01

January 1993 thru March 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
H-3	1.44E-5	.01
Sr-90	1.90E-8	.19
Sr-89	<MDA	
Tc-99	1.56-7	<0.01
Fe-55	<MDA	

Total volume discharged this quarter was 1,227,842 gallons.
Total Activity discharged this quarter was 85,852 μCi .

INS CORPORATION

QUARTERLY WASTEWATER DISCHARGE REPORT

ROYERSFORD, PA

April 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	5.05E-7	.17
Cs-137	1.32E-6	.33
Co-60	6.23E-7	.06
Co-58	5.82E-7	.02

May 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	4.89E-7	.16
Cs-137	1.32E-6	.33
Co-60	9.57E-7	.10
Co-58	9.61E-7	.03

June 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	5.90E-7	.20
Cs-137	1.68E-6	.42
Co-60	1.92E-6	.19
Mn-54	4.21E-7	.01
Zn-65	9.70E-7	.03
Co58	1.36E-7	<.01

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April 1993 thru June 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
H-3	4.20E-5	.04
Sr-90	3.20E-8	.32
Sr-89	<MDA	
Tc-99	8.20-8	<0.01
Fe-55	<MDA	

Total volume discharged this quarter was 1,267,934 gallons.
Total Activity discharged this quarter was 219860 μCi .

INS CORPORATION
QUARTERLY WASTEWATER DISCHARGE REPORT
ROYERSFORD, PA

July 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	8.10E-7	.27
Cs-137	1.65E-6	.41
Co-60	1.16E-7	.12
Zn-65	7.06E-7	.02
Mn-54	5.89E-7	..02

August 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	3.77E-7	.13
Cs-137	9.88E-7	.25
Co-60	1.17E-6	.12
Zn-65	4.58E-7	.02
Mn-54	4.29E-7	.01

September 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	8.12E-7	.27
Cs-137	1.92E-6	.48
Co-60	1.69E-6	.17
Mn-54	3.83E-7	.01
Zn-65	5.50E-7	.02
Co58	3.34E-7	.01

July 1993 thru September 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
H-3	1.51E-5	.02
Sr-90	1.16E-8	.12
Sr-89	<MDA	
Tc-99	8.40-8	<0.01
Fe-55	<MDA	

Total volume discharged 3rd quarter 1993 was 726,682 gallons.

Total Activity discharged 3rd quarter 1993 was 55690 μCi .

INS CORPORATION
QUARTERLY WASTEWATER DISCHARGE REPORT
ROYERSFORD, PA

October 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	3.85E-7	.13
Cs-137	1.02E-6	.26
Co-58	7.19E-7	.02
Co-60	9.9E-7	.10
Mn-54	2.39E-7	.01
Zn-65	2.92E-7	.01

November 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	1.61E-7	.05
Cs-137	3.78E-7	.09
Co-58	3.47E-7	.01
Co-60	5.15E-7	.05
Mn-54	2.68E-7	.01

December 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
Cs-134	3.00E-7	.10
Cs-137	1.57E-6	.39
Co-58	4.37E-7	.01
Co-60	9.18E-7	.09
Mn-54	4.89E-7	.02
Zn-65	2.86E-7	.01

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October 1993 thru December 1993

ISOTOPE	CONCENTRATION $\mu\text{Ci/ml}$	% SEWER MPC
H-3	4.78E-6	.00
Sr-90	6.63E-8	.66
Tc-99	3.51E-7	.01
Fe-55	3.23E-6	.02

Total volume discharged 4th quarter 1993 was 1,834,245 gallons.

Total activity discharged 4th quarter 1993 was 79,515 μCi .

Enclosure 5

First Quarter 1993 TLD Direct Radiation Environmental Monitoring at the Royersford Wastewater Treatment Facility

Period: January 8, 1993 to May 6, 1993

Transit Dose: 3.5 millirem

<u>Location</u>	<u>Net Exposure (millirem)</u>
1. Reed Bed #1, Cell A	136.9
2. Reed Bed #2, Cell B	165.7
3. Fence by Reed Bed #1 (east)	17.3
4. Settling tanks rail - by Reed Bed #1	32.3
5. Settling tanks rail - by Secondary digester	15.2
6. Rear Fence (north)	16.0
7. Fence by Reed Bed #2 (west)	15.9
8. Secondary Biofilter lamp post	18.8
9. Secondary Digester - center of west side	18.0
10. Flag pole	15.6
11. Front fence (south)	16.2
12. Chlorine building lamp post	24.5
13. Primary Digester - top of ladder	17.4
14. Secondary Digester - center of east side	25.1
15. Settling tanks rail - path to office door	14.3
16. Office	28.9

Enclosure 6

Second Quarter 1993 TLD Direct Radiation Environmental Monitoring at the Royersford Wastewater Treatment Facility

Period: May 6, 1993 to July 13, 1993
Transit Dose: 2.1 millirem

<u>Location</u>	<u>Net Exposure (millirem)</u>
1. Reed Bed #1, Cell A	168.1
2. Reed Bed #2, Cell B	192.5
3. Fence by Reed Bed #1 (east)	22.7
4. Settling tanks rail - by Reed Bed #1	38.3
5. Settling tanks rail - by Secondary digester	19.1
6. Rear Fence (north)	20.5
7. Fence by Reed Bed #2 (west)	23.6
8. Secondary Biofilter lamp post	28.1
9. Secondary Digester - center of west side	22.6
10. Flag pole	19.8
11. Front fence (south)	23.5
12. Chlorine building lamp post	30.1
13. Primary Digester - top of ladder	17.8
14. Secondary Digester - center of east side	29.4
15. Settling tanks rail - path to office door	16.2
16. Office	22.2

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Enclosure 7

Third Quarter 1993 TLD Direct Radiation Environmental Monitoring at the Royersford Wastewater Treatment Facility

Period: July 13, 1993 to October 7, 1993
Transit Dose: 2.7 millirem

<u>Location</u>	<u>Net Exposure (millirem)</u>
1. Reed Bed #1, Cell A	172.0
2. Reed Bed #2, Cell B	189.7
3. Fence by Reed Bed #1 (east)	19.7
4. Settling tanks rail - by Reed Bed #1	36.8
5. Settling tanks rail - by Secondary digester	17.0
6. Rear Fence (north)	18.0
7. Fence by Reed Bed #2 (west)	18.3
8. DOSIMETER NOT IN USE AT THIS TIME - LAMPPOST REMOVED	
9. Secondary Digester - center of west side	20.8
10. Flag pole	17.1
11. Front fence (south)	19.1
12. Chlorine building lamp post	27.0
13. Primary Digester - top of ladder	22.0
14. Secondary Digester - center of east side	29.5
15. Settling tanks rail - path to office door	missing
16. Office	21.1

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Enclosure 8

Fourth Quarter 1993 TLD Direct Radiation Environmental Monitoring at the Royersford Wastewater Treatment Facility

Period: October 7, 1993 to February 4, 1994

Transit Dose: 3.5 millirem

<u>Location</u>	<u>Net Exposure (millirem)</u>
1. Reed Bed #1, Cell A	144.8
2. Reed Bed #2, Cell B	174.1
3. Fence by Reed Bed #1 (east)	20.1
4. Settling tanks rail - by Reed Bed #1	38.1
5. Settling tanks rail - by Secondary digester	17.7
6. Rear Fence (north)	damaged
7. Fence by Reed Bed #2 (west)	20.5
8. DOSIMETER NOT IN USE AT THIS TIME - LAMPPOST REMOVED	
9. Secondary Digester - center of west side	21.2
10. Flag pole	18.3
11. Front fence (south)	20.3
12. Chlorine building lamp post	28.3
13. Primary Digester - top of ladder	47.9
14. Secondary Digester - center of east side	28.1
15. Settling tanks rail - path to office door	16.5
16. Office	20.8

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