



FUSRAP TECHNICAL BULLETIN

Prepared By <i>Tim King</i>	Team Lead Approval <i>Suzanne Carter</i>	Project Engineer Approval <i>Pat O'Keefe</i>	Project Engineering Manager <i>J L M... ..</i>
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**SUBJECT:**

Summary of the results for the Springdale characterization activities performed per WI-94-015, Rev. 0.

**SUMMARY:**

Two separate radiological characterization surveys and a limited chemical characterization survey were performed on the Springdale Site in October and December, 1993. The design of the radiological surveys were to supplement and define existing ORNL surveys. The limited chemical characterization survey was performed to assist in the completion of waste disposal paperwork. Radiological contamination is primarily in the belt cutting and belt fabrication areas of the building with a small area of contamination in the south end of the building. The chemical sample came back negative for the RCRA characteristics.

**DISCUSSION:**

A fidler walkover was performed in all areas of the building at Springdale. Both systematic and biased boreholes were used in the characterization (see attached figure). Biased boreholes were located based on elevated fidler measurements.

During the October sampling effort six boreholes were drilled in the building. These boreholes are labeled 1 through 6 on the attached figure. Two samples were collected from each of these boreholes down to a depth of 1.5 feet. Results for U-238 ranged from 0 to 198.00 pCi/g and are presented in table 1. All boreholes except 4 and 6 had results above the U-238 guideline of 50 pCi/g.

There were 16 boreholes drilled during the December sampling effort to provide data on areas of the building that previously had not be sampled. These boreholes were placed based both on elevated fidler readings and systematically. Samples were collected every 6 inches to the bottom of the borehole. The sample from each borehole with the highest HP-260 reading was shipped to the laboratory for analyses. All other samples from the borehole were archived. Table 2 presents results from the December sampling effort. Results for U-238 ranged from 0 to 59.30 pCi/g. As can be seen from the data the sample from borehole 9 was the only result above the U-238 guideline. In addition, during the December sampling effort two additional samples were collected from areas 1 and 2 shown on the attached figure. The samples were analyzed for isotopic uranium, radium-226 and thorium-232. These results are presented in table 3. The results from these samples will be used to complete waste disposal paperwork. Both of these samples contained elevated results for U-234, U-235, and U-238.

One chemical sample from area 1 was collected to be used in completion of the waste disposal paperwork. This sample was analyzed for the RCRA characteristics (TCLP total, flashpoint, reactivity, and corrosivity). TCLP metals included copper and zinc. Results were negative.

**ATTACHMENTS:**

Attachment 1 - Figure 1 Site map showing sampling locations.

Attachment 2 - Table 1 Radionuclide Concentrations in Soil Samples During October Sampling Effort

Attachment 3 - Table 2 Radionuclide Concentrations in Soil Samples During December Sampling Effort

Attachment 4 - Table 3 Radionuclide Concentrations in Soil Samples From Areas 1 and 2

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Note: The data contained herein are preliminary. Interpretations, conclusions, and recommendations based on these data are not to be used as a basis for final design, construction, remedial action, or as a basis for capital decisions.

Table 1  
Radionuclide Concentrations in Soil Samples  
During October 93 Sampling Effort

Location #	Sample ID	Depth (ft)	U-238 (pCi/g +/- 2 sigma)
1	122R001	0-0.5	0.00 +/- 0.00
1	122R002	0.5-1.5	60.50 +/- 10.40
2	122R003	0-0.5	33.00 +/- 7.50
2	122R004	0.5-1.5	120.10 +/- 14.50
3	122R005	0-0.5	0.00 +/- 0.00
3	122R006	0.5-1.5	198.00 +/- 14.60
4	122R007	0-0.5	0.00 +/- 0.00
4	122R008	0.5-1.5	0.00 +/- 0.00
5	122R009	0-0.5	170.00 +/- 15.20
5	122R010	0.5-1.5	55.00 +/- 12.50
6	122R011	0-0.5	35.70 +/- 13.00
6	122R012	0.5-1.5	27.70 +/- 10.20

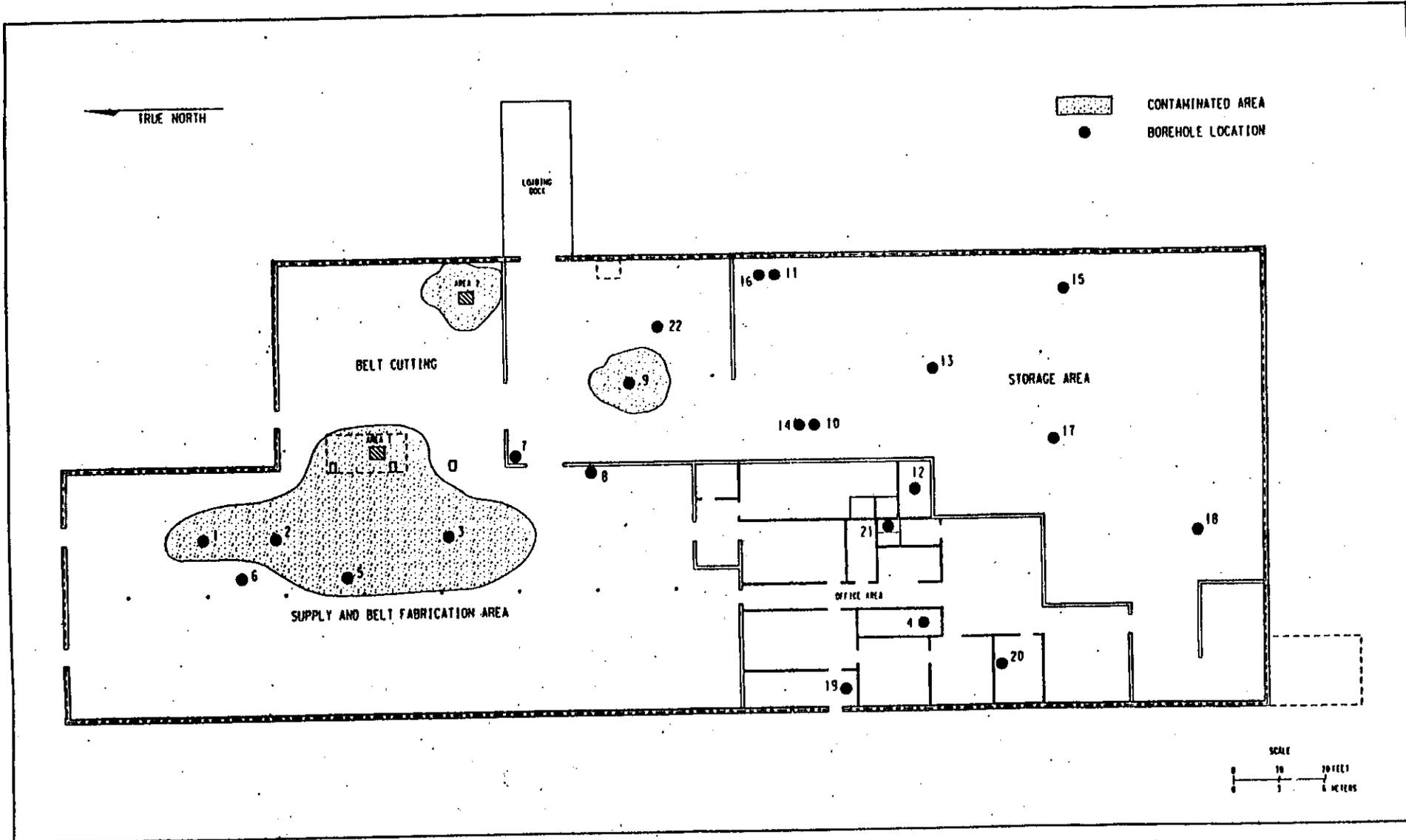
Table 2  
Radionuclide Concentrations in Soil Samples  
During December 93 Sampling Effort

Location #	Sample ID	Depth (in)	Concentration (pCi/g +/- 2 sigma)		
			U-238	R-226	T-232
7	12293013	4-10	0.00 +/- 0.00	1.70 +/- 0.72	1.60 +/- 0.51
8	12293019	4-10	0.00 +/- 0.00	1.60 +/- 0.22	2.30 +/- 0.39
9	12293028	22-28	59.30 +/- 7.10	1.60 +/- 0.34	1.40 +/- 0.15
10	12293031	7.5-13.5	0.00 +/- 0.00	1.60 +/- 0.45	1.90 +/- 0.27
11	12293033	4.5-10.5	3.70 +/- 2.20	1.00 +/- 0.13	0.88 +/- 0.48
12	12293042	5-11	0.00 +/- 0.00	1.40 +/- 0.17	1.50 +/- 0.32
13	12293048	5-11	0.00 +/- 0.00	1.50 +/- 1.10	1.70 +/- 0.46
14	12293036	8-14	0.00 +/- 0.00	1.10 +/- 0.14	1.10 +/- 0.09
15	12293054	5-11	0.00 +/- 0.00	1.90 +/- 0.59	2.20 +/- 0.97
16	12293060	5-11	38.30 +/- 9.00	1.70 +/- 0.68	0.00 +/- 0.00
17	12293063	17-23	0.00 +/- 0.00	1.50 +/- 0.38	0.00 +/- 0.00
18	12293067	18-24	0.00 +/- 0.00	1.50 +/- 0.30	1.70 +/- 0.35
19	12293074	11-17	0.00 +/- 0.00	1.40 +/- 0.49	1.70 +/- 0.57
20	12293079	4-10	0.00 +/- 0.00	1.20 +/- 0.47	1.80 +/- 1.20
21	12293080	5-11	0.00 +/- 0.00	1.90 +/- 0.21	2.10 +/- 0.19
22	12293087	16-22	0.00 +/- 0.00	0.00 +/- 0.00	2.30 +/- 2.30

Table 3  
 Radionuclide Concentrations in Soil Samples  
 From Areas 1 and 2

Location #	Sample ID	Depth (in)	Concentration (pCi/g +/- 2 sigma)				
			U-234	U-235	U-238	R-226	T-232
Area 1	12293091	5.5-11	8677.00 +/- 2027.00	405.60 +/- 250.90	8887.00 +/- 2069.00	1.30 +/- 0.86	2.40 +/- 1.10
Area 2	12293092	5.5-11	208.60 +/- 153.20	26.20 +/- 52.60	130.40 +/- 119.40	2.20 +/- 0.51	1.90 +/- 0.41

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February 9, 1995

Dr. W. A. Williams  
EM-421  
656 Quince Orchard Road  
Department of Energy  
Gaithersburg, Maryland 20878

Dear Dr. Williams:

**Results of the Supplementary Radiological Survey at Conviber, Incorporated, Springdale, Pennsylvania**

Enclosed for your review and comment are two copies of the survey report "Results of the Supplementary Radiological Survey at Conviber, Incorporated (formerly C. H. Schnoor & Company), 644 Garfield Street, Springdale, Pennsylvania." One copy will also be forwarded for review, to Mr. Jim D. Kopotic, Department of Energy, Oak Ridge Office.

If you have any questions please call me (615-576-7584).

Sincerely,



R. D. Foley  
Measurement Applications  
and Development Group

RDF:ec

Enclosure(s) 2

c: M. E. Murray  
R. E. Swaja  
File-Rc

c/att: J. D. Kopotic (DOE-ORO)