

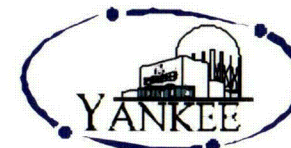
Yankee Nuclear Plant Site Historical Site Assessment



Yankee Atomic Electric Company Volume II



Yankee Atomic Power Company
Soil Sample Locations - Site Overview



Date: October 2003

Revision: 4

Figure: 1

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Sediments

Designator: **OOL-01**

Survey Area Description

Survey area OOL-01 consists of sediment on the bottom of Sherman Reservoir and contains about 60270 square meters of surface area.

Survey area OOL-01 is bounded by non-impacted property owned by US Gen. on the north, OOL-15 on the east, OOL-13 and OOL-03 on the south and OOL-03 on the west.

Sub-surface systems that traverse or connect within OOL-01 include:

- The east storm drain system
- The circulating water system intake.
- The circulating water system discharge.

Items of note located within or adjacent to OOL-01 include:

- Wheeler brook outflow
- The 10' diameter circulating water intake pipe
- The circulating water discharge structure, Seal Pit, (OMB-06)
- The Sherman Hydro-electric Station inlet structure
- The Sherman Dam spillway.

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Sediments

Designator: **OOL-01**

Survey Area History

Sherman Reservoir provided the cooling water to the YNPS steam condensers through the circulating water system and was the source of water for the plant service water system. It was also the source of water for the fire protection system and provided raw water feedstock to the water treatment facility to be processed into primary grade (de-mineralized) water.

Water was discharged back to OOL-01 from the service water system through the circulating water system. The permitted monitored radioactive liquid release pathway was through the service water system to the circulating water system and then to Sherman Reservoir. Survey area OOL-01 is potentially impacted as a result of this release pathway, depositing radioactivity in the sediment layer at the bottom of the reservoir.

At present the permitted monitored radioactive liquid release pathway is through the ASWS, which discharges into the Seal Pit, OMB-06.

Contamination of survey area OOL-01 may have resulted from run-off of low levels of radioactive contamination present on the yard area surface into the east storm drain system, which discharges into OOL-01. Additionally low levels of surface contamination that migrated out of the RCA along the railroad tracks may have washed into OOL-01 in the area of Wheeler Brook.

Events and activities that lead to the contamination of survey area OOL-01 include:

- AOR 66-07, Spent Fuel Pit Water Spill (Ref 1)
- AOR 66-09, Hose Failure (Fuel Chute Pump-back System draining in progress) (Ref 2)
- PIR 81-09 Contamination of the Yard Area during Reactor Head Removal. (Ref 3)

Translocation Pathways

Modes and vectors of contamination migration associated with OOL-01 are limited to receipt only. It is not likely that any radioactive contamination in OOL-01 would spread beyond the bounds of OOL-01.

Modifications to the YNPS site and surrounding environs include:

- Raising the height of Sherman Dam and spillway.
- Change to the layout of the east storm drain system, which diverted the east storm drain flow into OOL-01.
- Washout and repair of the Wheeler Brook railroad crossing.

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Sediments

Designator: **OOL-01**

Scoping/Characterization

Sherman Reservoir sediment sample analysis has identified Co-60 present in sediment at concentrations that represent a small fraction of DCGL. (Ref 4 & 5)

Decommissioning

No decommissioning activities have been performed for survey area OOL-01.

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Sediments

Designator: **OOL-01**

Findings

Survey area OOL-01 is a land area that is located beyond the bounds of the site boundary.

Survey area OOL-01 is impacted and contains locations known to have contained radioactivity at levels at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-01 includes all radionuclides identified in the radioactive systems of the plant (Ref 6). The primary radionuclides of concern for survey area OOL-01 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

OOL-01 continues to be potentially impacted by radioactive material migration due to surface run-off, monitored permitted release of radioactive liquids and by decommissioning activities.

A sediment sample location map (Figure 2) has been prepared to show the distribution of sampling locations in OOL-01. Only samples representative of sediments still present are included on the map. One survey media was assessed in OOL-01, Sediment. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the sediment DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-01 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Sediment: Mean SOF is 0.098.

Maximum SOF for a single sediment sample is 0.287. (key# 3441) a short distance offshore from the discharge of the East Storm drains.

Minimum SOF for a single sediment sample is 0.004. (key# 2968) on the shoreline just west of Wheeler Brook.

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-01 is identified as a Class 3 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Sediments

Designator: **OOL-01**

Drawings

9699-FB-A2, Storm and Sanitary Sewers Underground.

9699-FC-53A, Seal Pit Concrete Details

Figure 7-1A

References

1.	Abnormal Occurrence Report (AOR) 66-07, Spent Fuel Pit Water Spill, dated September 27, 1966.
2.	AOR 66-09, Plastic Garden Hose Failure, dated November 1, 1966.
3.	Plant Information Report (PIR) 81-09, dated June 12, 1981.
4.	"Deerfield River Sediment Screening Study," by F.X. Bellini, dated October 2000.
5.	DESD-TD-YR-01-001, "Deerfield River Sediment Screening Study: Follow-Up Assessment," by F.X. Bellini, dated March 2001.
6.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03.

Table 1
Sum of Fractions
OOL-01 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
3451	D1	4258	0.044
3091	SE547	SE547	0.015
3090	SE545	SE545	0.035
3088	SE543	SE543	0.098
2968	24A	G25677	0.004
2967	24	G25676	0.034
3440	C2	4266	0.013
3464	G1	4265	0.191
3438	B4	4263	0.076
3463	F4	4261	0.083
3458	E4	4216	0.069
3459	E5	4259	0.062
3442	CV1	29934	0.069
3452	D2	4257	0.099
3441	C3	4256	0.287
3465	G2	4255	0.248
3456	E2	4254	0.129
3470	H4	4235	0.127
3457	E3	4227	0.092
3453	D3	4226	0.071
3434	A4	4225	0.138
3431	A1	4224	0.217
3462	F3	4260	0.082
3437	B3	4181	0.107
3468	H2	4197	0.233
3469	H3	4196	0.218
3467	H1	4195	0.114

Table 1
Sum of Fractions
OOL-01 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
3466	G4	4194	0.009
3461	F2	4193	0.092
3460	F1	4192	0.207
3455	E1	4191	0.258
3439	C1	4190	0.151
3436	B2	4189	0.009
3092	SE548	SE548	0.011
3435	B1	4186	0.130
3093	SE549	SE549	0.004
3454	D4	4178	0.126
3450	CV9	29942	0.094
3449	CV8	29941	0.035
3448	CV7	29940	0.131
3447	CV6	29939	0.004
3446	CV5	29938	0.024
3445	CV4	29937	0.015
3444	CV3	29936	0.042
3443	CV2	29935	0.043
3471	H5	4198	0.048
3432	A2	4188	0.196
			Min 0.004
			Max 0.287
			Mean 0.098

Table 2
Statistical Data Summary – OOL-01 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	5	5	0.683	0.159	0.522	0.904	0.718
AcTh-228	pCi/g	41	42	1.337	0.380	0.537	2.230	1.380
Ag-108m	pCi/g	1	5	0.029		0.029	0.029	0.029
Ag-110m	pCi/g	0	7	0.000				
Am-241	pCi/g	0	5	0.000				
Ba-140	pCi/g	0	2	0.000				
Be-7	pCi/g	0	2	0.000				
Bi-212	pCi/g	3	3	0.683	0.004	0.678	0.685	0.684
Bi-214	pCi/g	4	4	0.404	0.121	0.265	0.555	0.397
Ce-141	pCi/g	0	2	0.000				
Ce-144	pCi/g	0	7	0.000				
Co-57	pCi/g	0	2	0.000				
Co-58	pCi/g	1	7	0.029		0.029	0.029	0.029
Co-60	pCi/g	9	19	0.177	0.226	0.042	0.764	0.087
Cr-51	pCi/g	0	2	0.000				
Cs-134	pCi/g	1	16	0.044		0.044	0.044	0.044
Cs-137	pCi/g	47	48	0.922	0.679	0.052	3.030	0.874
Fe-59	pCi/g	0	7	0.000				
I-131	pCi/g	0	2	0.000				
I-133	pCi/g	0	2	0.000				
K-40	pCi/g	47	48	17.590	2.755	11.900	23.800	17.700
Mn-54	pCi/g	2	16	0.043	0.018	0.030	0.056	0.043
Mo-99	pCi/g	0	2	0.000				
Nb-95	pCi/g	0	5	0.000				
Np-239	pCi/g	0	4	0.000				
Pb-212	pCi/g	5	5	0.570	0.189	0.386	0.890	0.520
Pb-214	pCi/g	5	5	0.407	0.048	0.362	0.475	0.403
Ra-226	pCi/g	1	1	1.785		1.785	1.785	1.785
Ru-103	pCi/g	0	7	0.000				
Ru-106	pCi/g	0	7	0.000				
Sb-124	pCi/g	0	7	0.000				
Sb-125	pCi/g	0	1	0.000				
Se-75	pCi/g	0	2	0.000				
Sr-90	pCi/g	10	10	0.188	0.079	0.070	0.330	0.190
Tel-132	pCi/g	0	2	0.000				
Tl-208	pCi/g	4	4	0.635	0.146	0.525	0.847	0.585
Zn-65	pCi/g	0	7	0.000				
Zr-95	pCi/g	1	7	0.085		0.085	0.085	0.085

Table 3
Summary of Detected Results Above Criteria
OOL-01 -- Sediment
Yankee Nuclear Power Station Rowe, MA
DCGL Sediment

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected d
Ac-228	5	5		pCi/g	0	0.90
AcTh-228	41	42		pCi/g	0	2.23
Ag-108m	1	5	8.52	pCi/g	0	0.03
Ag-110m	0	7		pCi/g	0	
Am-241	0	5	44.35	pCi/g	0	
Ba-140	0	2		pCi/g	0	
Bc-7	0	2		pCi/g	0	
Bi-212	3	3		pCi/g	0	0.69
Bi-214	4	4		pCi/g	0	0.56
Ce-141	0	2		pCi/g	0	
Ce-144	0	7		pCi/g	0	
Co-57	0	2		pCi/g	0	
Co-58	1	7		pCi/g	0	0.03
Co-60	9	19	4.84	pCi/g	0	0.76
Cr-51	0	2		pCi/g	0	
Cs-134	1	16	6.71	pCi/g	0	0.04
Cs-137	47	48	12.24	pCi/g	0	3.03
Fe-59	0	7		pCi/g	0	
I-131	0	2		pCi/g	0	
I-133	0	2		pCi/g	0	
K-40	47	48		pCi/g	0	23.80
Mn-54	2	16	21.66	pCi/g	0	0.06
Mo-99	0	2		pCi/g	0	
Nb-95	0	5		pCi/g	0	
Np-239	0	4		pCi/g	0	
Pb-212	5	5		pCi/g	0	0.89
Pb-214	5	5		pCi/g	0	0.47
Ra-226	1	1		pCi/g	0	1.79
Ru-103	0	7		pCi/g	0	
Ru-106	0	7	68.21	pCi/g	0	
Sb-124	0	7		pCi/g	0	
Sb-125	0	1	37.73	pCi/g	0	
Se-75	0	2		pCi/g	0	
Sr-90	10	10		pCi/g	0	0.33
Tel-132	0	2		pCi/g	0	
Tl-208	4	4		pCi/g	0	0.85
Zn-65	0	7		pCi/g	0	
Zr-95	1	7		pCi/g	0	0.08

Table 4

Rad

OOL-01 -- Sediment (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	CV1 (3442) 29934 6/17/1996	CV2 (3443) 29935 6/17/1996	CV3 (3444) 29936 6/17/1996	CV4 (3445) 29937 6/17/1996	CV5 (3446) 29938 6/17/1996	CV6 (3447) 29939 6/17/1996	CV7 (3448) 29940 6/17/1996
Ac-228							
AcTh-228	1.66	1.2	1.61	1.02	1.07		1.61
Ag-108m							
Ag-110m							
Am-241							
Ba-140							
Be-7							
Bi-212							
Bi-214							
Ce-141							
Ce-144							
Co-57							
Co-58							
Co-60	0.042	0.003 U	-0.031 U	0.02 U	-0.024 U		0.152
Cr-51							
Cs-134	0.008 U	0.006 U	0.01 U	0.007 U	0.044	-0.013 U	-0.025 U
Cs-137	0.734	0.509	0.515	0.149	0.217	0.052	0.894
Fe-59							
I-131							
I-133							
K-40	19	16.1	18.1	16.1	17.1		21.4
Mn-54	-0.005 U	0.03	-0.029 U	0.056	-0.004 U	-0.017 U	-0.018 U
Mo-99							
Nb-95							
Np-239							
Pb-212							
Pb-214							
Ra-226							
Ru-103							
Ru-106							
Sb-124							
Sb-125							
Se-75							
Sr-90							0.07
TeI-132							
Tl-208							
Zn-65							
Zr-95							
SOF	0.069	0.043	0.042	0.015	0.024	0.004	0.131

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Sediment Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-01 -- Sediment (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	CV8 (3449)	CV9 (3450)	D4 (3454)	B3 (3437)	B1 (3435)	A2 (3432)	B2 (3436)
Sample ID	29941	29942	4178	4181	4186	4188	4189
Date Sampled	6/17/1996	6/17/1996	9/25/1995	9/21/1995	9/26/1995	9/26/1995	9/26/1995
Ac-228							
AcTh-228	1.41	1.65	1.68	1.51	1.21	1.52	0.537
Ag-108m							
Ag-110m							
Am-241							
Ba-140							
Be-7							
Bi-212							
Bi-214							
Ce-141							
Ce-144							
Co-57							
Co-58							
Co-60	0.024 U	0.073		0.0963			
Cr-51							
Cs-134	-0.039 U	0.022 U					
Cs-137	0.426	0.649	1.54	1.07	1.59	1.26	0.106
Fe-59							
I-131							
I-133							
K-40	16.3	18.3	21.5	18	16.1	19.9	13.3
Mn-54	0.024 U	-0.045 U					
Mo-99							
Nb-95							
Np-239							
Pb-212							
Pb-214							
Ra-226							
Ru-103							
Ru-106							
Sb-124							
Sb-125							
Se-75							
Sr-90		0.07				0.25	
Tel-132							
Tl-208							
Zn-65							
Zr-95							
SOF	0.035	0.094	0.126	0.107	0.13	0.196	0.009

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 4

Rad

OOL-01 -- Sediment (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	C1 (3439)	E1 (3455)	F1 (3460)	F2 (3461)	G4 (3466)	H1 (3467)	H3 (3469)	H2 (3468)
Sample ID	4190	4191	4192	4193	4194	4195	4196	4197
Date Sampled	9/26/1995	9/26/1995	9/26/1995	9/26/1995	9/26/1995	9/26/1995	9/26/1995	9/26/1995
Ac-228								
AcTh-228	1.02	1.43	1.05	1.96	0.881	1.2	1.49	1.44
Ag-108m								
Ag-110m								
Am-241								
Ba-140								
Be-7								
Bi-212								
Bi-214								
Ce-141								
Ce-144								
Co-57								
Co-58								
Co-60		0.087						
Cr-51								
Cs-134								
Cs-137	0.803	1.93	1.66	1.13	0.112	1.4	1.8	1.35
Fe-59								
I-131								
I-133								
K-40	17.1	21.5	14.7	21.4	13.2	16.5	18.9	19.6
Mn-54								
Mo-99								
Nb-95								
Np-239								
Pb-212								
Pb-214								
Ra-226								
Ru-103								
Ru-106								
Sb-124								
Sb-125								
Se-75								
Sr-90	0.23	0.22	0.19				0.19	0.33
TeI-132								
Tl-208								
Zn-65								
Zr-95								
SOF	0.151	0.258	0.207	0.092	0.009	0.114	0.218	0.233

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Sediment Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-01 -- Sediment (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	H5 (3471)	E4 (3458)	RSS-3 (3472)	A1 (3431)	A4 (3434)	D3 (3453)	E3 (3457)
Sample ID	4198	4216	4222	4224	4225	4226	4227
Date Sampled	9/26/1995	10/4/1995	10/4/1995	10/4/1995	10/4/1995	10/5/1995	10/5/1995
Ac-228							
AcTh-228	0.992	1.17	0.724	1.52	1.24	1.17	
Ag-108m							
Ag-110m							
Am-241							
Ba-140							
Be-7							
Bi-212							
Bi-214							
Ce-141							
Ce-144							
Co-57							
Co-58							
Co-60							
Cr-51							
Cs-134							
Cs-137	0.585	0.839		1.93	0.909	0.874	1.12
Fe-59							
I-131							
I-133							
K-40	16.7	17.7	13.8	18.9	18.4	16.4	18.4
Mn-54							
Mo-99							
Nb-95							
Np-239							
Pb-212							
Pb-214							
Ra-226							
Ru-103							
Ru-106							
Sb-124							
Sb-125							
Se-75							
Sr-90				0.16	0.17		
Tel-132							
Tl-208							
Zn-65							
Zr-95							
SOF	0.048	0.069		0.217	0.138	0.071	0.092

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Sediment Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-01 -- Sediment (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	H4 (3470)	E2 (3456)	G2 (3465)	C3 (3441)	D2 (3452)	D1 (3451)	E5 (3459)
Sample ID	4235	4254	4255	4256	4257	4258	4259
Date Sampled	10/6/1995	10/16/1995	10/16/1995	10/16/1995	10/16/1995	10/16/1995	10/16/1995
Ac-228							
AcTh-228	1.81	1.59	1.9	1.96	1.73	1.19	0.938
Ag-108m							
Ag-110m							
Am-241							
Ba-140							
Be-7							
Bi-212							
Bi-214							
Ce-141							
Ce-144							
Co-57							
Co-58							
Co-60				0.764			
Cr-51							
Cs-134							
Cs-137	1.56	1.58	3.03	1.58	1.21	0.534	0.755
Fe-59							
I-131							
I-133							
K-40	18	21.3	22	21.4	17.7	18.7	15.4
Mn-54							
Mo-99							
Nb-95							
Np-239							
Pb-212							
Pb-214							
Ra-226							
Ru-103							
Ru-106							
Sb-124							
Sb-125							
Se-75							
Sr-90							
Tel-132							
Tl-208							
Zn-65							
Zr-95							
SOF	0.127	0.129	0.248	0.287	0.099	0.044	0.062

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Sediment Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-01 -- Sediment (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	F3 (3462) 4260 10/17/1995	F4 (3463) 4261 10/17/1995	B4 (3438) 4263 10/17/1995	G1 (3464) 4265 10/17/1995	C2 (3440) 4266 10/17/1995	A3 (3433) 6000 9/25/1995	24 (2967) G25676 10/5/1995
Ac-228							
AcTh-228	1.14	1.38	1.43	2.23	0.736	0.00000131 U	0.773
Ag-108m							
Ag-110m							0.003 U
Am-241							
Ba-140							0 U
Be-7							0.12 U
Bi-212							
Bi-214							
Ce-141							-0.001 U
Ce-144							0.025 U
Co-57							-0.0109 U
Co-58							-0.0104 U
Co-60						0.000000134 U	0.08
Cr-51							0.028 U
Cs-134							-0.045 U
Cs-137	0.998	1.01	0.925	2.34	0.162	0.00000125 U	0.215
Fe-59							-0.028 U
I-131							0.018 U
I-133							0 U
K-40	19.1	20.8	17.6	23.8	11.9	0.0000169 U	14.29
Mn-54							-0.0077 U
Mo-99							0.24 U
Nb-95							
Np-239							0.23 U
Pb-212							
Pb-214							
Ra-226							
Ru-103							-0.0091 U
Ru-106							-0.085 U
Sb-124							0.004 U
Sb-125							
Se-75							0.001 U
Sr-90							
TeI-132							0.04 U
Tl-208							
Zn-65							0.05 U
Zr-95							0.021 U
SOF	0.082	0.083	0.076	0.191	0.013		0.034

Table 4

Rad

OOL-01 -- Sediment (pCi/g)

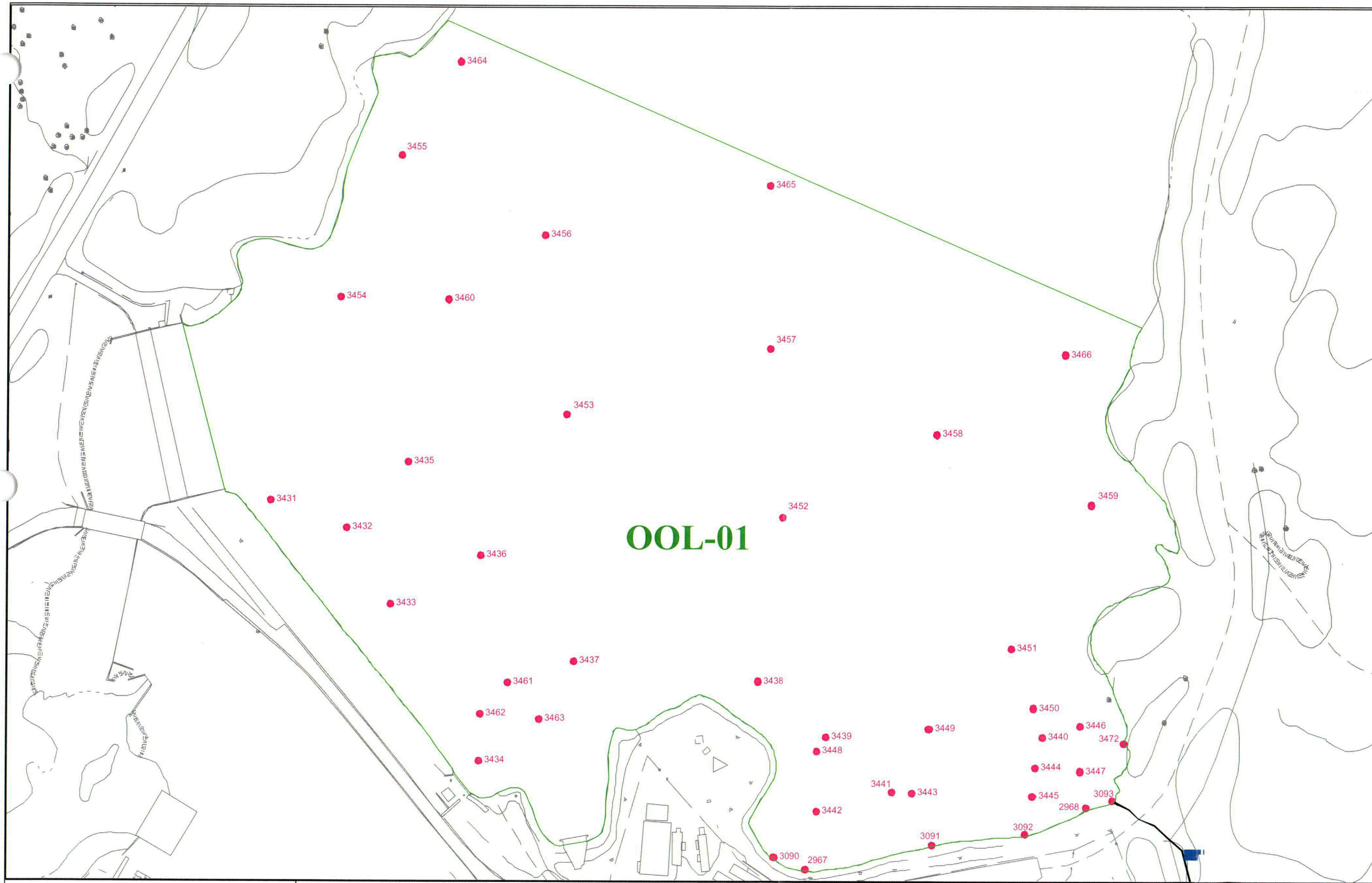
Yankee Nuclear Power Station Rowe, MA

Station (Key)	24A (2968)	SE543 (3088)	SE545 (3090)	SE547 (3091)	SE548 (3092)	SE549 (3093)
Sample ID	G25677	SE543	SE545	SE547	SE548	SE549
Date Sampled	10/5/1995	8/25/1998	8/25/1998	8/25/1998	8/25/1998	8/25/1998
Ac-228		0.5356	0.7177	0.9042	0.5222	0.7371
AcTh-228	1.029					
Ag-108m		-0.01328 U	-0.01249 U	0.01985 U	0.0289	-0.01324 U
Ag-110m	-0.003 U	-0.0293 U	-0.0101 U	-0.007838 U	-0.009124 U	-0.02358 U
Am-241		0 U	0 U	0 U	0 U	0 U
Ba-140	0.029 U					
Be-7	0.15 U					
Bi-212		0.678	0.6844			0.6852
Bi-214		0.3684	0.2648	0.5554	0.4254	
Ce-141	-0.003 U					
Ce-144	0.015 U	0.01684 U	-0.0554 U	-0.2732 U	0.05027 U	0.02012 U
Co-57	0.002 U					
Co-58	-0.005 U	-0.02563 U	0.02908	0.004945 U	-0.01065 U	0.01614 U
Co-60	0.006 U	0.2156	0.08336	-0.01223 U	0.0178 U	0.003778 U
Cr-51	-0.001 U					
Cs-134	0.011 U	-0.09058 U	-0.007984 U	-0.04795 U	-0.01236 U	-0.004422 U
Cs-137	0.055	0.6582	0.2229	0.1853	0.08889	0.05397
Fe-59	-0.036 U	-0.05086 U	-0.04353 U	-0.02342 U	-0.009414 U	-0.03942 U
I-131	0.012 U					
I-133	0 U					
K-40	13.78	16.24	14.11	16.43	12.98	16.82
Mn-54	0.002 U	-0.03833 U	0.02567 U	-0.006144 U	0.02954 U	0.01416 U
Mo-99	0.35 U					
Nb-95		0.02155 U	0.007489 U	0.01193 U	0.02522 U	0.01934 U
Np-239	-0.06 U		-0.5805 U	-1.908 U		
Pb-212		0.3863	0.5198	0.89	0.5393	0.514
Pb-214		0.4325	0.4033	0.4746	0.3644	0.3618
Ra-226				1.785		
Ru-103	0.022 U	-0.03179 U	0.003116 U	-0.02832 U	0.01939 U	0.01567 U
Ru-106	-0.05 U	-0.07429 U	-0.08905 U	0.2628 U	0.104 U	0.1132 U
Sb-124	0 U	0.02074 U	0.001695 U	-0.03833 U	0 U	0.003013 U
Sb-125						-0.1106 U
Se-75	0.001 U					
Sr-90						
Tel-132	-0.05 U					
Tl-208		0.5583	0.5245	0.847	0.6111	
Zn-65	0.043 U	0.03902 U	-0.06571 U	-0.1284 U	-0.07788 U	-0.1691 U
Zr-95	0 U	-0.01029 U	0.0849	0.06487 U	-0.01224 U	-0.04548 U
SOF	0.004	0.098	0.035	0.015	0.011	0.004

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Sediment Basic Data 12/15/2003

Blank results indicate chemical not analyzed

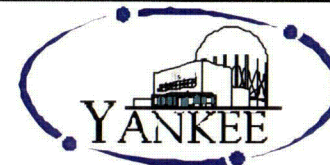


Legend

— Survey Area Boundary

Notes

Yankee Atomic Power Company
Soil Sample Locations - OOL-01



Date: October 2003

Revision: 4

Figure: 2

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Non-Rad Yard Area

Designator: **OOL-02**

Survey Area Description

Survey area OOL-02 consists of the non-RCA portion of the YNPS site inside the security fence, which is owned by YAEC. Survey area OOL-02 contains about 7134 square meters of soil, asphalt and concrete of surface area.

Survey area OOL-02 is bounded by survey areas OOL-04 and OOL-03, property owned by US Gen. on the north, OOL-12 on the east, OMB-04, SVC-03, SVC-01, TBN-01, OOL-10 and OOL-08 on the south and OOL-06 on the west.

Sub-surface systems that traverse or connect within OOL-02 include:

- The east and west storm drain systems
- The circulating water system
- Service water system
- Auxiliary Service Water System.
- Abandoned street lighting electrical cable.
- Floor and equipment drains from the turbine building and service building
- Sanitary sewers
- Electrical grounding cables
- Electrical duct trays
- Potable water lines
- Security lighting electrical conduits.

Items of note located within or adjacent to OOL-02 include:

- Concrete support pads at the former location of the a temporary office structure
- Aprons at garage and sliding doors of OMB-04
- Former location of the volleyball court located north of the warehouse.
- A portion of the onsite railroad spur line running from the northeast corner of the service building west into the east end of the turbine building
- Aprons and stoops at the service building doorways
- Flood control berm at Sherman Dam connecting the turbine building to Sherman Dam.
- Asphalt over concrete walkway to the front office
- Asphalt over concrete walkway to the gatehouse
- Former location of the station switchyard
- Secondary Side Switchboard for on site power.
- Temporary office trailers.

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Non-Rad Yard Area

Designator: OOL-02

Survey Area History

Survey area OOL-02 represents the primary travel path for personnel and material entering and leaving the YNPS site.

Systems present in survey are OOL-02 that contain residual radioactivity include the service water discharge, circulating water discharge, the ASWS discharge piping and the east and west storm sewers.

Survey area OOL-02 was not used for storing radioactive material or processing radioactive waste.

Contamination of survey area OOL-02 may have resulted from run-off of low levels of radioactive contamination present on the RCA yard area surface or as a result of traffic of contaminated personnel, equipment and material. Contaminated material inadvertently released from the RCA and temporarily stored in OOL-02 may have contributed to contamination of OOL-02.

Events and activities that lead to the contamination of survey area OOL-02 include:

- PIR 75-07, (Ref 1) Yard Area Contamination describes contamination location adjacent to the volleyball court. The volley ball court was located northwest of OMB-04

A temporary office building was set in place on concrete peers north of OMB-04. The present location of the non-contaminated construction spoils generated during construction of the temporary office building is thought to be within the SCF area (OOL-09) of the site (Ref 2).

Translocation Pathways

Modes and vectors of contamination transmigration include:

- Contaminated material transport within the OOL-02 typically involved moving contaminated equipment and tools by vehicle from the east side of the RCA around to the west side of the RCA.
- Surface water run-off resulting from rain and snowmelt is likely to have transported surface contamination into storm drains and/or into in low areas where it would collect. There are six storm drain system inputs located in OOL-02, one to the east storm drain system and 5 to the west storm drain system. Surface water collects in a low point located north of the front office and turbine building in OOL-02. Otherwise due to the slope of OOL-02 surface water run-off occurs in the direction of OOL-03, OOL-04, OOL-06, OOL-12 and OOL-13.

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Non-Rad Yard Area

Designator: **OOL-02**

Site modifications performed within survey area OOL-02 include:

- Raising the elevation of Sherman Dam
- Re-location of the security perimeter fence
- Set-up of the temporary office building
- Installation of the security lighting and camera system

Modifications performed at the YNPS site in support of decommissioning that changed the configuration of OOL-02 include:

- Mass Electric power line tie-in
- Installation of the ASWS

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 3).

Additional scoping survey data was collected in support of the construction activities performed in OOL-02 in support of decommissioning.

Decommissioning

No decommissioning activities have been performed for survey area OOL-02.

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Non-Rad Yard Area

Designator: OOL-02

Findings

Survey area OOL-02 is a land area that is located within the bounds of the non-RCA portion of the site.

Survey area OOL-02 is impacted with locations likely to contain radioactivity concentrations at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-02 includes all radionuclides identified in the radioactive systems of the plant (Ref 4). The primary radionuclides of concern for survey area OOL-02 are Co-60, Cs-137, Ag-108m, Sr-90, and tritium.

Current Status

OOL-08 continues to be potentially impacted by radioactive material migration due to surface run-off from within the RCA, radioactive material packaging and transport and by decommissioning activities.

A soil sample location map (Figure 9) has been prepared to show the distribution of sampling locations in OOL-08. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). Four survey media types were assessed in OOL-08, Humus, Sod, Sediment and Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL. There are separate sets of Tables 1-4 for each survey media. All are evaluated as fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-08 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Humus: Mean SOF is 0.098.

Maximum SOF for a single humus sample is 0.114 (key#383) located up slope south of Wheeler Brook east of the power line.

Minimum SOF for a single humus sample is 0.066 (key#374) located outside the exclusion area fence.

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Non-Rad Yard Area

Designator: **OOL-02**

Sediment: Mean SOF is 0.040.

Maximum SOF for a single sediment sample is 0.061 (key#628) located northeast of the front office building.

Minimum SOF for a single sediment sample is 0.018 (key#651) located northeast of the front office building.

Sod: Mean SOF is 0.040.

Maximum SOF for a single sod sample is 0.061 (key#628) located northeast of the front office building.

Minimum SOF for a single sod sample is 0.018 (key#651) located northeast of the front office building.

Soil: Mean SOF is 0.018.

Maximum SOF for a single soil sample is 0.045 (key#290) located at the southwest corner of the former switchyard.

Minimum SOF for a single soil sample is 0.002 (key#936, 3349) located behind the security trailer, located northeast of the turbine building.

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Non-Rad Yard Area

Designator: **OOL-02**

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-02 is identified as a Class 3 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Non-Rad Yard Area

Designator: **OOL-02**

Drawings

9699-FC-61A

9699-FE-25A

9699-FE-43A

9699-FP-12I

Figure 7-1A

References

1.	Plant Information Report (PIR) 75-07, dated August 12, 1975.
2.	"Summary of Excavation Volumes for YNPS Construction Performed During the Time Period of Plant Operation," dated October 1997.
3.	YNPS Decommissioning Plan, Rev. 0.0.
4.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03.

Underground Systems

OOL-02				
Structure / System	Component	Description	Location	Impacted?
Storm Drains & Sewers	ECB-001	depth = 5'10"; dia. 4', 2' at top; no ladder access; 16" PACM going ~60' N then ~75' E to Discharge 003 at Sherman Res., 16" corr pipe going ~130' S to ECB-002; concrete bottom; good condition	~5' N x ~18' W of NE corner of Service bldg	
	MH-8	8" & 12" pipes going ~100' N to middle of dam road, then 8" going ~55' W to meet pipe from WCB-012 and 12" going ~205' W going to WCB-017	manhole on north edge of Service bldg ~40' E of Turbine bldg	
	WCB-003	goes ~5' N to tie into line between WCB-002 and WCB-004	at SE corner of Security bldg	
	WCB-004	depth = 90"; 4' dia at base, 2' at top; ladder access; 20" corr pipe 64" from top going ~155' W to WCB-002, 18" corr pipe 59" from top going ~55' E to WCB-015, 18" corr pipe 25" from top going ~135' S to WCB-005; concrete bottom; good condition	just east of security bldg at corner of security fence	
	WCB-012	depth = 5'9"; 4' dia at base, 2' at top; no ladder access; 10" corr pipe 35" from top going ~55' N then ~45' WNW then ~100' WSW to WCB-014, 8" corr pipe 34" from top going ~35' S to Turbine Bldg; concrete bottom; good condition	~35' N and ~5' W of NE corner of Turbine bldg	
	WCB-013	depth = 6'; 4' dia at base, 2' at top; no ladder access; 12" corr pipe 33" from top going ~90' WNW to WCB-014; concrete bottom; good condition	~50' N and ~65' W of NE corner of Turbine bldg	
	WCB-014	depth = 42"; 4'x4' at base, 17"x17" at top; no ladder access; 12" corr pipe 18" from top going ~90' ESE to WCB-013, 12" corr pipe 22" from top going ~85' SW to WCB-015; concrete bottom; good condition	~38' N and ~25' E of NW corner of Office bldg	

Underground Systems

OOL-02				
Structure / System	Component	Description	Location	Impacted?
	WCB-015	depth 12'; 4' dia at base, 2' at top; ladder access; 18" pipe 8'4" from top going ~55' W to WCB-003, 12" corr pipe 6'6" from top going ~45' N to WCB-016, 12" corr pipe 6'4" from top going ~85' NE to WCB-014, 18" pipe 8'9" from top going ~190' S to WCB-011; concrete bottom; good condition	~39' W and ~15' S of NW corner of Office bldg	
	WCB-016	depth = 42"; 4'x4' at base, 17"x17" at top; no ladder access; 18" corr pipe 16" from top going ~45' S to WCB-015; concrete bottom; good condition	~39' W and ~40' N of NE corner of Office bldg	
Security Diesel	Fuel Oil Tank	510 gal 48" dia x 5'5" long tank; buried 3' below surface in 6'x7'9" pit; surrounded by sand backfill	below ground just east of security diesel bldg and under electrical panels	
Sewers		from the Service bldg north wall at a point ~47.5' E of the TB going N ~75' to manhole S1 (buried?) then going WNW ~165' to manhole S2 (buried?); from the TB north wall at a point ~20' W of the NE corner going N ~55' to manhole S2	S1 - ~47.5' E and ~75' N of NW corner of SB; S2 - ~20' W and ~55' N of NE corner of TB	
Aux. Service Water System	ASWS electric and water	from A1 going SW ~20' then S ~135' (and under warehouse) to manhole A2 (buried)	A1 - ~35' N of NE corner of SB addition	
Abandoned Street Lighting	electric cable	from a point on the west side of the road ~90' E of the gatehouse going S; also from ~same point going E ~140' to a point ~5' W and ~17' N of NE corner of Office bldg; from here branching with one branch going NNE the other branch going ESE ~120' then curving N and E and continuing E ~105' to lightpole L5 then going S ~140' and under the SB to an end	L5 - ~15' W and ~20' N of NE SB addition	

Underground Systems

OOL-02				
Structure / System	Component	Description	Location	Impacted?
Water		from OOL-10 continuing north to a tee (W1) 6' south of line of south wall of Office bldg, north to a reducer west of the SW corner of the Office bldg, then a 2" line continuing north to a tee (W2) ~13' north of line of north wall of Office bldg then north to a reducer at a point on the north side of the roadway by the north security fence (53' north of Office bldg) then continuing N into OOL-04; from tee W1 going E to NW corner of TB; from tee W2 going W to gatehouse	W1 - ~6' S and ~65' W of SW corner of Office bldg; W2 - ~72' N and ~65' W of NW corner of Office bldg; W4 - ~42' N and ~12' W of NE corner of Office bldg; W5 - ~63' N of NE corner of TB; W6 - ~8' E of W5; W7 - ~48' N and ~45' E of NW corner of SB; W13 - ~	
		from N wall of SVC-03 N ~40' then WNW ~80' to tee W7 then ~40' to tee W6 then ~8' to W5 then generally W in a gradual arc ~110' to tee W4 then W ~95' to a point ~24'W and ~50' N of NW corner of Office bldg, then S ~65' to tee W13 then S ~227' to NW corner of SI bldg; also from tee W7 SSW ~40' to hose house; also from tee W6 SW ~30' then S ~40' to TB; also from tee W5 NE ~110' to Screenwell; also from tee W4 curving N and W ~140' to tee W3 which has one short branch to the N and capped and the other branch S to tee W2; also from tee W13 W ~20' to hose house		

Underground Systems

OOL-02				
Structure / System	Component	Description	Location	Impacted?
Security Lighting	underground cables	from the security diesel W and around the NE corner of the gatehouse; from the security diesel E ~50' to handhole (HH) 1 & 1A; from HH1 & HH1A N ~40' to HH2; from HH2 W ~20' to camera pole, E ~212' to HH3; from HH3 NE ~20' to camera pole, from HH3 N then NE to HH12; from HH3 ESE ~200' to HH4; from HH4 N ~80 to pole 4, from HH4 ENE ~30' to security fence, from HH4 S ~50' to NE corner of SB, from HH4 SSE ~65' to camera pole, from HH4 ESE ~133' to HH5; from HH5 ESE ~160' to camera pole, from HH5 S ~80' to HH6; from HH1 & 1A S ~240' to HH7	HH1/1A - ~80' E of gatehouse; HH2 - ~80' E and ~37' N of NE corner of gatehouse; HH3 - ~25'N and ~65' E of NE corner of Office bldg; HH4 - ~47' N and ~3' E of NE corner of SB; HH5 - ~55' N and ~45'W of NE corner of warehouse	
Electrical	duct trays depth=3' 10'6"	from a point ~10' W of NE corner of TB going NE ~115' to manhole E1 then NE ~40' to screenwell; from the center of the south wall of the gatehouse going SE ~42' to manhole E2 then S ~65' then E ~67' meeting; from ~40' N of NE corner of gatehouse going S ~90' then SE ~90' then curving towards the E ~30' meeting; ~20' N of meeting going S to meeting all joined then going E ~90' to manhole E4; from E4 S ~40' to SI bldg & N ~40' to W side of TB; from ~30 N of SW corner of TB going W ~100' then NW ~130' to SE corner of gatehouse	E2 - ~30' S of Se corner of gatehouse; E4 - ~17'W and ~27' N of SW corner of TB	
Waste Oil	Storage tank	64" dia. x 12'; top of tank ~24" underground	~4' from north wall of SB in front of clean maintenance shop	

Table 1
Sum of Fractions
OOL-02 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
2998	AS99.45	AS99.45B	0.004
2997	AS98.52	AS98.52B	0.014
2996	AS98.51	AS98.51B	0.013
2991	AS97.01	AS97.01B	0.062
2991	AS97.01	AS97.01A	0.055
		Min	0.004
		Max	0.062
		Mean	0.030

Table 2
Statistical Data Summary – OOL-02 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	12	12	0.338	0.088	0.170	0.479	0.345
Ag-108m	pCi/g	1	12	0.027		0.027	0.027	0.027
Ag-110m	pCi/g	0	12	0.000				
Am-241	pCi/g	0	12	0.000				
Ba-140	pCi/g	0	1	0.000				
Bi-212	pCi/g	2	3	0.607	0.037	0.581	0.634	0.607
Bi-214	pCi/g	9	9	0.385	0.078	0.291	0.549	0.375
Ce-144	pCi/g	0	12	0.000				
Co-58	pCi/g	0	14	0.000				
Co-60	pCi/g	3	14	0.206	0.136	0.051	0.301	0.267
Cs-134	pCi/g	1	14	0.070		0.070	0.070	0.070
Cs-137	pCi/g	2	14	0.040	0.008	0.035	0.046	0.040
Eu-152	pCi/g	0	1	0.000				
Fe-59	pCi/g	0	12	0.000				
K-40	pCi/g	12	12	9.418	1.720	7.044	12.610	9.172
Mn-54	pCi/g	0	12	0.000				
Nb-94	pCi/g	0	1	0.000				
Nb-95	pCi/g	0	12	0.000				
Np-239	pCi/g	1	3	0.120		0.120	0.120	0.120
Pb-212	pCi/g	12	12	0.378	0.118	0.154	0.492	0.420
Pb-214	pCi/g	12	12	0.345	0.037	0.278	0.396	0.355
Ra-226	pCi/g	4	6	0.928	0.030	0.888	0.959	0.932
Ru-103	pCi/g	1	12	0.050		0.050	0.050	0.050
Ru-106	pCi/g	0	12	0.000				
Sb-124	pCi/g	0	12	0.000				
Se-75	pCi/g	0	1	0.000				
Tl-208	pCi/g	10	10	0.360	0.078	0.183	0.477	0.365
Zn-65	pCi/g	0	12	0.000				
Zr-95	pCi/g	0	12	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-02 -- Asphalt
Yankee Nuclear Power Station Rowe, MA
DCGL_Aspphalt

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	12	12		pCi/g	0	0.48
Ag-108m	1	12	8.52	pCi/g	0	0.03
Ag-110m	0	12		pCi/g	0	
Am-241	0	12	44.35	pCi/g	0	
Ba-140	0	1		pCi/g	0	
Bi-212	2	3		pCi/g	0	0.63
Bi-214	9	9		pCi/g	0	0.55
Ce-144	0	12		pCi/g	0	
Co-58	0	14		pCi/g	0	
Co-60	3	14	4.84	pCi/g	0	0.30
Cs-134	1	14	6.71	pCi/g	0	0.07
Cs-137	2	14	12.24	pCi/g	0	0.05
Eu-152	0	1	12.06	pCi/g	0	
Fe-59	0	12		pCi/g	0	
K-40	12	12		pCi/g	0	12.61
Mn-54	0	12	21.66	pCi/g	0	
Nb-94	0	1	8.53	pCi/g	0	
Nb-95	0	12		pCi/g	0	
Np-239	1	3		pCi/g	0	0.12
Pb-212	12	12		pCi/g	0	0.49
Pb-214	12	12		pCi/g	0	0.40
Ra-226	4	6		pCi/g	0	0.96
Ru-103	1	12		pCi/g	0	0.05
Ru-106	0	12	68.21	pCi/g	0	
Sb-124	0	12		pCi/g	0	
Se-75	0	1		pCi/g	0	
Tl-208	10	10		pCi/g	0	0.48
Zn-65	0	12		pCi/g	0	
Zr-95	0	12		pCi/g	0	

Table 4

Rad

OOL-02 -- Asphalt (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	AS97.01 (1991)	AS97.01 (1991)	AS97.01 (1991)	AS98.51 (1996)	AS98.51 (1996)
Sample ID	AS97.01A	AS97.01B	AS97.01C	AS98.51A	AS98.51B
Date Sampled	10/28/1998	10/28/1998	10/28/1998	11/3/1998	11/3/1998
Ac-228	0.2661	0.4106	0.333	0.386	0.3183
Ag-108m	-0.00453 U	-0.01314 U	0.002659 U	0.01403 U	-0.0003583 U
Ag-110m	0.01398 U	0.01239 U	0.01781 U	-0.01701 U	0.007095 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-140					
Bi-212	0.5808				
Bi-214	0.375	0.4532	0.5485	0.291	
Ce-144	-0.14 U	-0.1669 U	0.09983 U	-0.001219 U	0.0438 U
Co-58	-0.01402 U	0.001889 U	-0.008444 U	-0.006313 U	0.001747 U
Co-60	0.2667	0.3011	0.02218 U	0.03128 U	0.05063
Cs-134	-0.1139 U	0.002136 U	-0.08946 U	-0.07282 U	-0.01898 U
Cs-137	0.02127 U	0.01014 U	-0.009605 U	-0.003323 U	0.03494
Eu-152		0.4224 U			
Fe-59	0.08478 U	-0.002173 U	-0.03087 U	-0.02747 U	0.01938 U
K-40	11.49	8.371	7.044	9.584	8.269
Mn-54	-0.02625 U	-0.01067 U	-0.003143 U	-0.00574 U	-0.01538 U
Nb-94					
Nb-95	-0.02915 U	0.02664 U	-0.02533 U	0.02274 U	-0.01147 U
Np-239				0.1341 U	0.1195
Pb-212	0.4046	0.1595	0.3449	0.4644	0.3091
Pb-214	0.3672	0.3806	0.3597	0.3297	0.3024
Ra-226			0.8884		0.6226 U
Ru-103	0.05023	0.005089 U	0.01517 U	0.02 U	-0.001798 U
Ru-106	-0.1993 U	0.1706 U	0.02848 U	-0.02754 U	-0.04827 U
Sb-124	0.02458 U	0.03758 U	-0.04305 U	0 U	0.003875 U
Se-75					0.1193 U
Tl-208	0.3333		0.3246	0.357	0.3425
Zn-65	-0.1458 U	-0.01456 U	0.08173 U	-0.1064 U	-0.08717 U
Zr-95	0.03153 U	0.02388 U	-0.03014 U	-0.008785 U	-0.009438 U
SOF	0.055	0.062			0.013

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Asphalt Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-02 -- Asphalt (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	AS98.51 (2996)	AS98.52 (2997)	AS98.52 (2997)	AS98.52 (2997)	AS99.45 (2998)
Sample ID	AS98.51C	AS98.52A	AS98.52B	AS98.52C	AS99.45A
Date Sampled	11/3/1998	11/10/1998	11/10/1998	11/10/1998	7/7/1999
Ac-228	0.3571	0.4786	0.4006	0.415	0.297
Ag-108m	0.01342 U	-0.004625 U	0.02726	-0.008164 U	0.01734 U
Ag-110m	0.00165 U	-0.02653 U	0.03586 U	0.004087 U	0.002804 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-140	0.04949 U				
Bi-212			49.86 U		
Bi-214	0.3415	0.3775	0.4135	0.3267	0.3363
Ce-144	-0.05591 U	-0.001756 U	0.1016 U	0.03657 U	-0.1425 U
Co-58	-0.01625 U	-0.01483 U	-0.008409 U	-0.01897 U	-0.01526 U
Co-60	0.02391 U	-0.01721 U	0.01075 U	0.02201 U	-0.01667 U
Cs-134	-0.04189 U	-0.1638 U	0.07046	0.00821 U	-0.06404 U
Cs-137	0.02759 U	0.02632 U	0.01979 U	-0.002562 U	0.006294 U
Eu-152					
Fe-59	0.01669 U	-0.04247 U	-0.02743 U	-0.0455 U	0.02495 U
K-40	9.075	9.268	12.61	11.31	10.35
Mn-54	-0.01189 U	0.01795 U	0.005025 U	0.009891 U	-0.005962 U
Nb-94				0.01141 U	
Nb-95	0.01067 U	0.02261 U	-0.01359 U	0.007833 U	0.007659 U
Np-239					0.1282 U
Pb-212	0.3625	0.4558	0.4824	0.4347	0.4671
Pb-214	0.2781	0.3962	0.3568	0.3525	0.3468
Ra-226	0.9413	0.7162 U		0.9591	0.9234
Ru-103	-0.002091 U	0.005726 U	-0.001145 U	0.003562 U	-0.001779 U
Ru-106	-0.09122 U	0.005491 U	0.06149 U	0.0739 U	-0.1431 U
Sb-124	0 U	-0.0329 U	-0.01152 U	0 U	0 U
Se-75					
Tl-208		0.4772	0.3985	0.431	0.3736
Zn-65	-0.004422 U	0.06419 U	0.002123 U	-0.05498 U	0.06148 U
Zr-95	-0.01213 U	-0.01878 U	-0.005906 U	-0.007871 U	-0.01473 U
SOF			0.014		

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Asphalt Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-02 -- Asphalt (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	AS99.45 (2998) AS99.45B 7/7/1999	AS99.45 (2998) AS99.45C 7/7/1999	IA-4 (622) IAAS-4 5/21/1993	IA-6 (626) IAAS-6 5/21/1993
Ac-228	0.2264	0.1695		
Ag-108m	-0.00697 U	0.0157 U		
Ag-110m	0.0276 U	0.005158 U		
Am-241	0 U	0 U		
Ba-140				
Bi-212	0.6338			
Bi-214				
Ce-144	-0.007862 U	-0.0227 U		
Co-58	-0.00919 U	-0.005543 U	0.061 UM	0.048 UM
Co-60	0.007222 U	-0.00438 U	0.0772 UM	0.0862 UM
Cs-134	-0.01496 U	0.01061 U	0.065 UM	0.049 UM
Cs-137	0.0459	-0.01302 U	0.0946 UM	0.0677 UM
Eu-152				
Fe-59	0.00255 U	0.01609 U		
K-40	8.201	7.444		
Mn-54	0.0183 U	0.0009925 U		
Nb-94				
Nb-95	-0.01776 U	0.02044 U		
Np-239				
Pb-212	0.4915	0.1536		
Pb-214	0.3755	0.2928		
Ra-226				
Ru-103	0.009111 U	-0.01159 U		
Ru-106	0.1015 U	-0.04198 U		
Sb-124	-0.02718 U	0 U		
Se-75				
Tl-208	0.3835	0.1832		
Zn-65	-0.1298 U	-0.09247 U		
Zr-95	-0.005227 U	0.005563 U		
SOF	0.004			

Table 1
Sum of Fractions
OOL-02 -- Humus
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions	
363	OF-196	OFTZ-196	0.125	
357	OF-189	OFTZ-189	0.160	
			Min	0.125
			Max	0.160
			Mean	0.143

Table 2
Statistical Data Summary -- OOL-02 -- Humus
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ag-108m	pCi/g	0	2	0.000				
Co-58	pCi/g	0	2	0.000				
Co-60	pCi/g	0	2	0.000				
Cs-134	pCi/g	0	2	0.000				
Cs-137	pCi/g	2	2	1.740	0.305	1.524	1.955	1.740
Mn-54	pCi/g	0	2	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-02 -- Humus
Yankee Nuclear Power Station Rowe, MA
DCGL_Humus

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ag-108m	0	2	8.52	pCi/g	0	1.96
Co-58	0	2		pCi/g	0	
Co-60	0	2	4.84	pCi/g	0	
Cs-134	0	2	6.71	pCi/g	0	
Cs-137	2	2	12.24	pCi/g	0	
Mn-54	0	2	21.66	pCi/g	0	

Table 4
Rad
OOL-02 -- Humus (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-189 (357)	OF-196 (363)
Sample ID	OFTZ-189	OFTZ-196
Date Sampled	10/13/1994	10/14/1994
Ag-108m	0.101 UM	0.106 UM
Co-58	0.115 UM	0.137 UM
Co-60	0.237 UM	0.228 UM
Cs-134	0.09 UM	0.1 UM
Cs-137	1.955	1.524
Mn-54	0.156 UM	0.098 UM
SOF	0.16	0.125

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 1
Sum of Fractions
OOL-02 -- Sod
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions	
628	IA-7	IATZ-7		0.061
651	IA-67	IATZ-67		0.018
			Min	0.018
			Max	0.061
			Mean	0.040

Table 2
Statistical Data Summary -- OOL-02 -- Sod
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Co-58	pCi/g	0	3	0.000				
Co-60	pCi/g	0	3	0.000				
Cs-134	pCi/g	0	3	0.000				
Cs-137	pCi/g	2	3	0.483	0.371	0.220	0.745	0.483

Table 3
Summary of Detected Results Above Criteria
OOL-02 -- Sod
Yankee Nuclear Power Station Rowe, MA
DCGL_Sod

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Co-58	0	3		pCi/g	0	
Co-60	0	3	4.84	pCi/g	0	
Cs-134	0	3	6.71	pCi/g	0	
Cs-137	2	3	12.24	pCi/g	0	0.75

Table 4
Rad
OOL-02 -- Sod (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-5 (624)	IA-67 (651)	IA-7 (628)
Sample ID	IATZ-5	IATZ-67	IATZ-7
Date Sampled	5/21/1993	6/7/1993	5/21/1993
Co-58	0.098 UM	0.096 UM	0.095 UM
Co-60	0.112 UM	0.153 UM	0.136 UM
Cs-134	0.089 UM	0.078 UM	0.097 UM
Cs-137	0.116 UM	0.22	0.745
SOF		0.018	0.061

Table 1
Sum of Fractions
OOL-02 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
277	OG005-008	OG005GUFD008	0.041
357	OF-189	OFTS-189	0.041
290	OG005-022	OG005GUFD022	0.045
282	OG005-013	OG005GUFD013	0.007
281	OG005-012	OG005GUFD012	0.027
280	OG005-011	OG005GUFD011	0.005
89	OG001-005	OG001GUFD005	0.014
278	OG005-009	OG005GUFD009	0.022
419	OF-251	OFTS-251	0.009
276	OG005-007	OG005GUFD007	0.028
275	OG005-006	OG005GUFD006	0.020
94	OG001-010	OG001GUFD010	0.018
92	OG001-008	OG001GUFD008	0.010
91	OG001-007	OG001GUFD007	0.005
90	OG001-006	OG001GUFD006	0.013
279	OG005-010	OG005GUFD010	0.043
940	OG012-028	OG012GUFD028	0.008
3404	WSD03	WSD03	0.036
3351	TS99.53	TS99.53C	0.005
3349	TS99.51	TS99.51C	0.002
3334	TS99.35	TS99.35B	0.004
3334	TS99.35	TS99.35A	0.008
943	OG012-031	OG012GUFD031	0.009
361	OF-192	OFTS-192	0.010
941	OG012-029	OG012GUFD029	0.021
363	OF-196	OFTS-196	0.043
939	OG012-027	OG012GUFD027	0.026

Table 1
Sum of Fractions
OOL-02 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
938	OG012-026	OG012GUFD026	0.027
936	OG012-024	OG012GUFD024	0.002
935	OG012-023	OG012GUFD023	0.010
651	IA-67	IATS-67	0.009
3412	YG001.6	YG001.6A	0.016
942	OG012-030	OG012GUFD030	0.021
		Min	0.002
		Max	0.045
		Mean	0.018

Table 2
Statistical Data Summary -- OOL-02 -- Soil
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	52	52	0.778	0.221	0.164	1.264	0.811
Ag-108m	pCi/g	1	58	0.028		0.028	0.028	0.028
Ag-110m	pCi/g	3	52	0.035	0.003	0.033	0.039	0.034
Am-241	pCi/g	0	52	0.000				
Ba-133	pCi/g	0	2	0.000				
Ba-140	pCi/g	0	1	0.000				
Bi-212	pCi/g	41	44	0.869	0.229	0.350	1.331	0.864
Bi-214	pCi/g	49	49	0.467	0.106	0.192	0.768	0.464
Ce-144	pCi/g	2	52	0.270	0.051	0.234	0.307	0.270
Co-58	pCi/g	0	63	0.000				
Co-60	pCi/g	3	63	0.052	0.013	0.039	0.064	0.053
Cr-51	pCi/g	0	1	0.000				
Cs-134	pCi/g	2	63	0.038	0.003	0.036	0.040	0.038
Cs-136	pCi/g	2	2	0.220	0.140	0.121	0.319	0.220
Cs-137	pCi/g	29	63	0.226	0.158	0.043	0.548	0.193
Eu-152	pCi/g	0	5	0.000				
Fe-59	pCi/g	0	52	0.000				
I-133	pCi/g	0	1	0.000				
K-40	pCi/g	51	52	14.981	3.389	3.541	24.080	15.010
Kr-85	pCi/g	0	2	0.000				
Mn-54	pCi/g	5	58	0.039	0.004	0.032	0.041	0.041
Nb-94	pCi/g	0	1	0.000				
Nb-95	pCi/g	4	52	0.067	0.029	0.033	0.099	0.068
Np-239	pCi/g	0	3	0.000				
Pb-212	pCi/g	52	52	0.773	0.196	0.253	1.187	0.790
Pb-214	pCi/g	52	52	0.503	0.117	0.230	0.861	0.506
Ra-226	pCi/g	37	40	1.713	0.602	0.677	3.267	1.569
Ru-103	pCi/g	0	52	0.000				
Ru-106	pCi/g	2	52	0.428	0.167	0.310	0.546	0.428
Sb-124	pCi/g	0	52	0.000				
Sb-125	pCi/g	0	9	0.000				
Sn-113	pCi/g	0	1	0.000				
Tl-208	pCi/g	46	46	0.770	0.145	0.408	1.075	0.774
U-235	pCi/g	0	1	0.000				
Zn-65	pCi/g	1	52	0.082		0.082	0.082	0.082
Zr-95	pCi/g	5	52	0.068	0.017	0.053	0.096	0.060

Table 3
Summary of Detected Results Above Criteria
OOL-02 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL_Soil

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	52	52		pCi/g	0	1.26
Ag-108m	1	58	8.52	pCi/g	0	0.03
Ag-110m	3	52		pCi/g	0	0.04
Am-241	0	52	44.35	pCi/g	0	
Ba-133	0	2		pCi/g	0	
Ba-140	0	1		pCi/g	0	
Bi-212	41	44		pCi/g	0	1.33
Bi-214	49	49		pCi/g	0	0.77
Ce-144	2	52		pCi/g	0	0.31
Co-58	0	63		pCi/g	0	
Co-60	3	63	4.84	pCi/g	0	0.06
Cr-51	0	1		pCi/g	0	
Cs-134	2	63	6.71	pCi/g	0	0.04
Cs-136	2	2		pCi/g	0	0.32
Cs-137	29	63	12.24	pCi/g	0	0.55
Eu-152	0	5	12.06	pCi/g	0	
Fe-59	0	52		pCi/g	0	
I-133	0	1		pCi/g	0	
K-40	51	52		pCi/g	0	24.08
Kr-85	0	2		pCi/g	0	
Mn-54	5	58	21.66	pCi/g	0	0.04
Nb-94	0	1	8.53	pCi/g	0	
Nb-95	4	52		pCi/g	0	0.10
Np-239	0	3		pCi/g	0	
Pb-212	52	52		pCi/g	0	1.19
Pb-214	52	52		pCi/g	0	0.86
Ra-226	37	40		pCi/g	0	3.27
Ru-103	0	52		pCi/g	0	
Ru-106	2	52	68.21	pCi/g	0	0.55
Sb-124	0	52		pCi/g	0	
Sb-125	0	9	37.73	pCi/g	0	
Sn-113	0	1		pCi/g	0	
Tl-208	46	46		pCi/g	0	1.08
U-235	0	1		pCi/g	0	
Zn-65	1	52		pCi/g	0	0.08
Zr-95	5	52		pCi/g	0	0.10

Table 4

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	IA-1 (618) IATS-1 5/17/1993	IA-4 (622) IATS-4 5/21/1993	IA-5 (624) IATS-5 5/21/1993	IA-6 (626) IATS-6 5/6/1993	IA-67 (651) IATS-67 6/7/1993	OF-189 (357) OFTS-189 10/13/1994	OF-190 (359) OFTS-190 10/13/1994
Ac-228							
Ag-108m						0.068 UM	0.049 UM
Ag-110m							
Am-241							
Ba-133							
Ba-140							
Bi-212							
Bi-214							
Ce-144							
Co-58	0.073 UM	0.084 UM	0.084 UM	0.07 UM	0.093 UM	0.068 UM	0.063 UM
Co-60	0.0968 UM	0.1 UM	0.104 UM	0.0754 UM	0.0906 UM	0.098 UM	0.106 UM
Cr-51							
Cs-134	0.067 UM	0.075 UM	0.065 UM	0.053 UM	0.0695 UM	0.063 UM	0.064 UM
Cs-136							
Cs-137	0.0828 UM	0.0934 UM	0.117 UM	0.0837 UM	0.114	0.504	0.124 UM
Eu-152							
Fe-59							
I-133							
K-40							
Kr-85							
Mn-54						0.096 UM	0.085 UM
Nb-94							
Nb-95							
Np-239							
Pb-212							
Pb-214							
Ra-226							
Ru-103							
Ru-106							
Sb-124							
Sb-125							
Sn-113							
Tl-208							
U-235							
Zn-65							
Zr-95							
SOF					0.009	0.041	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OF-191 (360) OFTS-191 10/14/1994	OF-192 (361) OFTS-192 10/17/1994	OF-196 (363) OFTS-196 10/17/1994	OF-251 (419) OFTS-251 12/5/1994	OG001-005 (89) OG001GUFD005 7/1/1998
Ac-228					0.8403
Ag-108m	0.062 UM	0.049 UM	0.061 UM	0.046 UM	0.001595 U
Ag-110m					0.02161 U
Am-241					0 U
Ba-133					
Ba-140					
Bi-212					0.8244
Bi-214					0.602
Ce-144					-0.04331 U
Co-58	0.076 UM	0.058 UM	0.057 UM	0.05 UM	-0.04087 U
Co-60	0.0837 UM	0.0829 UM	0.0842 UM	0.076 UM	-0.0192 U
Cr-51					
Cs-134	0.071 UM	0.053 UM	0.054 UM	0.048 UM	-0.02494 U
Cs-136					
Cs-137	0.128 UM	0.117	0.53	0.107	0.1164
Eu-152					0.0628 U
Fe-59					0.01153 U
I-133					
K-40					20.15
Kr-85					
Mn-54	0.079 UM	0.066 UM	0.074 UM	0.057 UM	-0.01307 U
Nb-94					
Nb-95					0.01028 U
Np-239					
Pb-212					0.6768
Pb-214					0.5995
Ra-226					
Ru-103					-0.0208 U
Ru-106					0.3103
Sb-124					-0.0395 U
Sb-125					
Sn-113					
Tl-208					0.7712
U-235					
Zn-65					0.02741 U
Zr-95					0.03544 U
SOF		0.01	0.043	0.009	0.014

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG001-006 (90) OG001GUFD006 6/29/1998	OG001-007 (91) OG001GUFD007 6/29/1998	OG001-008 (92) OG001GUFD008 7/2/1998	OG001-010 (94) OG001GUFD010 7/1/1998	OG005-006 (275) OG005GUFD006 7/28/1998
Ac-228	0.9037	0.8435	0.6405	0.8181	0.7872
Ag-108m	0.02805	-0.01433 U	0.005507 U	0.02597 U	-0.002458 U
Ag-110m	0.002581 U	-0.005594 U	0.01145 U	-0.02997 U	-0.04529 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133		0.1893 U			
Ba-140					
Bi-212	49.49 U	1.151	0.9062	0.5088 U	0.8669
Bi-214		0.5552	0.2984	0.5067	0.5643
Ce-144	0.05618 U	-0.2016 U	0.1835 U	0.1371 U	-0.01548 U
Co-58	0.01661 U	-0.01169 U	-0.003979 U	0.005955 U	0.002123 U
Co-60	-0.003756 U	-0.007682 U	0.002508 U	-0.04073 U	0.006995 U
Cr-51					
Cs-134	-12.28 U	-0.1595 U	-0.1214 U	0.06069 U	-0.03758 U
Cs-136					
Cs-137	0.09307	0.06083	0.106	0.2174	0.2479
Eu-152					
Fe-59	-0.02888 U	0.02875 U	0.01978 U	-0.01235 U	0.02039 U
I-133					
K-40	-0.07527 U	18.4	14.47	13.43	20.53
Kr-85					
Mn-54	0.04149	-0.02104 U	0.03168	-0.006859 U	-0.003714 U
Nb-94					
Nb-95	-0.02992 U	0.02969 U	-0.02472 U	-0.02282 U	0.0252 U
Np-239		1.684 U			
Pb-212	0.8557	1.017	0.6938	0.7748	0.8799
Pb-214	0.5768	0.5997	0.4092	0.6457	0.5999
Ra-226	1.241	1.409	1.636		2.489
Ru-103	-0.0384 U	-0.01392 U	-0.011 U	-0.03225 U	0.02092 U
Ru-106	0.02177 U	0.04446 U	-0.01477 U	-0.004069 U	0.02134 U
Sb-124	0.0371 U	0.02051 U	0.01106 U	0.004589 U	-0.0232 U
Sb-125					-0.06784 U
Sn-113					
Tl-208	0.9648	1.001	0.6428	0.5154	0.6686
U-235					
Zn-65	-0.119 U	0.03843 U	-0.121 U	0.007657 U	-0.01305 U
Zr-95	0.05261 U	0.02303 U	0.07146	0.02939 U	-0.0002918 U
SOF	0.013	0.005	0.01	0.018	0.02

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG005-007 (276)	OG005-008 (277)	OG005-009 (278)	OG005-010 (279)
Sample ID	OG005GUFD007	OG005GUFD008	OG005GUFD009	OG005GUFD010
Date Sampled	7/28/1998	7/28/1998	7/28/1998	7/28/1998
Ac-228	0.6683	0.675	0.8059	0.7177
Ag-108m	-0.005282 U	-0.02334 U	-0.02289 U	0.01066 U
Ag-110m	-0.028 U	0.05301 U	0.008732 U	-0.007229 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.6795	0.8637		0.8452
Bi-214	0.4302	0.5195	0.5261	0.4172
Ce-144	0.1746 U	-0.1639 U	0.3068	-0.02297 U
Co-58	-0.02724 U	0.02487 U	-0.03614 U	-0.004071 U
Co-60	0.0526	-0.009858 U	0.01322 U	0.03562 U
Cr-51				
Cs-134	-0.05061 U	-0.02704 U	-0.07999 U	-0.01982 U
Cs-136				
Cs-137	0.2125	0.5044	0.2663	0.5255
Eu-152				
Fe-59	-0.0442 U	-0.08068 U	-0.0135 U	-0.04032 U
I-133				
K-40	11.42	16.16	10.19	14.29
Kr-85				
Mn-54	-0.007038 U	0.007195 U	0.009426 U	-0.0507 U
Nb-94				
Nb-95	-0.04232 U	0.003549 U	0.07942	0.00178 U
Np-239				
Pb-212	0.709	0.7776	0.699	0.7301
Pb-214	0.4474	0.597	0.6271	0.4782
Ra-226		3.263	2.087	1.608 U
Ru-103	-0.01353 U	-0.00524 U	-0.04314 U	-0.01094 U
Ru-106	0.03087 U	0.01219 U	0.1965 U	-0.1716 U
Sb-124	0.06054 U	0.03723 U	0.002272 U	0.003885 U
Sb-125				
Sn-113				
Tl-208	0.5616	0.8816	0.6792	0.6736
U-235				
Zn-65	0.002808 U	-0.1224 U	-0.04473 U	0.07938 U
Zr-95	-0.08824 U	0.06479 U	0.09585	-0.04789 U
SOF	0.028	0.041	0.022	0.043

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG005-011 (280) OG005GUFD011 7/28/1998	OG005-012 (281) OG005GUFD012 7/28/1998	OG005-013 (282) OG005GUFD013 7/28/1998	OG005-022 (290) OG005GUFD022 7/29/1998
Ac-228	0.2983	1.264	0.9103	1.193
Ag-108m	-0.01771 U	-0.007686 U	0.001028 U	-0.02055 U
Ag-110m	0.03332	0.01267 U	-0.00217 U	0.05268 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.3501	1.159	1.172	0.6032 U
Bi-214	0.4249	0.5519	0.6796	0.5792
Ce-144	-0.05064 U	-0.01613 U	-0.2192 U	-0.09595 U
Co-58	-0.003508 U	-0.006502 U	0.001373 U	-0.0217 U
Co-60	-0.0009734 U	0.00486 U	0.04456 U	0.01314 U
Cr-51				
Cs-134	-0.001341 U	-0.01954 U	0.02435 U	0.01241 U
Cs-136				
Cs-137	0.06385	0.2285	0.08199	0.5481
Eu-152				
Fe-59	-0.02482 U	-0.2689 U	0.02726 U	-0.1494 U
I-133				
K-40	3.541	23.86	24.08	21.47
Kr-85				
Mn-54	0.0009691 U	-0.0003686 U	-0.0152 U	0.02534 U
Nb-94		0.03531 U		
Nb-95	0.007671 U	0.05392 U	0.09946	-0.02855 U
Np-239				
Pb-212	0.2836	1.187	1.113	1.048
Pb-214	0.3659	0.5814	0.7377	0.58
Ra-226		2.853	1.908	2.332
Ru-103	0.02566 U	-0.002151 U	-0.004424 U	-0.03396 U
Ru-106	-0.1481 U	0.5462	-0.1707 U	0.1829 U
Sb-124	0.01046 U	-0.05012 U	0.07571 U	0.00423 U
Sb-125			-0.08868 U	
Sn-113				
Tl-208		1.073	1.075	0.8327
U-235				
Zn-65	-0.06651 U	-0.05969 U	-0.03467 U	0.09483 U
Zr-95	0.05315	0.03316 U	0.09496 U	0.09635 U
SOF	0.005	0.027	0.007	0.045

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG012-023 (935)	OG012-024 (936)	OG012-026 (938)	OG012-027 (939)
Sample ID	OG012GUFD023	OG012GUFD024	OG012GUFD026	OG012GUFD027
Date Sampled	10/7/1998	10/7/1998	10/7/1998	10/7/1998
Ac-228	0.592	0.668	0.73	0.81
Ag-108m	-0.00798 U	-0.0199 U	0.00292 U	0.0139 U
Ag-110m	0.00724 U	-0.00834 U	0.0191 U	-0.0406 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212		0.484	0.575	
Bi-214	0.339	0.413	0.597	0.768
Ce-144	0.0509 U	-0.0246 U	0.0212 U	-0.0534 U
Co-58	0.00485 U	-0.0419 U	-0.0285 U	-0.00489 U
Co-60	-0.00000000377 U	-0.0102 U	-0.0106 U	0.0187 U
Cr-51	0.197 U			
Cs-134	-0.00567 U	-0.08 U	0.0138 U	-0.135 U
Cs-136				
Cs-137	0.128	0.0353 U	0.333	0.316
Eu-152				
Fe-59	0.00613 U	0.00531 U	0.00764 U	-0.0508 U
I-133				
K-40	11.4	16.6	14.1	14.5
Kr-85				
Mn-54	-0.0142 U	0.0388	-0.00149 U	-0.0107 U
Nb-94				
Nb-95	-0.0433 U	0.0214 U	-0.0257 U	-0.0304 U
Np-239				
Pb-212	0.668	0.64	0.725	0.76
Pb-214	0.445	0.44	0.571	0.861
Ra-226	0.882 U		2.24	2.44
Ru-103	-0.00299 U	-0.00926 U	0.0065 U	0.0111 U
Ru-106	0.113 U	-0.176 U	0.0846 U	0.0616 U
Sb-124	0 U	0.0338 U	-0.00304 U	-0.00651 U
Sb-125		-0.0771 U	-0.0331 U	
Sn-113				
Tl-208	0.655	0.583	0.694	
U-235				
Zn-65	-0.0682 U	0.0199 U	0.0285 U	-0.0752 U
Zr-95	0.0283 U	0.0349 U	0.0101 U	-0.0122 U
SOF	0.01	0.002	0.027	0.026

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-02 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG012-028 (940) OG012GUFD028 10/7/1998	OG012-029 (941) OG012GUFD029 10/7/1998	OG012-030 (942) OG012GUFD030 10/7/1998	OG012-031 (943) OG012GUFD031 10/7/1998
Ac-228	0.758	0.654	0.67	0.761
Ag-108m	0.0147 U	0.00279 U	0.00478 U	-0.014 U
Ag-110m	-0.0139 U	-0.026 U	-0.0173 U	0.0199 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.754	0.62	0.672	0.617
Bi-214	0.465	0.564	0.579	0.558
Ce-144	0.234	-0.122 U	0.119 U	-0.129 U
Co-58	-0.00429 U	0.00522 U	-0.00685 U	-0.0264 U
Co-60	0.00123 U	0.009 U	0.0313 U	0.0155 U
Cr-51				
Cs-134	0.00442 U	0 U	0.0403	0.00447 U
Cs-136				
Cs-137	0.1	0.251	0.185	0.0909
Eu-152				0.448 U
Fe-59	0.025 U	-0.0129 U	0.033 U	-0.00601 U
I-133				
K-40	13.7	12.5	11.9	14.4
Kr-85	3.55 U	-1.59 U		
Mn-54	0.00166 U	-0.00384 U	0.00817 U	0.0405
Nb-94				
Nb-95	0.00696 U	0.00784 U	-0.00275 U	0.00177 U
Np-239				
Pb-212	0.866	0.79	0.512	0.769
Pb-214	0.636	0.693	0.555	0.522
Ra-226	1.08	1.08	1.27	
Ru-103	-0.00686 U	0.00766 U	-0.0211 U	-0.0101 U
Ru-106	0.0254 U	0 U	0 U	0 U
Sb-124	0.0201 U	0.00845 U	0.0125 U	-0.0168 U
Sb-125			-0.0419 U	
Sn-113				
Tl-208	0.892	0.738	0.6	0.754
U-235				
Zn-65	-0.0284 U	0.0352 U	0.0166 U	-0.00838 U
Zr-95	0.0421 U	0.000464 U	0.0261 U	0.049 U
SOF	0.008	0.021	0.021	0.009

Table 4

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	TS99.33 (3332)	TS99.33 (3332)	TS99.33 (3332)	TS99.33 (3332)	TS99.33 (3332)
Sample ID	TS99.33A	TS99.33B	TS99.33C	TS99.33D	TS99.33E
Date Sampled	5/11/1999	5/11/1999	5/11/1999	5/11/1999	5/11/1999
Ac-228	1	0.6352	0.6559	0.7939	0.8066
Ag-108m	-0.002975 U	-0.00453 U	-0.006656 U	-0.01625 U	-0.0053 U
Ag-110m	0.005345 U	0.005198 U	0.03165 U	-0.01075 U	0.003961 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133		-0.04197 U			
Ba-140					
Bi-212	0.6543	0.7271	1.085	0.7301	0.9395
Bi-214	0.4151	0.3991	0.4272	0.4641	0.4235
Ce-144	0.01325 U	0.0626 U	-0.0568 U	-0.08599 U	-0.07338 U
Co-58	-0.02826 U	0.003026 U	-0.0007948 U	0.01596 U	0.01693 U
Co-60	-0.003734 U	-0.02074 U	0.007226 U	0.002673 U	0.01085 U
Cr-51					
Cs-134	-0.03097 U	-0.06536 U	-0.05521 U	0.02347 U	-0.07436 U
Cs-136					
Cs-137	0.0158 U	0.02505 U	0.002493 U	0.01258 U	0.002495 U
Eu-152			0.4546 U		
Fe-59	-0.02406 U	0.005616 U	0.05031 U	-0.001882 U	-0.03429 U
I-133					
K-40	15.08	15.07	15.65	14.76	16.13
Kr-85					
Mn-54	0.001048 U	-0.003313 U	0.002536 U	0.00128 U	0.002539 U
Nb-94					
Nb-95	0.01246 U	0.01575 U	0.03329	0.02291 U	-0.00908 U
Np-239				0.1152 U	
Pb-212	0.7519	0.7577	0.7378	0.8133	0.6977
Pb-214	0.5136	0.446	0.5294	0.4891	0.4164
Ra-226	1.276	2.023	2.094		1.991
Ru-103	0.007195 U	0.01439 U	0.004934 U	-0.02145 U	0.01247 U
Ru-106	0.1069 U	-0.09614 U	-0.08275 U	-0.1879 U	-0.04142 U
Sb-124	-0.005758 U	0.008959 U	0.01003 U	-0.01688 U	0.007449 U
Sb-125					
Sn-113					
Tl-208	0.8918	0.6898	0.7772	0.8601	0.8054
U-235					
Zn-65	-0.005017 U	-0.03278 U	0.06679 U	0.08175	0.004439 U
Zr-95	0.01532 U	-0.01334 U	0.02909 U	-0.009517 U	-0.0146 U
SOF					

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	TS99.33 (3332)	TS99.33 (3332)	TS99.34 (3333)	TS99.35 (3334)	TS99.35 (3334)
Sample ID	TS99.33F	TS99.33G	TS99.34B	TS99.35A	TS99.35B
Date Sampled	5/11/1999	5/11/1999	5/12/1999	5/12/1999	5/12/1999
Ac-228	0.8135	0.8114	0.7077	0.7253	0.8386
Ag-108m	0.0146 U	0.005847 U	0.001826 U	0.00928 U	0.005062 U
Ag-110m	-0.0459 U	0.0009091 U	-0.005167 U	-0.007853 U	0.00436 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140			0.3555 U		
Bi-212	0.7382	1.101		1.331	1.174
Bi-214	0.3372	0.4572	0.4265		0.4342
Ce-144	0.1373 U	0.1058 U	0.0415 U	-0.1419 U	-0.1463 U
Co-58	-0.02164 U	-0.001751 U	-0.003932 U	-0.0043 U	0.01484 U
Co-60	0.02654 U	-0.01079 U	-0.03111 U	0.0389	-0.02222 U
Cr-51					
Cs-134	-0.05461 U	-0.07215 U	-0.2192 U	0.004375 U	0.00286 U
Cs-136	0.3189				
Cs-137	0.007324 U	0.01024 U	-0.02054 U	0.02148 U	0.04344
Eu-152				0.2294 U	
Fe-59	0.007887 U	-0.01159 U	0.005239 U	0.03333 U	-0.04502 U
I-133					
K-40	15.93	15.07	14.99	15.52	15.48
Kr-85					
Mn-54	0.009228 U	0.01349 U	0.002872 U	0.009821 U	0.01801 U
Nb-94					
Nb-95	0.008697 U	0.009396 U	0.0203 U	-0.01412 U	0.02493 U
Np-239					0.7511 U
Pb-212	0.7901	0.8	0.8191	0.8233	0.8346
Pb-214	0.4899	0.5066	0.4495	0.409	0.4516
Ra-226	1.605	0.8561 U	1.564	1.551	
Ru-103	-0.007255 U	0.00544 U	0.007877 U	-0.01079 U	0.007508 U
Ru-106	-0.2432 U	0.1648 U	-0.007581 U	0.2003 U	0.02876 U
Sb-124	0.008738 U	-0.04889 U	-0.01884 U	0 U	0 U
Sb-125				-0.07531 U	
Sn-113					
Tl-208	0.8242	0.5802	0.6625	0.9284	0.6879
U-235					
Zn-65	-0.05976 U	-0.05926 U	-0.06012 U	-0.201 U	0.01812 U
Zr-95	-0.005075 U	0.04284 U	0.01248 U	0.03049 U	0.03404 U
SOF				0.008	0.004

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	TS99.36 (3335)	TS99.36 (3335)	TS99.36 (3335)	TS99.46 (3344)	TS99.46 (3344)
Sample ID	TS99.36A	TS99.36B	TS99.36C	TS99.46A	TS99.46B
Date Sampled	5/17/1999	5/17/1999	5/17/1999	6/1/1999	6/1/1999
Ac-228	0.164	0.2242	0.2554	0.9913	1.03
Ag-108m	-0.01353 U	0.009373 U	-0.006202 U	0.0007227 U	-0.01336 U
Ag-110m	0.02161 U	0.02763 U	0.03364	-0.0252 U	0.01125 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212				0.8419	1.024
Bi-214		0.1922	0.1985	0.4501	0.4774
Ce-144	-0.03011 U	-0.01712 U	-0.002643 U	-0.0393 U	-0.06407 U
Co-58	0.00759 U	-0.0104 U	0.004564 U	0.01153 U	-0.03113 U
Co-60	-0.01019 U	0.003316 U	0.02994 U	-0.01081 U	0.01772 U
Cr-51					
Cs-134	-0.01146 U	-0.01723 U	-0.09509 U	-0.0488 U	-0.037 U
Cs-136	0.121				
Cs-137	0.01407 U	-0.003955 U	-0.003635 U	-0.002486 U	-0.01778 U
Eu-152					
Fe-59	-0.005204 U	-0.01757 U	-0.02666 U	-0.005587 U	0 U
I-133	0.01517 U				
K-40	13.11	11.27	11.89	16.51	16.17
Kr-85					
Mn-54	0.01239 U	-0.01628 U	0.01488 U	0.009362 U	0.02686 U
Nb-94					
Nb-95	0.005151 U	0.002542 U	0.007344 U	0.01978 U	0.007494 U
Np-239					
Pb-212	0.2532	0.2808	0.281	0.9135	0.901
Pb-214	0.2544	0.2296	0.2383	0.5365	0.5244
Ra-226	0.677			1.394	1.745
Ru-103	0.01159 U	-0.01233 U	-0.006493 U	0.01089 U	0.007024 U
Ru-106	0.02617 U	-0.03875 U	0.06225 U	0.1445 U	-0.08265 U
Sb-124	-0.03121 U	0.0102 U	0.008526 U	-0.01336 U	0 U
Sb-125					
Sn-113		0.9545 U			
Tl-208				0.9611	0.8848
U-235					
Zn-65	-0.04621 U	-0.06034 U	-0.07454 U	0.09551 U	-0.03853 U
Zr-95	-0.0008001 U	0.007431 U	-0.02418 U	-0.01292 U	0.01972 U
SOF					

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	TS99.46 (3344)	TS99.51 (3349)	TS99.51 (3349)	TS99.51 (3349)	TS99.52 (3350)
Sample ID	TS99.46C	TS99.51A	TS99.51B	TS99.51C	TS99.52A
Date Sampled	6/1/1999	6/7/1999	6/7/1999	6/7/1999	6/7/1999
Ac-228	0.9342	0.8417	0.8831	0.8278	0.9571
Ag-108m	-0.005332 U	-0.008247 U	0.01742 U	0.002869 U	-0.001988 U
Ag-110m	0.008617 U	-0.01905 U	-0.01204 U	0.01833 U	0.00118 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212	1.13	0.9897	0.7338	1.18	0.8687
Bi-214	0.4994	0.4763	0.3797	0.4172	0.4638
Ce-144	0.04632 U	-0.1962 U	-0.0716 U	-0.105 U	-0.04905 U
Co-58	0.01754 U	-0.02072 U	-0.002297 U	-0.004323 U	-0.01035 U
Co-60	-0.003652 U	-0.001597 U	-0.01885 U	0.01725 U	-0.03572 U
Cr-51					
Cs-134	0.01066 U	0.01188 U	-0.06137 U	0.02042 U	-0.03668 U
Cs-136					
Cs-137	-0.02016 U	0.01368 U	0.01011 U	-0.01268 U	0.007025 U
Eu-152					
Fe-59	-0.03366 U	0.01849 U	-0.006941 U	-0.04879 U	-0.02886 U
I-133					
K-40	15.01	14.86	14.84	14.8	15.32
Kr-85					
Mn-54	-0.007316 U	0.02263 U	0.01473 U	0.04058	-0.01044 U
Nb-94					
Nb-95	0.02547 U	0.0005326 U	0.05586	-0.01088 U	0.0328 U
Np-239					
Pb-212	0.9169	0.7672	0.8438	0.8485	0.9598
Pb-214	0.4977	0.5268	0.4682	0.5257	0.4421
Ra-226	1.469	1.093	1.147	1.182	3.267
Ru-103	-0.03558 U	-0.002746 U	0.01271 U	-0.005662 U	0.01835 U
Ru-106	-0.02092 U	-0.02272 U	0.09427 U	0.1976 U	0.1704 U
Sb-124	-0.009602 U	-0.007978 U	0.001701 U	-0.03201 U	-0.0391 U
Sb-125					
Sn-113					
Tl-208	0.884	0.7716	0.598	0.801	0.8003
U-235					
Zn-65	-0.09136 U	-0.1065 U	-0.07589 U	-0.05189 U	-0.03355 U
Zr-95	0.006946 U	0.0124 U	0.004359 U	0.05905	-0.03447 U
SOF				0.002	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Rad

OOL-02 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	TS99.52 (3350)	TS99.52 (3350)	TS99.53 (3351)	TS99.53 (3351)	TS99.53 (3351)
Sample ID	TS99.52B	TS99.52C	TS99.53A	TS99.53B	TS99.53C
Date Sampled	6/7/1999	6/7/1999	6/7/1999	6/7/1999	6/7/1999
Ac-228	1.028	1.014	0.8779	0.818	0.8787
Ag-108m	0.009246 U	0.0008899 U	0.005819 U	-0.003857 U	-0.003761 U
Ag-110m	0.008635 U	-0.02023 U	0.03914	-0.01736 U	0.006242 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212	1.108	0.7524	1.001	0.6354	0.9808
Bi-214	0.556	0.5396	0.4786	0.4362	0.3841
Ce-144	0.1088 U	0.09897 U	0.1326 U	0.1201 U	-0.07098 U
Co-58	-0.001585 U	-0.00105 U	-0.0115 U	0.01467 U	0.00444 U
Co-60	0.004374 U	0.01329 U	0 U	0.01443 U	0.007449 U
Cr-51					
Cs-134	-0.01544 U	-0.1398 U	-0.1117 U	-0.006091 U	0.03563
Cs-136					
Cs-137	0.02026 U	-0.0005401 U	0.03442 U	-0.0224 U	0.005138 U
Eu-152	0.1925 U				
Fe-59	0.01768 U	-0.01715 U	-0.02772 U	-0.05096 U	0.01755 U
I-133					
K-40	17.08	16.7	17	14.39	15.08
Kr-85					
Mn-54	-0.009329 U	0.0005268 U	-0.01401 U	0.01725 U	0.02619 U
Nb-94					
Nb-95	0.006717 U	0.008394 U	0.014 U	-0.00319 U	-0.02308 U
Np-239					
Pb-212	1.003	0.9477	0.7423	0.8942	0.8096
Pb-214	0.4758	0.6058	0.5049	0.4673	0.4153
Ra-226	1.781	1.236	1.872	1.569	1.509
Ru-103	0.005546 U	-0.006775 U	0.0004207 U	-0.01198 U	-0.00286 U
Ru-106	0.1496 U	0.02188 U	-0.1101 U	0.02069 U	0.1068 U
Sb-124	-0.01996 U	0.02044 U	0 U	0.02953 U	0.02789 U
Sb-125				-0.1291 U	
Sn-113					
Tl-208	0.8906	0.8874	0.8937	0.6559	0.6842
U-235	0.6268 U				
Zn-65	-0.008302 U	-0.1101 U	-0.0474 U	-0.03118 U	-0.04642 U
Zr-95	0.02326 U	0.02871 U	0.05977	0.01383 U	-0.003571 U
SOF					0.005

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-02 -- Soil (pCi/g)

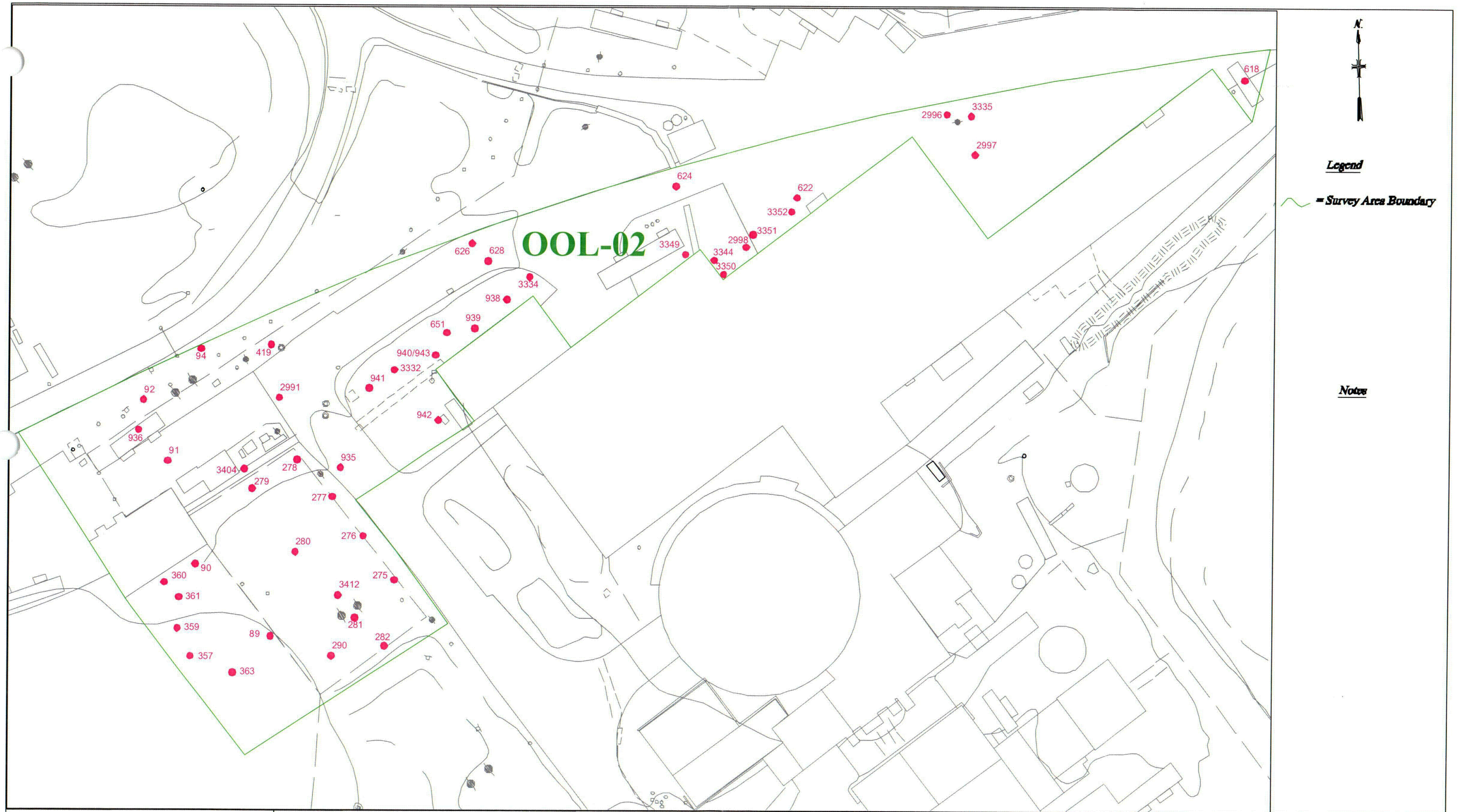
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	TS99.54 (3352) TS99.54A 6/9/1999	TS99.54 (3352) TS99.54B 6/9/1999	WSD03 (3404) WSD03 8/23/1999	YG001.6 (3412) YG001.6A 9/23/1998	YG001.6 (3412) YG001.6B 9/24/1998
Ac-228	0.9116	1.023	0.3779	0.6189	1.001
Ag-108m	-0.0121 U	-0.009371 U	0.002638 U	-0.009298 U	0.002169 U
Ag-110m	0.01621 U	0.005256 U	-0.008529 U	0.0292 U	-0.0411 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212	1.205	0.6432		0.6249	0.87
Bi-214	0.4627	0.4715	0.3163	0.4739	0.5109
Ce-144	-0.01127 U	0.05213 U	0.09392 U	-0.08423 U	0.01996 U
Co-58	-0.006176 U	-0.009493 U	0.01425 U	0.0007782 U	0.002996 U
Co-60	-0.01385 U	0.01101 U	0.06425	-0.008694 U	-0.03497 U
Cr-51					
Cs-134	-0.01874 U	-0.01239 U	-0.04744 U	-0.04811 U	0.04541 U
Cs-136					
Cs-137	-0.01569 U	0.03039 U	0.2778	0.1928	0.02991 U
Eu-152					
Fe-59	0.009284 U	-0.05337 U	-0.008897 U	0.00267 U	0.03023 U
I-133					
K-40	15.36	14.86	9.686	10.26	15.05
Kr-85					
Mn-54	-0.01655 U	-0.005669 U	0.001945 U	-0.01204 U	0.0005527 U
Nb-94					
Nb-95	0.02302 U	0.02337 U	0.009678 U	0.01874 U	-0.01848 U
Np-239					
Pb-212	0.9143	0.8575	0.5295	0.5554	0.9617
Pb-214	0.5074	0.4161	0.2936	0.4314	0.5419
Ra-226	1.211	1.583			1.223
Ru-103	-0.01177 U	-0.01209 U	-0.002557 U	-0.01533 U	-0.01494 U
Ru-106	0 U	-0.06306 U	0.0544 U	0.04268 U	-0.09018 U
Sb-124	-0.001143 U	0 U	0 U	0.003458 U	-0.008458 U
Sb-125				-0.03707 U	-0.118 U
Sn-113					
Tl-208	0.7249	0.805	0.4084		0.8007
U-235					
Zn-65	-0.09243 U	-0.07918 U	-0.0708 U	0.05866 U	0.05819 U
Zr-95	0.006151 U	0.03093 U	0.009702 U	0.009336 U	0.006969 U
SOF			0.036	0.016	

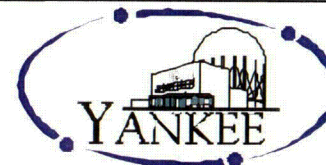
U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed



Yankee Atomic Power Company
Soil Sample Locations - OOL-02



Date: October 2003

Revision: 4

Figure: 3

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Dam & South Shoreline Designator: **OOL-03**

Survey Area Description

Survey area OOL-03 consists of the surface area of the Sherman Dam and the south shoreline of Sherman Reservoir, property owned by US Gen. Survey area OOL-03 contains about 16188 square meters of soil, asphalt and concrete surface area.

Survey area OOL-03 is bounded by survey areas OOL-01 on the north, OOL-13 on the east, both properties owned by US Gen., OOL-02 on the south and OOL-04 on the west property also owned by US Gen.

Sub-surface systems that traverse or connect within OOL-03 include:

- Abandoned street lighting electrical cable.
- Auxiliary Service Water System, power and water lines
- The circulating water system
- Roof, floor and equipment drains
- Electrical duct trays
- Electrical grounding cables
- Security lighting electrical conduits.
- East storm drain system
- Service water system
- Fire protection system water lines

Items of note located within or adjacent to OOL-03 include:

- Concrete support pads at the former location of the a temporary office structure
- A portion of the H T and W railroad bed where it crossed the site
- Flood control berm at Sherman Dam
- Electrical Hand Hole #3
- Temporary office trailers.
- East storm drain discharge point.
- The travelling-screen system wash water discharge trench
- The Sherman Dam road.
- The Sherman Hydro-electric Station sluice gate house
- The circulating water discharge structure.
- The MET Tower

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Dam & South Shoreline Designator: **OOL-03**

Survey Area History

Survey area OOL-03 is not part of the RCA. There are no radioactive systems present in OOL-03. Survey area OOL-03 was not used for storing radioactive material or processing or packaging radioactive waste.

The Sherman Dam access road portion of survey area OOL-03 was used as the primary access point for receiving and shipping radioactive waste via truck transport. Prior to discontinuance of railroad access to the site, spent fuel and high level radioactive waste such as irradiated control rods were shipped using the railroad.

Radioactive systems present in OOL-03 include:

- The east storm sewer system.
- Both the former (circulating water system) and the present (ASWS) monitored discharge pathway for radioactive liquid releases.

Survey area OOL-03 is likely to be minimally impacted as a result of transmigration of low levels of radioactive contamination present on the RCA yard area surface via surface water run-off of and/or personnel traffic, equipment and material transfer into the non-RCA portion of the site.

Events and activities that lead to the contamination of survey area OOL-03 include:

- AOR 66-7 Spent Fuel Pit Water Spill. (Ref 1)
- AOR 66-09 Hose Failure, while draining the fuel transfer chute pump back line. (Ref 2)
- PIR 81-09 Contamination of the Yard Area during Reactor Head Removal. (Ref 3)

The first two events in 1966 are similar because they both released radioactivity into the east storm drain system. At that time, the east storm drain system terminated at a point just to the north of the railroad tracks (Ref 4). Previously the east storm sewer terminated at the same location as the west storm sewer in survey area OOL-06 (Ref 5).

Subsequently the storm drain was extended to the northeast so that the discharge is closer to the edge of Sherman Reservoir (present location). The former discharge point is now buried under several feet of fill material.

Translocation Pathways

The likely modes and vectors of contamination translocation associated with OOL-03 are migration of low levels of contamination beyond the bounds of OOL-03 via surface run-off to survey areas down slope or into and through the storm drain system to the discharge.

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Dam & South Shoreline Designer: **OOL-03**

Site modifications performed within survey area OOL-03 include:

- Raising the elevation of Sherman Dam
- Change to the layout of the east storm drain system and subsequent extension, which diverted the east storm drain flow into Sherman Reservoir.
- Re-location of the security perimeter fence.
- Set-up of the temporary office building
- Installation of the security lighting and camera system.

Modifications performed at the YNPS site in support of decommissioning that changed the configuration of OOL-03 include:

- Installation of the ASWS piping.

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref. 6).

Additional scoping survey data was collected in support of the construction activities performed in OOL-03 in support of decommissioning.

Decommissioning

No decommissioning activities have been performed for survey area OOL-03.

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Dam & South Shoreline Designator: **OOL-03**

Findings

Survey area OOL-03 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-03 is minimally impacted with locations likely to contain radioactivity concentrations at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-03 includes all radionuclides identified in the radioactive systems of the plant (Ref 7). The primary radionuclides of concern for survey area OOL-03 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

OOL-03 continues to be potentially impacted by radioactive material migration due to surface run-off from within the RCA, radioactive material packaging and transport and by decommissioning activities.

A soil sample location map (Figure 4) has been prepared to show the distribution of sampling locations in OOL-03. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). Three survey media were assessed in OOL-03, Asphalt, Sediment and Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL. There are separate sets of Tables 1-4 for each survey media. All are evaluated as fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-03 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Asphalt: Mean SOF is 0.013.

Maximum SOF for a single asphalt sample is 0.013. (key# 86) on the dam roadway just inside the gate.

Minimum SOF for a single asphalt sample is 0.013. (key# 86).

Sediment: Mean SOF is 0.160.

Maximum SOF for a single sediment sample is 0.160. (key# 3089) at the east storm drain outlet.

Minimum SOF for a single sediment sample is 0.160. (key# 3089).

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Dam & South Shoreline Designator: **OOL-03**

Soil: Mean SOF is 0.036.

Maximum SOF for a single soil sample is 0.332. (key# 412) just southeast of the east storm drain outlet.

Minimum SOF for a single soil sample is 0.004. (key# 51) just southeast of the east storm drain outlet.

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-03 is identified as a Class 3 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Reservoir Dam & South Shoreline Designator: **OOL-03**

Drawings

9699-FB-A2, Storm and Sanitary Sewers Underground.
9699-FC-53A, Seal Pit Concrete Details
9699-FC-61A
9699-FP-12I
Figure 7-1A

References

1.	Abnormal Occurrence Report (AOR) 66-07, Spent Fuel Pit Water Spill, dated September 27, 1966.
2.	AOR 66-09, "Plastic Garden Hose Failure," dated November 1, 1966.
3.	Plant Information Report (PIR) 81-09, dated June 12, 1981.
4.	Analysis of Historical Aerial Photography for the YNPS Site
5.	OPs Report #69 for September 1966, dated October 21, 1966.
6.	YNPS Decommissioning Plan, Rev. 0.0.
7.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

Table 1
Sum of Fractions
OOL-03 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions	
86	OG001-002	OG001GUFA002		0.013
			Min	0.013
			Max	0.013
			Mean	0.013

Table 2
Statistical Data Summary -- OOL-03 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	1	1	0.453		0.453	0.453	0.453
Ag-108m	pCi/g	0	1	0.000				
Ag-110m	pCi/g	0	1	0.000				
Am-241	pCi/g	0	1	0.000				
Bi-212	pCi/g	1	1	0.585		0.585	0.585	0.585
Bi-214	pCi/g	1	1	0.406		0.406	0.406	0.406
Ce-144	pCi/g	0	1	0.000				
Co-58	pCi/g	0	2	0.000				
Co-60	pCi/g	0	2	0.000				
Cs-134	pCi/g	1	2	0.085		0.085	0.085	0.085
Cs-137	pCi/g	0	2	0.000				
Fe-59	pCi/g	0	1	0.000				
K-40	pCi/g	1	1	6.441		6.441	6.441	6.441
Mn-54	pCi/g	0	1	0.000				
Nb-95	pCi/g	0	1	0.000				
Pb-212	pCi/g	1	1	0.317		0.317	0.317	0.317
Pb-214	pCi/g	1	1	0.424		0.424	0.424	0.424
Ra-226	pCi/g	0	1	0.000				
Ru-103	pCi/g	0	1	0.000				
Ru-106	pCi/g	0	1	0.000				
Sb-124	pCi/g	0	1	0.000				
Zn-65	pCi/g	0	1	0.000				
Zr-95	pCi/g	0	1	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-03 -- Asphalt
Yankee Nuclear Power Station Rowe, MA
DCGL Asphalt

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	1	1		pCi/g	0	0.45
Ag-108m	0	1	8.52	pCi/g	0	
Ag-110m	0	1		pCi/g	0	
Am-241	0	1	44.35	pCi/g	0	
Bi-212	1	1		pCi/g	0	0.59
Bi-214	1	1		pCi/g	0	0.41
Ce-144	0	1		pCi/g	0	
Co-58	0	2		pCi/g	0	
Co-60	0	2	4.84	pCi/g	0	
Cs-134	1	2	6.71	pCi/g	0	0.08
Cs-137	0	2	12.24	pCi/g	0	
Fe-59	0	1		pCi/g	0	
K-40	1	1		pCi/g	0	6.44
Mn-54	0	1	21.66	pCi/g	0	
Nb-95	0	1		pCi/g	0	
Pb-212	1	1		pCi/g	0	0.32
Pb-214	1	1		pCi/g	0	0.42
Ra-226	0	1		pCi/g	0	
Ru-103	0	1		pCi/g	0	
Ru-106	0	1	68.21	pCi/g	0	
Sb-124	0	1		pCi/g	0	
Zn-65	0	1		pCi/g	0	
Zr-95	0	1		pCi/g	0	

Table 4

Rad

OOL-03 -- Asphalt (pCi/g)
 Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-3 (620)	OG001-002 (86)
Sample ID	IAAS-3	OG001GUFA002
Date Sampled	5/17/1993	6/30/1998
Ac-228		0.4534
Ag-108m		-0.002381 U
Ag-110m		-0.001056 U
Am-241		0 U
Bi-212		0.5851
Bi-214		0.4059
Ce-144		0.008902 U
Co-58	0.087 UM	0.001399 U
Co-60	0.111 UM	0.005009 U
Cs-134	0.074 UM	0.08469
Cs-137	0.105 UM	-0.00387 U
Fe-59		0.01368 U
K-40		6.441
Mn-54		-0.01584 U
Nb-95		0.01454 U
Pb-212		0.3166
Pb-214		0.4242
Ra-226		0.8607 U
Ru-103		0.002944 U
Ru-106		0.04593 U
Sb-124		-0.01088 U
Zn-65		-0.003931 U
Zr-95		0.01434 U
SOF		0.013

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 1
Sum of Fractions
OOL-03 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions	
3089	SE544	SE544		0.160
			Min	0.160
			Max	0.160
			Mean	0.160

Table 2
Statistical Data Summary -- OOL-03 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	1	1	0.653		0.653	0.653	0.653
Ag-108m	pCi/g	1	1	0.059		0.059	0.059	0.059
Ag-110m	pCi/g	0	1	0.000				
Am-241	pCi/g	0	1	0.000				
Bi-212	pCi/g	1	1	1.017		1.017	1.017	1.017
Bi-214	pCi/g	1	1	0.346		0.346	0.346	0.346
Ce-144	pCi/g	0	1	0.000				
Co-58	pCi/g	0	1	0.000				
Co-60	pCi/g	1	1	0.416		0.416	0.416	0.416
Cs-134	pCi/g	0	1	0.000				
Cs-137	pCi/g	1	1	0.823		0.823	0.823	0.823
Eu-152	pCi/g	0	1	0.000				
Fe-59	pCi/g	0	1	0.000				
K-40	pCi/g	1	1	14.820		14.820	14.820	14.820
Mn-54	pCi/g	0	1	0.000				
Nb-95	pCi/g	0	1	0.000				
Pb-212	pCi/g	1	1	0.801		0.801	0.801	0.801
Pb-214	pCi/g	1	1	0.456		0.456	0.456	0.456
Ru-103	pCi/g	0	1	0.000				
Ru-106	pCi/g	0	1	0.000				
Sb-124	pCi/g	0	1	0.000				
Sb-125	pCi/g	0	1	0.000				
Tl-208	pCi/g	1	1	0.877		0.877	0.877	0.877
Zn-65	pCi/g	0	1	0.000				
Zr-95	pCi/g	0	1	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-03 -- Sediment
Yankee Nuclear Power Station Rowe, MA
DCGL_Sediment

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	1	1		pCi/g	0	0.65
Ag-108m	1	1	8.52	pCi/g	0	0.06
Ag-110m	0	1		pCi/g	0	
Am-241	0	1	44.35	pCi/g	0	
Bi-212	1	1		pCi/g	0	1.02
Bi-214	1	1		pCi/g	0	0.35
Ce-144	0	1		pCi/g	0	
Co-58	0	1		pCi/g	0	
Co-60	1	1	4.84	pCi/g	0	0.42
Cs-134	0	1	6.71	pCi/g	0	
Cs-137	1	1	12.24	pCi/g	0	0.82
Eu-152	0	1	12.06	pCi/g	0	
Fe-59	0	1		pCi/g	0	
K-40	1	1		pCi/g	0	14.82
Mn-54	0	1	21.66	pCi/g	0	
Nb-95	0	1		pCi/g	0	
Pb-212	1	1		pCi/g	0	0.80
Pb-214	1	1		pCi/g	0	0.46
Ru-103	0	1		pCi/g	0	
Ru-106	0	1	68.21	pCi/g	0	
Sb-124	0	1		pCi/g	0	
Sb-125	0	1	37.73	pCi/g	0	
Tl-208	1	1		pCi/g	0	0.88
Zn-65	0	1		pCi/g	0	
Zr-95	0	1		pCi/g	0	

Table 4

Rad

OOL-03 -- Sediment (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	SE544 (3089)
Sample ID	SE544
Date Sampled	8/31/1998
Ac-228	0.6527
Ag-108m	0.05936
Ag-110m	-0.03015 U
Am-241	0 U
Bi-212	1.017
Bi-214	0.3461
Ce-144	0.1295 U
Co-58	-0.0275 U
Co-60	0.4155
Cs-134	0.0008945 U
Cs-137	0.8228
Eu-152	0.06798 U
Fe-59	-0.0137 U
K-40	14.82
Mn-54	0.01342 U
Nb-95	0.02861 U
Pb-212	0.801
Pb-214	0.4557
Ru-103	-0.03133 U
Ru-106	0.1748 U
Sb-124	-0.009517 U
Sb-125	0.02437 U
Tl-208	0.877
Zn-65	0.1522 U
Zr-95	0.0235 U
SOF	0.16

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 1
Sum of Fractions
OOL-03 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
113	OG001-031	OG001GUFD031	0.008
54	OG002-004	OG002GUFD004	0.007
56	OG002-006	OG002GUFD006	0.023
58	OG002-008	OG002GUFD008	0.116
59	OG002-009	OG002GUFD009	0.006
102	OG001-018	OG001GUFD018	0.025
103	OG001-020	OG001GUFD020	0.032
105	OG001-022	OG001GUFD022	0.005
108	OG001-025	OG001GUFD025	0.012
110	og001-027	og001gufd027	0.018
51	OG002-001	OG002GUFD001	0.004
112	og001-030	og001gufd030	0.018
415	OF-247	OFTS-247	0.030
114	OG001-032	OG001GUFD032	0.006
115	OG001-035	OG001GUFD035	0.015
116	OG001-036	OG001GUFD036	0.017
409	OF-241	OFTS-241	0.029
410	OF-242	OFTS-242	0.006
411	OF-243	OFTS-243	0.065
412	OF-244	OFTS-244	0.332
413	OF-245	OFTS-245	0.016
414	OF-246	OFTS-246	0.024
111	og001-029	og001gufd029	0.008
			Min 0.004
			Max 0.332
			Mean 0.036

Table 2
Statistical Data Summary -- OOL-03 -- Soil
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	28	28	0.918	0.116	0.700	1.193	0.928
Ag-108m	pCi/g	0	36	0.000				
Ag-110m	pCi/g	0	28	0.000				
Am-241	pCi/g	0	28	0.000				
Bi-212	pCi/g	21	23	0.894	0.208	0.622	1.285	0.875
Bi-214	pCi/g	18	18	0.525	0.070	0.413	0.671	0.521
Ce-141	pCi/g	1	1	0.080		0.080	0.080	0.080
Ce-144	pCi/g	1	28	0.371		0.371	0.371	0.371
Co-58	pCi/g	0	37	0.000				
Co-60	pCi/g	3	37	0.581	0.697	0.140	1.384	0.218
Cs-134	pCi/g	1	37	0.089		0.089	0.089	0.089
Cs-137	pCi/g	21	37	0.242	0.231	0.050	1.077	0.193
Eu-152	pCi/g	1	2	0.341		0.341	0.341	0.341
Fe-59	pCi/g	0	28	0.000				
K-40	pCi/g	25	28	15.817	8.469	0.453	26.170	18.560
Kr-85	pCi/g	0	1	0.000				
Mn-54	pCi/g	0	36	0.000				
Nb-95	pCi/g	4	28	0.075	0.012	0.060	0.090	0.075
Pb-212	pCi/g	28	28	0.883	0.124	0.640	1.259	0.870
Pb-214	pCi/g	28	28	0.539	0.063	0.445	0.699	0.531
Ra-226	pCi/g	16	21	1.920	0.475	1.279	2.691	1.792
Ru-103	pCi/g	1	28	0.037		0.037	0.037	0.037
Ru-106	pCi/g	1	28	0.425		0.425	0.425	0.425
Sb-124	pCi/g	0	28	0.000				
Sb-125	pCi/g	0	1	0.000				
Tl-202	pCi/g	0	1	0.000				
Tl-208	pCi/g	23	23	0.820	0.138	0.547	1.061	0.853
Zn-65	pCi/g	1	28	0.117		0.117	0.117	0.117
Zr-95	pCi/g	0	28	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-03 -- Sediment
Yankee Nuclear Power Station Rowe, MA
DCGL_Sediment

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	1	1		pCi/g	0	0.65
Ag-108m	1	1	8.52	pCi/g	0	0.06
Ag-110m	0	1		pCi/g	0	
Am-241	0	1	44.35	pCi/g	0	
Bi-212	1	1		pCi/g	0	1.02
Bi-214	1	1		pCi/g	0	0.35
Ce-144	0	1		pCi/g	0	
Co-58	0	1		pCi/g	0	
Co-60	1	1	4.84	pCi/g	0	0.42
Cs-134	0	1	6.71	pCi/g	0	
Cs-137	1	1	12.24	pCi/g	0	0.82
Eu-152	0	1	12.06	pCi/g	0	
Fe-59	0	1		pCi/g	0	
K-40	1	1		pCi/g	0	14.82
Mn-54	0	1	21.66	pCi/g	0	
Nb-95	0	1		pCi/g	0	
Pb-212	1	1		pCi/g	0	0.80
Pb-214	1	1		pCi/g	0	0.46
Ru-103	0	1		pCi/g	0	
Ru-106	0	1	68.21	pCi/g	0	
Sb-124	0	1		pCi/g	0	
Sb-125	0	1	37.73	pCi/g	0	
Tl-208	1	1		pCi/g	0	0.88
Zn-65	0	1		pCi/g	0	
Zr-95	0	1		pCi/g	0	

Table 4

Rad

OOL-03 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-3 (620)	OF-241 (409)	OF-242 (410)	OF-243 (411)	OF-244 (412)	OF-245 (413)
Sample ID	IATS-3	OFTS-241	OFTS-242	OFTS-243	OFTS-244	OFTS-245
Date Sampled	5/20/1993	11/22/1994	11/22/1994	11/22/1994	11/22/1994	11/23/1994
Ac-228						
Ag-108m		0.058 UM	0.039 UM	0.056 UM	0.064 UM	0.049 UM
Ag-110m						
Am-241						
Bi-212						
Bi-214						
Ce-141						
Ce-144						
Co-58	0.079 UM	0.078 UM	0.063 UM	0.061 UM	0.065 UM	0.055 UM
Co-60	0.0876 UM	0.14	0.0814 UM	0.218	1.384	0.0689 UM
Cs-134	0.063 UM	0.07 UM	0.049 UM	0.062 UM	0.064 UM	0.047 UM
Cs-137	0.0841 UM	0.105 UM	0.0789	0.25	0.557	0.193
Eu-152						
Fe-59						
K-40						
Kr-85						
Mn-54		0.078 UM	0.067 UM	0.075 UM	0.09 UM	0.054 UM
Nb-95						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Sb-125						
Tl-202						
Tl-208						
Zn-65						
Zr-95						
SOF		0.029	0.006	0.065	0.332	0.016

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-03 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-246 (414)	OF-247 (415)	OF-248 (416)	OG001-017 (101)	OG001-018 (102)
Sample ID	OFTS-246	OFTS-247	OFTS-248	OG001GUFD017	OG001GUFD018
Date Sampled	11/23/1994	11/23/1994	11/23/1994	7/1/1998	7/1/1998
Ac-228				0.956	0.8884
Ag-108m	0.051 UM	0.055 UM	0.05 UM	-0.005035 U	-0.00373 U
Ag-110m				0.02031 U	-0.004885 U
Am-241				0 U	0 U
Bi-212				0.7685	0.8147
Bi-214				0.4649	0.5277
Ce-141					
Ce-144				0.2213 U	0.02653 U
Co-58	0.064 UM	0.061 UM	0.063 UM	0.01424 U	-0.02556 U
Co-60	0.0727 UM	0.0679 UM	0.0735 UM	-0.01845 U	-0.02803 U
Cs-134	0.061 UM	0.051 UM	0.052 UM	-0.112 U	0.01311 U
Cs-137	0.295	0.365	0.0745 UM	0.02034 U	0.301
Eu-152					
Fe-59				-0.006264 U	0.04658 U
K-40				20.8	3.433
Kr-85					
Mn-54	0.07 UM	0.067 UM	0.061 UM	0.008977 U	-0.01061 U
Nb-95				-0.001901 U	0.007386 U
Pb-212				0.8693	0.791
Pb-214				0.5243	0.4887
Ra-226					2.038
Ru-103				-0.01432 U	-0.01444 U
Ru-106				-0.005241 U	-0.06671 U
Sb-124				0.004415 U	-0.008849 U
Sb-125					
Tl-202					
Tl-208				0.9351	0.6412
Zn-65				0.1437 U	-0.01251 U
Zr-95				-0.06906 U	0.03369 U
SOF	0.024	0.03			0.025

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-03 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG001-020 (103) OG001GUFD020 7/2/1998	OG001-021 (104) OG001GUFD021 7/2/1998	OG001-022 (105) OG001GUFD022 7/2/1998	OG001-023 (106) OG001GUFD023 7/2/1998
Ac-228	0.7051	0.8985	0.9111	0.738
Ag-108m	-0.01754 U	-0.01594 U	-0.002411 U	0.004951 U
Ag-110m	-0.03005 U	0.02281 U	0.01539 U	0.001324 U
Am-241	0 U	0 U	0 U	0 U
Bi-212	0.7035	0.6934	0.6218	
Bi-214	0.5382	0.5612	0.6707	
Ce-141				
Ce-144	-0.1351 U	0.09454 U	0.04011 U	0.05655 U
Co-58	0.01928 U	-0.05133 U	-0.02181 U	0.005999 U
Co-60	-0.009757 U	-0.02395 U	0.001978 U	0.01821 U
Cs-134	-0.08563 U	0.02436 U	-0.03543 U	-0.0345 U
Cs-137	0.3919	0.03654 U	0.06233	0.05753 U
Eu-152				
Fe-59	-0.06069 U	0.02358 U	0.01729 U	0.05051 U
K-40	21.33	20.19	22.11	0 U
Kr-85				
Mn-54	0.003528 U	-0.005918 U	0.02761 U	0.01561 U
Nb-95	0.09007	0.03283 U	0.03355 U	0.07317
Pb-212	0.7148	0.7598	0.996	0.7203
Pb-214	0.5826	0.6288	0.5805	0.4465
Ra-226	1.395	1.664	1.277 U	1.1 U
Ru-103	-0.004133 U	-0.0003132 U	0.01399 U	0.01654 U
Ru-106	0.1871 U	0.09412 U	0.07054 U	-0.06671 U
Sb-124	0.02586 U	-0.009264 U	0.07255 U	-0.01022 U
Sb-125				
Tl-202				
Tl-208	0.5473	0.8796	0.8529	
Zn-65	-0.0364 U	-0.01612 U	-0.07645 U	0 U
Zr-95	-0.01974 U	0.01167 U	-0.02667 U	0.04673 U
SOF	0.032		0.005	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-03 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG001-024 (107) OG001GUFD024 7/2/1998	OG001-025 (108) OG001GUFD025 7/6/1998	og001-026 (109) og001gufd026 7/6/1998	og001-027 (110) og001gufd027 7/6/1998	og001-029 (111) og001gufd029 7/22/1998
Ac-228	1.025	0.8208	0.8644	0.9665	0.9081
Ag-108m	0.01517 U	-0.0172 U	-0.00239 U	-0.01174 U	0.01672 U
Ag-110m	-0.01902 U	-0.01942 U	0.02386 U	-0.001101 U	0.006192 U
Am-241	0 U	0 U	0 U	0 U	0 U
Bi-212	0.9398	0.875	0.9086	0.9616	1.174
Bi-214		0.5494	0.5152	0.5355	0.663
Ce-141					
Ce-144	-0.1101 U	0.2143 U	0.03604 U	0.006585 U	-0.128 U
Co-58	-0.007119 U	-0.03161 U	-0.007234 U	-0.049 U	-0.004942 U
Co-60	-0.007005 U	-0.04644 U	-0.01891 U	-0.03115 U	-0.02688 U
Cs-134	0.0171 U	-0.1382 U	-0.06926 U	0.002359 U	-0.02036 U
Cs-137	-0.01555 U	0.15	0.01816 U	0.2218	0.09394
Eu-152			0.6309 U		
Fe-59	0.0285 U	0 U	-0.12 U	-0.06999 U	-0.0226 U
K-40	0.4526	22.96	18.56	21.38	24.35
Kr-85					
Mn-54	-0.05562 U	0.006025 U	-0.01763 U	-0.02571 U	0.008365 U
Nb-95	0.01821 U	-0.06366 U	-0.02966 U	-0.06156 U	0.03699 U
Pb-212	0.9729	0.9212	0.8113	0.8326	0.9107
Pb-214	0.5555	0.6172	0.5392	0.6159	0.5934
Ra-226		2.646	1.072 U	2.691	
Ru-103	0.009607 U	-0.04489 U	-0.01077 U	0.01266 U	0.01007 U
Ru-106	0.04407 U	0.1546 U	-0.06705 U	0.049 U	0.2882 U
Sb-124	0.03301 U	0.02151 U	-0.06536 U	-0.006443 U	0.02434 U
Sb-125					
Tl-202					
Tl-208	0.8544	0.8024	0.8281		0.7125
Zn-65	-0.04032 U	-0.04414 U	0.01891 U	-0.1505 U	-0.1102 U
Zr-95	-0.01027 U	0.006212 U	0.02783 U	-0.03662 U	0.03391 U
SOF		0.012		0.018	0.008

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-03 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	og001-030 (112) og001gufd030 7/6/1998	OG001-031 (113) OG001GUFD031 7/6/1998	OG001-032 (114) OG001GUFD032 7/6/1998	OG001-035 (115) OG001GUFD035 7/2/1998
Ac-228	0.9444	0.9414	1.084	0.9374
Ag-108m	0.0001693 U	-0.003373 U	0.02757 U	-0.008405 U
Ag-110m	-0.02759 U	-0.01133 U	-0.003854 U	0.03782 U
Am-241	0 U	0 U	0 U	0 U
Bi-212		0.565 U	1.173	0.9258
Bi-214	0.5969		0.5677	
Ce-141				
Ce-144	0.3708	-0.04473 U	-0.2223 U	0.2427 U
Co-58	-0.01363 U	0.03007 U	-0.009069 U	-0.0195 U
Co-60	0.03065 U	-0.04453 U	-0.008435 U	-0.02153 U
Cs-134	0.02122 U	0.02592 U	-0.1667 U	0 U
Cs-137	0.2245	0.09668	0.0752	0.1829
Eu-152				
Fe-59	0.05848 U	0.01579 U	-0.05133 U	-0.03761 U
K-40	21.62	26.17	21.75	2.086
Kr-85		5.115 U		
Mn-54	0.03779 U	0.009325 U	0.03043 U	-0.004245 U
Nb-95	0.01031 U	0.05353 U	-0.016 U	0.0322 U
Pb-212	0.7966	0.8714	1.054	0.9131
Pb-214	0.5688	0.6994	0.5375	0.5164
Ra-226	2.385		2.209	
Ru-103	-0.01778 U	0.01339 U	0.002444 U	-0.01118 U
Ru-106	0.07122 U	-0.1078 U	0.1053 U	0 U
Sb-124	-0.01769 U	0.003606 U	-0.03489 U	0.01284 U
Sb-125				
Tl-202			0.0637 U	
Tl-208	0.8911	0.8625	1.039	0.884
Zn-65	0.06715 U	-0.1541 U	-0.129 U	-0.1086 U
Zr-95	0.02414 U	0.05829 U	0.02758 U	-0.008999 U
SOF	0.018	0.008	0.006	0.015

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-03 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG001-036 (116)	OG002-001 (51)	OG002-002 (52)	OG002-003 (53)	OG002-004 (54)
Sample ID	OG001GUF036	OG002GUF001	OG002GUF002	OG002GUF003	OG002GUF004
Date Sampled	7/6/1998	7/7/1998	7/7/1998	7/7/1998	7/7/1998
Ac-228	0.92	0.7627	1.055	0.8021	0.9494
Ag-108m	0.00433 U	-0.008408 U	0.004356 U	-0.005341 U	-0.009022 U
Ag-110m	0.04012 U	0.03186 U	-0.03285 U	0.02598 U	-0.02166 U
Am-241	0 U	0 U	0 U	0 U	0 U
Bi-212	0.608 U	0.8524	0.6843	1.154	0.689
Bi-214		0.4998	0.495		
Ce-141				0.08046	
Ce-144	0.1722 U	-0.03567 U	0.05124 U	-0.04114 U	-0.3567 U
Co-58	-0.00277 U	0.001639 U	-0.01079 U	0.02709 U	-0.007003 U
Co-60	-0.03655 U	0.02625 U	0.02128 U	-0.01279 U	0.02881 U
Cs-134	0 U	-0.1221 U	-0.05705 U	0 U	-0.02442 U
Cs-137	0.204	0.05009	0.02685 U	0.004772 U	0.08674
Eu-152					
Fe-59	-0.1084 U	-0.04467 U	-0.05596 U	0.009888 U	0 U
K-40	1.79	18.37	17.16	0.9725	0.7215
Kr-85					
Mn-54	-0.03046 U	0.0007781 U	0.01492 U	-0.005685 U	0.00832 U
Nb-95	0.03277 U	0.004848 U	0.0547 U	-0.0068 U	0.01572 U
Pb-212	0.9502	0.8443	1.004	0.7957	0.9824
Pb-214	0.5834	0.4811	0.4752	0.4891	0.4878
Ra-226	1.026 U	1.322	1.86	1.092 U	1.279
Ru-103	-0.01489 U	0.02149 U	0.009449 U	0.01941 U	0.01702 U
Ru-106	0.1179 U	-0.1696 U	0.1028 U	-0.201 U	0.02088 U
Sb-124	-0.03056 U	-0.007385 U	0.01199 U	0 U	-0.02071 U
Sb-125					
Tl-202					
Tl-208	0.8642	0.7352	0.8798	0.805	0.8384
Zn-65	0.1003 U	0.04132 U	-0.1124 U	-0.043 U	0.03803 U
Zr-95	-0.01592 U	-0.004705 U	0.0003861 U	-0.01345 U	0.03259 U
SOF	0.017	0.004			0.007

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-03 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG002-005 (55) OG002GUFD005 7/7/1998	OG002-006 (56) OG002GUFD006 7/7/1998	OG002-007 (57) OG002GUFD007 7/7/1998	OG002-008 (58) OG002GUFD008 7/7/1998	OG002-009 (59) OG002GUFD009 7/8/1998
Ac-228	0.9356	0.7003	1.092	0.8615	0.8655
Ag-108m	-0.0158 U	-0.02088 U	-0.02433 U	0.02182 U	-0.03522 U
Ag-110m	-0.02755 U	-0.01576 U	0.00896 U	0.01572 U	-0.02142 U
Am-241	0 U	0 U	0 U	0 U	0 U
Bi-212		0.9204	1.259		
Bi-214		0.4392	0.4703		
Ce-141					
Ce-144	-0.09465 U	-0.08967 U	-0.08332 U	0.07441 U	-0.04103 U
Co-58	0.01637 U	0.004937 U	0.0132 U	-0.03095 U	0.01348 U
Co-60	-0.02283 U	-0.008824 U	0.005891 U	0.003518 U	-0.005537 U
Cs-134	0.03659 U	0.08902	-0.01711 U	0.01682 U	0 U
Cs-137	0.02599 U	0.1185	0.02549 U	1.077	-0.04447 U
Eu-152				0.3406	
Fe-59	0.03051 U	-0.08327 U	-0.02168 U	-0.02106 U	-0.01492 U
K-40	-0.07123 U	18.68	18.23	16.6	-0.08631 U
Kr-85					
Mn-54	-0.004955 U	-0.003548 U	0.002222 U	-0.01151 U	0.0331 U
Nb-95	-0.0007205 U	-0.008291 U	0.01383 U	0.06017	-0.02176 U
Pb-212	0.8874	0.8157	0.8582	0.7924	0.6399
Pb-214	0.6019	0.4865	0.4575	0.4904	0.445
Ra-226	1.445		1.711		1.724
Ru-103	-0.01155 U	-0.00007234 U	-0.03965 U	0.003835 U	0.03703
Ru-106	0.2112 U	-0.07316 U	0.07997 U	-0.1748 U	0.4253
Sb-124	-0.0405 U	0.009763 U	0.02116 U	-0.007708 U	0 U
Sb-125				0.0153 U	
Tl-202					
Tl-208		0.5501		0.5958	
Zn-65	0.1169	-0.07866 U	-0.1154 U	-0.06268 U	0.1135 U
Zr-95	0.01092 U	0.04531 U	0.03006 U	0 U	-0.002134 U
SOF		0.023		0.116	0.006

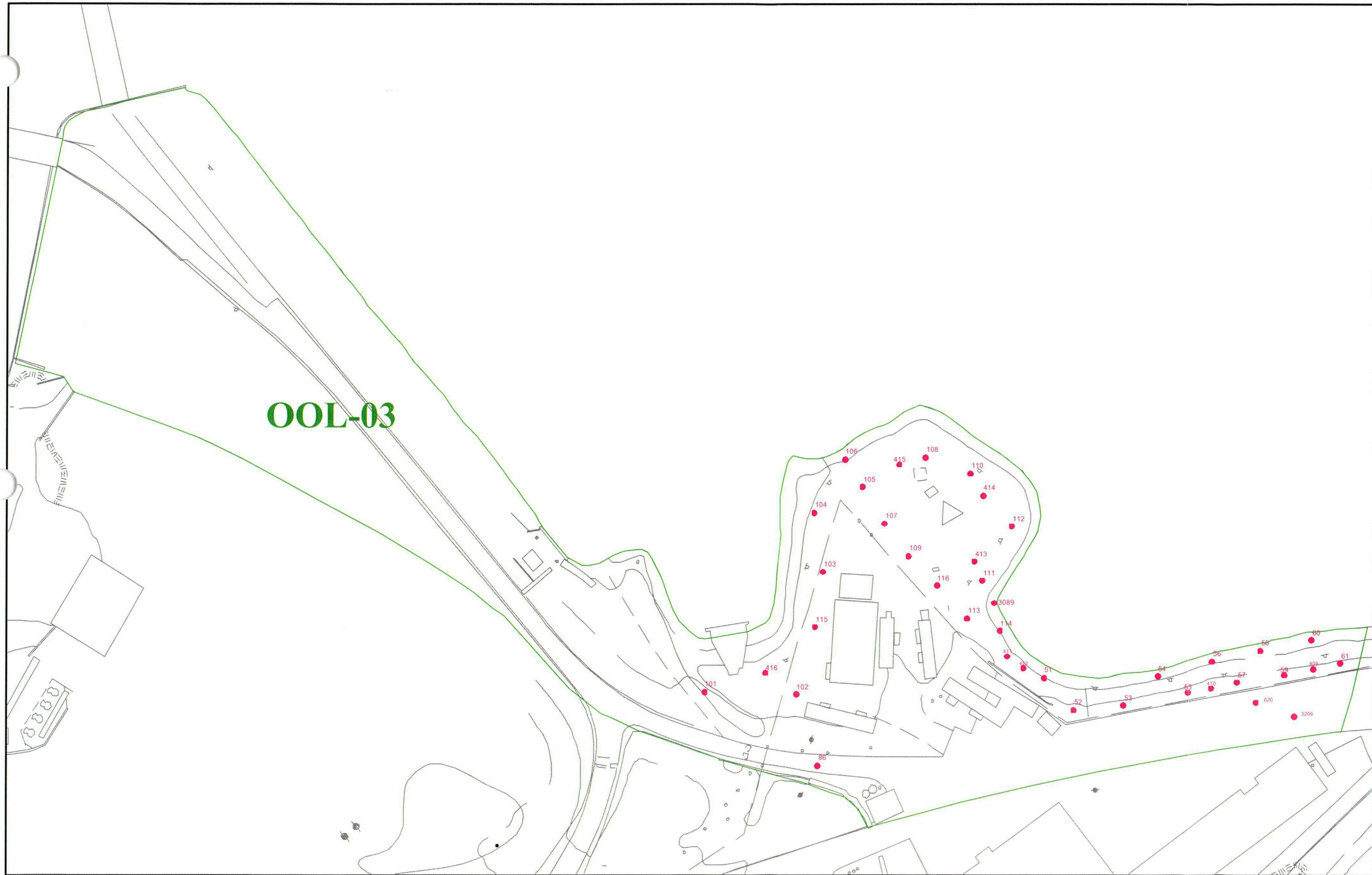
U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-03 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG002-010 (60) OG002GUFD010 7/8/1998	og002-011 (61) og002gufd011 7/8/1998	TS477 (3209) TS477 6/8/1998
Ac-228	0.9527	1.015	1.193
Ag-108m	0.01817 U	0.01791 U	0.008945 U
Ag-110m	0.02529 U	-0.02411 U	0.01707 U
Am-241	0 U	0 U	0 U
Bi-212	0.7087	0.6628	1.285
Bi-214	0.413	0.4547	0.4866
Ce-141			
Ce-144	0.1331 U	0.02779 U	-0.141 U
Co-58	0.005029 U	-0.002796 U	0.02056 U
Co-60	-0.02445 U	0.01653 U	-0.014 U
Cs-134	-0.1103 U	0.02986 U	-0.05656 U
Cs-137	0.03521 U	0.004498 U	-0.007246 U
Eu-152			
Fe-59	-0.007231 U	-0.02514 U	0.03222 U
K-40	18.19	18.48	19.03
Kr-85			
Mn-54	0.001997 U	-0.0298 U	-0.02584 U
Nb-95	0.07728	0.01973 U	-0.008555 U
Pb-212	0.9653	0.9843	1.259
Pb-214	0.5225	0.5011	0.5688
Ra-226	2.594	2.071	1.681
Ru-103	0.01267 U	-0.03541 U	0.01047 U
Ru-106	0.03483 U	-0.0004081 U	0.02002 U
Sb-124	-0.03186 U	0.002551 U	-0.02039 U
Sb-125			
Tl-202			
Tl-208	1.061	0.8164	0.9821
Zn-65	-0.09937 U	-0.01465 U	0.003501 U
Zr-95	-0.03019 U	0.02489 U	-0.00114 U
SOF			



Legend

 = Survey Area Boundary

Notes

**Yankee Atomic Power Company
Soil Sample Locations - OOL-03**



Date: October 2003

Revision: 4

Figure: 4

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Station & Surrounding Area

Designator: **OOL-04**

Survey Area Description

Survey area OOL-04 consists of the open land surface area surrounding Sherman Station, property owned by US Gen. Survey area OOL-04 contains about 17923 square meters of soil and asphalt surface area.

Survey area OOL-04 is bounded by the Deerfield River on the north, OOL-03 on the east, both properties owned by US Gen., OOL-02 on the south and OOL-05 on the west property also owned by US Gen.

Sub-surface systems that traverse or connect within OOL-04 include:

- Abandoned street lighting electrical cable.
- Sanitary sewers.

Items of note located within or adjacent to OOL-04 include:

- A portion of the H T and W railroad bed where it crossed the site
- Security light pole #3.
- Temporary office trailers.
- Temporary storage trailers.
- The Sherman Dam access road.
- The Sherman Hydro-electric Station and support structures

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Station & Surrounding Area

Designator: **OOL-04**

Survey Area History

Survey area OOL-04 is not part of the RCA. Survey area OOL-04 was not used for storing radioactive material or processing radioactive waste. There are no radioactive systems present in OOL-04.

Prior to discontinuance of railroad access to the site, spent fuel and high level radioactive waste such as irradiated control rods were shipped using the railroad.

Survey area OOL-04 is likely to be minimally impacted by low levels of radioactivity as a result of surface water run-off.

A wet area located south of and up-slope from Sherman Station identified, as Sherman Spring is known to have contained tritium. The tritium identified in Sherman Spring is assumed to have originated from a leak in the IX Pit that existed during early years of plant operation. The leak from the IX Pit was stopped in May of 1965.

Translocation Pathways

The likely modes and vectors of contamination translocation associated with OOL-04 are via surface run-off from survey areas up slope or as a result of ground water flow.

Site modifications performed within survey area OOL-04 include:

- Raising the elevation of Sherman Dam
- Re-location of the security perimeter fence.
- Installation of the security lighting and camera system.

Modifications performed at the YNPS site in support of decommissioning that changed the configuration of OOL-04 include:

- Change of use for the lower parking lot from vehicle parking to radiation control area/radioactive material area. This area is also used as a receiving area for empty radioactive material shipping containers and as a radioactive shipment preparation area.

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 1).

Decommissioning

No decommissioning activities have been performed for survey area OOL-04.

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Station & Surrounding Area

Designator: **OOL-04**

Findings

Survey area OOL-04 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-04 is minimally impacted with locations likely to contain radioactivity concentrations at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-04 includes all radionuclides identified in the radioactive systems of the plant (Ref 2). The primary radionuclides of concern for survey area OOL-04 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

OOL-04 continues to be potentially impacted by radioactive material migration due to surface run-off from within the RCA, radioactive material packaging and transport and by decommissioning activities.

A soil sample location map (Figure 5) has been prepared to show the distribution of sampling locations in OOL-04. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). Three survey media were assessed in OOL-04, Asphalt, Sediment and Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL. There are separate sets of Tables 1-4 for each survey media. All are evaluated as fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-04 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Asphalt: Mean SOF is none detectable.

Maximum SOF for a single asphalt sample is none detectable.

Minimum SOF for a single asphalt sample is none detectable.

Sediment: Mean SOF is 0.009.

Maximum SOF for a single sediment sample is 0.009. (key# 346) near Sherman Station.

Minimum SOF for a single sediment sample is 0.009. (key# 346) near Sherman Station.

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Station & Surrounding Area Designator: **OOL-04**

Soil: Mean SOF is 0.020.

Maximum SOF for a single soil sample is 0.035. (key# 420) north of the Sherman dam access road.

Minimum SOF for a single soil sample is 0.006. (key# 93) north of the Sherman dam access road.

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-04 is identified as a Class 3 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: Sherman Station & Surrounding Area

Designator: **OOL-04**

Drawings

Figure 7-1A

References

1.	YNPS Decommissioning Plan, Rev. 0.0.
2.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

Underground Systems

OOL-04				
Structure / System	Component	Description	Location	Impacted?
Sewers		from manhole S2 going NW ~85' to manhole S3 then going WNW ~75' to manhole S4; a line from S4 going NNE ~10' then turning E ~33' then apparently ending; then from S4 going WNW ~148' to manhole S5	S3 - ~10' E and ~120' N of NW corner of Office bldg; S4 - ~63' W and ~148' N of NW corner of Office bldg	
Water		from tee W4 (OOL-02) curving N and W ~140' to tee W3 which has one short branch to the N and capped and the other branch S to tee W2	W3 - ~135' N and ~10' W of NW corner of Office bldg	

Table 1
Sum of Fractions
OOL-04 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Radionuclides for which SOF is calculated were not present in samples.

Table 2
Statistical Data Summary -- OOL-04 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ag-108m	pCi/g	0	1	0.000				
Ag-110m	pCi/g	0	1	0.000				
Am-241	pCi/g	0	1	0.000				
Bi-212	pCi/g	0	1	0.000				
Bi-214	pCi/g	1	1	0.511		0.511	0.511	0.511
Ce-144	pCi/g	0	1	0.000				
Co-58	pCi/g	0	1	0.000				
Co-60	pCi/g	0	1	0.000				
Cs-134	pCi/g	0	1	0.000				
Cs-137	pCi/g	0	1	0.000				
Fe-59	pCi/g	0	1	0.000				
K-40	pCi/g	1	1	5.504		5.504	5.504	5.504
Mn-54	pCi/g	0	1	0.000				
Nb-95	pCi/g	0	1	0.000				
Pb-212	pCi/g	1	1	0.318		0.318	0.318	0.318
Pb-214	pCi/g	1	1	0.622		0.622	0.622	0.622
Ra-226	pCi/g	0	1	0.000				
Ru-103	pCi/g	0	1	0.000				
Ru-106	pCi/g	0	1	0.000				
Sb-124	pCi/g	0	1	0.000				
Tl-208	pCi/g	1	1	0.227		0.227	0.227	0.227
Zn-65	pCi/g	0	1	0.000				
Zr-95	pCi/g	0	1	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-04 -- Asphalt
Yankee Nuclear Power Station Rowe, MA
DCGL Asphalt

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ag-108m	0	1	8.52	pCi/g	0	
Ag-110m	0	1		pCi/g	0	
Am-241	0	1	44.35	pCi/g	0	
Bi-212	0	1		pCi/g	0	
Bi-214	1	1		pCi/g	0	0.51
Ce-144	0	1		pCi/g	0	
Co-58	0	1		pCi/g	0	
Co-60	0	1	4.84	pCi/g	0	
Cs-134	0	1	6.71	pCi/g	0	
Cs-137	0	1	12.24	pCi/g	0	
Fe-59	0	1		pCi/g	0	
K-40	1	1		pCi/g	0	5.50
Mn-54	0	1	21.66	pCi/g	0	
Nb-95	0	1		pCi/g	0	
Pb-212	1	1		pCi/g	0	0.32
Pb-214	1	1		pCi/g	0	0.62
Ra-226	0	1		pCi/g	0	
Ru-103	0	1		pCi/g	0	
Ru-106	0	1	68.21	pCi/g	0	
Sb-124	0	1		pCi/g	0	
Tl-208	1	1		pCi/g	0	0.23
Zn-65	0	1		pCi/g	0	
Zr-95	0	1		pCi/g	0	

Table 4
Rad
OOL-04 -- Asphalt (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG001-001 (85)
Sample ID	OG001GUFA001
Date Sampled	7/1/1998
Ag-108m	-0.00148 U
Ag-110m	0.002148 U
Am-241	0 U
Bi-212	0.4235 U
Bi-214	0.5107
Ce-144	-0.1695 U
Co-58	-0.00557 U
Co-60	0.000000001188 U
Cs-134	-0.0101 U
Cs-137	-0.01374 U
Fe-59	-0.01453 U
K-40	5.504
Mn-54	0.005252 U
Nb-95	0.01962 U
Pb-212	0.318
Pb-214	0.6216
Ra-226	0.745 U
Ru-103	-0.001569 U
Ru-106	-0.1142 U
Sb-124	0.001548 U
Tl-208	0.2269
Zn-65	0.04828 U
Zr-95	0.008177 U

Table 1
Sum of Fractions
OOL-04 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions	
346	OF-57	OFTS-57		0.009
			Min	0.009
			Max	0.009
			Mean	0.009

Table 2
Statistical Data Summary -- OOL-04 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Co-58	pCi/g	0	1	0.000				
Co-60	pCi/g	0	1	0.000				
Cs-134	pCi/g	0	1	0.000				
Cs-137	pCi/g	1	1	0.105		0.105	0.105	0.105
Mn-54	pCi/g	0	1	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-04 -- Sediment
Yankee Nuclear Power Station Rowe, MA
DCGL_Sediment

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Co-58	0	1		pCi/g	0	
Co-60	0	1	4.84	pCi/g	0	
Cs-134	0	1	6.71	pCi/g	0	
Cs-137	1	1	12.24	pCi/g	0	0.11
Mn-54	0	1	21.66	pCi/g	0	

Table 4

Rad

OOL-04 -- Sediment (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-57 (346)
Sample ID	OFTS-57
Date Sampled	5/17/1993
Co-58	0.065 UM
Co-60	0.08 UM
Cs-134	0.057 UM
Cs-137	0.105
Mn-54	0.067 UM
SOF	0.009

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 1
Sum of Fractions
OOL-04 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
420	OF-252	OFTS-252	0.035
418	OF-250	OFTS-250	0.018
347	OF-58	OFTS-58	0.030
99	OG001-015	OG001GUFD015	0.010
95	OG001-011	OG001GUFD011	0.020
93	OG001-009	OG001GUFD009	0.006
		Min	0.006
		Max	0.035
		Mean	0.020

Table 2
Statistical Data Summary -- OOL-04 -- Soil
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	6	6	0.982	0.045	0.918	1.039	0.994
Ag-108m	pCi/g	0	11	0.000				
Ag-110m	pCi/g	0	6	0.000				
Am-241	pCi/g	0	6	0.000				
Bi-212	pCi/g	5	5	0.887	0.163	0.687	1.020	0.976
Bi-214	pCi/g	6	6	0.537	0.075	0.474	0.679	0.514
Ce-144	pCi/g	0	6	0.000				
Co-58	pCi/g	0	13	0.000				
Co-60	pCi/g	0	13	0.000				
Cs-134	pCi/g	0	13	0.000				
Cs-137	pCi/g	6	13	0.242	0.136	0.076	0.424	0.228
Fe-59	pCi/g	0	6	0.000				
K-40	pCi/g	6	6	15.435	7.208	1.020	20.190	17.610
Mn-54	pCi/g	1	13	0.033		0.033	0.033	0.033
Nb-95	pCi/g	0	6	0.000				
Pb-212	pCi/g	6	6	0.896	0.103	0.696	0.972	0.929
Pb-214	pCi/g	6	6	0.520	0.040	0.465	0.567	0.525
Ra-226	pCi/g	3	3	1.429	0.280	1.176	1.730	1.380
Ru-103	pCi/g	0	6	0.000				
Ru-106	pCi/g	0	6	0.000				
Sb-124	pCi/g	0	6	0.000				
Tl-208	pCi/g	5	5	0.915	0.073	0.863	1.041	0.896
Zn-65	pCi/g	0	6	0.000				
Zr-95	pCi/g	0	6	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-04 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL_Soil

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	6	6		pCi/g	0	1.04
Ag-108m	0	11	8.52	pCi/g	0	
Ag-110m	0	6		pCi/g	0	
Am-241	0	6	44.35	pCi/g	0	
Bi-212	5	5		pCi/g	0	1.02
Bi-214	6	6		pCi/g	0	0.68
Ce-144	0	6		pCi/g	0	
Co-58	0	13		pCi/g	0	
Co-60	0	13	4.84	pCi/g	0	
Cs-134	0	13	6.71	pCi/g	0	
Cs-137	6	13	12.24	pCi/g	0	0.42
Fe-59	0	6		pCi/g	0	
K-40	6	6		pCi/g	0	20.19
Mn-54	1	13	21.66	pCi/g	0	0.03
Nb-95	0	6		pCi/g	0	
Pb-212	6	6		pCi/g	0	0.97
Pb-214	6	6		pCi/g	0	0.57
Ra-226	3	3		pCi/g	0	1.73
Ru-103	0	6		pCi/g	0	
Ru-106	0	6	68.21	pCi/g	0	
Sb-124	0	6		pCi/g	0	
Tl-208	5	5		pCi/g	0	1.04
Zn-65	0	6		pCi/g	0	
Zr-95	0	6		pCi/g	0	

Table 4

Rad

OOL-04 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-249 (417)	OF-250 (418)	OF-252 (420)	OF-253 (421)	OF-254 (422)	OF-55 (344)
Sample ID	OFTS-249	OFTS-250	OFTS-252	OFTS-253	OFTS-254	OFTS-55
Date Sampled	11/23/1994	11/23/1994	12/5/1994	12/5/1994	12/5/1994	5/17/1993
Ac-228						
Ag-108m	0.051 UM	0.053 UM	0.055 UM	0.038 UM	0.049 UM	
Ag-110m						
Am-241						
Bi-212						
Bi-214						
Ce-144						
Co-58	0.061 UM	0.064 UM	0.071 UM	0.048 UM	0.054 UM	0.089 UM
Co-60	0.0731 UM	0.0745 UM	0.0724 UM	0.0654 UM	0.0791 UM	0.122 UM
Cs-134	0.057 UM	0.068 UM	0.064 UM	0.043 UM	0.052 UM	0.093 UM
Cs-137	0.076 UM	0.224	0.424	0.0576 UM	0.0926 UM	0.0905 UM
Fe-59						
K-40						
Mn-54	0.056 UM	0.071 UM	0.071 UM	0.046 UM	0.065 UM	0.107 UM
Nb-95						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Tl-208						
Zn-65						
Zr-95						
SOF		0.018	0.035			

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-04 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OF-58 (347) OFTS-58 5/17/1993	OG001-009 (93) OG001GUFD009 7/1/1998	OG001-011 (95) OG001GUFD011 7/1/1998	OG001-013 (97) OG001GUFD013 7/1/1998	OG001-014 (98) OG001GUFD014 7/1/1998
Ac-228		0.9993	0.9183	0.9896	1.005
Ag-108m		0.02601 U	-0.009533 U	0.00618 U	0.00009283 U
Ag-110m		0.004374 U	0.004811 U	-0.02268 U	0.002892 U
Am-241		0 U	0 U	0 U	0 U
Bi-212		0.9763	0.7331		1.017
Bi-214		0.4742	0.6787	0.5557	0.483
Ce-144		-0.08076 U	0.04514 U	-0.1944 U	-0.04085 U
Co-58	0.089 UM	-0.00107 U	-0.0121 U	0.003033 U	-0.009647 U
Co-60	0.12 UM	0.002766 U	0.003944 U	0.002172 U	-0.007427 U
Cs-134	0.076 UM	-0.0331 U	-0.02047 U	-0.02445 U	-0.05696 U
Cs-137	0.372	0.0757	0.232	-0.01733 U	0.03504 U
Fe-59		-0.01157 U	0.04481 U	0.006027 U	0 U
K-40		16.38	20.19	17.62	1.02
Mn-54	0.101 UM	0.009868 U	0.03256	-0.007897 U	-0.02511 U
Nb-95		0.01436 U	0.007367 U	0.01782 U	0.02487 U
Pb-212		0.8924	0.901	0.6964	0.9724
Pb-214		0.5479	0.4885	0.5022	0.5668
Ra-226		1.176		1.38	
Ru-103		0.00271 U	0.002698 U	0.006936 U	0.002799 U
Ru-106		-0.08457 U	0.04418 U	0.2282 U	0 U
Sb-124		0 U	0.01647 U	0.01647 U	0.01136 U
Tl-208		1.041	0.9057	0.8955	0.8634
Zn-65		0.08543 U	0.0006225 U	-0.003723 U	0.1043 U
Zr-95		0.0006676 U	0.01343 U	-0.01442 U	0.01698 U
SOF	0.03	0.006	0.02		

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

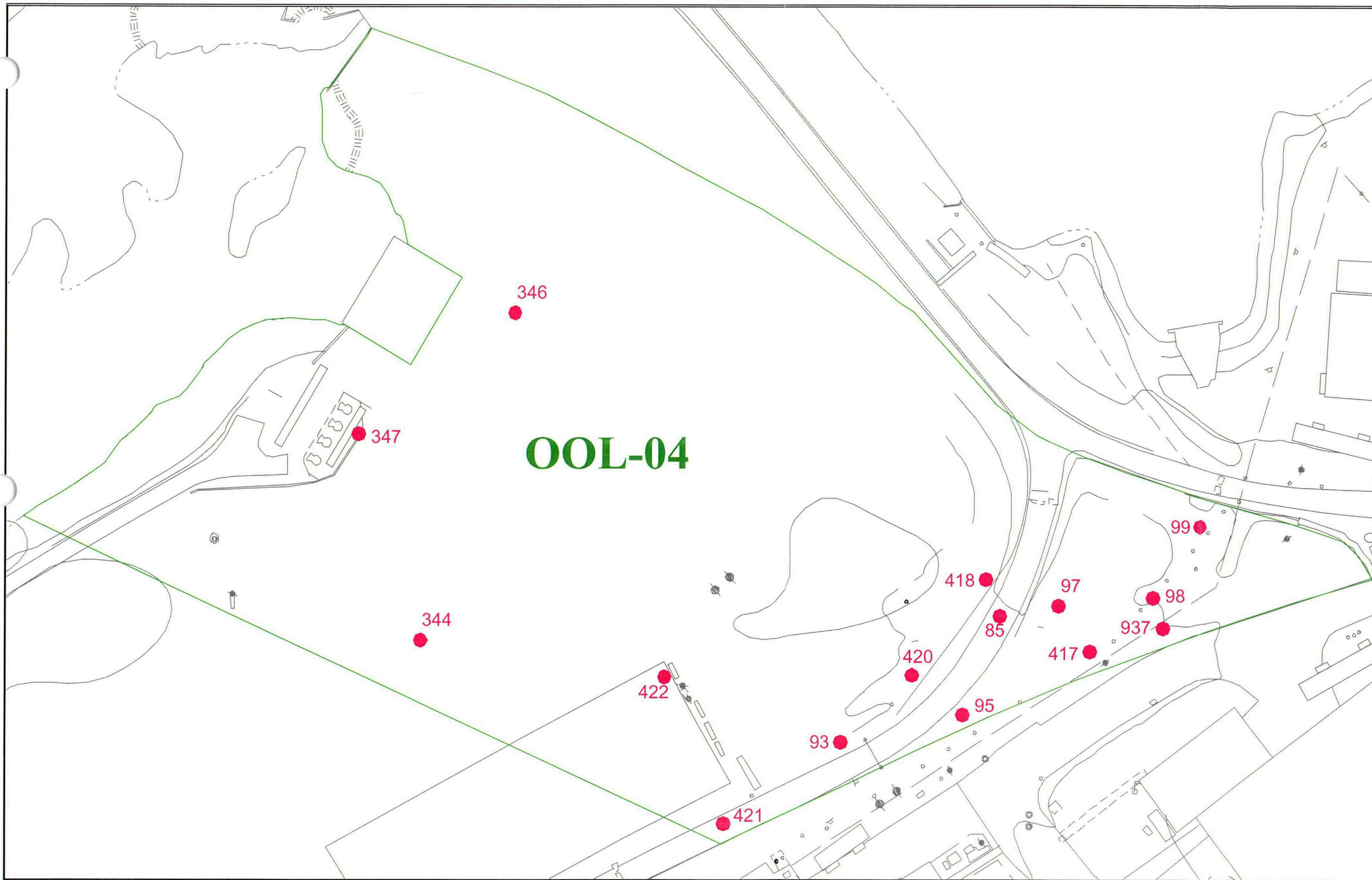
Rad

OOL-04 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG001-015 (99)	OG012-025 (937)
Sample ID	OG001GUFD015	OG012GUFD025
Date Sampled	7/1/1998	10/7/1998
Ac-228	1.039	0.94
Ag-108m	-0.0149 U	-0.0237 U
Ag-110m	-0.008725 U	0.0175 U
Am-241	0 U	0 U
Bi-212	0.6867	1.02
Bi-214	0.5197	0.508
Ce-144	-0.01714 U	0.0717 U
Co-58	0.006064 U	0.01 U
Co-60	0.01963 U	0.00124 U
Cs-134	-0.04641 U	-0.00192 U
Cs-137	0.1217	0.0074 U
Fe-59	-0.07991 U	-0.0106 U
K-40	19.8	17.6
Mn-54	0.0002788 U	0.0266 U
Nb-95	-0.02611 U	0.00358 U
Pb-212	0.9561	0.958
Pb-214	0.5486	0.465
Ra-226		1.73
Ru-103	0.005639 U	-0.0148 U
Ru-106	-0.4312 U	-0.0976 U
Sb-124	-0.000648 U	0 U
Tl-208		0.87
Zn-65	-0.05205 U	0.00772 U
Zr-95	0.003969 U	-0.00405 U
SOF	0.01	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

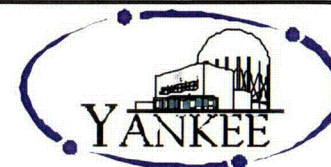


Legend

— Survey Area Boundary

Notes

Yankee Atomic Power Company
Soil Sample Locations - OOL-04



Date: October 2003

Revision: 4

Figure: 5

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Deerfield River Frontage Designator: **OOL-05**

Survey Area Description

Survey area OOL-05 consists of the US Gen. owned land area located between, the YAEC property and the Deerfield River. Survey area OOL-05 contains about 28637 square meters of soil and asphalt surface area.

Survey area OOL-05 is bounded by the Deerfield River on the north, OOL-04 on the east, both properties owned by US Gen., by OOL-06 on the south and non-impacted US Gen. property on the west.

Sub-surface systems that traverse or connect within OOL-05 include:

- Sanitary sewers system (tank, pump house and leaching fields, both the active and abandoned).
- The west storm drain system

Items of note located within or adjacent to OOL-05 include:

- A portion of the H T and W railroad bed where it crossed the site
- Temporary office trailers.
- Temporary storage trailers.
- The Sherman Dam, access road.
- The YNPS lower parking lot
- Temporary storage locations for surplus material

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Deerfield River Frontage

Designator: OOL-05

Survey Area History

Survey area OOL-05 is not part of the RCA. Survey area OOL-05 was not used for storing radioactive material or processing radioactive waste. There are no radioactive systems present in OOL-05.

Survey area OOL-05 was used as a material storage area by YNPS. Survey area OOL-05 is likely to be minimally impacted by low levels of radioactivity as a result of surface water run-off and material storage.

Site modifications performed within survey area OOL-05 include:

- Raising the elevation of Sherman Dam
- Construction of the YNPS lower parking lot
- Construction of the YNPS new leaching field.

Modifications performed at the YNPS site in support of decommissioning that changed the configuration of OOL-05 include:

- Placement of concrete blocks as vehicle security barriers in the Sherman Dam access road.
- Temporary storage of YNPS surplus materials

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 1).

Decommissioning

No decommissioning activities have been performed for survey area OOL-05.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Deerfield River Frontage Designator: **OOL-05**

Findings

Survey area OOL-05 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-05 is minimally impacted by surface water run-off, storm drain system and concentration low levels of radioactivity present in the sanitary sewer system solids. Survey area OOL-05 is likely to contain residual radioactivity concentrations at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-05 includes all radionuclides identified in the radioactive systems of the plant (Ref 2). The primary radionuclides of concern for survey area OOL-05 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

OOL-05 continues to be potentially impacted by radioactive material migration due to surface water run-off, storm drain effluents, by operation of the sanitary sewer system, material storage and by decommissioning activities.

A soil sample location map (Figure 6) has been prepared to show the distribution of sampling locations in OOL-05. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). Three survey media were assessed in OOL-05, Sediment, Sod and Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL. There are separate sets of Tables 1-4 for each survey media. All are evaluated as fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-05 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Sediment: Mean SOF is 0.038.

Maximum SOF for a single sediment sample is 0.107. (key# 2975)

Minimum SOF for a single sediment sample is 0.009. (key# 2977)

Sod: Mean SOF is none detectable.

Maximum SOF for a single sod sample is none detectable.

Minimum SOF for a single sod sample is none detectable.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Deerfield River Frontage

Designator: **OOL-05**

Soil: Mean SOF is 0.018.

Maximum SOF for a single soil sample is 0.034. (key# 345)

Minimum SOF for a single soil sample is 0.001. (key# 128)

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-05 is identified as a Class 3 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Deerfield River Frontage

Designator: **OOL-05**

Drawings

9699 FB 2 B

Figure 7-1A

References

1.	YNPS Decommissioning Plan, Rev. 0.0.
2.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

Table 1
Sum of Fractions
OOL-05 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
2977	42H	G32131	0.009
2976	42G	G32130	0.015
2975	42F	G32129	0.107
2974	42E	G32128	0.077
2973	42D	G32127	0.042
2972	42C	G32126	0.016
2971	42B	G32125	0.043
2970	42A	G32124	0.022
2969	42	G32123	0.010
			Min 0.009
			Max 0.107
			Mean 0.038

Table 2
Statistical Data Summary -- OOL-05 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
AcTh-228	pCi/g	9	9	0.751	0.219	0.480	1.120	0.710
Ag-110m	pCi/g	0	9	0.000				
Ba-140	pCi/g	0	9	0.000				
Be-7	pCi/g	0	9	0.000				
Ce-141	pCi/g	0	9	0.000				
Ce-144	pCi/g	0	9	0.000				
Co-57	pCi/g	0	9	0.000				
Co-58	pCi/g	0	9	0.000				
Co-60	pCi/g	4	9	0.185	0.091	0.109	0.317	0.157
Cr-51	pCi/g	0	9	0.000				
Cs-134	pCi/g	0	9	0.000				
Cs-137	pCi/g	9	9	0.255	0.156	0.114	0.521	0.192
Fe-59	pCi/g	1	9	0.135		0.135	0.135	0.135
I-131	pCi/g	0	9	0.000				
I-133	pCi/g	0	9	0.000				
K-40	pCi/g	9	9	14.600	1.770	11.800	17.900	14.400
Mn-54	pCi/g	0	9	0.000				
Mo-99	pCi/g	0	9	0.000				
Np-239	pCi/g	0	9	0.000				
Ru-103	pCi/g	0	9	0.000				
Ru-106	pCi/g	0	9	0.000				
Sb-124	pCi/g	0	9	0.000				
Se-75	pCi/g	0	9	0.000				
Tel-132	pCi/g	0	9	0.000				
Zn-65	pCi/g	0	9	0.000				
Zr-95	pCi/g	0	9	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-05 -- Sediment
Yankee Nuclear Power Station Rowe, MA
DCGL_Sediment

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
AcTh-228	9	9		pCi/g	0	1.12
Ag-110m	0	9		pCi/g	0	
Ba-140	0	9		pCi/g	0	
Be-7	0	9		pCi/g	0	
Ce-141	0	9		pCi/g	0	
Ce-144	0	9		pCi/g	0	
Co-57	0	9		pCi/g	0	
Co-58	0	9		pCi/g	0	
Co-60	4	9	4.84	pCi/g	0	0.32
Cr-51	0	9		pCi/g	0	
Cs-134	0	9	6.71	pCi/g	0	
Cs-137	9	9	12.24	pCi/g	0	0.52
Fe-59	1	9		pCi/g	0	0.14
I-131	0	9		pCi/g	0	
I-133	0	9		pCi/g	0	
K-40	9	9		pCi/g	0	17.90
Mn-54	0	9	21.66	pCi/g	0	
Mo-99	0	9		pCi/g	0	
Np-239	0	9		pCi/g	0	
Ru-103	0	9		pCi/g	0	
Ru-106	0	9	68.21	pCi/g	0	
Sb-124	0	9		pCi/g	0	
Se-75	0	9		pCi/g	0	
TeI-132	0	9		pCi/g	0	
Zn-65	0	9		pCi/g	0	
Zr-95	0	9		pCi/g	0	

Table 4

Rad

OOL-05 -- Sediment (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	42 (2969)	42A (2970)	42B (2971)	42C (2972)	42D (2973)	42E (2974)	42F (2975)
Sample ID	G32123	G32124	G32125	G32126	G32127	G32128	G32129
Date Sampled	10/25/1996	10/25/1996	10/25/1996	10/25/1996	10/25/1996	10/25/1996	10/25/1996
AcTh-228	0.85	0.88	0.5	0.71	0.66	0.97	1.12
Ag-110m	-0.004 U	-0.007 U	0.049 U	-0.02 U	0.015 U	0.003 U	0.041 U
Ba-140	-0.036 U	-0.038 U	-0.046 U	-0.047 U	0.051 U	0.049 U	-0.034 U
Be-7	-0.15 U	0.37 U	0.18 U	-0.19 U	0.33 U	0.24 U	0.28 U
Ce-141	-0.073 U	0 U	0.034 U	-0.042 U	0.066 U	-0.046 U	-0.075 U
Ce-144	0.04 U	-0.04 U	0.02 U	0.06 U	-0.02 U	0.13 U	-0.26 U
Co-57	-0.005 U	-0.022 U	-0.019 U	-0.022 U	0.022 U	-0.001 U	0.004 U
Co-58	-0.031 U	0.013 U	0.027 U	-0.03 U	0 U	0.01 U	0.001 U
Co-60	-0.077 U	0.1 U	0.109	0.061 U	0.147	0.167	0.317
Cr-51	0.08 U	0.02 U	-0.09 U	0.25 U	-0.26 U	-0.46 U	0.35 U
Cs-134	0.043 U	-0.024 U	0.025 U	0.001 U	0 U	0.004 U	-0.035 U
Cs-137	0.117	0.269	0.253	0.192	0.145	0.521	0.506
Fe-59	-0.08 U	0.04 U	0 U	-0.104 U	0.048 U	-0.094 U	0.072 U
I-131	-0.13 U	-0.16 U	0.1 U	0.019 U	0.2 U	-0.11 U	0.05 U
I-133	0 U	0 U	0 U	0 U	0 U	0 U	0 U
K-40	13.9	15.1	14.4	16.2	13.1	15.1	17.9
Mn-54	-0.034 U	0.005 U	0.032 U	0.009 U	0.009 U	0.01 U	-0.02 U
Mo-99	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Np-239	0 U	0 U	0 U	0 U	0 U	0 U	0 U
Ru-103	0.036 U	0.009 U	0.012 U	-0.016 U	0.002 U	0.042 U	0.022 U
Ru-106	-0.2 U	0.05 U	-0.05 U	0.11 U	-0.2 U	0.05 U	-0.25 U
Sb-124	-0.039 U	-0.041 U	-0.031 U	0 U	-0.028 U	-0.029 U	0.032 U
Se-75	-0.016 U	0.007 U	-0.014 U	-0.014 U	0 U	-0.009 U	0.058 U
Tel-132	-1 U	2.2 U	-0.6 U	-0.3 U	3.1 U	2.6 U	0.4 U
Zn-65	-0.049 U	-0.005 U	0.046 U	-0.058 U	0.034 U	0.05 U	0.08 U
Zr-95	0.025 U	0.033 U	-0.016 U	0.012 U	0.092 U	0.05 U	0.012 U
SOF	0.01	0.022	0.043	0.016	0.042	0.077	0.107

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Sediment Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-05 -- Sediment (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	42G (2976)	42H (2977)
Sample ID	G32130	G32131
Date Sampled	10/25/1996	10/25/1996
AcTh-228	0.59	0.48
Ag-110m	0.016 U	0.036 U
Ba-140	-0.019 U	-0.013 U
Be-7	-0.14 U	-0.21 U
Ce-141	0.041 U	-0.011 U
Ce-144	0.03 U	-0.11 U
Co-57	0.009 U	0.005 U
Co-58	0.006 U	0.002 U
Co-60	0.064 U	-0.018 U
Cr-51	0.02 U	-0.05 U
Cs-134	-0.011 U	0 U
Cs-137	0.178	0.114
Fe-59	-0.078 U	0.135
I-131	-0.147 U	-0.038 U
I-133	0 U	0 U
K-40	11.8	13.9
Mn-54	-0.019 U	-0.03 U
Mo-99	0 U	0 U
Np-239	0 U	0 U
Ru-103	-0.005 U	0.024 U
Ru-106	0.29 U	0.18 U
Sb-124	-0.034 U	0 U
Se-75	-0.001 U	0.017 U
TeI-132	0.1 U	1.6 U
Zn-65	-0.148 U	-0.002 U
Zr-95	0.022 U	0.009 U
SOF	0.015	0.009

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 1
Sum of Fractions
OOL-05 -- Sod
Yankee Nuclear Power Station Rowe, MA

Radionuclides for which SOF is calculated were not present in samples.

Table 2
Statistical Data Summary – OOL-05 -- Sod
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Co-58	pCi/g	0	1	0.000				
Co-60	pCi/g	0	1	0.000				
Cs-134	pCi/g	0	1	0.000				
Cs-137	pCi/g	0	1	0.000				
Mn-54	pCi/g	0	1	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-05 -- Sod
Yankee Nuclear Power Station Rowe, MA
DCGL_Sod

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Co-58	0	1		pCi/g	0	
Co-60	0	1	4.84	pCi/g	0	
Cs-134	0	1	6.71	pCi/g	0	
Cs-137	0	1	12.24	pCi/g	0	
Mn-54	0	1	21.66	pCi/g	0	

Table 4

Rad

OOL-05 -- Sod (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-54 (343)
Sample ID	OFTS-54A
Date Sampled	5/17/1993
Co-58	0.101 UM
Co-60	0.113 UM
Cs-134	0.078 UM
Cs-137	0.133 UM
Mn-54	0.1 UM

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 1
Sum of Fractions
OOL-05 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions	
345	OF-56	OFTS-56		0.034
128	OG015-032	OG015GUFD032		0.001
			Min	0.001
			Max	0.034
			Mean	0.018

Table 2
Statistical Data Summary -- OOL-05 -- Soil
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	11	11	0.584	0.133	0.411	0.822	0.572
Ag-108m	pCi/g	0	11	0.000				
Ag-110m	pCi/g	1	11	0.051		0.051	0.051	0.051
Am-241	pCi/g	0	11	0.000				
Bi-212	pCi/g	7	10	0.661	0.130	0.471	0.844	0.698
Bi-214	pCi/g	11	11	0.430	0.071	0.370	0.608	0.406
Ce-144	pCi/g	0	11	0.000				
Co-58	pCi/g	0	13	0.000				
Co-60	pCi/g	0	13	0.000				
Cs-134	pCi/g	0	13	0.000				
Cs-137	pCi/g	1	13	0.411		0.411	0.411	0.411
Eu-152	pCi/g	0	1	0.000				
Fe-59	pCi/g	1	11	0.073		0.073	0.073	0.073
K-40	pCi/g	11	11	13.946	3.595	10.810	22.200	13.350
Mn-54	pCi/g	1	13	0.030		0.030	0.030	0.030
Nb-95	pCi/g	0	11	0.000				
Pb-212	pCi/g	11	11	0.565	0.171	0.277	0.879	0.562
Pb-214	pCi/g	11	11	0.451	0.085	0.352	0.629	0.458
Ra-226	pCi/g	5	7	1.833	0.759	1.203	3.146	1.550
Ru-103	pCi/g	0	11	0.000				
Ru-106	pCi/g	0	11	0.000				
Sb-124	pCi/g	0	11	0.000				
Sb-125	pCi/g	0	1	0.000				
Tl-208	pCi/g	11	11	0.559	0.136	0.356	0.757	0.501
Zn-65	pCi/g	0	11	0.000				
Zr-95	pCi/g	0	11	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-05 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL_Soil

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	11	11		pCi/g	0	0.82
Ag-108m	0	11	8.52	pCi/g	0	
Ag-110m	1	11		pCi/g	0	0.05
Am-241	0	11	44.35	pCi/g	0	
Bi-212	7	10		pCi/g	0	0.84
Bi-214	11	11		pCi/g	0	0.61
Ce-144	0	11		pCi/g	0	
Co-58	0	13		pCi/g	0	
Co-60	0	13	4.84	pCi/g	0	
Cs-134	0	13	6.71	pCi/g	0	
Cs-137	1	13	12.24	pCi/g	0	0.41
Eu-152	0	1	12.06	pCi/g	0	
Fe-59	1	11		pCi/g	0	0.07
K-40	11	11		pCi/g	0	22.20
Mn-54	1	13	21.66	pCi/g	0	0.03
Nb-95	0	11		pCi/g	0	
Pb-212	11	11		pCi/g	0	0.88
Pb-214	11	11		pCi/g	0	0.63
Ra-226	5	7		pCi/g	0	3.15
Ru-103	0	11		pCi/g	0	
Ru-106	0	11	68.21	pCi/g	0	
Sb-124	0	11		pCi/g	0	
Sb-125	0	1	37.73	pCi/g	0	
Tl-208	11	11		pCi/g	0	0.76
Zn-65	0	11		pCi/g	0	
Zr-95	0	11		pCi/g	0	

Table 4

Rad

OOL-05 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-54 (343)	OF-56 (345)	OG015-021 (119)	OG015-022 (120)	OG015-024 (122)
Sample ID	OFTS-54B	OFTS-56	OG015GUFD021	OG015GUFD022	OG015GUFD024
Date Sampled	5/17/1993	5/17/1993	8/31/1998	8/3/1998	8/31/1998
Ac-228			0.6338	0.8216	0.7294
Ag-108m			0.0052 U	0.01567 U	0.01035 U
Ag-110m			-0.03087 U	-0.01321 U	-0.02785 U
Am-241			0 U	0 U	0 U
Bi-212				0.8438	0.7313
Bi-214			0.4249	0.5097	0.4022
Ce-144			-0.0554 U	0.083 U	-0.001734 U
Co-58	0.065 UM	0.069 UM	-0.009989 U	-0.02103 U	0.008342 U
Co-60	0.119 UM	0.107 UM	0 U	-0.02037 U	0.00277 U
Cs-134	0.071 UM	0.087 UM	-0.1671 U	-0.005146 U	-0.03781 U
Cs-137	0.0997 UM	0.411	-0.004477 U	0.0254 U	0.01121 U
Eu-152					
Fe-59			0.03494 U	-0.08512 U	-0.0528 U
K-40			13.35	19.31	13.4
Mn-54	0.067 UM	0.087 UM	-0.004293 U	-0.008024 U	0.002666 U
Nb-95			-0.005282 U	0.05138 U	-0.005906 U
Pb-212			0.6812	0.8789	0.6797
Pb-214			0.4739	0.5311	0.4997
Ra-226			1.203	3.146	1.747
Ru-103			-0.0196 U	0.01458 U	-0.0171 U
Ru-106			0.07983 U	0.02096 U	-0.07536 U
Sb-124			0 U	0 U	0.0205 U
Sb-125					
Tl-208			0.6642	0.7568	0.7101
Zn-65			-0.02734 U	0.05955 U	0.01697 U
Zr-95			0.05085 U	0.04763 U	-0.01068 U
SOF		0.034			

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-05 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG015-025 (123)	OG015-026 (124)	OG015-032 (128)	OG015-028 (125)
Sample ID	OG015GUFD025	OG015GUFD026	OG015GUFD027	OG015GUFD028
Date Sampled	8/31/1998	8/31/1998	8/31/1998	8/31/1998
Ac-228	0.4581	0.5259	0.572	0.411
Ag-108m	0.006715 U	0.003033 U	-0.0045 U	0.009131 U
Ag-110m	0.01654 U	0.01239 U	0.0505	0.01372 U
Am-241	0 U	0 U	0 U	0 U
Bi-212	0.4713	42.14 U	0.728	0.641
Bi-214	0.3986	0.3823	0.608	0.3698
Ce-144	-0.006704 U	0.134 U	-0.0183 U	-0.1735 U
Co-58	-0.01718 U	0.0001375 U	-0.00308 U	-0.02561 U
Co-60	0.003162 U	-0.003215 U	0.00914 U	-0.03547 U
Cs-134	-0.007067 U	0.01098 U	-0.169 U	-0.04487 U
Cs-137	0.003729 U	-0.01983 U	-0.00249 U	-0.02194 U
Eu-152	0.004979 U			
Fe-59	0.07267	0.0417 U	0.0203 U	0.02752 U
K-40	10.81	12.66	22.2	11.42
Mn-54	-0.0002842 U	0.003526 U	-0.00318 U	-0.003767 U
Nb-95	-0.005237 U	-0.01383 U	-0.0154 U	-0.006171 U
Pb-212	0.3614	0.5331	0.562	0.2765
Pb-214	0.3534	0.4576	0.629	0.3865
Ra-226		1.52		
Ru-103	0.01649 U	0.009126 U	0.0104 U	0.000501 U
Ru-106	0.1979 U	0.0571 U	0.15 U	0.1335 U
Sb-124	0.03153 U	-0.003805 U	0.0142 U	0.03629 U
Sb-125				0.01979 U
Tl-208	0.4761	0.4858	0.555	0.3557
Zn-65	-0.03449 U	-0.03999 U	0.0624 U	0.005663 U
Zr-95	0.03138 U	-0.02881 U	-0.00484 U	0.01193 U
SOF				

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-05 -- Soil (pCi/g)

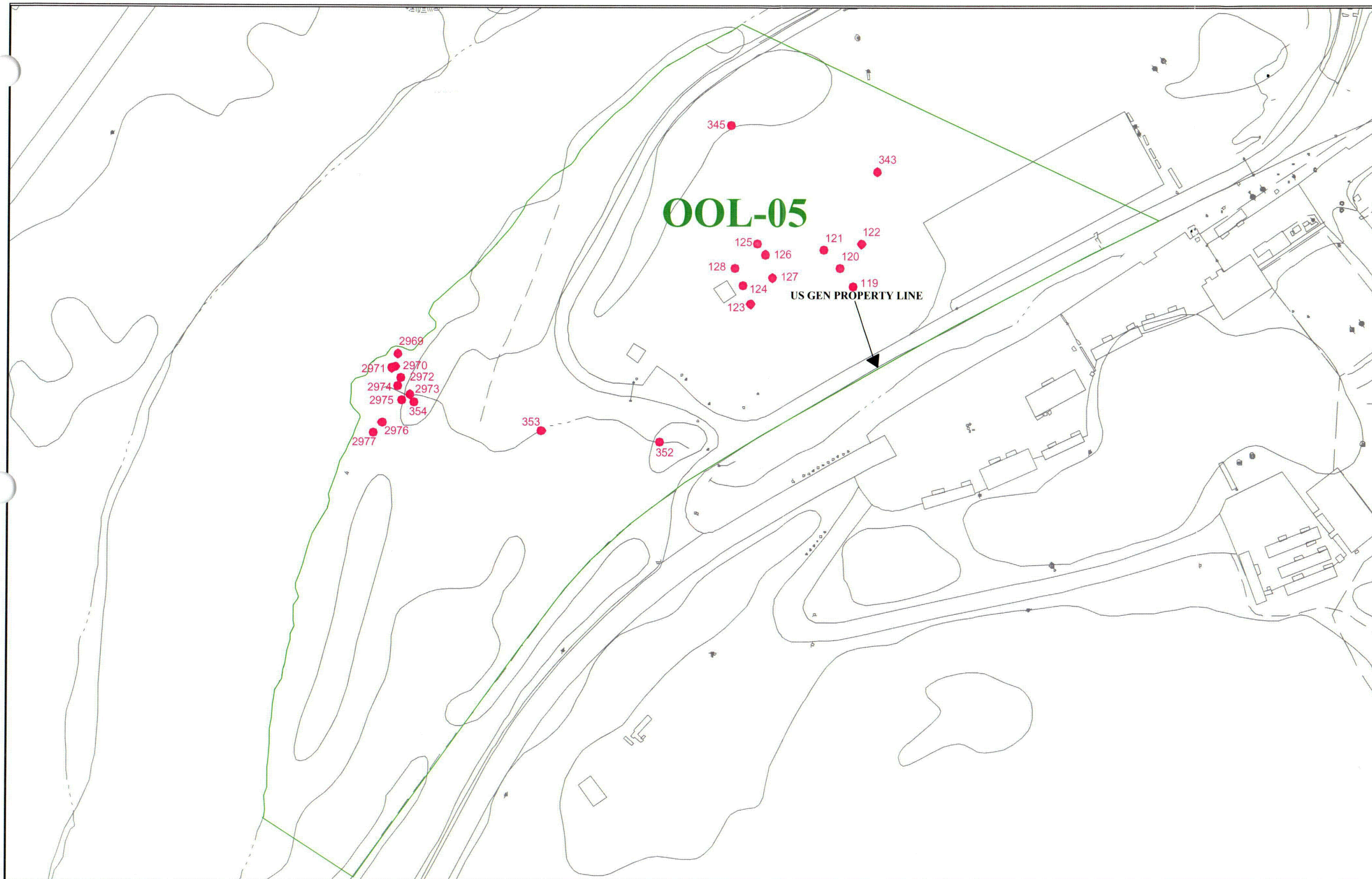
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG015-029 (126)	OG015-030 (127)	OG015-024 (122)	OG015-032 (128)
Sample ID	OG015GUFD029	OG015GUFD030	OG015GUFD031	OG015GUFD032
Date Sampled	8/31/1998	8/31/1998	8/31/1998	8/31/1998
Ac-228	0.5431	0.6041	0.709	0.4106
Ag-108m	0.006256 U	0.003091 U	0.00259 U	-0.007811 U
Ag-110m	-0.02571 U	0.03035 U	-0.0335 U	0.006602 U
Am-241	0 U	0 U	0 U	0 U
Bi-212	0.3194 U	0.5153	0.698	0.3598 U
Bi-214	0.4422	0.4059	0.406	0.3763
Ce-144	0.06303 U	-0.1163 U	-0.0796 U	-0.04688 U
Co-58	-0.01636 U	0.01001 U	0.0109 U	-0.009479 U
Co-60	0.0124 U	-0.03308 U	0.00319 U	0 U
Cs-134	-0.05493 U	-0.01877 U	-0.0115 U	-0.08731 U
Cs-137	-0.01542 U	0.01347 U	0.0139 U	-0.0105 U
Eu-152				
Fe-59	0.03431 U	0.01399 U	-0.065 U	0.04637 U
K-40	11.57	13.98	13.6	11.11
Mn-54	-0.005632 U	-0.02383 U	0.00394 U	0.02969
Nb-95	0.0269 U	0.0251 U	0.0352 U	0.04223 U
Pb-212	0.4962	0.5777	0.721	0.4473
Pb-214	0.4169	0.3516	0.482	0.3754
Ra-226	0.9751 U		1.55	1.084 U
Ru-103	0.01849 U	0.0107 U	0.00219 U	0.006272 U
Ru-106	-0.3421 U	0.09684 U	0.0798 U	0.1106 U
Sb-124	-0.01571 U	-0.008964 U	0.0112 U	-0.03963 U
Sb-125				
Tl-208	0.5008	0.4848	0.738	0.4238
Zn-65	-0.1779 U	-0.05106 U	-0.104 U	-0.09589 U
Zr-95	-0.00986 U	0.00291 U	0.0209 U	0.02619 U
SOF				0.001

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

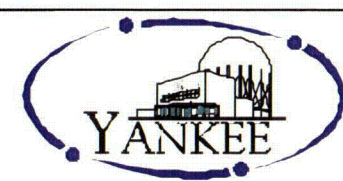


Legend

 Survey Area Boundary

Notes

Yankee Atomic Power Company
Soil Sample Locations - OOL-05



Date: October 2003

Revision: 4

Figure: 6

Historical Site Assessment and Classification Summary

Survey Area Name: Yankee West Access

Designator: **OOL-06**

Survey Area Description

Survey area OOL-06 consists of land area that lies to the west of the site. Survey area OOL-06 contains about 37281 square meters of soil and asphalt surface area.

Survey area OOL-06 is bounded by OOL-05 on the north, OOL-02 and OOL-08 on the east, by OOL-08 on the south and non-impacted YAEC owned property on the west.

Sub-surface systems that traverse or connect within OOL-06 include:

- Sanitary sewers system (tank, pump house and leaching fields, both the active and abandoned systems).
- Storm drain system
- Mass Electric power line feed to the YNPS site

Items of note located within or adjacent to OOL-06 include:

- The terminus of Yankee Road (a public way)
- Temporary office trailers.
- Temporary storage trailers.
- The Sherman Dam Access Road.
- The YNPS main parking lot
- Temporary storage locations for surplus material
- Location of soil deposition from within the YNPS site (OOL-07)
- The YNPS site administration building
- The YNPS site administration building access road
- The YNPS site administration building sanitary sewer system, (tanks and leach fields both active and abandoned).
- Security, vehicles access gate and barrier.

Historical Site Assessment and Classification Summary

Survey Area Name: Yankee West Access

Designator: OOL-06

Survey Area History

Survey area OOL-06 is not part of the RCA. There are no radioactive systems present in OOL-06. Survey area OOL-06 was not used for storing radioactive material or processing or packaging radioactive waste.

Survey Area OOL-06 contained the main access point for vehicle and personnel access to and egress from the YNPS site. Radioactive material shipments traversed survey area OOL-06 while accessing and leaving the YNPS site.

Survey area OOL-06 was used as a material storage area by YNPS. Survey area OOL-06 is likely to be minimally impacted by low levels of radioactivity as a result of surface water run-off and material storage.

Site modifications performed within survey area OOL-06 include:

- Construction of the MASS Electric power feed line to the YNPS site
- Construction of the turbine spindle storage pedestal.
- Construction of the waste compactor.
- Construction of the sand and salt shed.
- Construction of the enhanced security vehicle gate and barrier
- Modification of the YNPS administration building sanitary sewer leaching field.

Modifications performed at the YNPS site in support of decommissioning that changed the configuration of OOL-06 include:

- Construction of the Mass Electric power line feed.

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 1).

Decommissioning

No decommissioning activities have been performed for survey area OOL-06.

Historical Site Assessment and Classification Summary

Survey Area Name: Yankee West Access

Designator: OOL-06

Findings

Survey area OOL-06 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-06 is minimally impacted by surface water run-off, storm drain system and low levels of radioactivity present in the sanitary sewer system solids. Survey area OOL-06 is likely to contain residual radioactivity concentrations at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-06 includes all radionuclides identified in the radioactive systems of the plant (Ref 2). The primary radionuclides of concern for survey area OOL-06 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

OOL-06 continues to be potentially impacted by radioactive material migration due to surface water run-off, storm drain effluents, by operation of the sanitary sewer system, material storage and by continued decommissioning activities.

A soil sample location map (Figure 7) has been prepared to show the distribution of sampling locations in OOL-06. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). Four survey media were assessed in OOL-06, Humus, Sediment, Sod and Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL. There are separate sets of Tables 1-4 for each survey media. All are evaluated as fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-06 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Humus: Mean SOF is 0.052.

Maximum SOF for a single humus sample is 0.052. (key# 368)

Minimum SOF for a single humus sample is 0.052. (key# 368)

Sediment: Mean SOF is 0.022.

Maximum SOF for a single sediment sample is 0.047. (key# 350)

Minimum SOF for a single sediment sample is 0.007. (key# 349)

Historical Site Assessment and Classification Summary

Survey Area Name: Yankee West Access

Designator: **OOL-06**

Sod: Mean SOF is 0.114.

Maximum SOF for a single sod sample is 0.114. (key# 366)

Minimum SOF for a single sod sample is 0.114. (key# 366)

Soil: Mean SOF is 0.029.

Maximum SOF for a single soil sample is 0.080. (key# 368)

Minimum SOF for a single soil sample is 0.004. (key# 3267, 3402)

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-06 is identified as a Class 3 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: Yankee West Access

Designator: **OOL-06**

Drawings

9699-FE-34A

Figure 7-1A

References

1.	YNPS Decommissioning Plan, Rev. 0.0.
2.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

Table 1
Sum of Fractions
OOL-06 -- Humus
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions	
368	OF-199	OFTZ-199		0.052
			Min	0.052
			Max	0.052
			Mean	0.052

Table 2
Statistical Data Summary – OOL-06 -- Humus
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ag-108m	pCi/g	0	1	0.000				
Co-58	pCi/g	0	1	0.000				
Co-60	pCi/g	0	1	0.000				
Cs-134	pCi/g	0	1	0.000				
Cs-137	pCi/g	1	1	0.633		0.633	0.633	0.633
Mn-54	pCi/g	0	1	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-06 -- Humus
Yankee Nuclear Power Station Rowe, MA
DCGL_Humus

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ag-108m	0	1	8.52	pCi/g	0	0.63
Co-58	0	1		pCi/g	0	
Co-60	0	1	4.84	pCi/g	0	
Cs-134	0	1	6.71	pCi/g	0	
Cs-137	1	1	12.24	pCi/g	0	
Mn-54	0	1	21.66	pCi/g	0	

Table 4
Rad
OOL-06 -- Humus (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-199 (368)
Sample ID	OFTZ-199
Date Sampled	10/17/1994
Ag-108m	0.103 UM
Co-58	0.099 UM
Co-60	0.165 UM
Cs-134	0.071 UM
Cs-137	0.633
Mn-54	0.101 UM
SOF	0.052

Table 1
Sum of Fractions
OOL-06 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
351	OF-180	OFTS-180	0.011
350	OF-179	OFTS-179	0.047
349	OF-178	OFTS-178	0.007
		Min	0.007
		Max	0.047
		Mean	0.022

Table 2
Statistical Data Summary -- OOL-06 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ag-108m	pCi/g	0	3	0.000				
Co-58	pCi/g	0	3	0.000				
Co-60	pCi/g	1	3	0.140		0.140	0.140	0.140
Cs-134	pCi/g	0	3	0.000				
Cs-137	pCi/g	3	3	0.145	0.070	0.080	0.219	0.135
Mn-54	pCi/g	0	3	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-06 -- Sediment
Yankee Nuclear Power Station Rowe, MA
DCGL_Sediment

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ag-108m	0	3	8.52	pCi/g	0	
Co-58	0	3		pCi/g	0	
Co-60	1	3	4.84	pCi/g	0	0.14
Cs-134	0	3	6.71	pCi/g	0	
Cs-137	3	3	12.24	pCi/g	0	0.22
Mn-54	0	3	21.66	pCi/g	0	

Table 4
Rad
OOL-06 -- Sediment (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-178 (349)	OF-179 (350)	OF-180 (351)
Sample ID	OFTS-178	OFTS-179	OFTS-180
Date Sampled	10/4/1994	10/4/1994	10/4/1994
Ag-108m	0.037 UM	0.048 UM	0.033 UM
Co-58	0.043 UM	0.066 UM	0.044 UM
Co-60	0.0706 UM	0.14	0.0628 UM
Cs-134	0.037 UM	0.058 UM	0.04 UM
Cs-137	0.0804	0.219	0.135
Mn-54	0.049 UM	0.06 UM	0.046 UM
SOF	0.007	0.047	0.011

Table 1
Sum of Fractions
OOL-06 -- Sod
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions	
366	OF-198	OFTZ-198		0.114
			Min	0.114
			Max	0.114
			Mean	0.114

Table 2
Statistical Data Summary -- OOL-06 -- Sod
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ag-108m	pCi/g	0	1	0.000				
Co-58	pCi/g	0	1	0.000				
Co-60	pCi/g	0	1	0.000				
Cs-134	pCi/g	0	1	0.000				
Cs-137	pCi/g	1	1	1.398		1.398	1.398	1.398
Mn-54	pCi/g	0	1	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-06 -- Sod
Yankee Nuclear Power Station Rowe, MA
DCGL_Sod

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ag-108m	0	1	8.52	pCi/g	0	1.40
Co-58	0	1		pCi/g	0	
Co-60	0	1	4.84	pCi/g	0	
Cs-134	0	1	6.71	pCi/g	0	
Cs-137	1	1	12.24	pCi/g	0	
Mn-54	0	1	21.66	pCi/g	0	

Table 4
Rad
OOL-06 -- Sod (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-198 (366)
Sample ID	OFTZ-198
Date Sampled	10/14/1994
Ag-108m	0.088 UM
Co-58	0.079 UM
Co-60	0.171 UM
Cs-134	0.084 UM
Cs-137	1.398
Mn-54	0.109 UM
SOF	0.114

Table 1
Sum of Fractions
OOL-06 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
3403	WSD02	WSD02	0.038
3402	WSD01	WSD01	0.004
3267	TS541	TS541	0.004
368	OF-199	OFTS-199	0.080
366	OF-198	OFTS-198	0.019
365	OF-197	OFTS-197	0.059
362	OF-193	OFTS-193	0.038
356	OF-188	OFTS-188	0.005
312	OG014-035	OG014GUFD035	0.013
307	OG014-024	OG014GUFD024	0.006
238	OG004-001	OG004GUFD001	0.017
88	OG001-004	OG001GUFU004	0.039
87	OG001-003	OG001GUFD003	0.053
		Min	0.004
		Max	0.080
		Mean	0.029

Table 2
Statistical Data Summary -- OOL-06 -- Soil
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	23	23	0.709	0.249	0.271	1.434	0.692
Ag-108m	pCi/g	0	29	0.000				
Ag-110m	pCi/g	1	23	0.041		0.041	0.041	0.041
Am-241	pCi/g	0	23	0.000				
Bi-212	pCi/g	13	16	0.859	0.159	0.604	1.199	0.878
Bi-214	pCi/g	22	22	0.421	0.091	0.270	0.667	0.413
Ce-144	pCi/g	0	23	0.000				
Co-58	pCi/g	0	29	0.000				
Co-60	pCi/g	1	29	0.113		0.113	0.113	0.113
Cs-134	pCi/g	1	29	0.039		0.039	0.039	0.039
Cs-137	pCi/g	12	29	0.351	0.305	0.043	0.982	0.219
Eu-152	pCi/g	0	1	0.000				
Fe-59	pCi/g	0	23	0.000				
K-40	pCi/g	23	23	16.471	3.870	10.240	29.500	15.820
Mn-54	pCi/g	0	29	0.000				
Nb-95	pCi/g	0	23	0.000				
Np-239	pCi/g	0	1	0.000				
Pb-212	pCi/g	23	23	0.684	0.191	0.297	1.257	0.684
Pb-214	pCi/g	23	23	0.459	0.136	0.301	0.954	0.423
Ra-226	pCi/g	13	16	1.767	0.521	1.113	2.930	1.612
Ru-103	pCi/g	0	23	0.000				
Ru-106	pCi/g	0	23	0.000				
Sb-124	pCi/g	0	23	0.000				
Sb-125	pCi/g	0	1	0.000				
Tl-208	pCi/g	19	19	0.634	0.150	0.272	0.853	0.662
Zn-65	pCi/g	1	23	0.157		0.157	0.157	0.157
Zr-95	pCi/g	3	23	0.090	0.046	0.041	0.134	0.095

Table 3
Summary of Detected Results Above Criteria
OOL-06 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL_Soil

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	23	23		pCi/g	0	1.43
Ag-108m	0	29	8.52	pCi/g	0	
Ag-110m	1	23		pCi/g	0	0.04
Am-241	0	23	44.35	pCi/g	0	
Bi-212	13	16		pCi/g	0	1.20
Bi-214	22	22		pCi/g	0	0.67
Ce-144	0	23		pCi/g	0	
Co-58	0	29		pCi/g	0	
Co-60	1	29	4.84	pCi/g	0	0.11
Cs-134	1	29	6.71	pCi/g	0	0.04
Cs-137	12	29	12.24	pCi/g	0	0.98
Eu-152	0	1	12.06	pCi/g	0	
Fe-59	0	23		pCi/g	0	
K-40	23	23		pCi/g	0	29.50
Mn-54	0	29	21.66	pCi/g	0	
Nb-95	0	23		pCi/g	0	
Np-239	0	1		pCi/g	0	
Pb-212	23	23		pCi/g	0	1.26
Pb-214	23	23		pCi/g	0	0.95
Ra-226	13	16		pCi/g	0	2.93
Ru-103	0	23		pCi/g	0	
Ru-106	0	23	68.21	pCi/g	0	
Sb-124	0	23		pCi/g	0	
Sb-125	0	1	37.73	pCi/g	0	
Tl-208	19	19		pCi/g	0	0.85
Zn-65	1	23		pCi/g	0	0.16
Zr-95	3	23		pCi/g	0	0.13

Table 4

Rad

OOL-06 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OF-187 (355) OFTS-187 10/13/1994	OF-188 (356) OFTS-188 10/13/1994	OF-193 (362) OFTS-193 10/13/1994	OF-197 (365) OFTS-197 10/17/1994	OF-198 (366) OFTS-198 10/17/1994	OF-199 (368) OFTS-199 10/17/1994
Ac-228						
Ag-108m	0.058 UM	0.047 UM	0.075 UM	0.062 UM	0.054 UM	0.067 UM
Ag-110m						
Am-241						
Bi-212						
Bi-214						
Ce-144						
Co-58	0.064 UM	0.056 UM	0.08 UM	0.073 UM	0.057 UM	0.064 UM
Co-60	0.0813 UM	0.0816 UM	0.127 UM	0.086 UM	0.0851 UM	0.0919 UM
Cs-134	0.065 UM	0.06 UM	0.09 UM	0.061 UM	0.049 UM	0.055 UM
Cs-137	0.0798 UM	0.066	0.463	0.717	0.234	0.982
Eu-152						
Fe-59						
K-40						
Mn-54	0.079 UM	0.068 UM	0.092 UM	0.062 UM	0.054 UM	0.062 UM
Nb-95						
Np-239						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Sb-125						
Tl-208						
Zn-65						
Zr-95						
SOF		0.005	0.038	0.059	0.019	0.08

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-06 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG001-003 (87)	OG001-004 (88)	OG004-001 (238)	OG004-002 (239)
Sample ID	OG001GUF003	OG001GUFU004	OG004GUF001	OG004GUF002
Date Sampled	6/29/1998	6/29/1998	7/14/1998	7/14/1998
Ac-228	0.383	0.638	0.8064	1.004
Ag-108m	-0.03252 U	-0.02482 U	-0.01547 U	0.01163 U
Ag-110m	0.03259 U	0.02887 U	-0.03224 U	-0.04795 U
Am-241	0 U	0 U	0 U	0 U
Bi-212		0.7073	0.8777	0.671
Bi-214	0.4506		0.5214	0.4693
Ce-144	-0.2657 U	-0.05376 U	-0.04756 U	-0.04134 U
Co-58	-0.01826 U	-0.03223 U	0.002405 U	-0.001909 U
Co-60	0.001134 U	0.01214 U	0.0005766 U	0.02465 U
Cs-134	-0.02112 U	0.0137 U	0.02142 U	-0.07499 U
Cs-137	0.647	0.4722	0.2045	0.02042 U
Eu-152				
Fe-59	0.03753 U	-0.01034 U	-0.1209 U	-0.02148 U
K-40	17.04	17.88	18.48	19.47
Mn-54	0.000773 U	-0.05647 U	0.02856 U	-0.01276 U
Nb-95	0.0265 U	0.004585 U	0.01406 U	0.01542 U
Np-239				
Pb-212	0.6071	0.5382	0.849	0.7714
Pb-214	0.3974	0.4923	0.5813	0.5354
Ra-226		1.442	1.522	2.93
Ru-103	0.01195 U	-0.01241 U	0.0202 U	0.001982 U
Ru-106	-0.2516 U	-0.3157 U	0.09199 U	-0.1141 U
Sb-124	-0.01999 U	0 U	-0.04173 U	0 U
Sb-125				
Tl-208	0.5066	0.5127	0.7541	0.594
Zn-65	-0.01277 U	0.02126 U	0.02856 U	-0.01961 U
Zr-95	0.03282 U	-0.007179 U	0.09452	0.04827 U
SOF	0.053	0.039	0.017	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-06 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG014-017 (301)	OG014-018 (302)	OG014-018 (302)	OG014-020 (303)
Sample ID	OG014GUFD017	OG014GUFD018	OG014GUFD019	OG014GUFD020
Date Sampled	9/2/1998	9/2/1998	9/2/1998	9/2/1998
Ac-228	1.434	0.8332	0.612	0.4906
Ag-108m	0.01118 U	0.005659 U	0.00129 U	0.01356 U
Ag-110m	0.06374 U	0.04149	0.00613 U	-0.02162 U
Am-241	0 U	0 U	0 U	0 U
Bi-212	0.9618	0.6872		
Bi-214	0.6671	0.4481	0.595	0.3436
Ce-144	-0.4734 U	-0.002531 U	0.12 U	-0.03203 U
Co-58	0.01847 U	-0.05064 U	0.00487 U	0.0111 U
Co-60	-0.02444 U	-0.0196 U	-0.0146 U	0.004812 U
Cs-134	-0.2019 U	-0.01741 U	-0.0102 U	-0.0007283 U
Cs-137	0.01676 U	0.01969 U	0.025 U	0.02769 U
Eu-152				
Fe-59	-0.08976 U	-0.02679 U	0.0231 U	-0.0522 U
K-40	29.5	15.82	22.1	13.17
Mn-54	0.01158 U	0.02209 U	-0.0258 U	0.005206 U
Nb-95	0.02229 U	0.02203 U	0.0389 U	0.03557 U
Np-239				
Pb-212	1.257	0.6999	0.676	0.5411
Pb-214	0.9543	0.3594	0.652	0.3607
Ra-226		0.8412 U	1.82	
Ru-103	-0.02151 U	-0.004543 U	0.0287 U	-0.0128 U
Ru-106	-0.09445 U	-0.113 U	0.0431 U	-0.01834 U
Sb-124	0.01415 U	-0.00308 U	0.0285 U	0 U
Sb-125				
Tl-208		0.696	0.639	
Zn-65	-0.2326 U	-0.1626 U	0.00746 U	-0.02252 U
Zr-95	0.1341	0.06258 U	0.0194 U	0.02547 U
SOF				

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-06 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG014-021 (304) OG014GUFD021 9/2/1998	OG014-022 (305) OG014GUFD022 9/2/1998	OG014-023 (306) OG014GUFD023 9/2/1998	OG014-024 (307) OG014GUFD024 9/2/1998
Ac-228	0.8278	0.8745	0.4475	0.7874
Ag-108m	-0.01183 U	-0.008882 U	0.01271 U	-0.004453 U
Ag-110m	-0.009566 U	-0.003832 U	0.0156 U	0.01538 U
Am-241	0 U	0 U	0 U	0 U
Bi-212	0.9225	0.8608	0.6037	0.9512
Bi-214	0.4437	0.4116	0.3541	0.3498
Ce-144	0.002524 U	-0.2322 U	-0.03938 U	-0.07808 U
Co-58	0.02578 U	0.01133 U	-0.001065 U	-0.02481 U
Co-60	0.003181 U	0.006271 U	-0.02535 U	0.02624 U
Cs-134	0.01448 U	0.008254 U	-0.1054 U	0.03877
Cs-137	0.006546 U	0.03011 U	0.03042 U	0.00225 U
Eu-152	0.3295 U			
Fe-59	-0.05353 U	-0.01977 U	0.0008718 U	-0.0348 U
K-40	13.93	17.11	13.87	15.77
Mn-54	-0.003942 U	-0.00777 U	-0.007851 U	-0.001913 U
Nb-95	0.007237 U	-0.00547 U	0.0144 U	0.001945 U
Np-239				
Pb-212	0.7339	0.7119	0.5848	0.7523
Pb-214	0.5192	0.4753	0.4146	0.4455
Ra-226	1.477	1.113	1.845	1.612
Ru-103	-0.03332 U	0.006707 U	-0.008225 U	-0.01077 U
Ru-106	-0.263 U	-0.08536 U	-0.09354 U	0.155 U
Sb-124	0.03641 U	0.00303 U	0.01918 U	0.007606 U
Sb-125				
Tl-208	0.7401		0.4464	0.7971
Zn-65	0.1565	-0.1206 U	0.059 U	0.04476 U
Zr-95	-0.01749 U	-0.005053 U	0.006497 U	0.04854 U
SOF				0.006

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-06 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG014-025 (308)	OG014-026 (309)	OG014-027 (310)	OG014-028 (311)
Sample ID	OG014GUFD025	OG014GUFD026	OG014GUFD027	OG014GUFD028
Date Sampled	9/2/1998	9/2/1998	9/2/1998	9/2/1998
Ac-228	0.8625	0.9249	0.6922	0.7834
Ag-108m	-0.005484 U	0.0001977 U	0.01932 U	-0.003221 U
Ag-110m	-0.01856 U	-0.000158 U	0.01347 U	0.01457 U
Am-241	0 U	0 U	0 U	0 U
Bi-212	0.9409	0.9296	0.3945 U	0.3361 U
Bi-214	0.3614	0.4123	0.3951	0.4564
Ce-144	-0.07639 U	-0.1258 U	0.1016 U	0.09588 U
Co-58	-0.01966 U	-0.01578 U	-0.02642 U	-0.01787 U
Co-60	0.003442 U	0.0201 U	-0.0229 U	0.006773 U
Cs-134	-0.005116 U	-0.003812 U	0.007224 U	-0.02818 U
Cs-137	-0.009442 U	0.03447 U	0.01306 U	0.006958 U
Eu-152				
Fe-59	-0.04338 U	-0.02114 U	0.02002 U	0.01531 U
K-40	17.78	17.18	15.42	18.01
Mn-54	0.005422 U	-0.00116 U	-0.008329 U	0.01992 U
Nb-95	-0.02937 U	-0.05865 U	0.007546 U	-0.0202 U
Np-239				
Pb-212	0.8812	0.8153	0.6391	0.5987
Pb-214	0.4234	0.4652	0.3483	0.4693
Ra-226	2.661	1.434		1.002 U
Ru-103	-0.03442 U	0.01255 U	-0.04426 U	-0.008939 U
Ru-106	0.1016 U	0.05936 U	0.1312 U	0.1007 U
Sb-124	0.01684 U	0.0412 U	-0.0009816 U	-0.02209 U
Sb-125				
Tl-208	0.6855	0.7592	0.6007	0.7441
Zn-65	-0.08168 U	-0.01823 U	-0.002624 U	0.06053 U
Zr-95	-0.02117 U	-0.006384 U	0.001861 U	-0.0296 U
SOF				

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-06 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG014-027 (310)	OG014-035 (312)	TS539 (3265)	TS540 (3266)	TS541 (3267)
Sample ID	OG014GUFD034	OG014GUFD035	TS539	TS540	TS541
Date Sampled	9/2/1998	9/2/1998	8/18/1998	8/18/1998	8/18/1998
Ac-228	0.731	0.592	0.678	0.635	0.6686
Ag-108m	-0.00382 U	-0.001652 U	0.01625 U	0.007187 U	-0.005692 U
Ag-110m	-0.000859 U	0.02761 U	0.03083 U	0.003746 U	0.001294 U
Am-241	0 U	0 U	0 U	0 U	0 U
Bi-212	0.859				1.199
Bi-214	0.367	0.4137	0.4321	0.3744	0.4349
Ce-144	0.0977 U	-0.1332 U	-0.01707 U	-0.04888 U	-0.02019 U
Co-58	-0.0166 U	-0.02636 U	-0.01207 U	-0.02259 U	-0.01092 U
Co-60	0.00972 U	-0.01558 U	-0.01982 U	-0.02968 U	0.02547 U
Cs-134	0.0111 U	-0.007219 U	0.03378 U	-0.03283 U	-0.03314 U
Cs-137	-0.00444 U	0.1558	-0.004828 U	0.0004237 U	0.04321
Eu-152					
Fe-59	-0.0529 U	-0.08482 U	-0.007838 U	-0.04945 U	0.01715 U
K-40	15.9	11.79	15.54	14.95	15.44
Mn-54	0.0189 U	-0.008252 U	0.01619 U	0.0229 U	0.02562 U
Nb-95	-0.015 U	0.02614 U	0.003733 U	0.02852 U	0.003457 U
Np-239					-0.235 U
Pb-212	0.636	0.5262	0.8263	0.6838	0.7494
Pb-214	0.463	0.3856	0.4021	0.3766	0.3974
Ra-226	1.74	2.058	0.968 U		1.316
Ru-103	-0.0047 U	-0.01673 U	0.00353 U	-0.01152 U	0.00316 U
Ru-106	-0.0191 U	0.03708 U	-0.23 U	0.08491 U	0.08441 U
Sb-124	0.0266 U	-0.02547 U	0.0207 U	-0.004558 U	0.002278 U
Sb-125		-0.09277 U			
Tl-208	0.76	0.4095	0.8534	0.6088	0.662
Zn-65	0.044 U	-0.03243 U	0.04022 U	0.02701 U	0.09275 U
Zr-95	0.0233 U	0.04743 U	-0.07186 U	0.01884 U	-0.005691 U
SOF		0.013			0.004

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

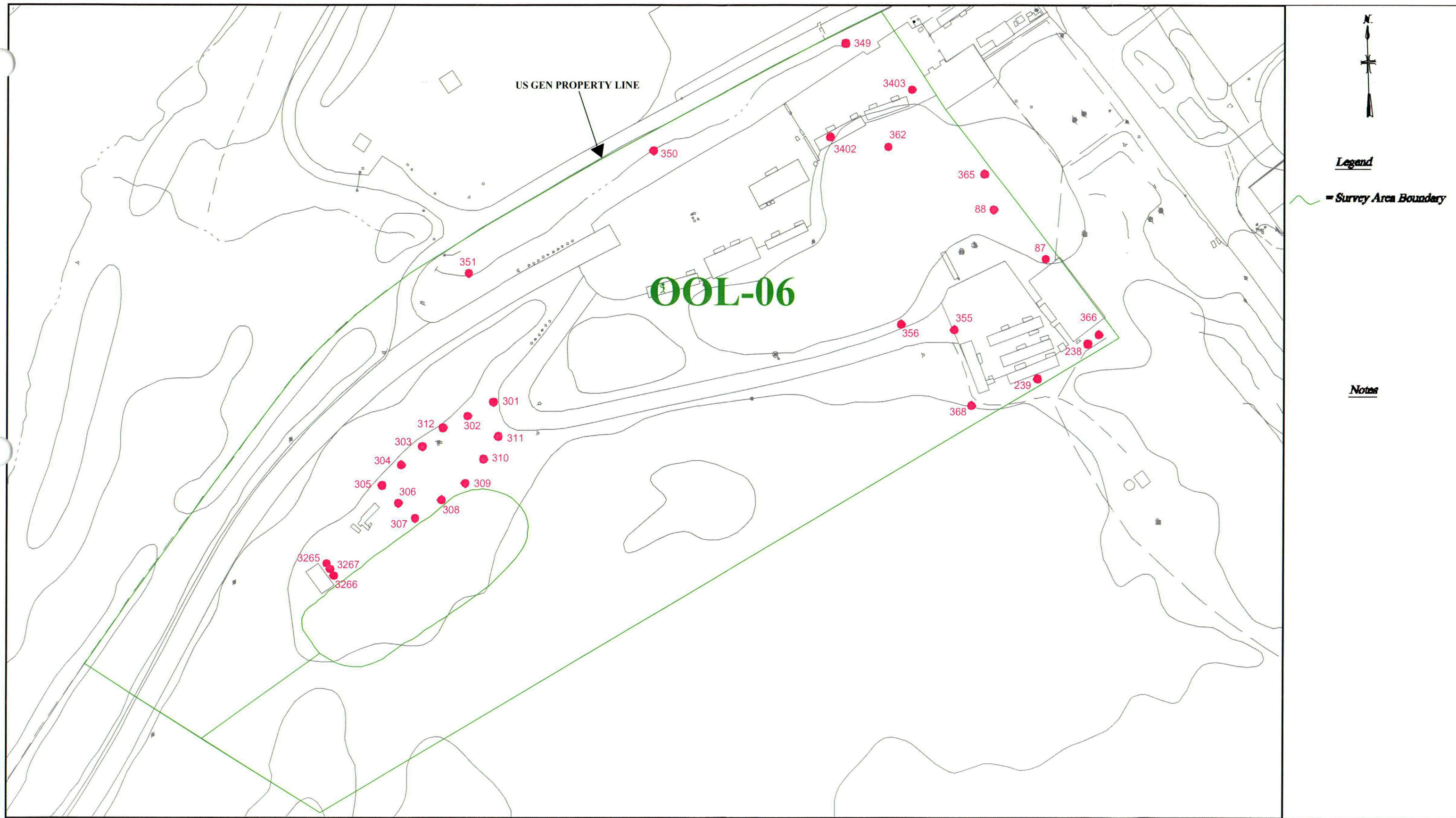
Blank results indicate chemical not analyzed

Table 4
Rad
OOL-06 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

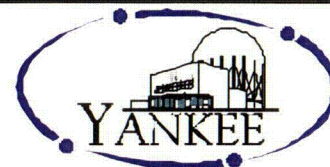
Station (Key) Sample ID Date Sampled	WSD01 (3402) WSD01 8/17/1999	WSD02 (3403) WSD02 8/19/1999
Ac-228	0.2707	0.3192
Ag-108m	0.001672 U	0.003685 U
Ag-110m	0.01417 U	-0.01106 U
Am-241	0 U	0 U
Bi-212	0.3392 U	
Bi-214	0.2881	0.2703
Ce-144	0.03013 U	0.05637 U
Co-58	-0.001027 U	0.01546 U
Co-60	0.009379 U	0.1132
Cs-134	-0.1186 U	-0.07924 U
Cs-137	0.0453	0.1769
Eu-152		
Fe-59	0.02765 U	0.01849 U
K-40	10.24	12.44
Mn-54	0.002195 U	-0.008513 U
Nb-95	0.009187 U	-0.004001 U
Np-239		
Pb-212	0.2974	0.3632
Pb-214	0.3014	0.3262
Ra-226		
Ru-103	0.003793 U	0.008267 U
Ru-106	-0.0358 U	0.09647 U
Sb-124	-0.02798 U	0.008262 U
Sb-125		
Tl-208	0.2716	
Zn-65	-0.03774 U	-0.01673 U
Zr-95	0.02521 U	0.04148
SOF	0.004	0.038

Underground Systems

OOL-06				
Structure / System	Component	Description	Location	Impacted?
Storm Drains	WCB-001			
	WCB-002	depth = 9'; 4'x8' at base, 2' dia at top; no ladder access; 18" corr pipe 74" from top going W, 30" corr pipe 79" from top going N, 30" corr pipe 83" from top going N, 18" corr pipe 74" from top going E, 6" PVC pipe 41" from top going SE; concrete bottom; deterioration of concrete at top, rear exposed, 30" outfall pipe with large amounts sediment	~15' W and ~18' S of NW corner of gatehouse	
Water		1" line from water tank to admin bldg		



Yankee Atomic Power Company
Soil Sample Locations - OOL-06



Date: October 2003

Revision: 4

Figure: 7

Historical Site Assessment and Classification Summary

Survey Area Name: Spoils Deposit Area

Designator: **OOL-07**

Survey Area Description

Survey area OOL-07 consists of land area that lies within survey area OOL-06. Survey area OOL-07 contains about 2108 square meters of soil surface area.

Survey area OOL-07 is bounded entirely by OOL-06

Sub-surface systems that traverse or connect within OOL-07 include:

- Administration building sanitary sewer system, active leaching field.

Items of note located within or adjacent to OOL-07 include:

- Pan fire training prop for fire extinguisher training.

Historical Site Assessment and Classification Summary

Survey Area Name: Spoils Deposit Area

Designator: OOL-07

Survey Area History

Survey area OOL-07 is not part of the RCA. There are no radioactive systems present in OOL-07. Survey area OOL-07 was not used for storing radioactive material or processing or packaging radioactive waste.

Survey Area OOL-07 contains an accumulation of soil that was excavated during the construction of the ISFSI pad. Soils from other plant modification were also deposited in this area.

Survey area OOL-07 was used to store the turbine spindle removed from service in 1981. Survey area OOL-07 was also used to store other material over time. Survey area OOL-07 is likely to be minimally impacted by low levels of radioactivity as a result of soil and material storage.

Modifications performed at the YNPS site in support of decommissioning that changed the configuration of OOL-07 include:

- Deposition of the soil from the ISFSI construction.

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 1).

Decommissioning

No decommissioning activities have been performed for survey area OOL-07.

Historical Site Assessment and Classification Summary

Survey Area Name: Spoils Deposit Area

Designator: **OOL-07**

Findings

Survey area OOL-07 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-07 is minimally impacted by concentration low levels of radioactivity present in soil deposited in this area. Survey area OOL-07 is likely to contain residual radioactivity concentrations at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-07 includes all radionuclides identified in the radioactive systems of the plant (Ref 2). The primary radionuclides of concern for survey area OOL-07 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

It is unlikely that survey area OOL-07 will be further impacted by continued decommissioning activities. No sampling was conducted in this area; however, the bulk of the material deposited was sampled prior to deposition.

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-07 is identified as a Class 3 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: Spoils Deposit Area

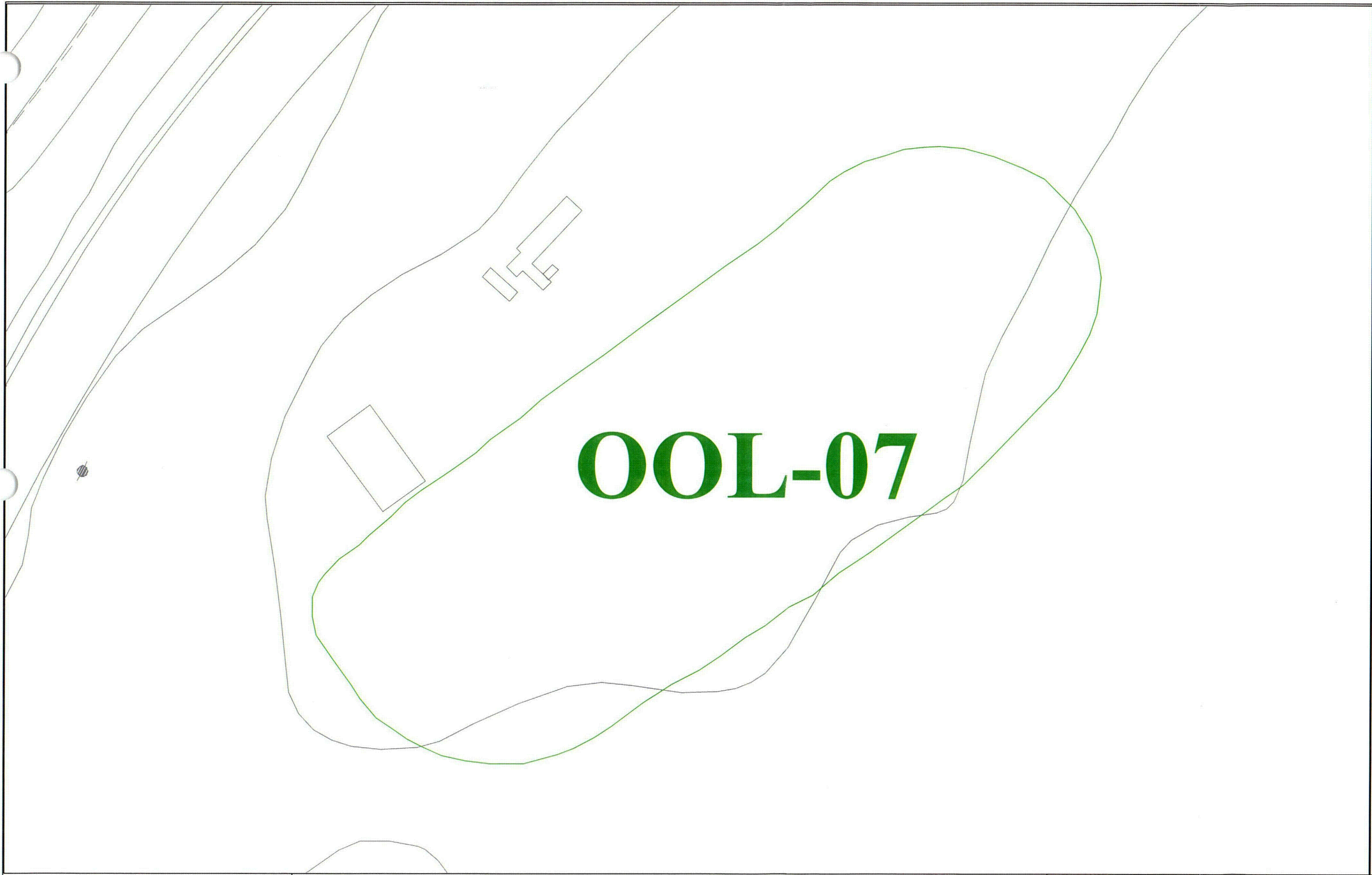
Designator: **OOL-07**

Drawings

Figure 7-1A

References

1.	YNPS Decommissioning Plan, Revision 0.0.
2.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

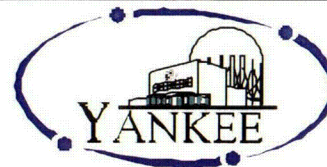


Legend

 = Survey Area Boundary

Notes

Yankee Atomic Power Company
Soil Sample Locations - OOL-07



Date: October 2003

Revision: 4

Figure: 8

C08

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Site Impacted Perimeter Zone Designator: **OOL-08**

Survey Area Description

Survey area OOL-08 consists of land area that encompasses southern boundary of the YNPS site. Survey area OOL-08 contains about 133414 square meters of soil surface area.

Survey area OOL-08 is bounded by OOL-06, OOL-02, OOL-10, OOL-09, OOL-12, OOL-14 and OOL-15 on the north and non-impacted YAEC owned property on the east, south and west.

There are no sub-surface systems that traverse or connect within survey area OOL-08.

Items of note located within or adjacent to survey area OOL-08 include:

- The Wheeler Brook Divertment Project
- The 177 electrical transmission line
- Southeast Construction Fill Area OOL-09

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Site Impacted Perimeter Zone

Designator: **OOL-08**

Survey Area History

Survey area OOL-08 is not part of the RCA. There are no radioactive systems present in OOL-08. Survey area OOL-08 was not used for storing radioactive material or processing or packaging radioactive waste.

Survey Area OOL-08 represents a buffer zone around the Class 1 and Class 2 survey areas. Survey area OOL-08 also includes that portion of the YNDS site potentially impacted by wind borne radioactive contamination.

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 1).

Decommissioning

No decommissioning activities have been performed for survey area OOL-08.

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Site Impacted Perimeter Zone

Designator: **OOL-08**

Findings

Survey area OOL-08 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-08 is minimally impacted by wind borne radioactive contamination potentially released from the YNPS site.

The radionuclide mix likely to be present in OOL-08 includes all radionuclides identified in the radioactive systems of the plant (Ref 2). The primary radionuclides of concern for survey area OOL-08 are Co-60, Cs-137, Ag-108m, Sr-90, Ni-63 and tritium.

Current Status

Survey area OOL-08 potentially may be further impacted by continued decommissioning activities.

A soil sample location map (Figure 09, 9A, 9B) has been prepared to show the distribution of sampling locations in OOL-08. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). Four survey media types were assessed in OOL-08, Humus, Sod, Sediment and Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL. There are separate sets of Tables 1-4 for each survey media. All are evaluated as fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-08 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Humus: Mean SOF is 0.098.

Maximum SOF for a single humus sample is 0.114 (key#383) located up slope south of Wheeler Brook east of the power line.

Minimum SOF for a single humus sample is 0.066 (key#374) located outside the exclusion area fence south of the potable water tank.

Sediment: Mean SOF is 0.010.

Maximum SOF for a single sediment sample is 0.019 (key#81) located east of Wheeler Brook and south of the former railroad tracks.

Minimum SOF for a single sediment sample is 0.0059 (key#203) located east of Wheeler Brook and south of the former railroad tracks.

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Site Impacted Perimeter Zone Designator: **OOL-08**

Sod: Mean SOF is 0.131.

Maximum SOF for a single sod sample is 0.269 (key#655) located west of the ISFSI under the power line.

Minimum SOF for a single sod sample is 0.049 (key#657) located west of Wheeler Brook and south of the SCFA.

Soil: Mean SOF is 0.051.

Maximum SOF for a single soil sample is 0.345 (key#291) located south of the southwest corner of the former switchyard.

Minimum SOF for a single soil sample is 0.004 (key#220, 932) located south of SCFA and up slope from Wheeler Brook, located on top of the retaining wall south of OOL-12.

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Site Impacted Perimeter Zone Designator: **OOL-08**

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-08 is identified as a Class 3 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: YNPS Site Impacted Perimeter Zone

Designator: **OOL-08**

Drawings

9699-FY-5A

Figure 7-1A

References

1.	YNPS Decommissioning Plan, Rev. 0.0.
2.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

Table 1
Sum of Fractions
OOL-08 -- Humus
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
383	OF-215	OFTZ-215	0.114
374	OF-206	OFTZ-206	0.066
371	OF-201	OFTZ-201	0.113
		Min	0.066
		Max	0.114
		Mean	0.098

Table 2
Statistical Data Summary – OOL-08 -- Humus
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ag-108m	pCi/g	0	3	0.000				
Co-58	pCi/g	0	3	0.000				
Co-60	pCi/g	0	3	0.000				
Cs-134	pCi/g	0	3	0.000				
Cs-137	pCi/g	3	3	1.196	0.332	0.813	1.392	1.384
Mn-54	pCi/g	0	3	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-08 -- Humus
Yankee Nuclear Power Station Rowe, MA
DCGL_Humus

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ag-108m	0	3	8.52	pCi/g	0	
Co-58	0	3		pCi/g	0	
Co-60	0	3	4.84	pCi/g	0	
Cs-134	0	3	6.71	pCi/g	0	
Cs-137	3	3	12.24	pCi/g	0	1.39
Mn-54	0	3	21.66	pCi/g	0	

Table 4

Rad

Page 1 of 1

OOL-08 -- Humus (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-201 (371)	OF-206 (374)	OF-215 (383)
Sample ID	OFTZ-201	OFTZ-206	OFTZ-215
Date Sampled	10/14/1994	10/14/1994	10/18/1994
Ag-108m	0.078 UM	0.085 UM	0.08 UM
Co-58	0.1 UM	0.079 UM	0.095 UM
Co-60	0.188 UM	0.151 UM	0.102 UM
Cs-134	0.077 UM	0.064 UM	0.07 UM
Cs-137	1.384	0.813	1.392
Mn-54	0.095 UM	0.093 UM	0.093 UM
SOF	0.113	0.066	0.114

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Humus Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 1
Sum of Fractions
OOL-08 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
269	OG004-037	OG004GUFN037	0.008
267	OG004-035	OG004GUFN036	0.009
203	OG003-035	OG003GUFN036	0.005
81	OG002-035	OG002GUFN035	0.019
		Min	0.005
		Max	0.019
		Mean	0.010

Table 2
Statistical Data Summary – OOL-08 -- Sediment
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	6	6	0.778	0.258	0.452	1.192	0.774
Ag-108m	pCi/g	0	6	0.000				
Ag-110m	pCi/g	0	6	0.000				
Am-241	pCi/g	0	6	0.000				
Bi-212	pCi/g	4	5	0.846	0.342	0.555	1.278	0.775
Bi-214	pCi/g	5	5	0.541	0.171	0.365	0.738	0.521
Ce-144	pCi/g	0	6	0.000				
Co-58	pCi/g	0	6	0.000				
Co-60	pCi/g	0	6	0.000				
Cs-134	pCi/g	0	6	0.000				
Cs-137	pCi/g	4	6	0.122	0.076	0.056	0.232	0.100
Fe-59	pCi/g	0	6	0.000				
K-40	pCi/g	5	6	13.008	5.714	3.379	18.680	14.070
Mn-54	pCi/g	0	6	0.000				
Nb-95	pCi/g	0	6	0.000				
Pb-212	pCi/g	6	6	0.757	0.262	0.491	1.122	0.696
Pb-214	pCi/g	6	6	0.538	0.211	0.246	0.786	0.510
Ra-226	pCi/g	3	4	1.857	0.358	1.483	2.196	1.892
Ru-103	pCi/g	0	6	0.000				
Ru-106	pCi/g	0	6	0.000				
Sb-124	pCi/g	0	6	0.000				
Sb-125	pCi/g	0	1	0.000				
Tl-208	pCi/g	4	4	0.659	0.274	0.447	1.034	0.578
Zn-65	pCi/g	1	6	0.218		0.218	0.218	0.218
Zr-95	pCi/g	0	6	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-08 -- Sediment
Yankee Nuclear Power Station Rowe, MA
DCGL_Sediment

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	6	6		pCi/g	0	1.19
Ag-108m	0	6	8.52	pCi/g	0	
Ag-110m	0	6		pCi/g	0	
Am-241	0	6	44.35	pCi/g	0	
Bi-212	4	5		pCi/g	0	1.28
Bi-214	5	5		pCi/g	0	0.74
Ce-144	0	6		pCi/g	0	
Co-58	0	6		pCi/g	0	
Co-60	0	6	4.84	pCi/g	0	
Cs-134	0	6	6.71	pCi/g	0	
Cs-137	4	6	12.24	pCi/g	0	0.23
Fe-59	0	6		pCi/g	0	
K-40	5	6		pCi/g	0	18.68
Mn-54	0	6	21.66	pCi/g	0	
Nb-95	0	6		pCi/g	0	
Pb-212	6	6		pCi/g	0	1.12
Pb-214	6	6		pCi/g	0	0.79
Ra-226	3	4		pCi/g	0	2.20
Ru-103	0	6		pCi/g	0	
Ru-106	0	6	68.21	pCi/g	0	
Sb-124	0	6		pCi/g	0	
Sb-125	0	1	37.73	pCi/g	0	
Tl-208	4	4		pCi/g	0	1.03
Zn-65	1	6		pCi/g	0	0.22
Zr-95	0	6		pCi/g	0	

Table 4

Rad

OOL-08 -- Sediment (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG002-035 (81)	OG003-035 (203)	OG003-037 (205)	OG003-038 (206)
Sample ID	OG002GUFN035	OG003GUFN036	OG003GUFN037	OG003GUFN038
Date Sampled	7/13/1998	7/16/1998	7/16/1998	7/16/1998
Ac-228	0.8829	0.7007	0.5955	0.4522
Ag-108m	0.005636 U	-0.00999 U	-0.01186 U	-0.0155 U
Ag-110m	-0.04173 U	-0.01443 U	0.007884 U	-0.03452 U
Am-241	0 U	0 U	0 U	0 U
Bi-212	1.278	0.5876	0.5549	
Bi-214	0.5211	0.3646	0.3892	
Ce-144	-0.1858 U	-0.1121 U	-0.0339 U	0.0669 U
Co-58	-0.03174 U	0.02123 U	-0.04043 U	0.009206 U
Co-60	0.01052 U	0.02129 U	-0.0001121 U	-0.02877 U
Cs-134	-0.01262 U	-0.03322 U	-0.09298 U	0.004688 U
Cs-137	0.2319	0.05568	0.03144 U	-0.01408 U
Fe-59	0.1324 U	-0.04909 U	-0.008493 U	0.001229 U
K-40	14.07	14	14.91	0.08189 U
Mn-54	0.02057 U	0.01204 U	0.001556 U	0.0148 U
Nb-95	-0.001668 U	-0.1073 U	0.05122 U	0.02559 U
Pb-212	0.9866	0.55	0.5637	0.4908
Pb-214	0.4899	0.2463	0.4021	0.5304
Ra-226		1.201 U		1.483
Ru-103	-0.02074 U	0.03725 U	0.01681 U	-0.06758 U
Ru-106	-0.7413 U	-0.1723 U	0.04196 U	-0.07703 U
Sb-124	0 U	0.01427 U	-0.01001 U	-0.01166 U
Sb-125				
Tl-208		0.447	0.4631	
Zn-65	-0.08158 U	-0.06081 U	0.1082 U	0.2184
Zr-95	0.03855 U	-0.01697 U	0.01081 U	-0.01007 U
SOF	0.019	0.005		

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Sediment Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-08 -- Sediment (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG004-035 (267) OG004GUFN036 7/13/1998	OG004-037 (269) OG004GUFN037 7/13/1998
Ac-228	0.8465	1.192
Ag-108m	-0.00259 U	-0.03141 U
Ag-110m	-0.01715 U	-0.02704 U
Am-241	0 U	0 U
Bi-212	0.606 U	0.9621
Bi-214	0.6923	0.7381
Ce-144	-0.1076 U	0.01822 U
Co-58	0.03117 U	-0.0174 U
Co-60	0.008381 U	-0.01455 U
Cs-134	-0.02873 U	-1.448 U
Cs-137	0.1071	0.09296
Fe-59	-0.05715 U	0.03396 U
K-40	18.68	3.379
Mn-54	0.009301 U	0.02903 U
Nb-95	-0.03769 U	0.03287 U
Pb-212	0.8274	1.122
Pb-214	0.7744	0.7863
Ra-226	2.196	1.892
Ru-103	-0.0387 U	-0.01001 U
Ru-106	-0.1751 U	-0.2026 U
Sb-124	0.01839 U	0.01619 U
Sb-125	0.3712 U	
Tl-208	0.6919	1.034
Zn-65	-0.1263 U	-0.1431 U
Zr-95	-0.04625 U	0.04459 U
SOF	0.009	0.008

Table 1
Sum of Fractions
OOL-08 -- Sod
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
659	IA-71	IATZ-71	0.147
657	IA-70	IATZ-70	0.049
655	IA-69	IATZ-69	0.269
653	IA-68	IATZ-68	0.057
		Min	0.049
		Max	0.269
		Mean	0.131

Table 2
Statistical Data Summary -- OOL-08 -- Sod
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Co-58	pCi/g	0	5	0.000				
Co-60	pCi/g	2	5	0.134	0.001	0.133	0.134	0.134
Cs-134	pCi/g	0	5	0.000				
Cs-137	pCi/g	4	5	1.427	1.086	0.605	2.950	1.076

Table 3
Summary of Detected Results Above Criteria
OOL-08 -- Sod
Yankee Nuclear Power Station Rowe, MA
DCGL_Sod

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Co-58	0	5		pCi/g	0	
Co-60	2	5	4.84	pCi/g	0	0.13
Cs-134	0	5	6.71	pCi/g	0	
Cs-137	4	5	12.24	pCi/g	0	2.95

Table 4
Rad
OOL-08 -- Sod (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-30 (634)	IA-68 (653)	IA-69 (655)	IA-70 (657)	IA-71 (659)
Sample ID	IATS-30A	IATZ-68	IATZ-69	IATZ-70	IATZ-71
Date Sampled	5/19/1993	6/14/1993	6/14/1993	6/11/1993	6/11/1993
Co-58	0.115 UM	0.086 UM	0.055 UM	0.039 UM	0.052 UM
Co-60	0.155 UM	0.105 UM	0.133	0.0577 UM	0.134
Cs-134	0.098 UM	0.085 UM	0.056 UM	0.048 UM	0.036 UM
Cs-137	0.165 UM	0.692	2.95	0.605	1.46
SOF		0.057	0.269	0.049	0.147

Table 1
Sum of Fractions
OOL-08 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
197	OG003-026	OG003GUFU026	0.155
10	OG016-001	OG016GUFU001	0.031
227	OG008-022	OG008GUFD022	0.007
226	OG008-020	OG008GUFD020	0.005
224	OG008-018	OG008GUFD018	0.011
222	OG008-016	OG008GUFD016	0.078
221	OG008-015	OG008GUFD015	0.024
220	OG008-014	OG008GUFD014	0.004
202	OG003-032	OG003GUFU032	0.103
201	OG003-031	OG003GUFU031	0.135
200	OG003-030	OG003GUFU030	0.051
229	OG008-024	OG008GUFD024	0.004
198	OG003-027	OG003GUFU027	0.043
230	OG008-025	OG008GUFD025	0.011
196	OG003-024	OG003GUFU024	0.059
195	OG003-023	OG003GUFU023	0.312
194	OG003-022	OG003GUFU022	0.072
193	OG003-021	OG003GUFU021	0.076
192	OG003-020	OG003GUFU020	0.130
191	OG003-019	OG003GUFU019	0.068
190	OG003-018	OG003GUFU018	0.105
189	OG003-017	OG003GUFU017	0.035
188	og003-016	og003gufu016	0.046
187	og003-015	og003gufu015	0.070
199	OG003-028	OG003GUFU028	0.043
245	OG004-008	OG004GUFU008	0.010
266	OG004-032	OG004GUFD032	0.006

Table 1
Sum of Fractions
MOOL-08 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
261	OG004-026	OG004GUFD026	0.013
258	OG004-022	OG004GUFD022	0.008
257	OG004-020	OG004GUFD020	0.010
254	OG004-017	OG004GUFD017	0.008
253	OG004-016	OG004GUFD016	0.036
252	OG004-015	OG004GUFD015	0.013
251	OG004-014	OG004GUFD014	0.007
250	OG004-013	OG004GUFU013	0.047
249	OG004-012	OG004GUFD012	0.010
228	OG008-023	OG008GUFD023	0.005
246	OG004-009	OG004GUFD009	0.004
184	OG003-012	OG003GUFU012	0.054
244	OG004-007	OG004GUFD007	0.014
243	OG004-006	OG004GUFU006	0.153
242	OG004-005	OG004GUFD005	0.047
241	OG004-004	OG004GUFU004	0.104
240	OG004-003	OG004GUFD003	0.029
235	OG008-030	OG008GUFD030	0.028
234	OG008-029	OG008GUFD029	0.012
233	OG008-028	OG008GUFD028	0.011
232	OG008-027	OG008GUFD027	0.019
231	OG008-026	OG008GUFD026	0.010
247	OG004-010	OG004GUFU010	0.010
21	OG016-014	OG016GUFU014	0.032
33	OG016-027	OG016GUFU027	0.040
32	OG016-026	OG016GUFU026	0.075
31	OG016-025	OG016GUFU025	0.114

Table 1
Sum of Fractions
OOL-08 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
30	OG016-024	OG016GUFU024	0.103
29	OG016-023	OG016GUFU023	0.081
28	OG016-022	OG016GUFU022	0.090
27	OG016-021	OG016GUFU021	0.019
26	OG016-020	OG016GUFU020	0.033
25	OG016-018	OG016GUFU018	0.093
24	OG016-017	OG016GUFU017	0.052
186	og003-014	og003gufu014	0.065
22	OG016-015	OG016GUFD015	0.028
36	OG016-031	OG016GUFD031	0.077
20	OG016-013	OG016GUFU013	0.073
19	OG016-012	OG016GUFU012	0.054
18	OG016-011	OG016GUFU011	0.041
17	OG016-010	OG016GUFU010	0.028
16	OG016-009	OG016GUFU009	0.024
15	OG016-008	OG016GUFU008	0.033
14	OG016-007	OG016GUFU007	0.026
13	OG016-004	OG016GUFD004	0.034
12	OG016-003	OG016GUFU003	0.031
11	OG016-002	OG016GUFU002	0.018
23	OG016-016	OG016GUFD016	0.089
155	OG007-027	OG007GAFD027	0.008
273	OG005-003	OG005GUFD003	0.041
183	OG003-011	OG003GUFU011	0.059
182	OG003-010	OG003GUFU010	0.023
181	OG003-009	OG003GUFU009	0.105
180	OG003-008	OG003GUFU008	0.097

Table 1
Sum of Fractions
POOL-08 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
179	OG003-007	OG003GUFU007	0.199
178	OG003-006	OG003GUFU006	0.049
177	OG003-005	OG003GUFU005	0.227
176	OG003-004	OG003GUFU004	0.063
175	OG003-003	OG003GUFU003	0.107
34	OG016-028	OG016GUFU028	0.150
173	OG003-001	OG003GUFU001	0.069
35	OG016-029	OG016GUFU029	0.158
154	OG007-026	OG007GAFD026	0.007
153	OG007-025	OG007GAFD025	0.005
80	OG002-032	OG002GUFU032	0.085
78	OG002-030	OG002GUFU030	0.010
75	OG002-026	OG002GUFU026	0.063
74	OG002-025	OG002GUFU025	0.026
73	og002-024	og002gufu024	0.050
39	OG016-034	OG016GUFU034	0.020
38	OG016-033	OG016GUFU033	0.038
37	OG016-032	OG016GUFU032	0.081
185	og003-013	og003gufu013	0.081
174	OG003-002	OG003GUFU002	0.052
917	OG009-009	OG009GUFU009	0.005
931	OG009-030	OG009GUFU030	0.028
930	OG009-029	OG009GUFU029	0.147
929	OG009-028	OG009GUFU028	0.068
928	OG009-026	OG009GUFU026	0.058
927	OG009-025	OG009GUFU025	0.029
926	OG009-023	OG009GUFU023	0.063

Table 1
Sum of Fractions
OOL-08 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
925	OG009-018	OG009GUFU018	0.029
924	OG009-016	OG009GUFU016	0.029
923	OG009-015	OG009GUFU015	0.047
922	OG009-014	OG009GUFU014	0.047
423	OF-255	OFTS-255	0.060
920	OG009-012	OG009GUFU012	0.056
978	OG020-019	OG020GUFD019	0.005
916	OG009-008	OG009GUFU008	0.038
932	OG009-031	OG009GUFD031	0.004
918	OG009-010	OG009GUFD010	0.004
657	IA-70	IATS-70	0.027
655	IA-69	IATS-69	0.015
630	IA-23	IATS-23	0.040
629	IA-20	IATS-20	0.051
426	OF-258	OFTS-258	0.096
425	OF-257	OFTS-257	0.066
271	OG005-001	OG005GUFD001	0.030
921	OG009-013	OG009GUFU013	0.061
3076	SE421	SE421	0.008
3257	TS529	TS529	0.010
3204	TS439	TS439	0.066
3203	TS438	TS438	0.010
3087	SE432	SE432	0.013
3086	SE431	SE431	0.004
3085	SE430	SE430	0.017
3084	SE429	SE429	0.011
3083	SE428	SE428	0.010

Table 1
Sum of Fractions
OOL-08 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
3082	SE427	SE427	0.009
3081	SE426	SE426	0.009
933	OG009-033	OG009GUFU033	0.064
3078	SE423	SE423	0.005
934	OG009-034	OG009GUFU034	0.057
3075	SE420	SE420	0.006
3072	SE417	SE417	0.006
986	OG020-029	OG020GUFU029	0.135
985	OG020-026	OG020GUFD026	0.006
984	OG020-025	OG020GUFD025	0.005
983	OG020-024	OG020GUFD024	0.292
982	OG020-023	OG020GUFD023	0.010
981	OG020-022	OG020GUFD022	0.008
980	OG020-021	OG020GUFD021	0.005
979	OG020-020	OG020GUFD020	0.012
407	OF-239	OFTS-239	0.197
3079	SE424	SE424	0.007
292	OG005-024	OG005GUFD024	0.020
374	OF-206	OFTS-206	0.025
373	OF-205	OFTS-205	0.014
371	OF-201	OFTS-201	0.052
370	OF-200	OFTS-200	0.023
300	OG005-032	OG005GUFD032	0.014
299	OG005-031	OG005GUFD031	0.034
298	OG005-030	OG005GUFU030	0.038
297	OG005-029	OG005GUFU029	0.057
296	OG005-028	OG005GUFD028	0.042

Table 1
Sum of Fractions
OOL-08 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
295	OG005-027	OG005GUFD027	0.023
424	OF-256	OFTS-256	0.091
293	OG005-025	OG005GUFD025	0.028
378	OF-210	OFTS-210	0.007
291	OG005-023	OG005GUFD023	0.345
289	OG005-021	OG005GUFD021	0.016
288	OG005-020	OG005GUFD020	0.007
287	OG005-019	OG005GUFD019	0.028
286	OG005-018	OG005GUFD018	0.019
285	OG005-016	OG005GUFD016	0.096
284	OG005-015	OG005GUFD015	0.021
283	OG005-014	OG005GUFD014	0.007
274	OG005-004	OG005GUFD004	0.020
3258	TS530	TS530	0.010
294	OG005-026	OG005GUFD026	0.063
390	OF-221	OFTS-221	0.052
406	OF-238	OFTS-238	0.021
405	OF-237	OFTS-237	0.008
404	OF-236	OFTS-236	0.066
403	OF-235	OFTS-235	0.040
402	OF-234	OFTS-234	0.040
401	OF-232	OFTS-232	0.097
400	OF-231	OFTS-231	0.065
399	OF-230	OFTS-230	0.103
398	OF-229	OFTS-229	0.058
397	OF-228	OFTS-228	0.009
376	OF-207	OFTS-207	0.153

Table 1
Sum of Fractions
OOL-08 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
393	OF-224	OFTS-224	0.009
377	OF-209	OFTS-209	0.134
389	OF-220	OFTS-220	0.096
388	OF-219	OFTS-219	0.127
387	OF-218	OFTS-218	0.017
386	OF-217	OFTS-217	0.057
385	OF-216	OFTS-216	0.042
383	OF-215	OFTS-215	0.065
382	OF-214	OFTS-214	0.050
381	OF-213	OFTS-213	0.086
380	OF-212	OFTS-212	0.010
379	OF-211	OFTS-211	0.075
272	OG005-002	OG005GUFD002	0.021
394	OF-225	OFTS-225	0.007
Min			0.004
Max			0.345
Mean			0.051

Table 2
Statistical Data Summary – OOL-08 -- Soil
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	175	176	0.740	0.230	0.197	1.842	0.754
Ag-108m	pCi/g	4	229	0.034	0.008	0.023	0.044	0.034
Ag-110m	pCi/g	3	190	0.057	0.008	0.047	0.061	0.061
Am-241	pCi/g	0	190	0.000				
Ba-133	pCi/g	0	3	0.000				
Ba-140	pCi/g	0	3	0.000				
Bi-212	pCi/g	102	130	0.888	0.254	0.448	1.829	0.853
Bi-214	pCi/g	164	164	0.482	0.113	0.211	0.901	0.478
Ce-141	pCi/g	0	2	0.000				
Ce-144	pCi/g	8	190	0.296	0.046	0.219	0.360	0.308
Co-58	pCi/g	2	238	0.074	0.007	0.069	0.079	0.074
Co-60	pCi/g	4	238	0.404	0.374	0.040	0.754	0.411
Cr-51	pCi/g	1	2	0.656		0.656	0.656	0.656
Cs-134	pCi/g	3	238	0.052	0.017	0.033	0.066	0.058
Cs-136	pCi/g	1	1	2.793		2.793	2.793	2.793
Cs-137	pCi/g	200	238	0.587	0.622	0.040	4.225	0.423
Eu-152	pCi/g	3	8	0.938	0.777	0.208	1.755	0.850
Fe-59	pCi/g	3	190	0.147	0.023	0.125	0.172	0.144
I-131	pCi/g	0	1	0.000				
K-40	pCi/g	186	190	16.282	4.928	1.890	27.010	17.425
Kr-85	pCi/g	2	2	6.399	3.262	4.092	8.705	6.399
Mn-54	pCi/g	2	229	0.123	0.105	0.049	0.197	0.123
Nb-95	pCi/g	11	190	0.078	0.028	0.053	0.152	0.068
Np-239	pCi/g	0	6	0.000				
Pb-212	pCi/g	182	187	0.701	0.246	0.104	1.623	0.726
Pb-214	pCi/g	184	185	0.510	0.117	0.167	0.811	0.525
Ra-226	pCi/g	100	128	15.740	135.988	0.852	1362.000	1.984
Ru-103	pCi/g	4	190	0.064	0.014	0.050	0.083	0.062
Ru-106	pCi/g	9	190	0.432	0.155	0.230	0.714	0.392
Sb-124	pCi/g	3	190	0.048	0.012	0.035	0.055	0.055
Sb-125	pCi/g	1	18	0.215		0.215	0.215	0.215
Sc-75	pCi/g	0	2	0.000				
Tl-202	pCi/g	0	2	0.000				
Tl-208	pCi/g	128	130	0.712	0.195	0.209	1.282	0.711
U-235	pCi/g	0	2	0.000				
Zn-65	pCi/g	2	190	0.222	0.097	0.154	0.291	0.222
Zr-95	pCi/g	10	190	0.087	0.018	0.064	0.122	0.080

Table 3
Summary of Detected Results Above Criteria
OOL-08 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL_Soil

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	175	176		pCi/g	0	1.84
Ag-108m	4	229	8.52	pCi/g	0	0.04
Ag-110m	3	190		pCi/g	0	0.06
Am-241	0	190	44.35	pCi/g	0	
Ba-133	0	3		pCi/g	0	
Ba-140	0	3		pCi/g	0	
Bi-212	102	130		pCi/g	0	1.83
Bi-214	164	164		pCi/g	0	0.90
Ce-141	0	2		pCi/g	0	
Ce-144	8	190		pCi/g	0	0.36
Co-58	2	238		pCi/g	0	0.08
Co-60	4	238	4.84	pCi/g	0	0.75
Cr-51	1	2		pCi/g	0	0.66
Cs-134	3	238	6.71	pCi/g	0	0.07
Cs-136	1	1		pCi/g	0	2.79
Cs-137	200	238	12.24	pCi/g	0	4.23
Eu-152	3	8	12.06	pCi/g	0	1.76
Fe-59	3	190		pCi/g	0	0.17
I-131	0	1		pCi/g	0	
K-40	186	190		pCi/g	0	27.01
Kr-85	2	2		pCi/g	0	8.71
Mn-54	2	229	21.66	pCi/g	0	0.20
Nb-95	11	190		pCi/g	0	0.15
Np-239	0	6		pCi/g	0	
Pb-212	182	187		pCi/g	0	1.62
Pb-214	184	185		pCi/g	0	0.81
Ra-226	100	128		pCi/g	0	1362.00
Ru-103	4	190		pCi/g	0	0.08
Ru-106	9	190	68.21	pCi/g	0	0.71
Sb-124	3	190		pCi/g	0	0.05
Sb-125	1	18	37.73	pCi/g	0	0.21
Se-75	0	2		pCi/g	0	
Tl-202	0	2		pCi/g	0	
Tl-208	128	130		pCi/g	0	1.28
U-235	0	2		pCi/g	0	
Zn-65	2	190		pCi/g	0	0.29
Zr-95	10	190		pCi/g	0	0.12

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-20 (629)	IA-23 (630)	IA-30 (634)	IA-31 (635)	IA-32 (636)	IA-68 (653)	IA-69 (655)
Sample ID	IATS-20	IATS-23	IATS-30B	IATS-31	IATS-32	IATS-68	IATS-69
Date Sampled	5/6/1993	5/6/1993	5/6/1993	5/6/1993	5/6/1993	6/14/1993	6/14/1993
Ac-228							
Ag-108m							
Ag-110m							
Am-241							
Ba-133							
Ba-140							
Bi-212							
Bi-214							
Ce-141							
Ce-144							
Co-58	0.038 UM	0.04 UM	0.043 UM	0.086 UM	0.103 UM	0.112 UM	0.064 UM
Co-60	0.0599 UM	0.0617 UM	0.0567 UM	0.116 UM	0.141 UM	0.133 UM	0.0958 UM
Cr-51							
Cs-134	0.038 UM	0.043 UM	0.041 UM	0.081 UM	0.077 UM	0.126 UM	0.066 UM
Cs-136							
Cs-137	0.629	0.484	0.0597 UM	0.129 UM	0.146 UM	0.136 UM	0.188
Eu-152							
Fe-59							
I-131							
K-40							
Kr-85							
Mn-54							
Nb-95							
Np-239							
Pb-212							
Pb-214							
Ra-226							
Ru-103							
Ru-106							
Sb-124							
Sb-125							
Se-75							
Tl-202							
Tl-208							
U-235							
Zn-65							
Zr-95							
SOF	0.051	0.04					0.015

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-70 (657)	IA-71 (659)	OF-200 (370)	OF-201 (371)	OF-205 (373)	OF-206 (374)
Sample ID	IATS-70	IATS-71	OFTS-200	OFTS-201	OFTS-205	OFTS-206
Date Sampled	6/14/1993	6/14/1993	10/19/1994	10/14/1994	10/17/1994	10/14/1994
Ac-228						
Ag-108m			0.046 UM	0.059 UM	0.057 UM	0.052 UM
Ag-110m						
Am-241						
Ba-133						
Ba-140						
Bi-212						
Bi-214						
Ce-141						
Ce-144						
Co-58	0.056 UM	0.06 UM	0.064 UM	0.072 UM	0.056 UM	0.058 UM
Co-60	0.0625 UM	0.0884 UM	0.0691 UM	0.0923 UM	0.0996 UM	0.092 UM
Cr-51						
Cs-134	0.049 UM	0.068 UM	0.054 UM	0.056 UM	0.053 UM	0.057 UM
Cs-136						
Cs-137	0.332	0.144 UM	0.287	0.635	0.167	0.311
Eu-152						
Fe-59						
I-131						
K-40						
Kr-85						
Mn-54			0.064 UM	0.074 UM	0.074 UM	0.059 UM
Nb-95						
Np-239						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Sb-125						
Se-75						
Tl-202						
Tl-208						
U-235						
Zn-65						
Zr-95						
SOF	0.027		0.023	0.052	0.014	0.025

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OF-207 (376) OFTS-207 10/19/1994	OF-209 (377) OFTS-209 10/19/1994	OF-210 (378) OFTS-210 10/19/1994	OF-211 (379) OFTS-211 10/19/1994	OF-212 (380) OFTS-212 10/19/1994	OF-213 (381) OFTS-213 10/18/1994
Ac-228						
Ag-108m	0.061 UM	0.057 UM	0.037 UM	0.057 UM	0.056 UM	0.061 UM
Ag-110m						
Am-241						
Ba-133						
Ba-140						
Bi-212						
Bi-214						
Ce-141						
Ce-144						
Co-58	0.08 UM	0.062 UM	0.053 UM	0.063 UM	0.077 UM	0.061 UM
Co-60	0.698	0.0952 UM	0.079 UM	0.0935 UM	0.0803 UM	0.0792 UM
Cr-51						
Cs-134	0.077 UM	0.07 UM	0.036 UM	0.045 UM	0.067 UM	0.058 UM
Cs-136						
Cs-137	0.121 UM	1.641	0.091	0.922	0.124	1.054
Eu-152						
Fe-59						
I-131						
K-40						
Kr-85						
Mn-54	0.197	0.085 UM	0.051 UM	0.077 UM	0.058 UM	0.045 UM
Nb-95						
Np-239						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Sb-125						
Se-75						
Tl-202						
Tl-208						
U-235						
Zn-65						
Zr-95						
SOF	0.153	0.134	0.007	0.075	0.01	0.086

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-214 (382)	OF-215 (383)	OF-216 (385)	OF-217 (386)	OF-218 (387)	OF-219 (388)
Sample ID	OFTS-214	OFTS-215	OFTS-216	OFTS-217	OFTS-218	OFTS-219
Date Sampled	10/19/1994	10/19/1994	10/19/1994	10/18/1994	10/19/1994	10/19/1994
Ac-228						
Ag-108m	0.049 UM	0.058 UM	0.054 UM	0.046 UM	0.055 UM	0.049 UM
Ag-110m						
Am-241						
Ba-133						
Ba-140						
Bi-212						
Bi-214						
Ce-141						
Ce-144						
Co-58	0.055 UM	0.066 UM	0.053 UM	0.059 UM	0.069 UM	0.054 UM
Co-60	0.0592 UM	0.0669 UM	0.0635 UM	0.081 UM	0.0553 UM	0.0679 UM
Cr-51						
Cs-134	0.063 UM	0.07 UM	0.05 UM	0.046 UM	0.066 UM	0.054 UM
Cs-136						
Cs-137	0.607	0.8	0.516	0.702	0.202	1.556
Eu-152						
Fe-59						
I-131						
K-40						
Kr-85						
Mn-54	0.065 UM	0.066 UM	0.067 UM	0.055 UM	0.064 UM	0.059 UM
Nb-95						
Np-239						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Sb-125						
Se-75						
Tl-202						
Tl-208						
U-235						
Zn-65						
Zr-95						
SOF	0.05	0.065	0.042	0.057	0.017	0.127

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OF-220 (389) OFTS-220 10/18/1994	OF-221 (390) OFTS-221 10/18/1994	OF-222 (391) OFTS-222 11/14/1994	OF-223 (392) OFTS-223 11/14/1994	OF-224 (393) OFTS-224 11/14/1994	OF-225 (394) OFTS-225 11/14/1994
Ac-228						
Ag-108m	0.07 UM	0.069 UM	0.048 UM	0.059 UM	0.05 UM	0.053 UM
Ag-110m						
Am-241						
Ba-133						
Ba-140						
Bi-212						
Bi-214						
Ce-141						
Ce-144						
Co-58	0.075 UM	0.066 UM	0.063 UM	0.076 UM	0.069 UM	0.065 UM
Co-60	0.113 UM	0.089 UM	0.071 UM	0.0753 UM	0.0597 UM	0.101 UM
Cr-51						
Cs-134	0.083 UM	0.075 UM	0.055 UM	0.062 UM	0.056 UM	0.063 UM
Cs-136						
Cs-137	1.177	0.638	0.0762 UM	0.0978 UM	0.112	0.0872
Eu-152						
Fe-59						
I-131						
K-40						
Kr-85						
Mn-54	0.086 UM	0.081 UM	0.065 UM	0.077 UM	0.062 UM	0.075 UM
Nb-95						
Np-239						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Sb-125						
Se-75						
Tl-202						
Tl-208						
U-235						
Zn-65						
Zr-95						
SOF	0.096	0.052			0.009	0.007

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-226 (395)	OF-227 (396)	OF-228 (397)	OF-229 (398)	OF-230 (399)	OF-231 (400)
Sample ID	OFTS-226	OFTS-227	OFTS-228	OFTS-229	OFTS-230	OFTS-231
Date Sampled	11/9/1994	11/15/1994	11/10/1994	11/15/1994	11/14/1994	11/14/1994
Ac-228						
Ag-108m	0.057 UM	0.067 UM	0.046 UM	0.059 UM	0.068 UM	0.069 UM
Ag-110m						
Am-241						
Ba-133						
Ba-140						
Bi-212						
Bi-214						
Ce-141						
Ce-144						
Co-58	0.066 UM	0.077 UM	0.057 UM	0.066 UM	0.07 UM	0.08 UM
Co-60	0.0895 UM	0.0979 UM	0.0837 UM	0.0724 UM	0.0866 UM	0.125 UM
Cr-51						
Cs-134	0.072 UM	0.074 UM	0.07 UM	0.064 UM	0.073 UM	0.066 UM
Cs-136						
Cs-137	0.0875 UM	0.0958 UM	0.113	0.714	1.266	0.794
Eu-152						
Fe-59						
I-131						
K-40						
Kr-85						
Mn-54	0.087 UM	0.087 UM	0.06 UM	0.058 UM	0.079 UM	0.084 UM
Nb-95						
Np-239						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Sb-125						
Se-75						
Tl-202						
Tl-208						
U-235						
Zn-65						
Zr-95						
SOF			0.009	0.058	0.103	0.065

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-232 (401)	OF-234 (402)	OF-235 (403)	OF-236 (404)	OF-237 (405)	OF-238 (406)
Sample ID	OFTS-232	OFTS-234	OFTS-235	OFTS-236	OFTS-237	OFTS-238
Date Sampled	11/14/1994	11/21/1994	11/21/1994	11/21/1994	11/21/1994	11/22/1994
Ac-228						
Ag-108m	0.082 UM	0.048 UM	0.058 UM	0.058 UM	0.054 UM	0.053 UM
Ag-110m						
Am-241						
Ba-133						
Ba-140						
Bi-212						
Bi-214						
Ce-141						
Ce-144						
Co-58	0.082 UM	0.058 UM	0.061 UM	0.05 UM	0.077 UM	0.069 UM
Co-60	0.107 UM	0.0877 UM	0.091 UM	0.0784 UM	0.0994 UM	0.0834 UM
Cr-51						
Cs-134	0.065 UM	0.055 UM	0.064 UM	0.055 UM	0.066 UM	0.057 UM
Cs-136						
Cs-137	1.193	0.49	0.484	0.806	0.0994	0.259
Eu-152						
Fe-59						
I-131						
K-40						
Kr-85						
Mn-54	0.098 UM	0.069 UM	0.085 UM	0.073 UM	0.067 UM	0.075 UM
Nb-95						
Np-239						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Sb-125						
Se-75						
Tl-202						
Tl-208						
U-235						
Zn-65						
Zr-95						
SOF	0.097	0.04	0.04	0.066	0.008	0.021

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OF-239 (407)	OF-255 (423)	OF-256 (424)	OF-257 (425)	OF-258 (426)	og002-021 (70)
Sample ID	OFTS-239	OFTS-255	OFTS-256	OFTS-257	OFTS-258	og002gufd021
Date Sampled	11/22/1994	12/5/1994	12/5/1994	12/5/1994	12/5/1994	7/9/1998
Ac-228						1.017
Ag-108m	0.065 UM	0.045 UM	0.062 UM	0.051 UM	0.054 UM	-0.004625 U
Ag-110m						-0.03661 U
Am-241						0 U
Ba-133						
Ba-140						
Bi-212						0.6416
Bi-214						0.4836
Ce-141						
Ce-144						-0.1058 U
Co-58	0.071 UM	0.04 UM	0.06 UM	0.059 UM	0.048 UM	-0.01432 U
Co-60	0.754	0.0824 UM	0.0829 UM	0.11 UM	0.0863 UM	-0.0002428 U
Cr-51						
Cs-134	0.065 UM	0.028 UM	0.058 UM	0.054 UM	0.048 UM	0.007784 U
Cs-136						
Cs-137	0.502	0.739	1.111	0.803	1.178	0.03717 U
Eu-152						
Fe-59						-0.1098 U
I-131						
K-40						19.08
Kr-85						
Mn-54	0.093 UM	0.047 UM	0.064 UM	0.07 UM	0.049 UM	0.01797 U
Nb-95						-0.004194 U
Np-239						
Pb-212						1.011
Pb-214						0.5905
Ra-226						2.255
Ru-103						-0.02214 U
Ru-106						0.1799 U
Sb-124						-0.02761 U
Sb-125						
Se-75						
Tl-202						
Tl-208						0.7742
U-235						
Zn-65						0.1552 U
Zr-95						0.02245 U
SOF	0.197	0.06	0.091	0.066	0.096	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG002-023 (72) OG002GUFD023 7/9/1998	OG002-028 (77) OG002GUFD028 7/13/1998	og002-024 (73) og002gufu024 7/9/1998	OG002-025 (74) OG002GUFU025 7/13/1998	OG002-026 (75) OG002GUFU026 7/13/1998
Ac-228	0.9815	0.9391		0.6016	0.7554
Ag-108m	0.01352 U	-0.008396 U	-0.02703 U	0.003142 U	-0.01161 U
Ag-110m	-0.002924 U	0.02551 U	0.01194 U	0.04162 U	-0.03209 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212	1.09			0.7841	1.169
Bi-214	0.5473			0.4361	0.5966
Ce-141					
Ce-144	0.0575 U	-0.04937 U	0.1304 U	0.3138	-0.1211 U
Co-58	-0.04679 U	0.01556 U	-0.01637 U	0.06903	0.01853 U
Co-60	0.006442 U	-0.0303 U	-0.008603 U	0.03643 U	0.004287 U
Cr-51					
Cs-134	-0.1193 U	-0.01715 U	0.01254 U	-0.04817 U	-0.03185 U
Cs-136					
Cs-137	0.006605 U	0.01284 U	0.6062	0.3207	0.7744
Eu-152					
Fe-59	0.007986 U	-0.02437 U	-0.08189 U	0.1251	0.01819 U
I-131					
K-40	17.99	-0.2988 U	4.678	13.75	19.32
Kr-85					
Mn-54	0.01054 U	0.01303 U	0.01249 U	0.02123 U	-0.002442 U
Nb-95	-0.003227 U	-0.02898 U	-0.04846 U	-0.007835 U	-0.009415 U
Np-239					
Pb-212	1.016	0.8508	0.1626	0.5302	0.9564
Pb-214	0.5454	0.6296		0.3914	0.6859
Ra-226	1.929	1.725		1.855	2.75
Ru-103	-0.00346 U	0.01135 U	-0.01523 U	0.01076 U	0.02183 U
Ru-106	-0.01487 U	-0.07528 U	-0.1447 U	-0.03806 U	-0.1281 U
Sb-124	0.005622 U	0.001571 U	0 U	0.03972 U	0.001813 U
Sb-125					
Se-75					
Tl-202					
Tl-208	0.9734				0.8012
U-235					
Zn-65	-0.0728 U	0.2909	0.02041 U	-0.1204 U	-0.1249 U
Zr-95	0.07811	-0.01778 U	-0.07218 U	0.009364 U	0.0827
SOF			0.05	0.026	0.063

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG002-030 (78)	OG002-032 (80)	OG003-001 (173)	OG003-002 (174)
Sample ID	OG002GUFU030	OG002GUFU032	OG003GUFU001	OG003GUFU002
Date Sampled	7/13/1998	7/13/1998	7/16/1998	7/16/1998
Ac-228	0.9784	0.8797	0.5789	0.652
Ag-108m	0.01861 U	0.02991 U	-0.01933 U	-0.001266 U
Ag-110m	0.01101 U	-0.02546 U	-0.03876 U	-0.01223 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212		0.9544	0.8201	
Bi-214		0.5286	0.5154	
Ce-141				
Ce-144	0.36	0.05735 U	-0.1234 U	-0.1428 U
Co-58	0.01451 U	-0.02595 U	0.007362 U	0.01708 U
Co-60	-0.02731 U	-0.00605 U	0.01169 U	-0.01956 U
Cr-51				
Cs-134	-0.03495 U	-0.3455 U	-0.028 U	-0.01233 U
Cs-136				
Cs-137	0.1256	0.9722	0.8433	0.6368
Eu-152				
Fe-59	0.004697 U	0.01014 U	0.006137 U	0.04016 U
I-131				
K-40	3.653	15.63	18.47	17.76
Kr-85				
Mn-54	0.01205 U	0.008075 U	-0.01934 U	-0.02323 U
Nb-95	0.002318 U	0.06423 U	0.02595 U	0.02309 U
Np-239				
Pb-212	0.7048	0.7159	0.4994	0.6199
Pb-214	0.4582	0.5466	0.5465	0.5776
Ra-226	1.147 U			2.026
Ru-103	0 U	0.03043 U	-0.01689 U	-0.01245 U
Ru-106	0.03044 U	-0.2351 U	-0.07022 U	-0.01725 U
Sb-124	0.03346 U	0.03468	0.01022 U	0.03249 U
Sb-125		0.2145		0.09417 U
Se-75				
Tl-202				
Tl-208		0.5953		0.373
U-235				
Zn-65	0.04705 U	0.04212 U	-0.06866 U	-0.0903 U
Zr-95	-0.04028 U	0.03646 U	-0.01795 U	0.06555 U
SOF	0.01	0.085	0.069	0.052

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG003-003 (175)	OG003-004 (176)	OG003-005 (177)	OG003-006 (178)
Sample ID	OG003GUFU003	OG003GUFU004	OG003GUFU005	OG003GUFU006
Date Sampled	7/16/1998	7/16/1998	7/15/1998	7/15/1998
Ac-228	0.718	0.4557	0.668	0.855
Ag-108m	-0.01295 U	-0.02174 U	-0.04664 U	-0.002381 U
Ag-110m	-0.02864 U	0.005116 U	0.03198 U	0.001054 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212		0.5809		0.3819 U
Bi-214	0.7149	0.8212	0.9011	0.8143
Ce-141				
Ce-144	0.04764 U	0.05526 U	-0.1811 U	0.05963 U
Co-58	0.01108 U	-0.01315 U	0.02274 U	-0.03649 U
Co-60	0.008325 U	0.002442 U	-0.03903 U	-0.02922 U
Cr-51				
Cs-134	0.05595 U	-0.0402 U	-0.4275 U	-0.08184 U
Cs-136				
Cs-137	1.315	0.7748	2.65	0.6012
Eu-152				
Fe-59	0.1258 U	-0.07595 U	0.06312 U	-0.04378 U
I-131				
K-40	23.07	14.06	14.47	21.21
Kr-85				
Mn-54	-0.008199 U	0.01729 U	0.005818 U	-0.03192 U
Nb-95	-0.1123 U	-0.01814 U	-0.03353 U	-0.03422 U
Np-239				
Pb-212	0.6744	0.4147	0.628	0.8639
Pb-214	0.7553	0.4893	0.709	0.8107
Ra-226			2.937	2.257
Ru-103	0.05964 U	0.01108 U	0.002444 U	0.01849 U
Ru-106	0.3563 U	-0.08597 U	0.7136	-0.1044 U
Sb-124	0.03709 U	0.02157 U	0.1188 U	0.104 U
Sb-125				
Se-75				
Tl-202				
Tl-208		0.6755	0.6108	0.7807
U-235				
Zn-65	0.01374 U	0.01138 U	-0.1944 U	0.1855 U
Zr-95	-0.06 U	0.08073 U	-0.0426 U	-0.01112 U
SOF	0.107	0.063	0.227	0.049

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG003-007 (179)	OG003-008 (180)	OG003-009 (181)	OG003-010 (182)
Sample ID	OG003GUFU007	OG003GUFU008	OG003GUFU009	OG003GUFU010
Date Sampled	7/15/1998	7/14/1998	7/15/1998	7/15/1998
Ac-228	0.8661	0.5422	0.4127	0.5487
Ag-108m	-0.002122 U	-0.0006504 U	-0.009768 U	-0.0052 U
Ag-110m	0.04429 U	0.04525 U	0.005783 U	0.01281 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.9434			0.5271 U
Bi-214	0.7153	0.5114	0.4903	0.5464
Ce-141				
Ce-144	-0.1893 U	0.1511 U	0.1843 U	0.04132 U
Co-58	-0.04192 U	0.01261 U	-0.0101 U	0.01666 U
Co-60	0.006019 U	0.03757 U	0.02042 U	0.006057 U
Cr-51				
Cs-134	-0.03258 U	-0.19 U	-0.02792 U	-0.1731 U
Cs-136				
Cs-137	0.6582	1.191	1.289	0.2788
Eu-152	1.755			
Fe-59	0.03036 U	-0.01924 U	0 U	-0.09137 U
I-131				
K-40	16.8	18.28	15.2	20.02
Kr-85				
Mn-54	0.005832 U	-0.01431 U	0.01657 U	-0.02858 U
Nb-95	0.01126 U	-0.03322 U	0.08065 U	0.027 U
Np-239				
Pb-212	0.8753	0.6831	0.3655	0.5403
Pb-214	0.68	0.6264	0.6071	0.4929
Ra-226	3.028	1.792 U		
Ru-103	0.01351 U	-0.03377 U	-0.007763 U	0.004622 U
Ru-106	0.2065 U	-0.2263 U	-0.1528 U	0.08869 U
Sb-124	-0.01263 U	-0.01343 U	0.02527 U	0.01738 U
Sb-125				
Se-75				
Tl-202				
Tl-208	0.4304		0.2991	
U-235				
Zn-65	-0.07214 U	0.08544 U	-0.02062 U	0.1073 U
Zr-95	-0.077 U	0.03721 U	0.04539 U	0.02206 U
SOF	0.199	0.097	0.105	0.023

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG003-011 (183) OG003GUFU011 7/15/1998	OG003-012 (184) OG003GUFU012 7/15/1998	og003-013 (185) og003gufu013 7/15/1998	og003-014 (186) og003gufu014 7/15/1998
Ac-228	0.9187	0.6005	0.5922	0.8472
Ag-108m	-0.03365 U	0.001899 U	-0.00795 U	0.006785 U
Ag-110m	-0.03426 U	-0.01489 U	0.004259 U	-0.0205 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212				0.7063
Bi-214	0.6456	0.3942	0.5597	0.4905
Ce-141				
Ce-144	-0.05472 U	-0.01033 U	0.102 U	-0.1217 U
Co-58	-0.008732 U	0.02392 U	-0.0006973 U	-0.01523 U
Co-60	-0.01091 U	0.005772 U	-0.03778 U	-0.03023 U
Cr-51				
Cs-134	-0.02442 U	-0.1641 U	-0.2546 U	-0.0579 U
Cs-136				
Cs-137	0.7194	0.6587	0.9918	0.7986
Eu-152				
Fe-59	-0.06884 U	-0.08744 U	0.1717	-0.04005 U
I-131				
K-40	18.15	16.51	19.79	14.46
Kr-85				
Mn-54	-0.04319 U	0.01785 U	0.01856 U	0.008115 U
Nb-95	-0.06295 U	0.01226 U	0.09785	-0.002533 U
Np-239				
Pb-212	0.7265	0.6214	0.605	0.6514
Pb-214	0.6505	0.5681	0.6602	0.4962
Ra-226	2.801	1.66 U	1.204 U	
Ru-103	0.02976 U	-0.01901 U	0.002328 U	0.03718 U
Ru-106	-0.05467 U	0.2689 U	0.1623 U	0.02789 U
Sb-124	0 U	0 U	-0.04368 U	-0.04024 U
Sb-125				
Se-75				
Tl-202				
Tl-208	0.8085	0.3724		0.5095
U-235				
Zn-65	-0.023 U	0.1373 U	-0.08357 U	-0.06177 U
Zr-95	0.02448 U	0.008637 U	0.09851	-0.01008 U
SOF	0.059	0.054	0.081	0.065

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-08 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	og003-015 (187)	og003-016 (188)	OG003-017 (189)	OG003-018 (190)
Sample ID	og003gufu015	og003gufu016	OG003GUFU017	OG003GUFU018
Date Sampled	7/15/1998	7/15/1998	7/15/1998	7/15/1998
Ac-228	0.9562	0.5735	0.6072	0.6336
Ag-108m	0.004825 U	0.01254 U	0.009038 U	-0.001601 U
Ag-110m	0.05202 U	-0.02989 U	-0.006133 U	0.001251 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.9482	0.4723 U	0.4592 U	0.7867
Bi-214	0.4979		0.4652	0.4783
Ce-141				
Ce-144	0.2065 U	-0.1032 U	0.03346 U	0.1229 U
Co-58	-0.01241 U	-0.009847 U	0.01727 U	-0.04631 U
Co-60	-0.00000005221 U	0.01074 U	-0.06688 U	-0.02046 U
Cr-51				
Cs-134	-0.02703 U	0.01193 U	0.03875 U	-0.003913 U
Cs-136				
Cs-137	0.853	0.562	0.43	1.29
Eu-152				
Fe-59	0.09856 U	-0.0397 U	0.05888 U	0.03884 U
I-131				
K-40	17.78	13.6	13.38	16.1
Kr-85				
Mn-54	0.0006125 U	-0.00478 U	-0.006057 U	0.04295 U
Nb-95	0.002392 U	0.008781 U	-0.06233 U	-0.07838 U
Np-239				
Pb-212	0.8231	0.4904	0.751	0.6028
Pb-214	0.5297	0.473	0.5616	0.5304
Ra-226	1.749	2.363		
Ru-103	-0.01399 U	-0.001481 U	0.00839 U	-0.07178 U
Ru-106	0.06589 U	-0.06266 U	0 U	-0.04121 U
Sb-124	-0.02916 U	-0.04396 U	0.01783 U	0.05413 U
Sb-125				
Se-75				
Tl-202				
Tl-208		0.6075	0.7379	
U-235				
Zn-65	-0.1044 U	-0.1041 U	0.05651 U	-0.1383 U
Zr-95	0.02192 U	0.001739 U	-0.03154 U	-0.1851 U
SOF	0.07	0.046	0.035	0.105

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG003-019 (191) OG003GUFU019 7/14/1998	OG003-020 (192) OG003GUFU020 7/14/1998	OG003-021 (193) OG003GUFU021 7/14/1998	OG003-022 (194) OG003GUFU022 7/14/1998
Ac-228	0.4858	0.5841		
Ag-108m	0.002538 U	0.01757 U	0.01103 U	-0.005949 U
Ag-110m	0.04371 U	0.02358 U	0.02646 U	0.01285 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.8709	0.5638 U		
Bi-214	0.3771			
Ce-141				
Ce-144	-0.09632 U	0.02572 U	0.2186	-0.01018 U
Co-58	0.04746 U	-0.03255 U	0.01227 U	0.004374 U
Co-60	0.01032 U	0.00937 U	0.0151 U	0.03691 U
Cr-51				
Cs-134	-0.02525 U	0.009821 U	0.06559	-0.05309 U
Cs-136				
Cs-137	0.83	1.589	0.8113	0.8871
Eu-152				
Fe-59	0.02355 U	0.0419 U	0.03055 U	-0.09646 U
I-131				
K-40	11.45	12.14	3.627	10.78
Kr-85				
Mn-54	-0.01653 U	-0.00899 U	-0.001715 U	-0.02374 U
Nb-95	-0.03434 U	0.02528 U	0.04607 U	0.0404 U
Np-239				
Pb-212	0.4247	0.2802	0.0918 U	0.0854 U
Pb-214	0.3426	0.4009	0.1666	0.3496
Ra-226	2.256			
Ru-103	0.03715 U	-0.03691 U	-0.0218 U	0.001994 U
Ru-106	-0.1492 U	-0.1552 U	0.07834 U	0.05618 U
Sb-124	-0.02844 U	0.03155 U	0 U	0 U
Sb-125				
Se-75				
Tl-202				
Tl-208		0.447		
U-235				
Zn-65	-0.1096 U	-0.09678 U	0 U	-0.09183 U
Zr-95	-0.0518 U	0.06359 U	0.06422 U	0.08532 U
SOF	0.068	0.13	0.076	0.072

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG003-023 (195)	OG003-024 (196)	OG003-026 (197)	OG003-027 (198)
Sample ID	OG003GUFU023	OG003GUFU024	OG003GUFU026	OG003GUFU027
Date Sampled	7/14/1998	7/14/1998	7/14/1998	7/14/1998
Ac-228		0.6123	0.5592	0.5103
Ag-108m	-0.00688 U	-0.004948 U	-0.02664 U	-0.01037 U
Ag-110m	-0.05556 U	0.02455 U	-0.02212 U	-0.03612 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212		0.5489	0.5913 U	
Bi-214	0.2716	0.2106		0.2683
Ce-141				
Ce-144	-0.06796 U	0.01227 U	0.02628 U	-0.0872 U
Co-58	0.05002 U	0.002259 U	0.05245 U	-0.006105 U
Co-60	0.08805 U	-0.01483 U	0.03574 U	-0.03743 U
Cr-51				
Cs-134	-0.1307 U	-0.07659 U	0 U	0.01265 U
Cs-136				
Cs-137	3.818	0.728	1.892	0.5297
Eu-152				
Fe-59	-0.0167 U	-0.04226 U	-0.06796 U	0.03075 U
I-131				
K-40	7.151	10.8	12.86	14.07
Kr-85				
Mn-54	0.01598 U	0.001122 U	0.06849 U	-0.02396 U
Nb-95	-0.01367 U	-0.04434 U	0.04175 U	-0.001754 U
Np-239				
Pb-212	0.1738 U	0.3523	0.5438	0.4882
Pb-214	0.1879 U	0.3682	0.5036	0.4096
Ra-226				1.555
Ru-103	-0.1385 U	-0.0008006 U	-0.02318 U	-0.004612 U
Ru-106	0.01286 U	0.08126 U	0.3127 U	-0.1289 U
Sb-124	0 U	0 U	0 U	0 U
Sb-125				
Se-75				
Tl-202				
Tl-208			0.7457	0.4475
U-235				
Zn-65	-0.03075 U	0.1015 U	-0.227 U	-0.06009 U
Zr-95	0.02225 U	-0.03038 U	0.03662 U	0.03956 U
SOF	0.312	0.059	0.155	0.043

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG003-028 (199)	OG003-030 (200)	OG003-031 (201)	OG003-032 (202)
Sample ID	OG003GUFU028	OG003GUFU030	OG003GUFU031	OG003GUFU032
Date Sampled	7/14/1998	7/14/1998	7/14/1998	7/14/1998
Ac-228	0.3741			0.5775
Ag-108m	-0.02225 U	0.01513 U	-0.0188 U	0.001034 U
Ag-110m	0.03545 U	0.003195 U	0.01375 U	-0.003218 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212			0.7104 U	1.1
Bi-214	0.6106		0.2717	0.5089
Ce-141				
Ce-144	0.1673 U	0.3199	-0.04424 U	-0.2725 U
Co-58	0.003606 U	0.04196 U	0.05772 U	-0.04679 U
Co-60	0.00893 U	-0.008604 U	0.03702 U	0.01486 U
Cr-51				
Cs-134	0.07838 U	-0.0198 U	-0.3438 U	-0.07381 U
Cs-136				
Cs-137	0.5241	0.6217	1.539	1.256
Eu-152				
Fe-59	-0.0973 U	0.1443	0 U	-0.01177 U
I-131				
K-40	9.027	7.924	7.943	13.61
Kr-85				
Mn-54	-0.02264 U	0.01823 U	0.004535 U	0.0331 U
Nb-95	-0.01088 U	-0.02262 U	-0.1029 U	0.01085 U
Np-239				
Pb-212	0.1992	0.3663	0.4568	0.4721
Pb-214	0.6907	0.4238	0.2733	0.4774
Ra-226		1.437		
Ru-103	-0.02817 U	0.0217 U	0.0521 U	0.0042 U
Ru-106	-0.05706 U	-0.2619 U	0.6011	0.01583 U
Sb-124	0.03181 U	0 U	0 U	0.03413 U
Sb-125				
Se-75				
Tl-202				
Tl-208				
U-235				
Zn-65	-0.07179 U	-0.02295 U	0.2882 U	0.2202 U
Zr-95	0.002549 U	-0.005779 U	0.05808 U	0.03426 U
SOF	0.043	0.051	0.135	0.103

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG004-003 (240)	OG004-005 (242)	OG004-007 (244)	OG004-009 (246)
Sample ID	OG004GUFD003	OG004GUFD005	OG004GUFD007	OG004GUFD009
Date Sampled	7/14/1998	7/14/1998	7/14/1998	7/14/1998
Ac-228	0.704	0.3894	0.7898	0.5245
Ag-108m	0.0003046 U	-0.00006763 U	-0.001195 U	0.03354
Ag-110m	-0.06239 U	-0.006655 U	-0.00142 U	-0.0233 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.9404			0.905
Bi-214	0.3584	0.413	0.5446	0.493
Ce-141				
Ce-144	0.1781 U	-0.09201 U	-0.1456 U	-0.009898 U
Co-58	0.001704 U	0.0009695 U	-0.02696 U	-0.02608 U
Co-60	-0.03936 U	-0.001818 U	-0.009629 U	0.004414 U
Cr-51				
Cs-134	0.03207 U	0.003114 U	-0.01034 U	-0.03697 U
Cs-136				
Cs-137	0.2764	0.5752	0.1772	0.0224 U
Eu-152				
Fe-59	-0.06306 U	0.02509 U	-0.05449 U	0.07093 U
I-131				
K-40	14.21	11.95	16.46	16.08
Kr-85				
Mn-54	0.00394 U	-0.006432 U	0.01157 U	-0.005467 U
Nb-95	0.02239 U	0.006651 U	0.03603 U	0.02778 U
Np-239				
Pb-212	0.5313	0.318	0.6153	0.535
Pb-214	0.375	0.3815	0.6078	0.4007
Ra-226		1.844	2.16	
Ru-103	-0.06331 U	-0.01328 U	-0.02181 U	0.002186 U
Ru-106	0.4437	0.13 U	-0.09313 U	0.08159 U
Sb-124	0.03893 U	0 U	0.01975 U	0 U
Sb-125				0.03489 U
Se-75				
Tl-202				
Tl-208	0.5423		0.4537	
U-235				
Zn-65	-0.04213 U	-0.07026 U	-0.0637 U	-0.03431 U
Zr-95	-0.02581 U	0.0136 U	0.008307 U	-0.01923 U
SOF	0.029	0.047	0.014	0.004

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-08 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG004-011 (248) OG004GUFD011 7/14/1998	OG004-012 (249) OG004GUFD012 7/14/1998	OG004-014 (251) OG004GUFD014 7/15/1998	OG004-015 (252) OG004GUFD015 7/15/1998
Ac-228		0.7333	0.8068	0.7089
Ag-108m	0.005846 U	-0.002489 U	0.01226 U	0.02492 U
Ag-110m	-0.02226 U	0.0197 U	0.01734 U	-0.02993 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.4104 U	0.5822	0.6471	0.4547 U
Bi-214		0.4555	0.4532	0.542
Ce-141				
Ce-144	-0.0693 U	-0.04509 U	-0.176 U	-0.1934 U
Co-58	0.02186 U	0.01398 U	-0.01781 U	-0.04223 U
Co-60	-0.01097 U	-0.03931 U	-0.01674 U	-0.01329 U
Cr-51				
Cs-134	0.004048 U	-0.09419 U	-0.04106 U	0.03347 U
Cs-136				
Cs-137	-0.02185 U	0.1255	0.08239	0.1593
Eu-152				
Fe-59	-0.1142 U	-0.09121 U	0.1032 U	0.04812 U
I-131				
K-40	0.07059 U	16.78	18.87	19.71
Kr-85				
Mn-54	0.01385 U	-0.001849 U	0.01916 U	0.0229 U
Nb-95	0.0234 U	-0.05983 U	-0.003922 U	0.06995 U
Np-239				
Pb-212	0.7683	0.7227	0.7885	0.7006
Pb-214	0.5263	0.6025	0.524	0.5949
Ra-226		1.938	3.407	1.338
Ru-103	-0.0117 U	-0.02752 U	-0.03383 U	-0.0469 U
Ru-106	0.00000004029 U	-0.08747 U	0.1224 U	-0.06613 U
Sb-124	0.03587 U	-0.01332 U	-0.08173 U	0 U
Sb-125				
Se-75				
Tl-202				
Tl-208		0.6319	0.5714	0.71
U-235				
Zn-65	0.01305 U	-0.04465 U	0.073 U	-0.0846 U
Zr-95	-0.03869 U	-0.02322 U	0.06462 U	0.0736 U
SOF		0.01	0.007	0.013

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG004-016 (253)	OG004-017 (254)	OG004-018 (255)	OG004-019 (256)
Sample ID	OG004GUFD016	OG004GUFD017	OG004GUFD018	OG004GUFD019
Date Sampled	7/15/1998	7/15/1998	7/15/1998	7/15/1998
Ac-228	0.5801	0.9277	1.095	0.8281
Ag-108m	-0.003576 U	-0.006096 U	-0.01534 U	0.001944 U
Ag-110m	0.04713 U	0.0075 U	0.0223 U	0.01691 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212			0.8283	1.058
Bi-214		0.5975	0.5883	0.6258
Ce-141				
Ce-144	-0.05134 U	-0.003556 U	-0.1026 U	0.09215 U
Co-58	0.01287 U	0.003909 U	-0.01361 U	0.02276 U
Co-60	0.01291 U	-0.01141 U	-0.01998 U	-0.02058 U
Cr-51				
Cs-134	0.006498 U	-0.06196 U	0.07388 U	-0.09447 U
Cs-136				
Cs-137	0.443	0.1028	-0.006857 U	-0.01011 U
Eu-152		0.01372 U		
Fe-59	-0.07052 U	0.06071 U	-0.07143 U	0.01914 U
I-131				
K-40	18.08	21.37	23.59	20.58
Kr-85				
Mn-54	-0.02263 U	0.004554 U	-0.002903 U	-0.004484 U
Nb-95	-0.01957 U	0.1524	0.04426 U	0.02157 U
Np-239				
Pb-212	0.3521	0.9121	1.035	0.8383
Pb-214	0.4979	0.6305	0.5498	0.6368
Ra-226		1.332 U	1.472 U	3.086
Ru-103	-0.07413 U	0.02572 U	0.001847 U	-0.005822 U
Ru-106	0.2062 U	0.1309 U	0.2631 U	0.1696 U
Sb-124	-0.002714 U	0 U	-0.04159 U	0.01012 U
Sb-125	0.01175 U			
Se-75				
Tl-202				
Tl-208		0.8388	0.7461	0.8224
U-235				
Zn-65	-0.129 U	-0.1649 U	-0.02051 U	0.1034 U
Zr-95	-0.004246 U	0.05948 U	0.08525	0.03487 U
SOF	0.036	0.008		

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-08 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG004-020 (257) OG004GUF020 7/15/1998	OG004-022 (258) OG004GUF022 7/15/1998	OG004-023 (259) OG004GUF023 7/15/1998	OG004-025 (260) OG004GUF025 7/15/1998
Ac-228	0.8889	1.016	1.102	0.6648
Ag-108m	0.01451 U	0.009807 U	-0.005577 U	-0.02587 U
Ag-110m	0.01155 U	0.0079 U	-0.0468 U	0.004637 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				0.1862 U
Ba-140				
Bi-212	1.327	1.009	1.068	0.852
Bi-214	0.4908	0.5685	0.6615	0.4021
Ce-141				
Ce-144	-0.006109 U	-0.3203 U	0.001309 U	-0.06649 U
Co-58	-0.01487 U	-0.05329 U	-0.04138 U	-0.02684 U
Co-60	0.01559 U	0.006583 U	-0.04971 U	-0.006108 U
Cr-51				
Cs-134	0.01326 U	-0.03968 U	-0.2372 U	0.03017 U
Cs-136				
Cs-137	0.1232	0.09856	-0.01706 U	0.01306 U
Eu-152				
Fe-59	0.00749 U	-0.08235 U	-0.01013 U	-0.01957 U
I-131				
K-40	19.44	23.75	22.23	18.47
Kr-85				
Mn-54	0.02705 U	-0.006577 U	-0.005732 U	0.01178 U
Nb-95	0.01168 U	-0.04649 U	-0.03682 U	0.04318 U
Np-239				-20.17 U
Pb-212	0.8786	1.007	1.073	0.7575
Pb-214	0.5801	0.6465	0.6913	0.5579
Ra-226	2.44	1.281 U	1.772	2.212
Ru-103	0.02151 U	0.013 U	-0.02817 U	-0.01359 U
Ru-106	0.1611 U	-0.02642 U	-0.08778 U	-0.08894 U
Sb-124	0.01598 U	0 U	0.001878 U	0.05489
Sb-125				
Se-75				
Tl-202				
Tl-208	0.7389	0.7581	0.759	0.714
U-235				
Zn-65	0.0131 U	-0.0156 U	-0.03021 U	-0.07466 U
Zr-95	0.05904 U	0.0837 U	-0.01099 U	0.05224 U
SOF	0.01	0.008		

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG004-026 (261)	OG004-027 (262)	OG004-028 (263)	OG004-030 (264)
Sample ID	OG004GUFD026	OG004GUFD027	OG004GUFD028	OG004GUFD030
Date Sampled	7/16/1998	7/16/1998	7/16/1998	7/16/1998
Ac-228	0.7541	0.7732	0.9568	0.8029
Ag-108m	0.01142 U	0.01587 U	-0.002813 U	-0.0142 U
Ag-110m	0.00168 U	-0.00729 U	-0.0003878 U	0.02676 U
Am-241	0.1189 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.8018	0.9381	0.7623	0.9716
Bi-214	0.4515	0.5276	0.5632	0.6428
Ce-141				
Ce-144	-0.08157 U	-0.1355 U	-0.2542 U	-0.1283 U
Co-58	-0.002131 U	-0.04772 U	0.0102 U	0.001051 U
Co-60	-0.01159 U	0 U	0 U	-0.004835 U
Cr-51				
Cs-134	0.002189 U	-0.01108 U	0.004491 U	0.03174 U
Cs-136				
Cs-137	0.1645	0.007682 U	0.03284 U	0.04668 U
Eu-152				
Fe-59	0.001465 U	-0.05285 U	0 U	-0.0584 U
I-131				
K-40	24.99	16.1	21.95	21.02
Kr-85				
Mn-54	0.01299 U	-0.01761 U	-0.02282 U	-0.01796 U
Nb-95	-0.01405 U	0.05264	0.03065 U	0.04079 U
Np-239				
Pb-212	0.7217	0.7961	0.9064	0.988
Pb-214	0.5237	0.4578	0.5712	0.6344
Ra-226	1.839	0.8299 U	1.887	2.992
Ru-103	0.008136 U	0.001866 U	0.002694 U	-0.0175 U
Ru-106	-0.06771 U	-0.2612 U	0.1238 U	0.03196 U
Sb-124	-0.02906 U	-0.02448 U	0.01704 U	0 U
Sb-125				
Se-75				
Tl-202				
Tl-208	0.6374	0.7688	0.8836	0.9103
U-235				
Zn-65	-0.09984 U	0.02115 U	0.06165 U	-0.009046 U
Zr-95	0.008619 U	0.03806 U	0.07572	0.01681 U
SOF	0.013			

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	og004-031 (265)	OG004-032 (266)	OG004-004 (241)	OG004-006 (243)
Sample ID	og004gufd031	OG004GUFU032	OG004GUFU004	OG004GUFU006
Date Sampled	7/16/1998	7/16/1998	7/14/1998	7/14/1998
Ac-228	1.003	0.9044	0.4512	0.3908
Ag-108m	0.01301 U	0.02313	-0.01257 U	0.04359
Ag-110m	0.01751 U	0.01173 U	0.01963 U	-0.0006069 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.4347 U	0.9064	0.4338 U	
Bi-214	0.4744	0.4241		
Ce-141				
Ce-144	0.04891 U	0.1053 U	0.3347	-0.06129 U
Co-58	0.003449 U	0.02716 U	-0.05868 U	-0.004373 U
Co-60	-0.003027 U	0.02181 U	0.02261 U	0.01307 U
Cr-51				
Cs-134	-0.1352 U	-0.135 U	-0.008676 U	0.01128 U
Cs-136				
Cs-137	0.01442 U	0.03988	1.279	1.813
Eu-152				
Fe-59	0.04956 U	0.0915 U	-0.1343 U	-0.131 U
I-131				
K-40	22.56	19.58	10.67	11.19
Kr-85				
Mn-54	0.01584 U	0.01149 U	0.03176 U	-0.04501 U
Nb-95	0.04695 U	0.03603 U	-0.008956 U	-0.03932 U
Np-239				
Pb-212	1.073	0.7959	0.3114	0.2875
Pb-214	0.6948	0.5201	0.3288	0.3785
Ra-226	4.05	2.295	2.201 U	2.043
Ru-103	-0.03756 U	-0.01404 U	-0.03308 U	-0.08513 U
Ru-106	0.2608 U	-0.1125 U	-0.09189 U	-0.1592 U
Sb-124	-0.04155 U	-0.01231 U	-0.01473 U	0.01268 U
Sb-125		-0.1069 U		
Se-75				
Tl-202				
Tl-208	0.8694	0.7399		
U-235				
Zn-65	-0.08537 U	0.07369 U	-0.2375 U	-0.08722 U
Zr-95	0.06081 U	-0.01763 U	-0.07428 U	0.01896 U
SOF		0.006	0.104	0.153

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 – Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG004-008 (245)	OG004-010 (247)	OG004-013 (250)	OG005-001 (271)
Sample ID	OG004GUFU008	OG004GUFU010	OG004GUFU013	OG005GUFU001
Date Sampled	7/14/1998	7/14/1998	7/15/1998	7/27/1998
Ac-228	0.6754	0.6734	0.5071	0.649
Ag-108m	-0.01598 U	0.01582 U	-0.02494 U	-0.01517 U
Ag-110m	-0.02656 U	0.01862 U	-0.01682 U	0.006921 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				2.772 U
Bi-212			0.9742	0.4481
Bi-214	0.5547	0.438	0.3673	0.3945
Ce-141				
Ce-144	0.1029 U	0 U	-0.1218 U	0.142 U
Co-58	-0.02286 U	-0.02333 U	0.005732 U	0.01388 U
Co-60	-0.06476 U	-0.0001465 U	0.006597 U	0 U
Cr-51				
Cs-134	-0.015 U	-0.1994 U	-0.1237 U	-0.0924 U
Cs-136				
Cs-137	0.1175	0.1199	0.579	0.3715
Eu-152				
Fe-59	0.04478 U	0.05197 U	0.0419 U	-0.0446 U
I-131				
K-40	12.01	16.08	12.64	17.8
Kr-85				
Mn-54	0.03044 U	0.008334 U	0.01568 U	-0.002026 U
Nb-95	-0.06624 U	-0.01604 U	-0.02063 U	0.007598 U
Np-239				
Pb-212	0.5578	0.6762	0.4791	0.8355
Pb-214	0.5802	0.454	0.3807	0.4335
Ra-226	2.951	2.174		1.43
Ru-103	0.03817 U	-0.01586 U	0.0145 U	0.01037 U
Ru-106	-0.04435 U	0.1011 U	0.09023 U	-0.3175 U
Sb-124	0.007609 U	0.01949 U	-0.03453 U	0.001544 U
Sb-125				-0.07849 U
Se-75				
Tl-202				
Tl-208			0.4463	0.7301
U-235				
Zn-65	0.04465 U	0.04233 U	-0.09648 U	-0.07661 U
Zr-95	0.019 U	0.02335 U	-0.03289 U	0.01043 U
SOF	0.01	0.01	0.047	0.03

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG005-002 (272) OG005GUF002 7/27/1998	OG005-003 (273) OG005GUF003 7/27/1998	OG005-004 (274) OG005GUF004 7/27/1998	OG005-014 (283) OG005GUF014 7/28/1998
Ac-228	0.966	0.8579	1.051	1.135
Ag-108m	-0.02284 U	0.009041 U	0.01933 U	0.03236 U
Ag-110m	-0.01654 U	-0.0144 U	0.04502 U	-0.001595 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.6994	0.6179	1.455	0.6337
Bi-214		0.5606	0.593	0.7394
Ce-141	0.0618 U			
Ce-144	-0.0009649 U	-0.03701 U	0.1387 U	-0.1243 U
Co-58	-0.01096 U	0.003107 U	-0.002418 U	0.01038 U
Co-60	0.0389 U	0.008093 U	0.02084 U	0.01285 U
Cr-51				
Cs-134	0.02435 U	-0.05761 U	-0.1413 U	0.04315 U
Cs-136				
Cs-137	0.2584	0.4998	0.2447	0.08172
Eu-152				
Fe-59	0.01866 U	-0.1223 U	-0.0549 U	-0.02491 U
I-131				
K-40	19.09	21.89	21.63	27.01
Kr-85				
Mn-54	-0.008137 U	0.00107 U	-0.0103 U	-0.00812 U
Nb-95	-0.006272 U	-0.09467 U	-0.003299 U	-0.01154 U
Np-239				
Pb-212	0.9226	0.8984	1.288	1.067
Pb-214	0.5284	0.5294	0.6037	0.6659
Ra-226	2.469		3.258	2.222
Ru-103	0.01679 U	-0.008109 U	0.03416 U	-0.004731 U
Ru-106	0.1923 U	0.1654 U	0.07552 U	-0.02613 U
Sb-124	0.01696 U	0.01303 U	0.04722 U	-0.05778 U
Sb-125				
Se-75				
Tl-202				
Tl-208	0.6898	0.7043	1.219	0.7668
U-235				
Zn-65	-0.1131 U	0.04985 U	0.06116 U	0.03089 U
Zr-95	0.01697 U	-0.02078 U	-0.0107 U	0.06436 U
SOF	0.021	0.041	0.02	0.007

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG005-015 (284)	OG005-016 (285)	OG005-018 (286)	OG005-019 (287)
Sample ID	OG005GUFD015	OG005GUFD016	OG005GUFD018	OG005GUFD019
Date Sampled	7/28/1998	7/29/1998	7/28/1998	7/29/1998
Ac-228	0.9969	0.8654	0.9099	0.9516
Ag-108m	-0.01634 U	-0.002967 U	0.004351 U	0.002346 U
Ag-110m	-0.002659 U	0.008715 U	-0.01315 U	0.01401 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140	2.349 U			
Bi-212	0.6453 U	0.509 U	0.4885 U	0.9203
Bi-214	0.7334	0.6459	0.3907	0.5462
Ce-141				
Ce-144	-0.09725 U	-0.1413 U	0.3701 U	0.1919 U
Co-58	0.02936 U	-0.05741 U	-0.01656 U	0.01436 U
Co-60	0.03974 U	0.124	0.007428 U	0.04464 U
Cr-51				
Cs-134	-0.07164 U	0.05829	-0.1601 U	0.08895 U
Cs-136				
Cs-137	0.2581	0.7595	0.2278	0.3449
Eu-152			0.06003 U	
Fe-59	0.01336 U	-0.1454 U	-0.05419 U	0.1391 U
I-131				
K-40	24.62	26.13	20.48	23.27
Kr-85				
Mn-54	0.01005 U	0.01193 U	0.01494 U	-0.01188 U
Nb-95	0.06339 U	-0.07583 U	0.001117 U	0.02708 U
Np-239				
Pb-212	1.173	0.9896	0.8858	1.005
Pb-214	0.7572	0.7451	0.5759	0.6155
Ra-226	3.568		3.569	4.721
Ru-103	-0.0249 U	0.08343	-0.03131 U	-0.03902 U
Ru-106	-0.1672 U	-0.005942 U	0.109 U	-0.3852 U
Sb-124	-0.0585 U	0.02462 U	-0.01279 U	-0.01414 U
Sb-125		0.06663 U		
Se-75				
Tl-202				
Tl-208	0.8884	1.027	0.8927	0.8634
U-235				
Zn-65	-0.04713 U	-0.04918 U	0.05842 U	-0.07488 U
Zr-95	0.03865 U	-0.03476 U	0.1105	0.0401 U
SOF	0.021	0.096	0.019	0.028

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG005-020 (288) OG005GUFD020 7/29/1998	OG005-021 (289) OG005GUFD021 7/29/1998	OG005-023 (291) OG005GUFD023 7/29/1998	OG005-024 (292) OG005GUFD024 7/29/1998
Ac-228	1.081	1.041	0.8356	0.8101
Ag-108m	-0.003753 U	0.004319 U	-0.01742 U	-0.01594 U
Ag-110m	-0.05172 U	-0.02283 U	0.02425 U	0.004187 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	1.246	0.8118	0.6815 U	0.9573
Bi-214	0.4568	0.5908	0.5589	0.4598
Ce-141				
Ce-144	-0.1902 U	0.06779 U	-0.302 U	0.1587 U
Co-58	-0.01312 U	-0.003756 U	-0.03234 U	-0.04686 U
Co-60	-0.00108 U	0.04153 U	-0.006379 U	0.004812 U
Cr-51				
Cs-134	0.0467 U	-0.05375 U	-0.03306 U	0.02856 U
Cs-136				
Cs-137	0.08733	0.1898	4.225	0.2445
Eu-152				
Fe-59	-0.0694 U	0.0354 U	0.07493 U	-0.07249 U
I-131				
K-40	22.91	21.33	13.76	17.59
Kr-85				
Mn-54	-0.003337 U	-0.01798 U	0.01079 U	0.01722 U
Nb-95	0.04874 U	-0.004815 U	-0.003442 U	0.007479 U
Np-239				
Pb-212	0.9731	1.018	0.6905	0.8421
Pb-214	0.5732	0.6277	0.5904	0.5601
Ra-226	1.978	2.105		3.927
Ru-103	0.04567 U	0.001781 U	-0.06164 U	-0.01471 U
Ru-106	-0.04882 U	-0.09977 U	-0.0861 U	0.2014 U
Sb-124	0.03128 U	0.03479 U	0.009457 U	0.004069 U
Sb-125				
Se-75				
Tl-202				
Tl-208	1.037	0.9469	0.5875	0.896
U-235				
Zn-65	0.1058 U	0.04103 U	0.01316 U	-0.0937 U
Zr-95	0.0562 U	0.007266 U	0.02066 U	-0.06762 U
SOF	0.007	0.016	0.345	0.02

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG005-025 (293)	OG005-026 (294)	OG005-027 (295)	OG005-028 (296)
Sample ID	OG005GUFD025	OG005GUFD026	OG005GUFD027	OG005GUFD028
Date Sampled	7/29/1998	7/29/1998	7/30/1998	7/30/1998
Ac-228	0.6063	0.5739	0.9746	0.5626
Ag-108m	-0.007308 U	0.01774 U	-0.001516 U	-0.01072 U
Ag-110m	0.02596 U	-0.008727 U	0.006538 U	-0.01657 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140		0.8869 U		
Bi-212	0.5333 U	0.7695		
Bi-214	0.4307	0.5563	0.4329	0.5088
Ce-141				
Ce-144	-0.1257 U	-0.1128 U	-0.02861 U	0.06151 U
Co-58	-0.04438 U	-0.009098 U	-0.01101 U	0.001523 U
Co-60	-0.009982 U	0.005507 U	0.01006 U	-0.004947 U
Cr-51				
Cs-134	-0.0115 U	-0.0711 U	-0.1983 U	-0.08436 U
Cs-136				
Cs-137	0.3401	0.7693	0.2192	0.5091
Eu-152				
Fe-59	-0.01465 U	0.03224 U	0.1058 U	-0.03238 U
I-131				
K-40	9.83	10.79	21.81	11.61
Kr-85				
Mn-54	-0.004547 U	-0.004598 U	0.01345 U	-0.02282 U
Nb-95	-0.03941 U	-0.05737 U	-0.06139 U	0.01622 U
Np-239				
Pb-212	0.6524	0.5389	0.8786	0.5654
Pb-214	0.5167	0.5366	0.5441	0.5357
Ra-226	1.359 U	1.373 U	1.623	3.618
Ru-103	0.05044 U	0.004776 U	0.004888 U	0.002178 U
Ru-106	-0.1524 U	-0.1009 U	0.3382	-0.06033 U
Sb-124	0 U	0 U	-0.02082 U	0.06052 U
Sb-125				
Se-75				
Tl-202				
Tl-208	0.5812	0.6676	0.6966	0.5847
U-235				
Zn-65	0.001916 U	-0.08642 U	-0.1625 U	-0.04717 U
Zr-95	0.03555 U	0.02677 U	-0.04396 U	0.09368 U
SOF	0.028	0.063	0.023	0.042

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG005-031 (299)	OG005-032 (300)	OG005-029 (297)	OG005-030 (298)
Sample ID	OG005GUF031	OG005GUF032	OG005GUF029	OG005GUF030
Date Sampled	9/14/1998	7/29/1998	7/30/1998	7/30/1998
Ac-228	0.8815	0.8251	0.5784	0.5302
Ag-108m	-0.007285 U	-0.0243 U	-0.004737 U	0.01428 U
Ag-110m	0.01465 U	-0.007813 U	0.05937 U	-0.01706 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	1.311	1.077		
Bi-214	0.504	0.4368	0.3895	0.5224
Ce-141				
Ce-144	0.3028	-0.127 U	0.1066 U	-0.09586 U
Co-58	0.008447 U	-0.01434 U	0.03318 U	0.03665 U
Co-60	-0.003344 U	0.0182 U	0.01244 U	0.03468 U
Cr-51				
Cs-134	0.02032 U	-0.1082 U	-0.1049 U	0.029 U
Cs-136		2.793		
Cs-137	0.4153	0.1761	0.6994	0.4659
Eu-152				
Fe-59	-0.02722 U	0.0914 U	0.03604 U	0.1151 U
I-131				
K-40	18.75	17.83	14.96	9.367
Kr-85				
Mn-54	-0.005492 U	-0.04314 U	0.007072 U	0.004132 U
Nb-95	0.0309 U	0.0421 U	0.03015 U	0.01861 U
Np-239				
Pb-212	0.8968	0.7855	0.3567	0.6608
Pb-214	0.5303	0.4884	0.503	0.5906
Ra-226	1.194	1.449 U		1.675
Ru-103	-0.02169 U	-0.009724 U	-0.0698 U	0.02405 U
Ru-106	-0.1341 U	0.06671 U	0.02781 U	0.09065 U
Sb-124	0.002687 U	0.01623 U	0.09738 U	0 U
Sb-125			0.04765 U	
Se-75				
Tl-202				
Tl-208	0.8321	0.6706	0.3135	0.3531
U-235				
Zn-65	-0.164 U	-0.06937 U	-0.1208 U	-0.09483 U
Zr-95	-0.01877 U	0.07898 U	0.122	0.0254 U
SOF	0.034	0.014	0.057	0.038

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG007-023 (151)	OG007-024 (152)	OG007-025 (153)	OG007-026 (154)
Sample ID	OG007GAFD023	OG007GAFD024	OG007GAFD025	OG007GAFD026
Date Sampled	9/16/1998	9/16/1998	9/16/1998	9/16/1998
Ac-228	0.629	0.8165	0.7368	0.6635
Ag-108m	0.002991 U	-0.01344 U	-0.008002 U	-0.0007827 U
Ag-110m	-0.00228 U	-0.002824 U	-0.01681 U	0.02906 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	1.061	0.4583	1.059	0.9663
Bi-214	0.52	0.4047	0.4888	0.4037
Ce-141				
Ce-144	0.111 U	0.1481 U	0.01411 U	-0.1001 U
Co-58	0.01511 U	-0.02149 U	0.004568 U	-0.02659 U
Co-60	-0.02106 U	0.009739 U	0 U	-0.01323 U
Cr-51				
Cs-134	-0.09999 U	-0.07092 U	0.02227 U	-0.03344 U
Cs-136				
Cs-137	-0.003324 U	0.005293 U	0.0611	0.09093
Eu-152				
Fe-59	-0.04974 U	-0.03221 U	-0.008485 U	0.04389 U
I-131				
K-40	17.79	18.11	17.93	18.89
Kr-85				
Mn-54	-0.04079 U	-0.01212 U	0.0005563 U	0.01119 U
Nb-95	0.07898	0.01238 U	-0.0214 U	0.003001 U
Np-239		51.03 U		
Pb-212	0.7495	0.8101	0.6556	0.7739
Pb-214	0.4646	0.5573	0.527	0.5392
Ra-226	0.9473 U	2.345	2.265	1.237
Ru-103	0.003788 U	-0.02664 U	-0.01705 U	0.007818 U
Ru-106	0.09572 U	-0.009485 U	-0.1635 U	0.03866 U
Sb-124	-0.001174 U	0.003489 U	-0.04705 U	0.02212 U
Sb-125				
Se-75				
Tl-202				
Tl-208	0.6211	0.6602	0.7398	0.7109
U-235				
Zn-65	0.1615 U	-0.02678 U	0.06398 U	-0.1372 U
Zr-95	0.01514 U	0.01329 U	0.07095	-0.01805 U
SOF			0.005	0.007

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG007-027 (155)	OG008-014 (220)	OG008-015 (221)	OG008-016 (222)
Sample ID	OG007GAFD027	OG008GUFD014	OG008GUFD015	OG008GUFD016
Date Sampled	9/16/1998	10/27/1998	10/27/1998	10/27/1998
Ac-228	0.6809	0.7815	0.9652	0.742
Ag-108m	0.009745 U	-0.02273 U	-0.02433 U	-0.01335 U
Ag-110m	0.01521 U	0.01792 U	0.004141 U	-0.006215 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212		0.739	1.146	0.8711
Bi-214	0.3279	0.5476	0.4781	0.4814
Ce-141				
Ce-144	-0.1152 U	-0.06784 U	-0.04006 U	-0.132 U
Co-58	0.01015 U	-0.008211 U	0.002603 U	-0.01954 U
Co-60	-0.004602 U	-0.00567 U	0.03401 U	0.03678 U
Cr-51				
Cs-134	0.01648 U	0.00567 U	-0.04269 U	-0.04043 U
Cs-136				
Cs-137	-0.006325 U	0.04847	0.2897	0.09019
Eu-152				0.85
Fe-59	0.03487 U	0.001594 U	-0.03868 U	-0.0129 U
I-131				
K-40	17.44	19.46	19.23	17.65
Kr-85				
Mn-54	-0.01921 U	0.0114 U	0.007824 U	0.01517 U
Nb-95	0.02795 U	-0.02745 U	-0.0001066 U	0.005621 U
Np-239	-5.602 U			
Pb-212	0.7139	0.8375	0.8734	0.6957
Pb-214	0.4875	0.5632	0.4752	0.4803
Ra-226	1.72	1.311	1.871	1.046 U
Ru-103	-0.001695 U	0.01461 U	-0.01235 U	0.0004507 U
Ru-106	0.5169	-0.02252 U	0.1395 U	-0.2345 U
Sb-124	0.01071 U	0.01752 U	0.0274 U	-0.03966 U
Sb-125			-0.1376 U	
Se-75				
Tl-202				
Tl-208			0.7582	0.7808
U-235				
Zn-65	-0.01261 U	-0.01895 U	-0.09496 U	-0.03086 U
Zr-95	0.006275 U	-0.002593 U	0.06355 U	0.006879 U
SOF	0.008	0.004	0.024	0.078

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG008-017 (223)	OG008-018 (224)	OG008-019 (225)	OG008-020 (226)
Sample ID	OG008GUFD017	OG008GUFD018	OG008GUFD019	OG008GUFD020
Date Sampled	10/28/1998	10/28/1998	10/28/1998	10/28/1998
Ac-228	1.039	0.8784	1.305	0.9346
Ag-108m	-0.003508 U	-0.009085 U	0.03014 U	0.0179 U
Ag-110m	0.01155 U	0.01421 U	0.01629 U	-0.01731 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.5264 U		1.349	1.007
Bi-214	0.5819	0.4966	0.6034	0.5122
Ce-141			0.06352 U	
Ce-144	-0.1273 U	0.1104 U	0.01318 U	-0.1534 U
Co-58	-0.03147 U	-0.008054 U	-0.0174 U	0.02661 U
Co-60	0.006839 U	0.006959 U	-0.01472 U	0.04209 U
Cr-51				
Cs-134	-0.2785 U	-0.1041 U	0.0765 U	-0.02268 U
Cs-136				
Cs-137	-0.00719 U	0.1295	-0.01522 U	0.06526
Eu-152				
Fe-59	-0.04024 U	-0.0632 U	-0.01823 U	-0.04047 U
I-131				
K-40	23.52	18.47	19.76	19.36
Kr-85				
Mn-54	-0.003692 U	0.02438 U	0.02084 U	0.01266 U
Nb-95	0.007418 U	-0.001263 U	-0.002669 U	-0.02006 U
Np-239				
Pb-212	1.085	0.9428	1.239	0.8132
Pb-214	0.5804	0.6214	0.7118	0.6288
Ra-226	2.43	2.132	1.513	1.114
Ru-103	0.004649 U	0.00853 U	0.02007 U	0.01438 U
Ru-106	0.2205 U	0.1122 U	-0.1909 U	-0.3436 U
Sb-124	0 U	-0.01577 U	-0.002382 U	-0.004535 U
Sb-125				
Se-75				
Tl-202				
Tl-208	0.8946	0.9097	1.27	
U-235				
Zn-65	0.001513 U	-0.05654 U	-0.02347 U	-0.1161 U
Zr-95	-0.001295 U	-0.01165 U	0.05842 U	-0.02651 U
SOF		0.011		0.005

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG008-022 (227) OG008GUFD022 10/29/1998	OG008-023 (228) OG008GUFD023 10/29/1998	OG008-024 (229) OG008GUFD024 10/29/1998	OG008-025 (230) OG008GUFD025 10/29/1998
Ac-228	0.8213	0.8046	0.8159	0.9013
Ag-108m	-0.01961 U	-0.002402 U	0.002561 U	-0.00404 U
Ag-110m	-0.0126 U	0.01694 U	-0.01413 U	-0.01049 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	1.264	0.6463	0.83	0.8162
Bi-214	0.5048	0.436	0.5535	0.399
Ce-141				
Ce-144	-0.1155 U	0.07336 U	-0.1274 U	-0.1468 U
Co-58	-0.01842 U	-0.0432 U	0.006693 U	0.0029 U
Co-60	-0.01763 U	-0.04047 U	-0.02261 U	0.01621 U
Cr-51				
Cs-134	0.007954 U	-0.2505 U	-0.01831 U	0.03291
Cs-136				
Cs-137	0.08263	0.06043	0.04576	0.0715
Eu-152		0.2014 U		
Fe-59	-0.04657 U	0.02626 U	0.01643 U	-0.02142 U
I-131	0.4278 U			
K-40	20.38	17.43	20.02	17.24
Kr-85				8.705
Mn-54	-0.02391 U	0.03103 U	0.01415 U	0.01377 U
Nb-95	0.02277 U	-0.006331 U	0.01083 U	0.01083 U
Np-239				
Pb-212	0.8972	0.8526	0.7928	0.8366
Pb-214	0.6135	0.4564	0.4849	0.519
Ra-226	1.313	1.623	1.055 U	0.8553 U
Ru-103	-0.0004093 U	-0.01587 U	0.01887 U	0.0126 U
Ru-106	0.06098 U	-0.1944 U	0.1932 U	0.05158 U
Sb-124	0.01141 U	0.008738 U	0.01825 U	0.0119 U
Sb-125		-0.1125 U		
Se-75				
Tl-202				
Tl-208	0.8077	0.7724	0.723	0.7819
U-235				
Zn-65	-0.08504 U	-0.09408 U	0.01458 U	0.02112 U
Zr-95	0.02711 U	-0.03313 U	-0.01889 U	0.05655 U
SOF	0.007	0.005	0.004	0.011

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG008-026 (231)	OG008-027 (232)	OG008-028 (233)	OG008-029 (234)
Sample ID	OG008GUFD026	OG008GUFD027	OG008GUFD028	OG008GUFD029
Date Sampled	10/29/1998	10/29/1998	10/29/1998	10/29/1998
Ac-228	0.7795	0.7778	0.8677	0.9293
Ag-108m	0.01906 U	0.03394	-0.008358 U	-0.001615 U
Ag-110m	0.02395 U	0.004844 U	0.02477 U	0.01273 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.5583	1.038	0.7629	1.027
Bi-214	0.4586	0.5539	0.4926	0.4283
Ce-141				
Ce-144	0.1011 U	0.1491 U	0.006307 U	0.1061 U
Co-58	-0.004964 U	0.01178 U	-0.005602 U	0.01238 U
Co-60	0.0005276 U	0.04019	0.03127 U	0.01737 U
Cr-51				
Cs-134	0.01249 U	-0.0121 U	-0.07491 U	-0.1245 U
Cs-136				
Cs-137	0.1247	0.0854	0.1383	0.07502
Eu-152				
Fe-59	-0.03048 U	-0.02515 U	-0.06973 U	-0.0112 U
I-131				
K-40	20.49	16.97	19.26	17.54
Kr-85				
Mn-54	0.005226 U	0.002505 U	0.0167 U	0.03417 U
Nb-95	0.006428 U	0.01045 U	0.02196 U	0.02852 U
Np-239				
Pb-212	0.8494	0.8284	0.8364	0.6103
Pb-214	0.4982	0.4604	0.4608	0.4364
Ra-226		1.09 U	1.311	1.08
Ru-103	-0.01136 U	0.01125 U	0.0142 U	0.01358 U
Ru-106	-0.06385 U	0.0579 U	0.2095 U	0.392
Sb-124	-0.01872 U	-0.01515 U	0.0005696 U	-0.00659 U
Sb-125				
Se-75				
Tl-202				
Tl-208	0.6942	0.7435	0.5898	0.6772
U-235				
Zn-65	0.03293 U	-0.08053 U	-0.07407 U	-0.02533 U
Zr-95	-0.01145 U	0.03817 U	-0.03405 U	-0.03804 U
SOF	0.01	0.019	0.011	0.012

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG008-030 (235) OG008GUFD030 10/29/1998	OG009-010 (918) OG009GUFD010 7/30/1998	OG009-011 (919) OG009GUFD011 8/3/1998	OG009-031 (932) OG009GUFD031 8/3/1998
Ac-228	0.8891	0.833	0.543	1.03
Ag-108m	0.01442 U	-0.0131 U	0.0113 U	-0.00138 U
Ag-110m	-0.01804 U	-0.0234 U	-0.00559 U	-0.00596 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.7081	0.468 U	0.529 U	0.525
Bi-214	0.4188	0.564	0.606	0.545
Ce-141				
Ce-144	-0.08582 U	-0.041 U	0.0759 U	-0.00652 U
Co-58	-0.0376 U	-0.0492 U	-0.0188 U	0.0404 U
Co-60	0.01543 U	-0.0114 U	-0.0085 U	-0.0101 U
Cr-51				
Cs-134	-0.07087 U	-0.00722 U	0.05 U	0.00387 U
Cs-136				
Cs-137	0.1302	0.0491	-0.0282 U	0.055
Eu-152	0.2081			
Fe-59	-0.004631 U	-0.118 U	-0.0337 U	-0.0198 U
I-131				
K-40	18.96	17.9	23.6	19.9
Kr-85				
Mn-54	0.01329 U	0.0218 U	0.0214 U	0.0135 U
Nb-95	0.008924 U	0.083 U	0.0807	-0.0332 U
Np-239				
Pb-212	0.5159	0.886	0.616	0.85
Pb-214	0.5312	0.632	0.678	0.457
Ra-226	1.015	1.52	3.46	
Ru-103	-0.00982 U	0.0493 U	0.0651	0.0594
Ru-106	-0.02222 U	0.0464 U	0.0459 U	0.087 U
Sb-124	-0.00872 U	0.0524 U	0 U	0.00166 U
Sb-125				
Se-75				
Tl-202				
Tl-208	0.8942		0.704	0.897
U-235				
Zn-65	0.1749 U	-0.0132 U	0.0345 U	0.0192 U
Zr-95	0.02463 U	-0.0113 U	0.00268 U	-0.0279 U
SOF	0.028	0.004		0.004

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-08 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG009-008 (916)	OG009-009 (917)	OG009-012 (920)	OG009-013 (921)
Sample ID	OG009GUFU008	OG009GUFU009	OG009GUFU012	OG009GUFU013
Date Sampled	7/30/1998	7/30/1998	7/30/1998	7/30/1998
Ac-228	0.197	0.698		0.547
Ag-108m	0.0211 U	-0.0156 U	0.0357 U	0.0175 U
Ag-110m	-0.0156 U	-0.00688 U	0.0736 U	-0.0448 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212		0.877		0.383 U
Bi-214	0.345	0.412		0.286
Ce-141				
Ce-144	-0.132 U	0.00408 U	0.255 U	0.159 U
Co-58	0.0204 U	0.00993 U	0 U	-0.0271 U
Co-60	0.034 U	-0.00109 U	-0.0056 U	0.0373 U
Cr-51	0.591 U			
Cs-134	-0.156 U	0.0109 U	-0.0251 U	0 U
Cs-136				
Cs-137	0.463	0.0653	0.682	0.743
Eu-152				
Fe-59	0.0916 U	-0.0867 U	0.134 U	-0.00969 U
I-131				
K-40	6.05	17	1.94	15.5
Kr-85				
Mn-54	0.0149 U	-0.0117 U	-0.0499 U	-0.0129 U
Nb-95	-0.00255 U	-0.0157 U	0.0536 U	0.0656 U
Np-239				
Pb-212	0.176	0.755		0.276
Pb-214	0.292	0.528		0.359
Ra-226		1.76		
Ru-103	0.0263 U	0.0232 U	-0.041 U	0.0539 U
Ru-106	-0.13 U	0.135 U	0.134 U	0 U
Sb-124	0.00415 U	-0.0164 U	0 U	0 U
Sb-125				
Se-75				
Tl-202				
Tl-208		0.733		0.405
U-235	0.156 U			
Zn-65	0.119 U	-0.122 U	0.014 U	0.0316 U
Zr-95	0.0434 U	0.0459 U	0 U	-0.0825 U
SOF	0.038	0.005	0.056	0.061

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG009-014 (922) OG009GUFU014 7/30/1998	OG009-015 (923) OG009GUFU015 7/30/1998	OG009-016 (924) OG009GUFU016 7/30/1998	OG009-018 (925) OG009GUFU018 8/3/1998
Ac-228		0.298	0.459	0.479
Ag-108m	0.0287 U	0.00118 U	0.000555 U	-0.00419 U
Ag-110m	0.0291 U	0.00378 U	0.0308 U	-0.0294 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212				
Bi-214		0.46	0.213	
Ce-141				
Ce-144	0.0799 U	-0.0266 U	0.0635 U	-0.0926 U
Co-58	-0.00146 U	-0.0215 U	-0.0153 U	0.0115 U
Co-60	0.0409 U	0.0301 U	-0.023 U	0.029 U
Cr-51				
Cs-134	0 U	-0.137 U	0.011 U	0.0302 U
Cs-136				
Cs-137	0.576	0.574	0.361	0.353
Eu-152				
Fe-59	0.0424 U	0.0312 U	0.118 U	-0.0772 U
I-131				
K-40	1.89	4.07	9.28	11.9
Kr-85				
Mn-54	0.0209 U	-0.0108 U	0.0174 U	0.0217 U
Nb-95	0.0178 U	-0.0153 U	-0.0744 U	-0.00898 U
Np-239				
Pb-212	0.101 U	0.314		0.558
Pb-214		0.296	0.455	0.712
Ra-226			2.91	
Ru-103	-0.0374 U	-0.0694 U	-0.00227 U	-0.00539 U
Ru-106	-0.151 U	-0.296 U	-0.136 U	0.16 U
Sb-124	-0.0527 U	0 U	0.0391 U	0 U
Sb-125				
Se-75				
Tl-202			0.564 U	
Tl-208	0.142 U	0.209		
U-235				
Zn-65	0.0286 U	-0.0453 U	0.0901 U	-0.147 U
Zr-95	-0.0602 U	0.0116 U	0.0492 U	-0.023 U
SOF	0.047	0.047	0.029	0.029

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG009-023 (926)	OG009-025 (927)	OG009-026 (928)	OG009-028 (929)
Sample ID	OG009GUFU023	OG009GUFU025	OG009GUFU026	OG009GUFU028
Date Sampled	8/3/1998	8/3/1998	8/3/1998	8/3/1998
Ac-228	0.364	0.543	0.444	0.509
Ag-108m	-0.0105 U	-0.0264 U	0.00748 U	-0.0116 U
Ag-110m	0.0373 U	-0.0292 U	-0.0049 U	0.0112 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212				
Bi-214		0.565	0.518	0.605
Ce-141				
Ce-144	0.115 U	0.0564 U	-0.274 U	0.047 U
Co-58	0.00661 U	0.0791	-0.0295 U	-0.00659 U
Co-60	0.0225 U	0.0184 U	0.00215 U	0.0425 U
Cr-51				
Cs-134	-0.0098 U	0.0251 U	-0.0173 U	-0.049 U
Cs-136				
Cs-137	0.771	0.354	0.706	0.83
Eu-152				
Fe-59	-0.0501 U	-0.0908 U	0.0487 U	0.107 U
I-131				
K-40	9.68	13.9	7.81	8.83
Kr-85				
Mn-54	-0.0181 U	0.014 U	0.0307 U	0.0247 U
Nb-95	-0.0634 U	0.0261 U	0.0854 U	0.0252 U
Np-239				
Pb-212	0.476	0.532	0.329	0.428
Pb-214	0.453	0.701	0.371	0.537
Ra-226		1.47 U		3.13
Ru-103	-0.0114 U	-0.00691 U	-0.0336 U	-0.0205 U
Ru-106	-0.116 U	0.0754 U	-0.184 U	-0.13 U
Sb-124	0 U	-0.0367 U	0.0297 U	0.014 U
Sb-125	0.215 U			
Se-75				
Tl-202				
Tl-208		0.438		
U-235				
Zn-65	-0.0652 U	0.046 U	-0.00525 U	0.0546 U
Zr-95	0.011 U	-0.121 U	0.087 U	0.017 U
SOF	0.063	0.029	0.058	0.068

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG009-029 (930)	OG009-030 (931)	OG009-033 (933)	OG009-034 (934)
Sample ID	OG009GUFU029	OG009GUFU030	OG009GUFU033	OG009GUFU034
Date Sampled	8/3/1998	8/30/1998	7/30/1998	8/3/1998
Ac-228	0.727	0.774		0.467
Ag-108m	0.015 U	0.0158 U	0.0465 U	-0.00839 U
Ag-110m	-0.0153 U	0.033 U	0.0498 U	-0.0107 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.6 U			
Bi-214	0.478	0.56		0.424
Ce-141				
Ce-144	-0.0931 U	-0.132 U	-0.0985 U	-0.125 U
Co-58	0.0231 U	0.00743 U	0.047 U	-0.0415 U
Co-60	0 U	0.0247 U	0.0756 U	0.0446 U
Cr-51				
Cs-134	-0.109 U	-0.241 U	-0.102 U	-0.034 U
Cs-136				
Cs-137	1.8	0.339	0.782	0.665
Eu-152		0.0613 U		
Fe-59	-0.00385 U	-0.0668 U	0.0509 U	0.106 U
I-131				
K-40	16.7	19.1	-0.0312 U	7.45
Kr-85				
Mn-54	-0.00549 U	0.00801 U	0.00944 U	0.0491
Nb-95	-0.0927 U	-0.0119 U	0.0378 U	0.0354 U
Np-239		-25.9 U		
Pb-212	0.664	0.789		0.387
Pb-214	0.418	0.573		0.258
Ra-226	2.24 U	1.99		
Ru-103	-0.041 U	-0.0188 U	-0.133 U	0.0654 U
Ru-106	0.0426 U	-0.0963 U	-0.407 U	0.0547 U
Sb-124	-0.0227 U	-0.024 U	0.107 U	0.071 U
Sb-125				
Se-75				
Tl-202				
Tl-208		0.923		
U-235				
Zn-65	-0.0224 U	0.131 U	-0.114 U	-0.0858 U
Zr-95	-0.0823 U	0.02 U	-0.0505 U	0.0298 U
SOF	0.147	0.028	0.064	0.057

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG016-004 (13)	OG016-015 (22)	OG016-016 (23)	OG016-031 (36)	OG016-033 (38)
Sample ID	OG016GUFD004	OG016GUFD015	OG016GUFD016	OG016GUFD031	OG016GUFD033
Date Sampled	8/19/1998	8/25/1998	8/25/1998	8/19/1998	8/19/1998
Ac-228		0.9593	1.498	0.3606	0.1995 U
Ag-108m	-0.006818 U	0.007009 U	-0.0314 U	0.008268 U	-0.00395 U
Ag-110m	-0.005729 U	-0.005354 U	-0.02086 U	0.06118	-0.02992 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212		1.015	1.118		
Bi-214		0.5478	0.4854	0.3048	
Ce-141					
Ce-144	-0.1128 U	0.08086 U	0.004149 U	0.1886 U	-0.03848 U
Co-58	-0.02184 U	-0.007422 U	-0.07043 U	-0.003675 U	-0.05144 U
Co-60	-0.01792 U	0 U	-0.02285 U	0.007816 U	0.02987 U
Cr-51					
Cs-134	-0.03307 U	-0.121 U	0.03143 U	-0.2259 U	-0.02567 U
Cs-136					
Cs-137	0.4122	0.3412	1.085	0.9401	0.4696
Eu-152					
Fe-59	-0.03385 U	-0.04982 U	0.03613 U	0.02437 U	0.0377 U
I-131					
K-40	22.3	20.1	16.35	10.87	11.65
Kr-85					
Mn-54	-0.01011 U	0.01456 U	-0.01655 U	0.03892 U	0.00668 U
Nb-95	0.06776	0.01516 U	0.008556 U	0.04284 U	0.03078 U
Np-239					
Pb-212	0.1041	0.949	1.169	0.208	0.2727
Pb-214	0.2619	0.5039	0.4659	0.3027	0.332
Ra-226		2.397	2.226		1.994
Ru-103	-0.04993 U	0.03799 U	0.02905 U	-0.0132 U	-0.004917 U
Ru-106	0.06912 U	0.06531 U	0 U	-0.047 U	0 U
Sb-124	0 U	0.0544 U	0.03122 U	0.06004 U	0.006604 U
Sb-125		-0.1163 U			
Se-75			0.02918 U		
Tl-202					
Tl-208		1.049	1.282		
U-235					0.5021 U
Zn-65	-0.1261 U	0.1082 U	-0.002169 U	-0.225 U	-0.1337 U
Zr-95	0.01197 U	0.01994 U	-0.004686 U	0.07438 U	0.02234 U
SOF	0.034	0.028	0.089	0.077	0.038

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG016-001 (10) OG016GUFU001 8/19/1998	OG016-002 (11) OG016GUFU002 8/19/1998	OG016-003 (12) OG016GUFU003 8/19/1998	OG016-007 (14) OG016GUFU007 8/20/1998	OG016-008 (15) OG016GUFU008 8/20/1998
Ac-228	0.7914	0.8022	0.6051	0.5035	0.7326
Ag-108m	-0.01176 U	0.001512 U	-0.003376 U	-0.006305 U	0.003808 U
Ag-110m	0.03421 U	0.005943 U	0.04732	-0.009088 U	0.004646 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212	0.8109	0.6853		0.4118 U	0.588
Bi-214	0.3831	0.4743	0.4623	0.4263	0.3977
Ce-141					
Ce-144	0.08856 U	-0.06599 U	-0.02053 U	-0.1578 U	-0.09706 U
Co-58	-0.004301 U	-0.0122 U	-0.02366 U	0.01299 U	-0.01424 U
Co-60	0.02595 U	-0.001107 U	-0.00956 U	-0.008027 U	0.05288 U
Cr-51					
Cs-134	-0.05239 U	-0.07575 U	-0.07861 U	0.01374 U	0.04065 U
Cs-136					
Cs-137	0.3815	0.2236	0.3828	0.3202	0.4029
Eu-152					
Fe-59	0.01775 U	-0.04437 U	-0.03366 U	-0.05609 U	0 U
I-131					
K-40	17.89	20.2	14.7	14.51	13.32
Kr-85					
Mn-54	-0.006281 U	-0.003524 U	-0.01307 U	-0.04165 U	-0.01007 U
Nb-95	0.006588 U	0.05996	0.031 U	0.04941 U	-0.03954 U
Np-239					
Pb-212	0.7243	0.7167	0.6409	0.5256	0.8041
Pb-214	0.3705	0.4101	0.4185	0.4494	0.5824
Ra-226		1.864		2.117	1.882
Ru-103	0.02282 U	-0.01099 U	0.04222 U	0.01432 U	-0.003466 U
Ru-106	0.06335 U	0.06572 U	0.05708 U	0.2595 U	-0.1205 U
Sb-124	-0.003107 U	0.008442 U	-0.04307 U	0 U	0.02147 U
Sb-125					
Se-75					
Tl-202					
Tl-208	0.6062	0.699	0.5846		0.6201
U-235					
Zn-65	-0.08528 U	0.0296 U	-0.1153 U	-0.03505 U	-0.06859 U
Zr-95	0.0111 U	0.001158 U	-0.01814 U	0.01044 U	-0.05216 U
SOF	0.031	0.018	0.031	0.026	0.033

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG016-009 (16)	OG016-010 (17)	OG016-011 (18)	OG016-012 (19)	OG016-013 (20)
Sample ID	OG016GUFU009	OG016GUFU010	OG016GUFU011	OG016GUFU012	OG016GUFU013
Date Sampled	8/20/1998	8/20/1998	8/20/1998	8/20/1998	8/20/1998
Ac-228	0.8087	0.9591	1.179	1.032	1.842
Ag-108m	0.009189 U	-0.01112 U	-0.01477 U	-0.01151 U	0.009306 U
Ag-110m	0.02624 U	-0.01115 U	0.01064 U	0.03403 U	-0.01839 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212	0.5888	1.087	1.455	0.6073	1.645
Bi-214	0.481	0.4405	0.5853	0.4159	0.6024
Ce-141					
Ce-144	0.02851 U	0.02936 U	0.01258 U	-0.08413 U	-0.1834 U
Co-58	-0.03111 U	0.008127 U	-0.04494 U	-0.01704 U	-0.02241 U
Co-60	0.01359 U	0 U	-0.005869 U	-0.02299 U	-0.04683 U
Cr-51					
Cs-134	-0.06118 U	-0.02009 U	-0.01431 U	-0.1538 U	-0.02884 U
Cs-136					
Cs-137	0.2973	0.3377	0.4982	0.6007	0.8896
Eu-152					
Fe-59	0.0617 U	0.07885 U	0.1354 U	-0.1066 U	-0.006751 U
I-131					
K-40	21	19.2	25.47	20.78	24.47
Kr-85					
Mn-54	-0.001972 U	-0.01724 U	0.006489 U	0.004236 U	0.04185 U
Nb-95	0.001461 U	0.03858 U	0.0006533 U	0.03901 U	0.08143 U
Np-239					
Pb-212	0.768	0.8702	1.25	0.9289	1.623
Pb-214	0.572	0.5223	0.7249	0.4947	0.5835
Ra-226	1.246 U	2.261	3.18	2.074	4.871
Ru-103	0.03357 U	0.009912 U	-0.04884 U	-0.04676 U	0.02435 U
Ru-106	-0.08391 U	0.1396 U	0.2099 U	0.3653	-0.06977 U
Sb-124	-0.04048 U	-0.05589 U	0.07772 U	0.02296 U	-0.008881 U
Sb-125	-0.09845 U				
Se-75					
Tl-202					
Tl-208	0.5869	0.8941	1.172	0.8733	1.197
U-235					
Zn-65	-0.1115 U	-0.02873 U	0.217 U	0.06381 U	0.1175 U
Zr-95	-0.01679 U	-0.01426 U	0.0005393 U	0.02571 U	0.07863 U
SOF	0.024	0.028	0.041	0.054	0.073

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG016-014 (21) OG016GUFU014 8/20/1998	OG016-017 (24) OG016GUFU017 8/25/1998	OG016-018 (25) OG016GUFU018 8/25/1998	OG016-020 (26) OG016GUFU020 8/25/1998	OG016-021 (27) OG016GUFU021 8/25/1998
Ac-228	0.9527	0.8497	0.8253	0.7901	0.9019
Ag-108m	0.01043 U	-0.004436 U	0.0006316 U	-0.0004191 U	-0.01143 U
Ag-110m	-0.002221 U	0.005487 U	-0.01568 U	0.01476 U	-0.01149 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212	1.106	0.9786	1.829	0.9248	0.6831
Bi-214	0.4906	0.4598	0.4407	0.4505	
Ce-141					
Ce-144	-0.273 U	-0.1685 U	0.05577 U	0.2664	0.05307 U
Co-58	-0.009821 U	-0.01978 U	-0.01203 U	-0.01107 U	-0.02928 U
Co-60	-0.02399 U	-0.01094 U	-0.01341 U	-0.001766 U	0.03236 U
Cr-51					
Cs-134	-0.008315 U	-0.03023 U	-0.1496 U	-0.001508 U	-0.01341 U
Cs-136					
Cs-137	0.396	0.6411	1.138	0.4068	0.2302
Eu-152					
Fe-59	-0.1091 U	-0.05871 U	-0.045 U	0.00879 U	-0.1129 U
I-131					
K-40	21.54	19.18	18.68	17.92	19.56
Kr-85					
Mn-54	-0.03772 U	0.007949 U	0.02475 U	-0.01143 U	0.003011 U
Nb-95	-0.0008779 U	-0.02721 U	0.01515 U	0.04772 U	0.08526
Np-239					
Pb-212	0.9489	0.7408	0.8318	0.7731	0.935
Pb-214	0.5948	0.5359	0.5937	0.5322	0.4459
Ra-226		1.681		1.552	1.568 U
Ru-103	0.04988	-0.009895 U	0.006924 U	0.0192 U	-0.03472 U
Ru-106	-0.07037 U	0.1001 U	-0.2401 U	0.1443 U	-0.1552 U
Sb-124	0.008152 U	0.02774 U	0.002799 U	-0.04749 U	0.01839 U
Sb-125					
Se-75					
Tl-202					
Tl-208	0.8643	0.5973		0.5649	0.7489
U-235					
Zn-65	-0.02826 U	0.1536	-0.02473 U	-0.1053 U	-0.06881 U
Zr-95	-0.01046 U	0.007542 U	-0.04858 U	-0.04025 U	0.01568 U
SOF	0.032	0.052	0.093	0.033	0.019

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 – Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG016-022 (28)	OG016-023 (29)	OG016-024 (30)	OG016-025 (31)	OG016-026 (32)
Sample ID	OG016GUFU022	OG016GUFU023	OG016GUFU024	OG016GUFU025	OG016GUFU026
Date Sampled	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998
Ac-228	0.3677	0.2878		0.7329	0.576
Ag-108m	0.001732 U	0.01082 U	-0.02056 U	0.003109 U	0.00337 U
Ag-110m	0.004223 U	0.009255 U	0.03907 U	0.01652 U	-0.01921 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212		0.6962		0.8541	
Bi-214	0.4419			0.4008	0.4982
Ce-141					
Ce-144	0.03939 U	-0.1207 U	-0.1095 U	0.02367 U	-0.04843 U
Co-58	-0.002512 U	-0.01555 U	0.003554 U	-0.01095 U	-0.04082 U
Co-60	-0.001849 U	0.02242 U	-0.02517 U	0.02108 U	-0.0215 U
Cr-51					
Cs-134	-0.05299 U	-0.0262 U	-0.0383 U	0.01684 U	-0.1208 U
Cs-136					
Cs-137	1.104	0.9854	1.259	1.394	0.9239
Eu-152					
Fe-59	0.01355 U	-0.01743 U	-0.02798 U	0.06254 U	-0.03254 U
I-131					
K-40	14.11	12.88	11.5	16.09	20.36
Kr-85					
Mn-54	0.008515 U	0.00338 U	-0.003754 U	-0.00543 U	-0.02351 U
Nb-95	0.02669 U	-0.0004189 U	-0.007335 U	0.03393 U	-0.0219 U
Np-239					
Pb-212	0.3027	0.2944	0.3498	0.5812	0.7404
Pb-214	0.3954	0.3722	0.4582	0.4755	0.4511
Ra-226	1.478 U			2.053	1.554
Ru-103	-0.02592 U	-0.0006403 U	-0.02972 U	0.001852 U	-0.01688 U
Ru-106	0.07174 U	-0.1914 U	-0.1198 U	-0.2274 U	0.1756 U
Sb-124	0.0389 U	0 U	0 U	0 U	-0.001953 U
Sb-125				0.1022 U	
Se-75					
Tl-202					
Tl-208		0.174 U		0.6321	
U-235					
Zn-65	0.1087 U	-0.1547 U	-0.1479 U	-0.009383 U	-0.1005 U
Zr-95	0.01101 U	-0.008295 U	0.004153 U	-0.06968 U	0.04015 U
SOF	0.09	0.081	0.103	0.114	0.075

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG016-027 (33) OG016GUFU027 8/26/1998	OG016-028 (34) OG016GUFU028 8/26/1998	OG016-029 (35) OG016GUFU029 8/26/1998	OG016-032 (37) OG016GUFU032 8/26/1998	OG016-034 (39) OG016GUFU034 8/25/1998
Ac-228	0.8344		0.7719	0.6627	0.8934
Ag-108m	-0.04492 U	-0.06176 U	0.02608 U	0.01657 U	-0.01457 U
Ag-110m	0.03229 U	0.03801 U	-0.004335 U	-0.04704 U	0.03078 U
Am-241	0 U	0.1547 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212			88.75 U	0.7288	0.5794
Bi-214	0.4379		0.4773	0.4032	0.4595
Ce-141					
Ce-144	-0.005507 U	-0.228 U	0.06469 U	-0.006687 U	0.2545
Co-58	0.0009153 U	-0.001463 U	-0.04229 U	-0.02595 U	-0.02811 U
Co-60	-0.03622 U	-0.01234 U	0.05636 U	0.01876 U	0.02475 U
Cr-51			0.6555		
Cs-134	-0.1076 U	0.07043 U	-0.07071 U	-0.01131 U	0.03646 U
Cs-136					
Cs-137	0.4856	1.842	1.935	0.9934	0.2428
Eu-152					0.4217 U
Fe-59	0.02445 U	-0.08525 U	0 U	-0.0313 U	-0.08661 U
I-131					
K-40	13.81	0.7369 U	19.07	14.94	17.77
Kr-85					
Mn-54	0.0197 U	-0.02274 U	-0.04451 U	0.01481 U	0.006394 U
Nb-95	-0.04195 U	-0.001218 U	-0.005675 U	-0.05373 U	0.01286 U
Np-239					
Pb-212	0.8249	0.4361	0.7489	0.9526	0.8578
Pb-214	0.4436		0.4552	0.4281	0.5435
Ra-226	1.542 U			1.739	
Ru-103	-0.02967 U	0.02928 U	0.04989 U	-0.01796 U	-0.0227 U
Ru-106	0.05164 U	-0.00000001753 U	0.04265 U	-0.1489 U	0 U
Sb-124	-0.00638 U	0.0459 U	0.05497 U	0 U	0 U
Sb-125					
Se-75		0.307 U			
Tl-202					
Tl-208			0.6332	0.7102	0.7105
U-235					
Zn-65	0.1025 U	-0.06812 U	-0.09206 U	-0.1493 U	0.003315 U
Zr-95	0.01365 U	0.03301 U	-0.03898 U	0.02225 U	0.04892 U
SOF	0.04	0.15	0.158	0.081	0.02

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG020-019 (978)	OG020-020 (979)	OG020-021 (980)	OG020-022 (981)
Sample ID	OG020GUF019	OG020GUF020	OG020GUF021	OG020GUF022
Date Sampled	9/22/1998	9/22/1998	9/22/1998	9/23/1998
Ac-228	0.826	0.818	1.03	0.896
Ag-108m	-0.0301 U	-0.0271 U	-0.0133 U	0.00147 U
Ag-110m	0.00684 U	-0.00819 U	-0.0104 U	0.00559 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.744	0.448 U	0.763	1
Bi-214	0.532	0.533	0.547	0.465
Ce-141				
Ce-144	0 U	-0.177 U	0.0693 U	-0.0438 U
Co-58	0.000869 U	0.0256 U	-0.00609 U	0.0349 U
Co-60	-0.0294 U	-0.0135 U	-0.00459 U	-0.00993 U
Cr-51				
Cs-134	-0.022 U	-0.103 U	-0.144 U	0.0831 U
Cs-136				
Cs-137	0.0583	0.151	0.0568	0.099
Eu-152				
Fe-59	-0.0227 U	-0.0252 U	-0.0343 U	0.0372 U
I-131				
K-40	19.1	21	21.8	19
Kr-85				
Mn-54	0.0137 U	0.00613 U	0.00759 U	-0.0089 U
Nb-95	0.00686 U	0.0275 U	0.0257 U	0.0272 U
Np-239				
Pb-212	0.765	0.865	0.876	0.817
Pb-214	0.418	0.616	0.586	0.641
Ra-226	1.71	1.51	1.54	1.2 U
Ru-103	0.00768 U	0.00689 U	-0.0409 U	-0.000651 U
Ru-106	0.223 U	0 U	-0.2 U	-0.0578 U
Sb-124	0.0243 U	0.0127 U	-0.0439 U	0.00348 U
Sb-125				
Se-75				
Tl-202				
Tl-208	0.719	0.835	0.634	0.64
U-235				
Zn-65	0.0238 U	-0.06 U	0.0503 U	-0.0214 U
Zr-95	0.0499 U	0.0388 U	0.0124 U	-0.00663 U
SOF	0.005	0.012	0.005	0.008

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG020-023 (982) OG020GUFD023 9/23/1998	OG020-024 (983) OG020GUFD024 9/23/1998	OG020-025 (984) OG020GUFD025 9/23/1998	OG020-026 (985) OG020GUFD026 9/23/1998
Ac-228	0.966	0.261	0.947	0.741
Ag-108m	-0.00387 U	-0.0447 U	0.0183 U	-0.0131 U
Ag-110m	0.0611	-0.0117 U	0.0251 U	-0.0573 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.869		1.09	1.09
Bi-214	0.665	0.243	0.528	0.413
Ce-141				
Ce-144	0.055 U	-0.1 U	-0.0662 U	-0.0709 U
Co-58	0.0106 U	0.00874 U	-0.0204 U	0.0104 U
Co-60	-0.0479 U	0.01 U	0.0223 U	-0.0229 U
Cr-51				
Cs-134	-0.137 U	-0.189 U	-0.113 U	0.00919 U
Cs-136				
Cs-137	0.12	3.57	0.0554	0.0684
Eu-152				
Fe-59	-0.016 U	0 U	0.0656 U	-0.00795 U
I-131				
K-40	20.7	10.3	20.2	20.1
Kr-85				
Mn-54	-0.0125 U	-0.0387 U	0.0186 U	0.0344 U
Nb-95	0.0613	0.0659	0.0283 U	0.0468 U
Np-239		5.4 U		
Pb-212	0.893	0.118 U	0.885	0.777
Pb-214	0.543	0.315	0.539	0.56
Ra-226	1.74		1.67	
Ru-103	0.00914 U	0.0459 U	0.0363 U	0.0103 U
Ru-106	0.127 U	-0.262 U	-0.0406 U	0.252 U
Sb-124	0 U	0 U	0.00625 U	-0.00909 U
Sb-125	-0.0918 U		-0.101 U	
Se-75				
Tl-202		0.118 U		
Tl-208	0.926		0.896	0.76
U-235				
Zn-65	-0.0191 U	-0.0797 U	0.0171 U	-0.0424 U
Zr-95	0.0291 U	-0.012 U	0.0775	0.00578 U
SOF	0.01	0.292	0.005	0.006

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG020-031 (988) OG020GUF031 9/23/1998	OG020-029 (986) OG020GUFU029 9/23/1998	OG020-030 (987) OG020GUFU030 9/23/1998	SE417 (3072) SE417 11/5/1997	SE418 (3073) SE418 11/5/1997
Ac-228	0.759	0.385	0.561	0.5245	0.9199
Ag-108m	-0.000587 U	-0.0175 U	0.00435 U	-0.006383 U	-0.02059 U
Ag-110m	-0.0199 U	-0.0181 U	-0.0293 U	-0.008888 U	-0.007263 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133			-0.0344 U		
Ba-140					
Bi-212	0.97	0.54 U		1.206	0.805
Bi-214	0.611	-0.213	0.463	0.3879	0.3901
Ce-141					
Ce-144	-0.0715 U	0 U	0.0328 U	0.1696 U	-0.062 U
Co-58	0.0078 U	-0.0228 U	0.003 U	0.01166 U	-0.01301 U
Co-60	0.0233 U	0.0562 U	0.0195 U	0.01632 U	0.006687 U
Cr-51					
Cs-134	-0.0462 U	-0.73 U	-0.108 U	-0.007863 U	-0.04454 U
Cs-136					
Cs-137	0.0225 U	1.65	-0.00586 U	0.07631	-0.009189 U
Eu-152					
Fe-59	-0.112 U	-0.0512 U	-0.0534 U	-0.01271 U	-0.05772 U
I-131					
K-40	21	10	21.6	8.838	15.24
Kr-85					
Mn-54	-0.00703 U	0.0248 U	0.0342 U	-0.01025 U	-0.01325 U
Nb-95	0.0525 U	-0.0239 U	-0.0193 U	-0.02251 U	-0.01411 U
Np-239			0.111 U		
Pb-212	0.815	0.265	0.862	0.5092	0.7473
Pb-214	0.638	0.284	0.529	0.4062	0.3953
Ra-226	0.972 U				1.689
Ru-103	0.00367 U	-0.0344 U	-0.0175 U	-0.007285 U	0.002992 U
Ru-106	0.0816 U	0.042 U	-0.34 U	-0.1821 U	0.01668 U
Sb-124	-0.018 U	0.0201 U	0.0238 U	-0.006481 U	-0.009664 U
Sb-125					
Se-75					
Tl-202					
Tl-208	0.933		0.749	0.4198	0.6824
U-235					
Zn-65	-0.0275 U	-0.0284 U	-0.108 U	0.0856 U	-0.02861 U
Zr-95	-0.00603 U	0.00961 U	-0.022 U	0.03444 U	-0.02943 U
SOF		0.135		0.006	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	SE419 (3074) SE419 11/5/1997	SE420 (3075) SE420 11/5/1997	SE421 (3076) SE421 11/5/1997	SE422 (3077) SE422 11/8/1997	SE423 (3078) SE423 11/5/1997	SE424 (3079) SE424 11/5/1997
Ac-228	0.5382	0.6888	0.9341	0.6103	0.5819	0.6638
Ag-108m	0.01238 U	0.003596 U	-0.003313 U	0.009506 U	-0.002452 U	0.008404 U
Ag-110m	-0.009862 U	0.008202 U	-0.005319 U	-1.854 U	-0.01759 U	-0.0218 U
Am-241	0 U	0 U	0 U	0 U	0 U	0 U
Ba-133						
Ba-140						
Bi-212		0.6534	0.7215	0.603	0.6882	0.5145
Bi-214	0.3968	0.4634	0.4266	0.5023	0.3874	0.3946
Ce-141						
Ce-144	0.01256 U	0.1822 U	-0.01251 U	-7.482 U	-0.04796 U	-0.1898 U
Co-58	-0.009456 U	0.001776 U	-0.008908 U	2.586 U	-0.02246 U	0.004494 U
Co-60	-0.01566 U	-0.003583 U	-0.01726 U	0.4447 U	0.009626 U	-0.03207 U
Cr-51						
Cs-134	-0.002709 U	-0.0744 U	0.0117 U	-6.709 U	-0.02948 U	0.02549 U
Cs-136						
Cs-137	-0.01962 U	0.07867	0.1037	0.1354 U	0.06655	0.09131
Eu-152						
Fe-59	-0.04878 U	0.01466 U	-0.0529 U	44.88 U	0.05925 U	0 U
I-131						
K-40	11.7	16.56	12.75	14.04	14.74	13.67
Kr-85						4.092
Mn-54	0.02458 U	0.00989 U	-0.01348 U	-0.5399 U	0.003264 U	0.02942 U
Nb-95	-0.001275 U	-0.02551 U	0.02919 U	7.664 U	-0.02093 U	0.03955 U
Np-239						
Pb-212	0.5568	0.7464	0.6791	0.6514	0.5636	0.5911
Pb-214	0.3794	0.4312	0.6794	0.4449	0.3969	0.4737
Ra-226	0.8523	1.345		1362	1.96	
Ru-103	0.01417 U	-0.01762 U	0.02329 U	0.4607 U	-0.01417 U	-0.02617 U
Ru-106	0.1684 U	0.06329 U	-0.02541 U	9.782 U	0.04238 U	-0.148 U
Sb-124	0.001806 U	0.02171 U	0.02973 U	0 U	0.001668 U	0 U
Sb-125		-0.07792 U				
Se-75						
Tl-202						
Tl-208	0.5636	0.8507	0.575		0.5603	0.6635
U-235						
Zn-65	-0.003031 U	-0.007242 U	-0.04128 U	17.99 U	-0.001432 U	-0.02532 U
Zr-95	0.06444	-0.01751 U	-0.0527 U	-4.122 U	-0.003744 U	0.06393 U
SOF		0.006	0.008		0.005	0.007

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	SE425 (3080)	SE426 (3081)	SE427 (3082)	SE428 (3083)	SE429 (3084)	SE430 (3085)
Sample ID	SE425	SE426	SE427	SE428	SE429	SE430
Date Sampled	11/5/1997	11/5/1997	11/5/1997	11/5/1997	11/5/1997	11/5/1997
Ac-228	0.623	0.6469	0.5071	0.5952	0.4449	0.4629
Ag-108m	-0.0002562 U	0.01919 U	-0.01727 U	0.02527 U	-0.00332 U	0.02478 U
Ag-110m	0.01521 U	-0.04795 U	0.004134 U	0.004097 U	-0.01063 U	-0.003003 U
Am-241	0 U	0 U	0 U	0 U	0 U	0 U
Ba-133			0.0818 U			
Ba-140						
Bi-212		0.745	0.661	0.6874		0.3864 U
Bi-214	0.4637	0.4238	0.3209	0.3981	0.4923	0.4355
Ce-141						
Ce-144	-0.1479 U	-0.01798 U	-0.1658 U	-0.1762 U	0.1566 U	0.2067 U
Co-58	0.005371 U	-0.04292 U	-0.03237 U	0.03922 U	-0.02106 U	0.01136 U
Co-60	-0.01311 U	-0.006057 U	0.01288 U	-0.01506 U	0.005353 U	0.02562 U
Cr-51						
Cs-134	-0.06943 U	-0.05836 U	-0.1369 U	-0.05731 U	-0.06949 U	0.01358 U
Cs-136						
Cs-137	0.03577 U	0.1132	0.1157	0.1207	0.1397	0.1543
Eu-152						
Fe-59	-0.1226 U	0.03612 U	-0.06311 U	-0.1382 U	0 U	0.02391 U
I-131						
K-40	15.41	14.85	9.906	14.8	13.12	11.93
Kr-85						
Mn-54	-0.00528 U	0.004176 U	0.01483 U	0.02376 U	0.001553 U	-0.01805 U
Nb-95	0.05882 U	-0.03108 U	0.01152 U	0.0324 U	0.05123 U	0.02131 U
Np-239						
Pb-212	0.5442	0.7314	0.5648	0.6344	0.6529	0.5007
Pb-214	0.5413	0.5722	0.3811	0.3911	0.3503	0.3851
Ra-226	2.214			2.548	2.087	0.9863 U
Ru-103	-0.01807 U	-0.02708 U	-0.03671 U	0.00418 U	0.02694 U	0.0235 U
Ru-106	-0.102 U	0.0917 U	-0.1449 U	-0.3884 U	-0.09867 U	0.2872
Sb-124	-0.03341 U	-0.009595 U	0.004273 U	0 U	0.002382 U	-0.01222 U
Sb-125				-0.02262 U		
Se-75						
Tl-202						
Tl-208		0.6651	0.3451	0.5281		0.4111
U-235						
Zn-65	-0.02844 U	0.04795 U	0.05297 U	0.07876 U	-0.0581 U	-0.03245 U
Zr-95	0.02146 U	0.0359 U	0.02398 U	-0.02112 U	0.06597 U	0.01525 U
SOF		0.009	0.009	0.01	0.011	0.017

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-08 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	SE431 (3086)	SE432 (3087)	TS438 (3203)	TS439 (3204)	TS523 (3251)	TS529 (3257)
Sample ID	SE431	SE432	TS438	TS439	TS523	TS529
Date Sampled	11/5/1997	11/5/1997	11/7/1997	11/7/1997	8/3/1998	8/11/1998
Ac-228	0.6346	0.5064	0.2861		0.8409	0.7888
Ag-108m	-0.01723 U	-0.003154 U	-0.01612 U	-0.003648 U	-0.00707 U	0.006405 U
Ag-110m	-0.02504 U	-0.011 U	-0.03053 U	0.001156 U	-0.0415 U	-0.002763 U
Am-241	0 U	0 U	0 U	0 U	0 U	0 U
Ba-133						
Ba-140						
Bi-212	0.6526		0.424 U		1.276	0.5084 U
Bi-214	0.3662	0.2707	0.3483	0.2418	0.4548	0.3882
Ce-141						
Ce-144	-0.03207 U	-0.1092 U	0.008244 U	-0.02739 U	0.006563 U	0.1735 U
Co-58	0.01967 U	0.006777 U	0.007872 U	0.001454 U	-0.02666 U	-0.002605 U
Co-60	-0.000933 U	-0.000135 U	-0.002101 U	-0.00629 U	0.04258 U	0.007699 U
Cr-51						
Cs-134	-0.05798 U	-0.003194 U	-0.03807 U	0.02601 U	-0.01442 U	-0.02166 U
Cs-136						
Cs-137	0.05409	0.116	0.1179	0.8119	0.008798 U	0.1229
Eu-152						
Fe-59	0.06524 U	0.1061 U	-0.0148 U	-0.0246 U	-0.02172 U	0.007254 U
I-131						
K-40	12.99	11.76	11.23	8.173	18.32	15.12
Kr-85						
Mn-54	0.01056 U	-0.004852 U	-0.006879 U	0.02037 U	-0.04475 U	-0.02106 U
Nb-95	0.009301 U	0.0119 U	0.02738 U	0.01894 U	0.02085 U	0.001322 U
Np-239						
Pb-212	0.7257	0.4712	0.2862	0.2306	1.003	0.7187
Pb-214	0.6302	0.2979	0.2649	0.2158	0.5057	0.4813
Ra-226	1.026 U			0.8952 U	1.481	1.393
Ru-103	0.02592 U	0.02676 U	0.01813 U	-0.007464 U	0.002555 U	0.01618 U
Ru-106	0.1134 U	0.2298	0.09738 U	-0.2353 U	0 U	0.2952 U
Sb-124	0.01557 U	-0.01446 U	0.006824 U	0 U	0.02253 U	0.03435 U
Sb-125						
Se-75						
Tl-202						
Tl-208	0.6901	0.4368			0.6672	0.678
U-235						
Zn-65	0.01765 U	-0.02355 U	0.02206 U	-0.06216 U	-0.03108 U	-0.07274 U
Zr-95	0.02414 U	0.03449 U	0.01347 U	0.001865 U	0.0485 U	0.009451 U
SOF	0.004	0.013	0.01	0.066		0.01

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-08 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	TS530 (3258) TS530 8/11/1998	TS531 (3259) TS531 8/11/1998	TS532 (3260) TS532 8/11/1998
Ac-228	0.6607	0.76	0.7526
Ag-108m	0.001318 U	0.001769 U	-0.006194 U
Ag-110m	0.01457 U	0.008836 U	0.007479 U
Am-241	0 U	0 U	0 U
Ba-133			
Ba-140			
Bi-212		0.8217	0.8376
Bi-214	0.4129	0.448	0.5783
Ce-141			
Ce-144	0.02024 U	-0.05177 U	0.1439 U
Co-58	0 U	-0.008753 U	0.008853 U
Co-60	-0.02661 U	-0.02552 U	-0.00386 U
Cr-51			
Cs-134	0.01379 U	-0.1225 U	-0.1138 U
Cs-136			
Cs-137	0.1285	0.02641 U	0.03196 U
Eu-152			
Fe-59	0 U	-0.05111 U	0.008111 U
I-131			
K-40	16.71	18.34	17.42
Kr-85			
Mn-54	0.02802 U	-0.01672 U	0.01531 U
Nb-95	-0.002117 U	0.01207 U	0.05305
Np-239			
Pb-212	0.6277	0.7668	0.8271
Pb-214	0.4322	0.5595	0.5315
Ra-226	1.78	1.548	1.693
Ru-103	0.01101 U	0.001617 U	-0.01145 U
Ru-106	-0.05079 U	-0.03714 U	0.07826 U
Sb-124	0.05475	-0.01837 U	0 U
Sb-125			
Se-75			
Tl-202			
Tl-208		0.713	0.8068
U-235			
Zn-65	0.003269 U	0.1244 U	0.02858 U
Zr-95	-0.05051 U	0.01633 U	0.04843 U
SOF	0.01		

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 2
Statistical Data Summary -- OOL-08 -- Water
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	1	1	0.000		0.000	0.000	0.000
Ag-108m	pCi/g	0	3	0.000				
Ag-110m	pCi/g	0	3	0.000				
Bi-214	pCi/g	1	2	0.000		0.000	0.000	0.000
Ce-144	pCi/g	0	3	0.000				
Co-58	pCi/g	0	3	0.000				
Co-60	pCi/g	0	3	0.000				
Cs-134	pCi/g	0	3	0.000				
Cs-137	pCi/g	1	3	0.000		0.000	0.000	0.000
Fe-59	pCi/g	0	3	0.000				
I-135	pCi/g	0	1	0.000				
K-40	pCi/g	0	3	0.000				
Kr-85	pCi/g	0	3	0.000				
Mn-54	pCi/g	0	3	0.000				
Nb-95	pCi/g	0	3	0.000				
Np-239	pCi/g	0	1	0.000				
Pb-214	pCi/g	2	3	0.000	0.000	0.000	0.000	0.000
Ru-103	pCi/g	0	3	0.000				
Ru-106	pCi/g	0	3	0.000				
Sb-124	pCi/g	0	3	0.000				
Sb-125	pCi/g	0	3	0.000				
Sc-75	pCi/g	0	3	0.000				
Zn-65	pCi/g	0	3	0.000				
Zr-95	pCi/g	0	3	0.000				

Table 4

Rad

OOL-08 -- Water (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Station (Key)	OG002-035 (81)	OG003-035 (203)	OG004-035 (267)
Sample ID	OG002GUFW036	OG003GUFW035	OG004GUFW035
Date Sampled	9/17/1998	9/30/1998	9/30/1998
Ac-228			1.345E-08
Ag-108m	-0.0000000003268 U	0.000000001154 U	0.000000001944 U
Ag-110m	-0.000000001161 U	-0.000000002671 U	0.00000007631 U
Bi-214		1.441E-08	0.000000003483 U
Ce-144	0.000000001311 U	-0.0000000008737 U	0.0000003764 U
Co-58	-0.0000000008714 U	0.000000001142 U	-0.00000004428 U
Co-60	0.000000001713 U	0.000000001762 U	-0.00000002407 U
Cs-134	0.0000000005304 U	0.0000000001566 U	0.000000005987 U
Cs-137	1.904E-09	-0.000000002549 U	0.000000004784 U
Fe-59	0.0000000006446 U	0.000000002185 U	0.0000004996 U
I-135			0.01365 U
K-40	0.00000000687 U	-0.00000001194 U	0.00000001099 U
Kr-85	0.0000003077 U	-0.0000001831 U	0.000001351 U
Mn-54	0.0000000007999 U	0.0000000006786 U	0.00000002926 U
Nb-95	-0.0000000002601 U	-0.000000001185 U	-0.00000009841 U
Np-239			0.0001459 U
Pb-214	4.852E-09	1.115E-08	0.000000004064 U
Ru-103	-0.0000000001462 U	-0.000000001457 U	-0.0000003749 U
Ru-106	-0.0000000004796 U	-0.000000009494 U	0.0000002516 U
Sb-124	-0.0000000004104 U	-0.0000000002164 U	-0.000001102 U
Sb-125	0.000000001391 U	0.000000003607 U	0.00000006488 U
Se-75	0.0000000004304 U	-0.000000001773 U	0.000000007963 U
Zn-65	0.000000002153 U	0.000000000227 U	-0.0000001205 U
Zr-95	-0.0000000001453 U	0 U	0.0000005251 U

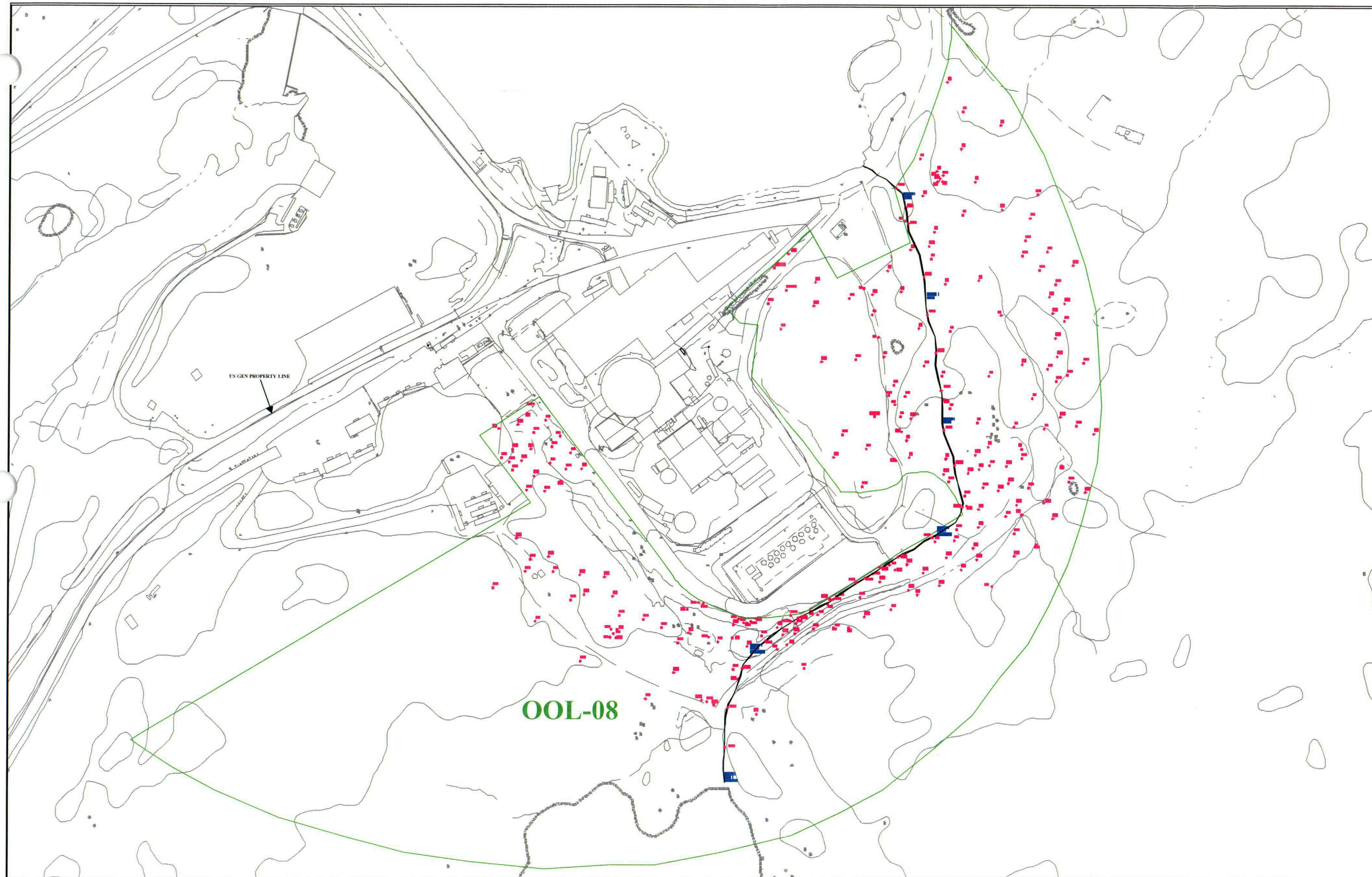
U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Water Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Underground Systems

OOL-08				
Structure / System	Component	Description	Location	Impacted?
Water		starting at 10,000 gal well water tank on hill a 6" line goes east to a point just north of the middle of the north side of the SSS bldg; a 1" line from tank to admin bldg	min 5' underground	

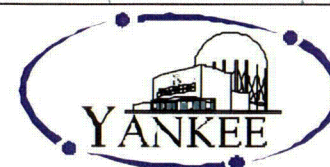


Legend

 = Survey Area Boundary

Notes

Yankee Atomic Power Company
Soil Sample Locations - OOL-8



Date: October 2003

Revision: 4

Figure: 9

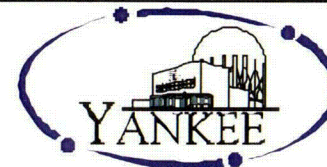


Legend

= Survey Area Boundary

Notes

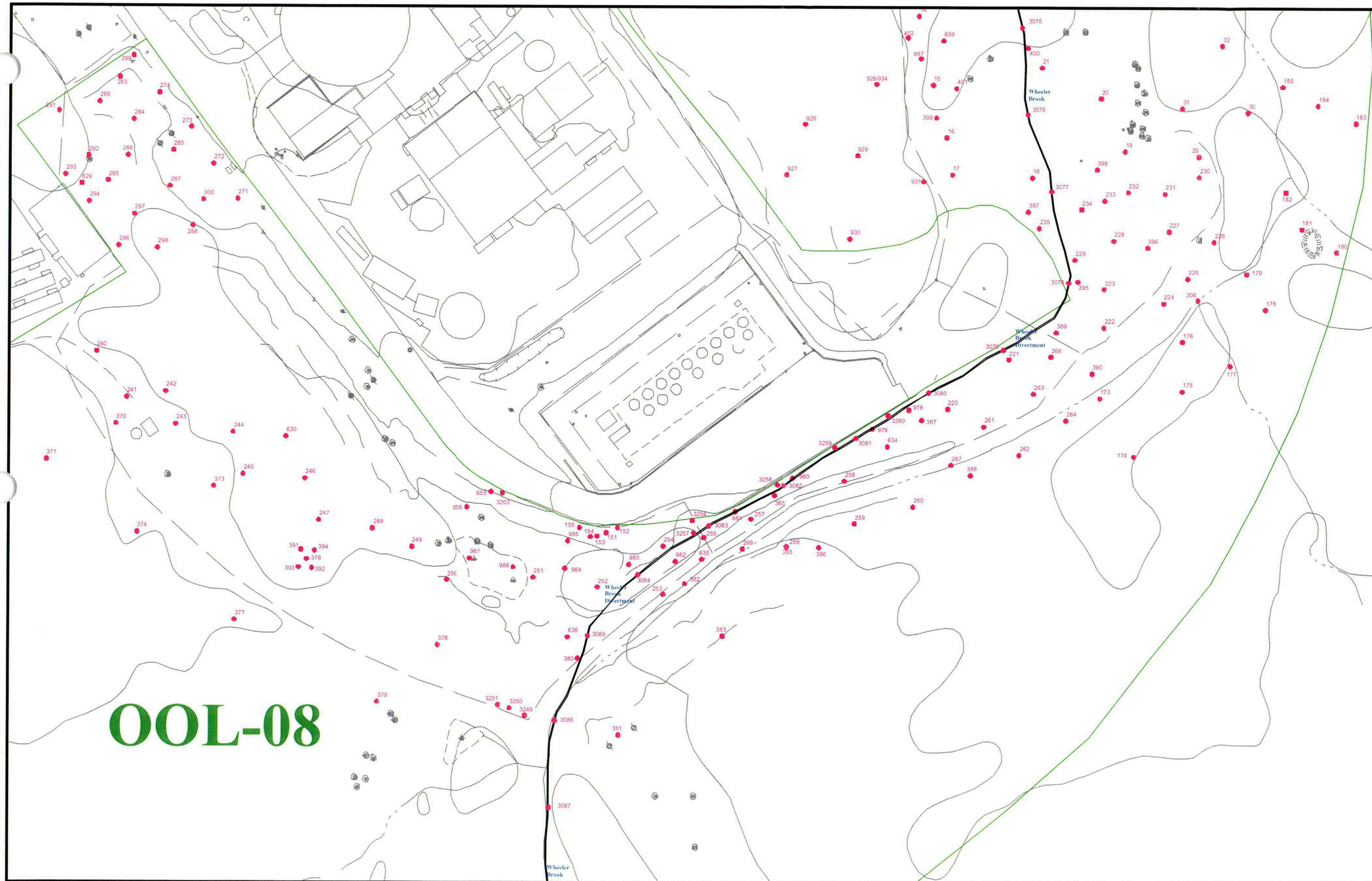
Yankee Atomic Power Company
Soil Sample Locations - OOL-8



Date: October 2003

Revision: 4

Figure: 9A



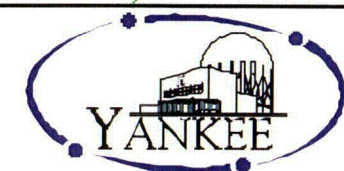
Legend

 = Survey Area Boundary

Notes

OOL-08

Yankee Atomic Power Company
Soil Sample Locations - OOL-8



Date: October 2003

Revision: 4

Figure: 9B

Historical Site Assessment and Classification Summary

Survey Area Name: SE Construction Fill Area

Designator: **OOL-09**

Survey Area Description

Survey area OOL-09 consists of land area that received construction spoils from various projects over the life of the plant. Survey area OOL-09 contains about 2390 square meters of soil surface area.

Survey area OOL-09 is bounded by OOL-08 on the north, east and south and OOL-10 on the west.

There are no sub-surface systems that traverse or connect within survey area OOL-09.

Items of note located within or adjacent to survey area OOL-09 include:

- Groundwater Monitoring wells of the CFW series.

Historical Site Assessment and Classification Summary

Survey Area Name: SE Construction Fill Area

Designator: **OOL-09**

Survey Area History

Survey area OOL-09 is not part of the RCA. There are no radioactive systems present in OOL-09. Survey area OOL-09 was not used for storing radioactive material or processing, packaging or disposal of radioactive waste.

Survey Area OOL-09 contains an accumulation of soil and construction debris as well as discarded components that were generated over the life of the plant (Ref 1 & 2).

Survey area OOL-09 is likely to be minimally impacted by low levels of radioactivity as a result of soil and material storage.

Modifications performed at the YNPS site in support of decommissioning that changed the configuration of OOL-09 include:

- Deposition of the soil from the ISFSI construction.

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 3).

Continuing Soil Characterization sampling was conducted under the guidance provided in NUREG/CR-5849. A series of test pits were excavated to characterize the nature of materials deposited in OOL-09. In addition, a ground penetrating radar unit was used to locate large subsurface objects. The artifacts found were excavated and evaluated for radiological hazard. The investigations did not disclose any discernable radiological issues in this survey area.

Decommissioning

No decommissioning activities have been performed for survey area OOL-09.

Historical Site Assessment and Classification Summary

Survey Area Name: SE Construction Fill Area Designator: **OOL-09**

Findings

Survey area OOL-09 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-09 is minimally impacted by low levels of radioactivity present in soil deposited in this area. Survey area OOL-09 may contain residual radioactivity concentrations at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-09 includes all radionuclides identified in the radioactive systems of the plant (Ref 4). The primary radionuclides of concern for survey area OOL-09 are Co-60, Cs-137, Ag-108m, Sr-90, and tritium.

Current Status

Survey area OOL-09 potentially may be further impacted by continued decommissioning activities.

A soil sample location map (Figure 10) has been prepared to show the distribution of sampling locations in OOL-09. Two survey media were assessed in OOL-09, Asphalt and Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL. There are separate sets of Tables 1-4 for each survey media. All are evaluated as fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-09 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Asphalt: Mean SOF is 0.077.

Maximum SOF for a single asphalt sample is 0.153 (key# 2992) at the eastern boundary

Minimum SOF for a single asphalt sample is 0.014 (key# 2990) at the southeast corner

Soil: Mean SOF is 0.029.

Maximum SOF for a single soil sample is 0.205 (key# 3270) discarded septic tank residue.

Minimum SOF for a single soil sample is 0.004 (key# 3231) southern boundary

The results of this investigation are presented on the attached spreadsheet

Historical Site Assessment and Classification Summary

Survey Area Name: SE Construction Fill Area

Designator: **OOL-09**

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-09 is identified as a Class 3 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: SE Construction Fill Area

Designator: **OOL-09**

Drawings

9699-FY-5A

Figure 7-1A

References

1.	"Summary of Excavation Volumes for YNPS Construction Performed During the Time Period of Plant Operation," dated October 1997.
2.	"Southeast Construction Fill Area, Soil and Ground Water Sampling at YNPS, Investigation Status Report," dated April 29, 1997.
3.	YNPS Decommissioning Plan, Rev. 0.0.
4.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

Table 1
Sum of Fractions
OOL-09 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
2992	AS98.30	AS98.30C	0.075
2992	AS98.30	AS98.30B	0.153
2990	AS510	AS510D	0.014
2990	AS510	AS510C	0.052
2990	AS510	AS510B	0.087
2990	AS510	AS510A	0.083
			Min 0.014
			Max 0.153
			Mean 0.077

Table 2
Statistical Data Summary -- OOL-09 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	6	6	0.404	0.159	0.157	0.657	0.403
Ag-108m	pCi/g	0	7	0.000				
Ag-110m	pCi/g	0	7	0.000				
Am-241	pCi/g	0	7	0.000				
Bi-212	pCi/g	1	2	0.550		0.550	0.550	0.550
Bi-214	pCi/g	7	7	0.362	0.074	0.250	0.430	0.408
Ce-144	pCi/g	0	7	0.000				
Co-58	pCi/g	0	7	0.000				
Co-60	pCi/g	5	7	0.157	0.101	0.083	0.326	0.105
Cs-134	pCi/g	0	7	0.000				
Cs-137	pCi/g	6	7	0.618	0.570	0.176	1.631	0.453
Fe-59	pCi/g	0	7	0.000				
K-40	pCi/g	7	7	6.414	2.962	0.513	8.910	7.563
Mn-54	pCi/g	0	7	0.000				
Nb-95	pCi/g	0	7	0.000				
Np-239	pCi/g	0	1	0.000				
Pb-212	pCi/g	7	7	0.280	0.066	0.212	0.358	0.268
Pb-214	pCi/g	7	7	0.366	0.068	0.259	0.446	0.370
Ra-226	pCi/g	4	4	1.274	0.348	0.886	1.706	1.253
Ru-103	pCi/g	0	7	0.000				
Ru-106	pCi/g	0	7	0.000				
Sb-124	pCi/g	0	7	0.000				
Sb-125	pCi/g	0	1	0.000				
Zn-65	pCi/g	0	7	0.000				
Zr-95	pCi/g	0	7	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-09 -- Asphalt
Yankee Nuclear Power Station Rowe, MA
DCGL_Aspphalt

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	6	6		pCi/g	0	0.66
Ag-108m	0	7	8.52	pCi/g	0	
Ag-110m	0	7		pCi/g	0	
Am-241	0	7	44.35	pCi/g	0	
Bi-212	1	2		pCi/g	0	0.55
Bi-214	7	7		pCi/g	0	0.43
Ce-144	0	7		pCi/g	0	
Co-58	0	7		pCi/g	0	
Co-60	5	7	4.84	pCi/g	0	0.33
Cs-134	0	7	6.71	pCi/g	0	
Cs-137	6	7	12.24	pCi/g	0	1.63
Fe-59	0	7		pCi/g	0	
K-40	7	7		pCi/g	0	8.91
Mn-54	0	7	21.66	pCi/g	0	
Nb-95	0	7		pCi/g	0	
Np-239	0	1		pCi/g	0	
Pb-212	7	7		pCi/g	0	0.36
Pb-214	7	7		pCi/g	0	0.45
Ra-226	4	4		pCi/g	0	1.71
Ru-103	0	7		pCi/g	0	
Ru-106	0	7	68.21	pCi/g	0	
Sb-124	0	7		pCi/g	0	
Sb-125	0	1	37.73	pCi/g	0	
Zn-65	0	7		pCi/g	0	
Zr-95	0	7		pCi/g	0	

Table 4

Rad

OOL-09 -- Asphalt (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	AS510 (2990) AS510A 7/29/1998	AS510 (2990) AS510B 7/29/1998	AS510 (2990) AS510C 7/29/1998	AS510 (2990) AS510D 7/29/1998	AS98.30 (2992) AS98.30A 7/23/1998
Ac-228		0.384	0.6573	0.4146	0.418
Ag-108m	0.01263 U	-0.0002706 U	-0.01864 U	0.0181 U	0.001978 U
Ag-110m	0.008197 U	-0.01294 U	0.01299 U	-0.001719 U	0.02804 U
Am-241	0 U	0 U	0 U	0 U	0 U
Bi-212					0.3572 U
Bi-214	0.4296	0.4078	0.4222	0.2908	0.4147
Ce-144	0.06582 U	-0.07196 U	-0.02846 U	-0.04918 U	-0.03168 U
Co-58	-0.0101 U	-0.006136 U	-0.01974 U	0.003898 U	-0.02053 U
Co-60	0.3255	0.1047	0.1761	-0.01021 U	0.02069 U
Cs-134	0.003502 U	-0.01034 U	-0.121 U	0.0201 U	-0.02313 U
Cs-137	0.1905	0.8046	0.197	0.1761	0.03282 U
Fe-59	-0.07479 U	-0.01817 U	-0.02875 U	-0.0618 U	0.03927 U
K-40	7.563	6.245	8.233	0.5129	8.555
Mn-54	-0.02582 U	-0.002038 U	-0.004596 U	0.007047 U	-0.01123 U
Nb-95	-0.001789 U	-0.00352 U	-0.001238 U	-0.03022 U	0.02137 U
Np-239				1.744 U	
Pb-212	0.2156	0.3483	0.3576	0.3387	0.268
Pb-214	0.4461	0.3703	0.4224	0.3485	0.3023
Ra-226		1.706	1.142	1.364	0.8859
Ru-103	-0.009834 U	0.01865 U	-0.004253 U	0.02254 U	-0.004417 U
Ru-106	0.1549 U	0.06772 U	-0.02678 U	-0.05845 U	0.03019 U
Sb-124	-0.001107 U	0.02904 U	0.04595 U	0 U	-0.01078 U
Sb-125				0.08936 U	
Zn-65	-0.04493 U	-0.08155 U	0.07797 U	0.06088 U	-0.02091 U
Zr-95	0.01915 U	-0.01582 U	0.03313 U	-0.006049 U	0.004132 U
SOF	0.083	0.087	0.052	0.014	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Asphalt Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-09 -- Asphalt (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	AS98.30 (2992) AS98.30B 7/23/1998	AS98.30 (2992) AS98.30C 7/23/1998
Ac-228	0.1566	0.3908
Ag-108m	-0.001749 U	-0.03313 U
Ag-110m	0.01078 U	0.001663 U
Am-241	0 U	0 U
Bi-212		0.5495
Bi-214	0.2503	0.3153
Ce-144	0.04494 U	-0.006748 U
Co-58	-0.01057 U	-0.0002542 U
Co-60	0.09645	0.08253
Cs-134	0.004986 U	-0.1159 U
Cs-137	1.631	0.7089
Fe-59	0.009721 U	0.02749 U
K-40	4.88	8.91
Mn-54	-0.01477 U	-0.00647 U
Nb-95	-0.001708 U	0.002548 U
Np-239		
Pb-212	0.2119	0.2226
Pb-214	0.2594	0.4161
Ra-226		
Ru-103	-0.0123 U	0.004078 U
Ru-106	-0.01699 U	-0.02534 U
Sb-124	0.01096 U	0.001422 U
Sb-125		
Zn-65	0.02331 U	-0.1226 U
Zr-95	-0.01461 U	0.0109 U
SOF	0.153	0.075

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 1
Sum of Fractions
OOL-09 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
3230	TS499	TS499B	0.018
208	OG008-002	OG008GUFD002	0.015
210	OG008-004	OG008GUFD004	0.007
211	OG008-005	OG008GUFU005	0.009
212	OG008-006	OG008GUFD006	0.007
213	OG008-007	OG008GUFD007	0.013
214	OG008-008	OG008GUFD008	0.038
216	OG008-010	OG008GUFU010	0.012
217	OG008-011	OG008GUFU011	0.008
219	OG008-013	OG008GUFD013	0.013
207	OG008-001	OG008GUFD001	0.056
3230	TS499	TS499A	0.044
3272	TS559	TS559	0.019
3231	TS500	TS500	0.004
3239	TS511	TS511	0.025
3240	TS512	TS512	0.010
3241	TS513	TS513	0.013
3242	TS514	TS514	0.006
3243	TS515	TS515	0.113
3244	TS516	TS516	0.021
3245	TS517	TS517	0.043
3246	TS518	TS518	0.013
3271	TS558	TS558	0.005
3229	TS498	TS498	0.005
		Min	0.004
		Max	0.113
		Mean	0.022

Table 2
Statistical Data Summary -- OOL-09 -- Soil
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	28	28	0.816	0.188	0.425	1.270	0.805
Ag-108m	pCi/g	0	28	0.000				
Ag-110m	pCi/g	0	28	0.000				
Am-241	pCi/g	0	28	0.000				
Ba-133	pCi/g	0	2	0.000				
Bi-212	pCi/g	19	24	0.916	0.277	0.549	1.444	0.846
Bi-214	pCi/g	25	25	0.534	0.205	0.346	1.444	0.496
Ce-144	pCi/g	1	28	0.306		0.306	0.306	0.306
Co-58	pCi/g	0	28	0.000				
Co-60	pCi/g	3	28	0.149	0.132	0.062	0.301	0.084
Cs-134	pCi/g	1	28	0.124		0.124	0.124	0.124
Cs-136	pCi/g	0	1	0.000				
Cs-137	pCi/g	22	28	0.219	0.189	0.048	0.686	0.149
Eu-152	pCi/g	0	4	0.000				
Fe-59	pCi/g	0	28	0.000				
I-132	pCi/g	1	1	11.420		11.420	11.420	11.420
I-133	pCi/g	0	1	0.000				
K-40	pCi/g	27	28	16.921	4.379	3.296	22.820	18.440
La-140	pCi/g	0	1	0.000				
Mn-54	pCi/g	0	28	0.000				
Nb-95	pCi/g	4	28	0.042	0.008	0.033	0.053	0.041
Np-239	pCi/g	0	2	0.000				
Pb-212	pCi/g	28	28	0.809	0.191	0.239	1.273	0.785
Pb-214	pCi/g	28	28	0.554	0.233	0.310	1.644	0.502
Ra-226	pCi/g	18	24	1.490	0.458	1.017	3.077	1.452
Ru-103	pCi/g	2	28	0.037	0.000	0.037	0.037	0.037
Ru-106	pCi/g	2	28	0.336	0.025	0.318	0.354	0.336
Sb-124	pCi/g	0	28	0.000				
Sb-125	pCi/g	0	4	0.000				
Tl-208	pCi/g	25	25	0.769	0.188	0.317	1.232	0.769
Y-88	pCi/g	0	1	0.000				
Zn-65	pCi/g	0	28	0.000				
Zr-95	pCi/g	4	28	0.059	0.012	0.041	0.067	0.063

Table 3
Summary of Detected Results Above Criteria
OOL-09 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL Soil

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	28	28		pCi/g	0	1.27
Ag-108m	0	28	8.52	pCi/g	0	
Ag-110m	0	28		pCi/g	0	
Am-241	0	28	44.35	pCi/g	0	
Ba-133	0	2		pCi/g	0	
Bi-212	19	24		pCi/g	0	1.44
Bi-214	25	25		pCi/g	0	1.44
Ce-144	1	28		pCi/g	0	0.31
Co-58	0	28		pCi/g	0	
Co-60	3	28	4.84	pCi/g	0	0.30
Cs-134	1	28	6.71	pCi/g	0	0.12
Cs-136	0	1		pCi/g	0	
Cs-137	22	28	12.24	pCi/g	0	0.69
Eu-152	0	4	12.06	pCi/g	0	
Fe-59	0	28		pCi/g	0	
I-132	1	1		pCi/g	0	11.42
I-133	0	1		pCi/g	0	
K-40	27	28		pCi/g	0	22.82
La-140	0	1		pCi/g	0	
Mn-54	0	28	21.66	pCi/g	0	
Nb-95	4	28		pCi/g	0	0.05
Np-239	0	2		pCi/g	0	
Pb-212	28	28		pCi/g	0	1.27
Pb-214	28	28		pCi/g	0	1.64
Ra-226	18	24		pCi/g	0	3.08
Ru-103	2	28		pCi/g	0	0.04
Ru-106	2	28	68.21	pCi/g	0	0.35
Sb-124	0	28		pCi/g	0	
Sb-125	0	4	37.73	pCi/g	0	
Tl-208	25	25		pCi/g	0	1.23
Y-88	0	1		pCi/g	0	
Zn-65	0	28		pCi/g	0	
Zr-95	4	28		pCi/g	0	0.07

Table 4

Rad

OOL-09 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG008-001 (207)	OG008-002 (208)	OG008-003 (209)	OG008-004 (210)
Sample ID	OG008GUFD001	OG008GUFD002	OG008GUFD003	OG008GUFD004
Date Sampled	10/26/1998	10/26/1998	10/26/1998	10/26/1998
Ac-228	0.7402	0.8277	1.028	0.7987
Ag-108m	-0.006749 U	0.01168 U	-0.005195 U	-0.009347 U
Ag-110m	-0.01523 U	-0.01732 U	0.01257 U	-0.02803 U
Am-241	0 U	0 U	0 U	0 U
Ba-133	-0.0461 U			
Bi-212		0.8463	0.8082	0.6486
Bi-214	0.4403	0.4313	0.4429	0.5555
Ce-144	-0.0767 U	-0.01453 U	0.1311 U	-0.02957 U
Co-58	0.002203 U	-0.004964 U	0.00146 U	0.00276 U
Co-60	0.007836 U	0.01681 U	-0.008651 U	0.006842 U
Cs-134	-0.02564 U	0.03028 U	-0.01558 U	-0.01155 U
Cs-136		0.1279 U		
Cs-137	0.6864	0.1855	-0.00716 U	0.08258
Eu-152				
Fe-59	-0.03707 U	0.02917 U	-0.0546 U	-0.02338 U
I-132				
I-133				
K-40	18.69	19.01	17.62	19.28
La-140				
Mn-54	0.006341 U	-0.00107 U	0.002922 U	-0.0002188 U
Nb-95	-0.01126 U	-0.0009205 U	-0.004976 U	0.01287 U
Np-239				
Pb-212	0.772	0.6268	1.06	0.8712
Pb-214	0.4241	0.4985	0.5154	0.4685
Ra-226	1.415	1.214	0.7814 U	
Ru-103	-0.01835 U	-0.01297 U	0.02404 U	-0.01489 U
Ru-106	0.04495 U	0.07715 U	0.139 U	0.1766 U
Sb-124	0.005516 U	0.02078 U	-0.000000002066 U	0.00107 U
Sb-125			-0.1526 U	
Tl-208	0.6174	0.7341	0.9717	0.8326
Y-88				
Zn-65	-0.02904 U	-0.03569 U	0.007981 U	-0.1068 U
Zr-95	0.04566 U	0.02101 U	0.06004	0.06709
SOF	0.056	0.015		0.007

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-09 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG008-006 (212)	OG008-007 (213)	OG008-008 (214)	OG008-009 (215)
Sample ID	OG008GUFD006	OG008GUFD007	OG008GUFD008	OG008GUFD009
Date Sampled	10/27/1998	10/27/1998	10/27/1998	10/27/1998
Ac-228	1.012	0.7498	0.8956	0.9494
Ag-108m	0.007849 U	0.008261 U	-0.0112 U	-0.007275 U
Ag-110m	-0.01176 U	-0.02005 U	-0.006699 U	0.007962 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				0.1276 U
Bi-212	0.6068	0.4512 U	1.019	0.9049
Bi-214	0.4698	0.3829	0.5003	0.4986
Ce-144	0.2012 U	0.3055	-0.1395 U	0.04883 U
Co-58	-0.02202 U	0.01303 U	0.005592 U	0.01073 U
Co-60	-0.01315 U	-0.007252 U	0.02792 U	0.0105 U
Cs-134	0.00555 U	-0.06057 U	-0.004103 U	0.04283 U
Cs-136				
Cs-137	0.08847	0.1567	0.4622	0.02414 U
Eu-152	0.2813 U			
Fe-59	0.01024 U	0.04485 U	-0.03266 U	-0.04823 U
I-132				
I-133				
K-40	18.67	20.86	18.44	19.82
La-140				
Mn-54	-0.02002 U	0.01046 U	-0.003678 U	0.0007372 U
Nb-95	-0.02041 U	-0.01696 U	-0.003767 U	-0.01317 U
Np-239				
Pb-212	0.8541	0.7836	0.9332	0.7861
Pb-214	0.5463	0.5326	0.6023	0.5474
Ra-226	1.472	1.048	1.538	1.017
Ru-103	0.005537 U	-0.008193 U	-0.008165 U	-0.008725 U
Ru-106	0.1507 U	0.0649 U	0.12 U	0.101 U
Sb-124	0.008666 U	0.001675 U	0.006228 U	-0.039 U
Sb-125			-0.1271 U	
Tl-208		0.7456	0.8372	0.7673
Y-88				
Zn-65	-0.08087 U	-0.005184 U	0.01697 U	-0.03032 U
Zr-95	0.008227 U	0.04064	0.03954 U	0.04788 U
SOF	0.007	0.013	0.038	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-09 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG008-012 (218) OG008GUFD012 10/27/1998	OG008-013 (219) OG008GUFD013 10/27/1998	OG008-005 (211) OG008GUFU005 10/27/1998	OG008-010 (216) OG008GUFU010 10/27/1998
Ac-228	0.9451	0.9171	0.7527	0.8597
Ag-108m	-0.01569 U	-0.02584 U	-0.03811 U	-0.027 U
Ag-110m	0.02908 U	0.01538 U	0.0166 U	-0.05442 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Bi-212	1.444	1.151	0.5486	1.277
Bi-214	0.5213	0.5689	0.5838	0.6894
Ce-144	0.1063 U	-0.1433 U	0.02784 U	-0.09709 U
Co-58	-0.03002 U	-0.01109 U	0.01976 U	-0.002888 U
Co-60	-0.02314 U	-0.01782 U	-0.01315 U	-0.009566 U
Cs-134	-0.01675 U	-0.006106 U	-0.007399 U	-0.02478 U
Cs-136				
Cs-137	0.01301 U	0.09197	0.1058	0.1419
Eu-152		0.4727 U	0.1414 U	
Fe-59	0.002188 U	-0.01811 U	0.01868 U	-0.01053 U
I-132				
I-133				
K-40	21.48	20.05	19.82	19.51
La-140				
Mn-54	0.02201 U	-0.008416 U	-0.0117 U	-0.02162 U
Nb-95	0.005289 U	0.005053 U	0.02363 U	0.02539 U
Np-239	0.4135 U			
Pb-212	0.8945	1.031	0.7646	0.7604
Pb-214	0.5675	0.673	0.5188	0.5137
Ra-226	1.521	1.581	0.7853 U	1.854
Ru-103	-0.01506 U	-0.005315 U	0.01334 U	0.002074 U
Ru-106	-0.121 U	0.354	0.05526 U	-0.4384 U
Sb-124	0.01765 U	-0.01611 U	0.02085 U	0.03554 U
Sb-125				
Tl-208	0.9502	1.068	0.7469	0.751
Y-88				
Zn-65	-0.1032 U	-0.1576 U	-0.07569 U	-0.004889 U
Zr-95	0.01214 U	0.06639	0.02037 U	0.04553 U
SOF		0.013	0.009	0.012

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-09 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG008-011 (217)	TS497 (3228)	TS498 (3229)	TS499 (3230)	TS499 (3230)
Sample ID	OG008GUFU011	TS497	TS498	TS499A	TS499B
Date Sampled	10/27/1998	7/7/1998	7/7/1998	11/7/1997	7/7/1998
Ac-228	1.23	1.27	0.7669	0.425	0.7371
Ag-108m	0.02739 U	-0.004382 U	0.02269 U	0.01402 U	-0.01561 U
Ag-110m	-0.07714 U	0.006567 U	-0.02594 U	0.000272 U	-0.002035 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Bi-212	0.599 U	1.376	1.037	0.2812 U	0.8078
Bi-214	0.5745	1.444	0.6384		0.458
Ce-144	-0.1961 U	-0.1472 U	-0.03261 U	0.04868 U	0.0359 U
Co-58	0.001065 U	-0.01199 U	-0.0309 U	-0.01635 U	0.01559 U
Co-60	0.0189 U	-0.008674 U	-0.03045 U	0.003212 U	-0.000000006593 U
Cs-134	-0.1204 U	-0.0462 U	-0.00694 U	0.02532 U	0.1236
Cs-136					
Cs-137	0.09385	0.02576 U	-0.01867 U	0.5348	0.03101 U
Eu-152	0.5417 U				
Fe-59	0.04661 U	-0.06656 U	-0.06294 U	0.04499 U	0.06363 U
I-132					
I-133					0.6987 U
K-40	22.82	9.503	17.64	8.521	20.11
La-140					0.09433 U
Mn-54	-0.0165 U	-0.01643 U	0.002138 U	-0.002377 U	0.001212 U
Nb-95	0.008309 U	0.01464 U	-0.01336 U	0.005096 U	0.04154
Np-239					
Pb-212	1.067	1.273	0.8163	0.239	0.8137
Pb-214	0.6641	1.644	0.8045	0.3104	0.5279
Ra-226		3.077	1.208		1.456
Ru-103	-0.008568 U	0.009034 U	0.006398 U	-0.004095 U	0.003952 U
Ru-106	0.04338 U	-0.1985 U	0.3181	0 U	0.05933 U
Sb-124	-0.01541 U	-0.02261 U	-0.05435 U	0.01422 U	0.02967 U
Sb-125					
Tl-208	0.8034	1.232	0.8476	0.3171	0.7817
Y-88					
Zn-65	-0.01658 U	0.03773 U	-0.0279 U	-0.03899 U	-0.1397 U
Zr-95	-0.04142 U	0.01098 U	0.006428 U	0.01194 U	-0.002581 U
SOF	0.008		0.005	0.044	0.018

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-09 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	TS500 (3231) TS500 7/7/1998	TS511 (3239) TS511 7/30/1998	TS512 (3240) TS512 7/30/1998	TS513 (3241) TS513 7/30/1998	TS514 (3242) TS514 7/30/1998	TS515 (3243) TS515 7/30/1998
Ac-228	0.4688	0.8071	0.8241	0.8024	0.8426	0.551
Ag-108m	0.01768 U	-0.003617 U	0.01522 U	0.01818 U	-0.005073 U	0.009511 U
Ag-110m	-0.01958 U	0.003764 U	0.00146 U	0.03011 U	-0.007582 U	-0.006528 U
Am-241	0 U	0 U	0 U	0 U	0 U	0 U
Ba-133						
Bi-212	0.6464	1.158	0.6396	0.6754	1.113	
Bi-214	0.5035	0.3464	0.4766			0.468
Ce-144	0.08169 U	-0.09861 U	-0.05716 U	-0.1306 U	0.1635 U	-0.2697 U
Co-58	0.02353 U	-0.0006185 U	-0.006957 U	-0.005183 U	0.02442 U	-0.01995 U
Co-60	0.00773 U	0.02739 U	-0.03906 U	0.01546 U	0.007238 U	0.3011
Cs-134	-0.09483 U	0.02516 U	0.0122 U	0.01357 U	0.004826 U	0.01509 U
Cs-136						
Cs-137	0.04782	0.3026	0.1168	0.1574	0.07954	0.6154
Eu-152						
Fe-59	0.01717 U	-0.0412 U	0.006659 U	0.03372 U	-0.02879 U	-0.06689 U
I-132						
I-133						
K-40	11.92	16.1	17.58	3.296	0.3431 U	13.06
La-140						
Mn-54	-0.03063 U	0.02008 U	-0.01278 U	0.004678 U	0.01103 U	-0.006236 U
Nb-95	0.03324	-0.007946 U	0.001433 U	0.01626 U	0.04134 U	0.0132 U
Np-239				-1.112 U		
Pb-212	0.5767	0.7492	0.7662	0.7037	0.9512	0.6171
Pb-214	0.39	0.5059	0.4706	0.4576	0.4461	0.4493
Ra-226	0.7882 U	0.8928 U	1.058	1.007 U	1.444	1.448
Ru-103	0.01981 U	-0.007704 U	0.01831 U	0.03732	0.03704	-0.01258 U
Ru-106	-0.1634 U	-0.07475 U	0.2524 U	-0.1182 U	0.07691 U	0.06621 U
Sb-124	0 U	-0.008233 U	-0.003992 U	0.01052 U	0.001404 U	0 U
Sb-125						
Tl-208	0.4028	0.6633	0.8424	0.7694	0.8213	0.5433
Y-88					0.02468 U	
Zn-65	0.0452 U	0.04268 U	0.1027 U	-0.07009 U	0.02991 U	0.09633 U
Zr-95	0.02959 U	-0.005276 U	0.01765 U	-0.01712 U	0.02687 U	0.004827 U
SOF	0.004	0.025	0.01	0.013	0.006	0.113

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-09 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	TS516 (3244)	TS517 (3245)	TS518 (3246)	TS558 (3271)	TS559 (3272)
Sample ID	TS516	TS517	TS518	TS558	TS559
Date Sampled	7/30/1998	7/30/1998	7/30/1998	9/10/1998	9/10/1998
Ac-228	0.6751	0.7138	0.6403	0.7365	0.8863
Ag-108m	0.01861 U	-0.005473 U	-0.003393 U	-0.019 U	0.01606 U
Ag-110m	0.01276 U	-0.01879 U	0.009278 U	0.02796 U	0 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Bi-212	0.701			-0.01944 U	0.4543 U
Bi-214	0.4176	0.4959	0.394	0.5523	0.4942
Ce-144	-0.0118 U	0.1208 U	0.06059 U	-0.001109 U	0.124 U
Co-58	-0.01888 U	0.003775 U	-0.01419 U	-0.003937 U	-0.01331 U
Co-60	0.06243	0.08351	0.01233 U	0.004692 U	0.02477 U
Cs-134	0.00216 U	0.009924 U	-0.01949 U	-0.02333 U	-0.001759 U
Cs-136					
Cs-137	0.09752	0.3148	0.1597	0.05759	0.2357
Eu-152					
Fe-59	-0.01951 U	0.02987 U	-0.04401 U	-0.02018 U	-0.03223 U
I-132				11.42	
I-133					
K-40	15.08	15.42	15.63	18.84	18.1
La-140					
Mn-54	0.025 U	-0.03527 U	-0.009108 U	0.01352 U	0.021 U
Nb-95	0.004035 U	0.01092 U	0.00557 U	0.03997	0.0529
Np-239					
Pb-212	0.6295	0.7126	0.7765	0.9191	0.9108
Pb-214	0.4989	0.4859	0.4923	0.4674	0.4822
Ra-226	0.6657 U		1.482	1.23	1.75
Ru-103	-0.01181 U	0.01897 U	-0.01538 U	0.0005762 U	-0.01583 U
Ru-106	-0.02108 U	-0.2032 U	-0.02325 U	0.1854 U	0.2281 U
Sb-124	0.02024 U	-0.0276 U	0.01467 U	0.01209 U	0 U
Sb-125		-0.0184 U		-0.02834 U	
Tl-208		0.65	0.7249	0.7947	
Y-88					
Zn-65	-0.03902 U	-0.004833 U	-0.07575 U	0.06983 U	-0.06053 U
Zr-95	0.009685 U	0 U	-0.006137 U	0.02067 U	0.01034 U
SOF	0.021	0.043	0.013	0.005	0.019

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

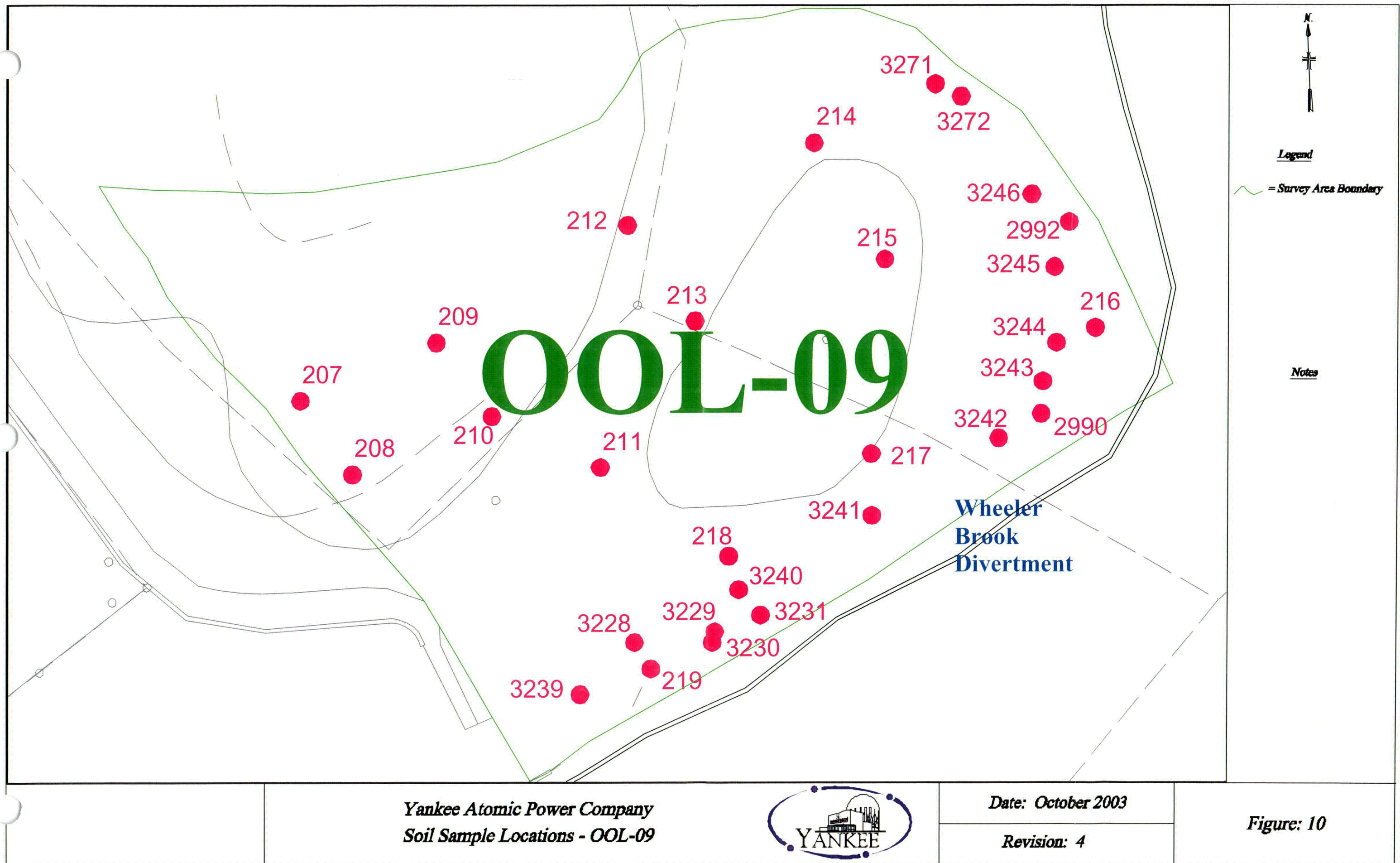
Blank results indicate chemical not analyzed

OOL-09

Mitigated Areas								
Location	Sample #	Date	GLV SOF	Disposition	Nuclide	Conc. (pCi/gm)	Fraction of DCGL	DCGL SOF
sidewall of CB5 pit composite	TS-497	7-Jul-98	ND	AL				
sidewall of A1 pit composite	TS-498	7-Jul-98	ND	AL				
sidewall of A1 pit composite	TS-499	7-Jul-98	ND	AL				
sidewall of A2 pit composite	TS-500	7-Jul-98	ND	AL				
Area B at drums discrete	TS-501	7-Jul-98	ND	AL				
midway on SE bank grab	TS-511	30-Jul-98	0.040	AL	Cs-137	3.026E-01	0.025	0.025
midway on SE bank grab	TS-512	30-Jul-98	0.020	AL	Cs-137	1.168E-01	0.010	0.010
midway on SE bank grab	TS-513	30-Jul-98	0.020	AL	Cs-137	1.574E-01	0.013	0.013
midway on SE bank grab	TS-514	30-Jul-98	ND	AL				
midway on SE bank grab	TS-515	30-Jul-98		AL				
midway on SE bank grab	TS-516	30-Jul-98	<MDA	AL				
midway on SE bank grab	TS-517	30-Jul-98	0.040	AL	Cs-137	3.148E-01	0.026	0.026
midway on SE bank grab	TS-518	30-Jul-98	0.020	AL	Cs-137	1.597E-01	0.013	0.013
septic tank residue, asphalt & quickdry, solids	TZ-552	31-Aug-98	0.400	TS	Co-60	9.178E-01	0.190	0.205
					Cs-137	1.850E-01	0.015	
barrel in woods at 232 stake composite	TS-558	10-Sep-98	ND	AL				
barrels at N edge of clearing composite	TS-559	10-Sep-98	0.030	AL	Cs-137	2.357E-01	0.019	0.019

UNK - unknown
 AB - as area backfill
 ABC - ABC storage area
 AL - as left
 ALAR - as left after remediation
 FR - further remediation
 RD - rad disposal
 TS - temporary storage tk

DCGL (pCi/gm)		
Nuclide	25 mr/yr	10 mr/yr
Ag-108m	8.521E+00	3.408E+00
Co-60	4.838E+00	1.935E+00
Cs-134	6.706E+00	2.682E+00
Cs-137	1.224E+01	4.896E+00



Historical Site Assessment and Classification Summary

Survey Area Name: ISFSI Pad Access & Exclusion/Buffer Zone Designator: **OOL-10**

Survey Area Description

Survey area OOL-10 consists of land area that was established as the ISFSI haul road, the ISFSI access and the exclusion/buffer zone around the ISFSI. Survey area OOL-10 contains about 8408 square meters of soil surface area.

Survey area OOL-10 is bounded by OOL-02, NOL-04, NOL-03 and OOL-11 on the north, TBN-01, NOL-06, NOL-05, OOL-08 and OOL-09 on the east, OOL-08 on the south and OOL-08 and OOL-02 on the west.

Sub-surface systems that traverse or connect within OOL-10 include:

- The west storm drain system
- Abandoned street lighting electrical cable.
- Electrical grounding cables
- Electrical duct trays
- Potable water lines
- Security lighting electrical conduits.

Items of note located within or adjacent to survey area OOL-10 include:

- Soil piles from construction of ISFSI haul road.
- Rubble pile from SIDG building demolition.
- Storage container for fuel transfer process equipment
- Access point to OOL-09, SE Construction Fill Area.
- Power supply to the ISFSI.
- Security structure for the ISFSI

Historical Site Assessment and Classification Summary

Survey Area Name: ISFSI Pad Access & Exclusion/Buffer Zone Designator: **OOL-10**

Survey Area History

The portion of the YNPS site identified as survey area OOL-10 was established to support transfer of the spent fuel to the ISFSI. While fuel transfer was in progress this area was posted and controlled as an RCA. After fuel transfer was complete the area was surveyed in order to de-post the RCA. There are no radioactive systems present in OOL-10. Survey area OOL-10 was used for transport of radioactive material. It was not used for storing radioactive material or processing or packaging radioactive waste.

Survey Area OOL-10 contains an accumulation of soil and demolition debris. The soil excavated during the construction of the haul road to the ISFSI pad. The demolition debris came from the demolition of the SIDG building, NSY-03. The SIDG building was surveyed prior to demolition (Ref 1).

Survey area OOL-10 is likely to be minimally impacted by low levels of radioactivity as a result of soil and material storage and surface water run-off from out of the RCA.

Modifications performed at the YNPS site in support of decommissioning that changed the configuration of OOL-10 include:

- Deposition of the soil from ISFSI haul road construction
- Deposition of the SIDG building demolition debris.

Scoping/Characterization

Soil sampling was performed on the soil from the ISFSI haul road area prior to excavation.

Decommissioning

No decommissioning activities have been performed for survey area OOL-10.

Historical Site Assessment and Classification Summary

Survey Area Name: ISFSI Pad Access & Exclusion/Buffer Zone Designator: **OOL-10**

Findings

Survey area OOL-10 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-10 is assumed to be minimally impacted the transport of the spent fuel. Survey area OOL-10 is likely to contain residual radioactivity concentrations at a fraction of DCGL.

The radionuclide mix likely to be present in OOL-10 includes all radionuclides identified in the radioactive systems of the plant (Ref 2). The primary radionuclides of concern for survey area OOL-10 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

Survey area OOL-10 potentially may be further impacted by continued decommissioning activities.

A soil sample location map (Figure 11) has been prepared to show the distribution of sampling locations in OOL-10. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). Three survey media were assessed in OOL-10, Asphalt, Sod and Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL. There are separate sets of Tables 1-4 for each survey media. All are evaluated as fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-10 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Asphalt: Mean SOF is 0.023.

Maximum SOF for a single asphalt sample is 0.033. (key# 2994) in the road west of the SW corner of the SIDG building.

Minimum SOF for a single asphalt sample is 0.013. (key# 2994)

Sod: Mean SOF is 0.035.

Maximum SOF for a single sod sample is 0.053. (key# 647) in road west of SW corner of TB.

Minimum SOF for a single sod sample is 0.016. (key# 645) in road west of SW corner of TB.

Historical Site Assessment and Classification Summary

Survey Area Name: ISFSI Pad Access & Exclusion/Buffer Zone Designator: **OOL-10**

Soil: Mean SOF is 0.027.

Maximum SOF for a single soil sample is 0.391. (key# 661) south of SW corner of TB.

Minimum SOF for a single soil sample is 0.003. (key# 158, 159, 161, 3194) south of SW corner of TB.

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-10 is identified as a Class 2 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: ISFSI Pad Access & Exclusion/Buffer Zone Designator: **OOL-10**

Drawings

9699-FY-5A

Figure 7-1A

References

1.	SIDG Building Survey.
2.	Radionuclides for Building Surfaces and Soil DCGL Determinations YA-REPT-00-001-03
3.	
4.	
5.	

Table 1
Sum of Fractions
OOL-10 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
2994	AS98.45	AS98.45C	0.013
2994	AS98.45	AS98.45B	0.033
2994	AS98.45	AS98.45A	0.024
		Min	0.013
		Max	0.033
		Mean	0.023

Table 2
Statistical Data Summary -- OOL-10 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	3	3	0.459	0.142	0.364	0.622	0.390
Ag-108m	pCi/g	1	3	0.028		0.028	0.028	0.028
Ag-110m	pCi/g	0	3	0.000				
Am-241	pCi/g	0	3	0.000				
Bi-212	pCi/g	1	1	0.395		0.395	0.395	0.395
Bi-214	pCi/g	3	3	0.392	0.082	0.323	0.483	0.369
Ce-144	pCi/g	0	3	0.000				
Co-58	pCi/g	0	4	0.000				
Co-60	pCi/g	3	4	0.107	0.039	0.065	0.143	0.114
Cs-134	pCi/g	0	4	0.000				
Cs-137	pCi/g	0	4	0.000				
Fe-59	pCi/g	0	3	0.000				
K-40	pCi/g	3	3	9.431	0.311	9.106	9.725	9.462
Kr-85	pCi/g	0	1	0.000				
Mn-54	pCi/g	0	3	0.000				
Nb-95	pCi/g	1	3	0.030		0.030	0.030	0.030
Pb-212	pCi/g	3	3	0.445	0.092	0.349	0.533	0.452
Pb-214	pCi/g	3	3	0.355	0.046	0.303	0.388	0.374
Ra-226	pCi/g	1	1	0.902		0.902	0.902	0.902
Ru-103	pCi/g	0	3	0.000				
Ru-106	pCi/g	0	3	0.000				
Sb-124	pCi/g	0	3	0.000				
Tl-208	pCi/g	2	2	0.460	0.196	0.321	0.598	0.460
Zn-65	pCi/g	0	3	0.000				
Zr-95	pCi/g	0	3	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-10 -- Asphalt
Yankee Nuclear Power Station Rowe, MA
DCGL_Aspphalt

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	3	3		pCi/g	0	0.62
Ag-108m	1	3	8.52	pCi/g	0	0.03
Ag-110m	0	3		pCi/g	0	
Am-241	0	3	44.35	pCi/g	0	
Bi-212	1	1		pCi/g	0	0.39
Bi-214	3	3		pCi/g	0	0.48
Ce-144	0	3		pCi/g	0	
Co-58	0	4		pCi/g	0	
Co-60	3	4	4.84	pCi/g	0	0.14
Cs-134	0	4	6.71	pCi/g	0	
Cs-137	0	4	12.24	pCi/g	0	
Fe-59	0	3		pCi/g	0	
K-40	3	3		pCi/g	0	9.73
Kr-85	0	1		pCi/g	0	
Mn-54	0	3	21.66	pCi/g	0	
Nb-95	1	3		pCi/g	0	0.03
Pb-212	3	3		pCi/g	0	0.53
Pb-214	3	3		pCi/g	0	0.39
Ra-226	1	1		pCi/g	0	0.90
Ru-103	0	3		pCi/g	0	
Ru-106	0	3	68.21	pCi/g	0	
Sb-124	0	3		pCi/g	0	
Tl-208	2	2		pCi/g	0	0.60
Zn-65	0	3		pCi/g	0	
Zr-95	0	3		pCi/g	0	

Table 4
Rad
OOL-10 – Asphalt (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	AS98.45 (2994) AS98.45A 10/28/1998	AS98.45 (2994) AS98.45B 10/28/1998	AS98.45 (2994) AS98.45C 10/28/1998	IR-36 (433) IRAS-36 5/20/1993
Ac-228	0.3636	0.6223	0.3904	
Ag-108m	-0.01105 U	0.028	-0.003594 U	
Ag-110m	-0.001466 U	-0.02584 U	0.03706 U	
Am-241	0 U	0 U	0 U	
Bi-212		0.3945		
Bi-214	0.3228	0.3691	0.4827	
Ce-144	0.02256 U	0.1566 U	-0.1652 U	
Co-58	-0.01766 U	-0.008982 U	-0.002089 U	0.092 UM
Co-60	0.1144	0.1428	0.0648	0.078 UM
Cs-134	0.01524 U	-0.01884 U	0.004858 U	0.08 UM
Cs-137	0.02138 U	0.02102 U	-0.02683 U	0.106 UM
Fe-59	-0.01188 U	0.006043 U	-0.0391 U	
K-40	9.106	9.462	9.725	
Kr-85		0.2351 U		
Mn-54	-0.01439 U	0.003365 U	0.01272 U	
Nb-95	0.03002	0.004423 U	0.02339 U	
Pb-212	0.3493	0.5327	0.4517	
Pb-214	0.3028	0.388	0.3736	
Ra-226		0.9022		
Ru-103	-0.002068 U	0.001823 U	-0.005304 U	
Ru-106	0.1101 U	-0.05484 U	-0.02471 U	
Sb-124	0 U	0.005636 U	-0.005297 U	
Tl-208	0.3212	0.5978		
Zn-65	-0.0272 U	0.06448 U	-0.1042 U	
Zr-95	-0.01872 U	0.02252 U	0.01171 U	
SOF	0.024	0.033	0.013	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 1
Sum of Fractions
OOL-10 -- Sod
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
649	IA-66	IATZ-66	0.037
647	IA-65	IATZ-65	0.053
645	IA-64	IATZ-64	0.016
		Min	0.016
		Max	0.053
		Mean	0.035

Table 2
Statistical Data Summary – OOL-10 -- Sod
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Co-58	pCi/g	0	5	0.000				
Co-60	pCi/g	1	5	0.256		0.256	0.256	0.256
Cs-134	pCi/g	0	5	0.000				
Cs-137	pCi/g	2	5	0.326	0.185	0.195	0.457	0.326

Table 3
Summary of Detected Results Above Criteria
OOL-10 -- Sod
Yankee Nuclear Power Station Rowe, MA
DCGL_Sod

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Co-58	0	5		pCi/g	0	
Co-60	1	5	4.84	pCi/g	0	0.26
Cs-134	0	5	6.71	pCi/g	0	
Cs-137	2	5	12.24	pCi/g	0	0.46

Table 4
Rad
OOL-10 -- Sod (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-62 (641)	IA-63 (643)	IA-64 (645)	IA-65 (647)	IA-66 (649)
Sample ID	IATZ-62	IATZ-63	IATZ-64	IATZ-65	IATZ-66
Date Sampled	6/7/1993	6/7/1993	6/4/1993	6/4/1993	6/7/1993
Co-58	0.069 UM	0.11 UM	0.112 UM	0.106 UM	0.092 UM
Co-60	0.181 UM	0.253 UM	0.162 UM	0.256	0.148 UM
Cs-134	0.103 UM	0.089 UM	0.106 UM	0.103 UM	0.084 UM
Cs-137	0.15 UM	0.153 UM	0.195	0.151 UM	0.457
SOF			0.016	0.053	0.037

Table 1
Sum of Fractions
OOL-10 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
663	IA-233	IATS-233A	0.004
134	OG007-005	OG007GAFD005	0.011
135	OG007-006	OG007GAFD006	0.006
139	OG007-010	OG007GAFD010	0.004
140	OG007-011	OG007GAFD011	0.007
143	OG007-014	OG007GAFD014	0.006
156	OG007-028	OG007GAFD028	0.005
157	OG007-029	OG007GAFD029	0.004
158	OG007-030	OG007GAFD030	0.003
159	OG007-031	OG007GAFD031	0.003
161	OG007-033	OG007GAFD033	0.003
164	OG007-036	OG007GAFD036	0.019
631	IA-27	IATS-27	0.011
649	IA-66	IATS-66	0.023
132	OG007-003	OG007GAFD003	0.007
3194	TS405	TS405D	0.089
3411	YG001.5	YG001.5A	0.008
3410	YG001.4	YG001.4B	0.021
3409	YG001.3	YG001.3A	0.010
3408	YG001.2	YG001.2A	0.009
3406	WSD06	WSD06	0.040
661	IATS-114	IATS-114	0.391
3249	TS521	TS521	0.010
662	IATS-115	IATS-115	0.084
3194	TS405	TS405C	0.003
977	OG020-018	OG020GUFD018	0.008
976	OG020-017	OG020GUFD017	0.012

Table 1
Sum of Fractions
OOL-10 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
975	OG020-016	OG020GUFD016	0.008
944	OG012-032	OG012GUFD032	0.007
3417	YS001.7	YS001.7B	0.005
3354	TS99.56	TS99.56A	0.004
			Min 0.003
			Max 0.391
			Mean 0.027

Table 2
Statistical Data Summary -- OOL-10 -- Soil
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	60	60	0.728	0.192	0.169	1.041	0.786
Ag-108m	pCi/g	1	60	0.026		0.026	0.026	0.026
Ag-110m	pCi/g	1	60	0.043		0.043	0.043	0.043
Am-241	pCi/g	0	60	0.000				
Ba-133	pCi/g	0	1	0.000				
Ba-140	pCi/g	2	3	0.186	0.091	0.121	0.250	0.186
Bi-212	pCi/g	43	51	2.776	12.668	0.444	83.900	0.883
Bi-214	pCi/g	55	55	0.444	0.065	0.198	0.548	0.450
Ce-144	pCi/g	1	60	0.250		0.250	0.250	0.250
Co-58	pCi/g	0	72	0.000				
Co-60	pCi/g	7	72	0.364	0.612	0.033	1.726	0.093
Cs-134	pCi/g	2	72	0.118	0.031	0.096	0.140	0.118
Cs-136	pCi/g	2	2	0.517	0.063	0.472	0.562	0.517
Cs-137	pCi/g	26	72	0.113	0.105	0.035	0.425	0.069
Eu-152	pCi/g	0	6	0.000				
Fe-59	pCi/g	1	60	0.098		0.098	0.098	0.098
I-131	pCi/g	0	2	0.000				
K-40	pCi/g	58	60	15.833	5.203	0.617	20.810	17.430
Kr-85	pCi/g	2	4	15.715	10.642	8.190	23.240	15.715
La-140	pCi/g	1	1	12.950		12.950	12.950	12.950
Mn-54	pCi/g	3	60	0.040	0.011	0.029	0.050	0.042
Nb-94	pCi/g	0	1	0.000				
Nb-95	pCi/g	5	60	0.054	0.007	0.044	0.064	0.051
Np-239	pCi/g	0	9	0.000				
Pb-212	pCi/g	60	60	0.718	0.200	0.216	0.993	0.778
Pb-214	pCi/g	60	60	0.465	0.083	0.236	0.650	0.468
Ra-226	pCi/g	29	35	1.566	0.514	0.926	2.694	1.422
Ru-103	pCi/g	1	60	0.025		0.025	0.025	0.025
Ru-106	pCi/g	3	60	0.338	0.035	0.307	0.377	0.331
Sb-124	pCi/g	2	60	0.047	0.001	0.047	0.048	0.047
Sb-125	pCi/g	0	5	0.000				
Sc-75	pCi/g	0	1	0.000				
Te-132	pCi/g	0	1	0.000				
Tl-208	pCi/g	54	54	0.675	0.152	0.198	0.902	0.702
Zn-65	pCi/g	1	60	0.163		0.163	0.163	0.163
Zr-95	pCi/g	3	60	0.061	0.012	0.052	0.075	0.056

Table 3
Summary of Detected Results Above Criteria
OOL-10 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL Soil

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	60	60		pCi/g	0	1.04
Ag-108m	1	60	8.52	pCi/g	0	0.03
Ag-110m	1	60		pCi/g	0	0.04
Am-241	0	60	44.35	pCi/g	0	
Ba-133	0	1		pCi/g	0	
Ba-140	2	3		pCi/g	0	0.25
Bi-212	43	51		pCi/g	0	83.90
Bi-214	55	55		pCi/g	0	0.55
Ce-144	1	60		pCi/g	0	0.25
Co-58	0	72		pCi/g	0	
Co-60	7	72	4.84	pCi/g	0	1.73
Cs-134	2	72	6.71	pCi/g	0	0.14
Cs-136	2	2		pCi/g	0	0.56
Cs-137	26	72	12.24	pCi/g	0	0.43
Eu-152	0	6	12.06	pCi/g	0	
Fe-59	1	60		pCi/g	0	0.10
I-131	0	2		pCi/g	0	
K-40	58	60		pCi/g	0	20.81
Kr-85	2	4		pCi/g	0	23.24
La-140	1	1		pCi/g	0	12.95
Mn-54	3	60	21.66	pCi/g	0	0.05
Nb-94	0	1	8.53	pCi/g	0	
Nb-95	5	60		pCi/g	0	0.06
Np-239	0	9		pCi/g	0	
Pb-212	60	60		pCi/g	0	0.99
Pb-214	60	60		pCi/g	0	0.65
Ra-226	29	35		pCi/g	0	2.69
Ru-103	1	60		pCi/g	0	0.02
Ru-106	3	60	68.21	pCi/g	0	0.38
Sb-124	2	60		pCi/g	0	0.05
Sb-125	0	5	37.73	pCi/g	0	
Se-75	0	1		pCi/g	0	
Te-132	0	1		pCi/g	0	
Tl-208	54	54		pCi/g	0	0.90
Zn-65	1	60		pCi/g	0	0.16
Zr-95	3	60		pCi/g	0	0.07

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	IATS-114 (661)	IATS-115 (662)	IA-233 (663)	IA-233 (663)	IA-233 (663)	IA-27 (631)
Sample ID	IATS-114	IATS-115	IATS-233A	IATS-233B	IATS-233C	IATS-27
Date Sampled	6/30/1994	6/30/1994	11/21/1994	11/17/1994	11/21/1994	5/6/1993
Ac-228						
Ag-108m						
Ag-110m						
Am-241						
Ba-133						
Ba-140						
Bi-212						
Bi-214						
Ce-144						
Co-58	0.115 UM	0.069 UM	0.055 UM	0.063 UM	0.063 UM	0.049 UM
Co-60	1.726	0.349	0.079 UM	0.0838 UM	0.0787 UM	0.697 UM
Cs-134	0.115 UM	0.063 UM	0.046 UM	0.056 UM	0.057 UM	0.039 UM
Cs-136						
Cs-137	0.425	0.151	0.0531	0.0758 UM	0.0697 UM	0.136
Eu-152						
Fe-59						
I-131						
K-40						
Kr-85						
La-140						
Mn-54						
Nb-94						
Nb-95						
Np-239						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Sb-125						
Se-75						
Te-132						
Tl-208						
Zn-65						
Zr-95						
SOF	0.391	0.084	0.004			0.011

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-10 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-62 (641)	IA-63 (643)	IA-64 (645)	IA-65 (647)	IA-66 (649)	IR-36 (433)
Sample ID	IATS-62	IATS-63	IATS-64	IATS-65	IATS-66	IRTS-36
Date Sampled	6/4/1993	6/7/1993	6/7/1993	6/4/1993	6/7/1993	5/18/1993
Ac-228						
Ag-108m						
Ag-110m						
Am-241						
Ba-133						
Ba-140						
Bi-212						
Bi-214						
Ce-144						
Co-58	0.0997 UM	0.085 UM	0.099 UM	0.114 UM	0.096 UM	0.0779 UM
Co-60	0.101 UM	0.11 UM	0.135 UM	0.138 UM	0.105 UM	0.099 UM
Cs-134	0.08 UM	0.074 UM	0.081 UM	0.089 UM	0.0995 UM	0.059 UM
Cs-136						
Cs-137	0.117 UM	0.0864 UM	0.126 UM	0.147 UM	0.282	0.0836 UM
Eu-152						
Fe-59						
I-131						
K-40						
Kr-85						
La-140						
Mn-54						
Nb-94						
Nb-95						
Np-239						
Pb-212						
Pb-214						
Ra-226						
Ru-103						
Ru-106						
Sb-124						
Sb-125						
Se-75						
Te-132						
Tl-208						
Zn-65						
Zr-95						
SOF					0.023	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG007-003 (132)	OG007-004 (133)	OG007-005 (134)	OG007-006 (135)
Sample ID	OG007GAFD003	OG007GAFD004	OG007GAFD005	OG007GAFD006
Date Sampled	9/14/1998	9/14/1998	9/14/1998	9/14/1998
Ac-228	0.9209	0.8902	0.8078	0.8128
Ag-108m	0.0008688 U	-0.01533 U	-0.0009957 U	-0.01664 U
Ag-110m	0.01948 U	0.001982 U	-0.012 U	-0.00453 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.7966	0.3246 U	83.9	1.038
Bi-214	0.4833	0.5089	0.5172	0.4504
Ce-144	-0.03355 U	0.04839 U	-0.043 U	0.06699 U
Co-58	0.001735 U	-0.01179 U	0.001143 U	-0.01235 U
Co-60	0.01102 U	0.01954 U	0.03169 U	0.01695 U
Cs-134	-0.08471 U	-0.04201 U	-0.2495 U	-0.04594 U
Cs-136				
Cs-137	0.0858	0.03358 U	0.1365	0.074
Eu-152	0.3133 U			
Fe-59	0.09823	0.006156 U	-0.05988 U	0.08279 U
I-131				
K-40	19.24	17.17	16.97	17.75
Kr-85				
La-140				
Mn-54	0.01264 U	0.01029 U	0.01332 U	-0.002099 U
Nb-94				
Nb-95	0.0514	0.03593 U	0.04414	0.05068
Np-239	-24.02 U		-23.2 U	
Pb-212	0.2262	0.6716	0.7539	0.7336
Pb-214	0.5568	0.4633	0.4849	0.4877
Ra-226	2.557	0.9393 U		1.444
Ru-103	-0.008466 U	0.01102 U	-0.002431 U	-0.01552 U
Ru-106	-0.08904 U	-0.07611 U	0 U	0.08117 U
Sb-124	-0.04796 U	0.001164 U	-0.00722 U	-0.007451 U
Sb-125				
Se-75				
Te-132				
Tl-208	0.8511	0.6375	0.6621	0.7001
Zn-65	-0.08321 U	0.07828 U	0.02656 U	-0.124 U
Zr-95	0.005005 U	-0.03104 U	0.05627	0.00946 U
SOF	0.007		0.011	0.006

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG007-007 (136)	OG007-008 (137)	OG007-009 (138)	OG007-010 (139)
Sample ID	OG007GAFD007	OG007GAFD008	OG007GAFD009	OG007GAFD010
Date Sampled	9/14/1998	9/14/1998	9/15/1998	9/15/1998
Ac-228	0.7437	0.5253	0.7811	0.7391
Ag-108m	-0.0001901 U	-0.02191 U	-0.01489 U	-0.007268 U
Ag-110m	-0.009498 U	-0.01509 U	-0.004888 U	0.02132 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.8006	0.6927	1.101	0.6619
Bi-214	0.3618	0.4067	0.4678	0.5319
Ce-144	0.06482 U	-0.06435 U	0.3636 U	-0.05011 U
Co-58	0.008339 U	-0.01915 U	-0.01269 U	0.009164 U
Co-60	0 U	-0.01668 U	0 U	0.00664 U
Cs-134	0.0008518 U	0.01727 U	0.05738 U	-0.009905 U
Cs-136				
Cs-137	0.03224 U	0.02752 U	0.02865 U	0.04793
Eu-152	0.1728 U			
Fe-59	-0.03035 U	-0.0568 U	0.006198 U	0.06826 U
I-131				
K-40	16.81	16.58	19.12	19.26
Kr-85				
La-140			12.95	
Mn-54	-0.01395 U	0.0108 U	0.01714 U	0 U
Nb-94				
Nb-95	0.03268 U	0.02864 U	0.008744 U	-0.01412 U
Np-239		-6.622 U		
Pb-212	0.7073	0.6156	0.7987	0.8139
Pb-214	0.409	0.4295	0.4512	0.4682
Ra-226				1.593
Ru-103	0.008889 U	0.01689 U	-0.002882 U	-0.006657 U
Ru-106	0.2252 U	0.09356 U	0.232 U	0.1744 U
Sb-124	-0.008036 U	0.02386 U	0.01234 U	-0.03295 U
Sb-125				
Se-75				
Te-132				
Tl-208	0.5754	0.5566	0.611	0.7544
Zn-65	0.002858 U	0.02527 U	0.02364 U	-0.002985 U
Zr-95	0.05227	-0.01818 U	0.005211 U	-0.02243 U
SOF				0.004

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG007-011 (140) OG007GAFD011 9/15/1998	OG007-012 (141) OG007GAFD012 9/15/1998	OG007-013 (142) OG007GAFD013 9/15/1998	OG007-014 (143) OG007GAFD014 9/15/1998
Ac-228	0.8243	0.834	0.7528	0.737
Ag-108m	-0.005775 U	-0.02793 U	0.008466 U	0.0007872 U
Ag-110m	-0.002253 U	0.005724 U	-0.02459 U	-0.01447 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	1.136	0.4231 U		0.8069
Bi-214	0.4123	0.5201	0.4001	0.4442
Ce-144	-0.2323 U	0.07175 U	-0.02821 U	0.07805 U
Co-58	-0.02259 U	-0.02259 U	0.01209 U	-0.00288 U
Co-60	0.02777 U	-0.006794 U	0.005455 U	-0.0002716 U
Cs-134	-0.11 U	-0.1167 U	-0.01093 U	-0.1 U
Cs-136				
Cs-137	0.06409	0.03735 U	-0.03839 U	0.04802
Eu-152				
Fe-59	0.05891 U	-0.01934 U	-0.01457 U	0.01888 U
I-131				
K-40	19.55	19.43	20.07	17.1
Kr-85	8.19			
La-140				
Mn-54	0.02877	0.01041 U	0.03265 U	0.05027
Nb-94				
Nb-95	-0.006577 U	0.04272 U	0.04005 U	-0.008001 U
Np-239				
Pb-212	0.7381	0.7618	0.8114	0.2156
Pb-214	0.4233	0.5393	0.5293	0.4421
Ra-226		1.127	1.422	
Ru-103	0.0114 U	-0.005545 U	-0.02934 U	0.01668 U
Ru-106	0.222 U	0.09927 U	0.1428 U	-0.1555 U
Sb-124	0 U	0.0203 U	0 U	0.009518 U
Sb-125				-0.08455 U
Se-75				
Te-132				
Tl-208	0.6353	0.7426		0.6714
Zn-65	-0.14 U	-0.1333 U	-0.07466 U	0.05241 U
Zr-95	0.03084 U	0.02783 U	0.01962 U	-0.0136 U
SOF	0.007			0.006

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG007-017 (146)	OG007-018 (147)	OG007-019 (148)	OG007-021 (149)
Sample ID	OG007GAFD017	OG007GAFD018	OG007GAFD019	OG007GAFD021
Date Sampled	9/15/1998	9/15/1998	9/15/1998	9/16/1998
Ac-228	0.8868	0.7853	0.8646	0.768
Ag-108m	-0.007737 U	0.02044 U	-0.00455 U	-0.0146 U
Ag-110m	-0.04159 U	-0.01339 U	-0.001592 U	-0.04892 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.6743	0.3703 U	0.9127	
Bi-214	0.5367	0.4661	0.4348	0.464
Ce-144	-0.04285 U	0.02905 U	-0.1308 U	0.06183 U
Co-58	-0.004964 U	-0.002368 U	-0.001152 U	-0.02284 U
Co-60	0.003737 U	0.01486 U	0.01366 U	0.02604 U
Cs-134	-0.01356 U	-0.09571 U	-0.02896 U	-0.123 U
Cs-136		0.4724		
Cs-137	0.02055 U	0.03023 U	0.01007 U	-0.02237 U
Eu-152				
Fe-59	-0.0008671 U	-0.04912 U	0.02767 U	-0.04258 U
I-131				
K-40	18.13	20.81	20.37	17.22
Kr-85				
La-140				
Mn-54	-0.02662 U	0.002406 U	-0.002898 U	0.008184 U
Nb-94				
Nb-95	0.01531 U	0.02065 U	-0.02493 U	-0.0119 U
Np-239				
Pb-212	0.7778	0.8807	0.8558	0.7828
Pb-214	0.6495	0.5393	0.5454	0.4428
Ra-226	2.694	1.921		
Ru-103	-0.02149 U	-0.00557 U	-0.01907 U	0.0006214 U
Ru-106	0.1715 U	0.2605 U	0.0214 U	-0.1519 U
Sb-124	0.01425 U	0.03584 U	0.00785 U	-0.02538 U
Sb-125				
Se-75				
Te-132				
Tl-208	0.6825	0.7438	0.7145	0.686
Zn-65	0.004568 U	-0.007645 U	0.06851 U	0.05765 U
Zr-95	-0.001283 U	0.06704 U	-0.007177 U	-0.02893 U
SOF				

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-10 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG007-022 (150) OG007GAFD022 9/16/1998	OG007-028 (156) OG007GAFD028 9/16/1998	OG007-029 (157) OG007GAFD029 9/16/1998	OG007-030 (158) OG007GAFD030 9/16/1998
Ac-228	0.7081	0.8062	0.847	0.7876
Ag-108m	0.00678 U	-0.02285 U	0.006797 U	0.005136 U
Ag-110m	-0.02188 U	-0.04849 U	-0.02012 U	-0.008495 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.9053	0.4428 U	0.6816	0.6774
Bi-214	0.4051	0.4284	0.4805	0.445
Ce-144	-0.1048 U	-0.02519 U	-0.05475 U	0.03395 U
Co-58	-0.0092 U	0.01469 U	0.0059 U	-0.02022 U
Co-60	0.01892 U	0.00986 U	0 U	0.01307 U
Cs-134	-0.02133 U	-0.08603 U	-0.03283 U	0.0007776 U
Cs-136				
Cs-137	-0.01515 U	0 U	0.04964	0.03979
Eu-152				0.2502 U
Fe-59	-0.06111 U	0.005877 U	-0.0496 U	0.04106 U
I-131				
K-40	19.06	17.96	18.65	19.29
Kr-85				
La-140				
Mn-54	-0.005443 U	0.002458 U	0.02031 U	0.01145 U
Nb-94				
Nb-95	-0.004168 U	-0.01555 U	-0.03275 U	0.01999 U
Np-239				
Pb-212	0.7668	0.8239	0.8655	0.7108
Pb-214	0.4318	0.4676	0.4987	0.5191
Ra-226		1.16	2.366	0.9824 U
Ru-103	0.009444 U	-0.02214 U	0.01214 U	0.002941 U
Ru-106	0.1924 U	0.331	0.09688 U	-0.1902 U
Sb-124	0.04522 U	-0.003577 U	0.04691	0.01854 U
Sb-125				-0.09128 U
Se-75				
Te-132				
Tl-208	0.8304		0.9015	0.7101
Zn-65	-0.09097 U	-0.06297 U	-0.05333 U	-0.1036 U
Zr-95	0.004419 U	-0.02271 U	0.02234 U	0.0345 U
SOF		0.005	0.004	0.003

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG007-031 (159)	OG007-032 (160)	OG007-033 (161)	OG007-034 (162)
Sample ID	OG007GAFD031	OG007GAFD032	OG007GAFD033	OG007GAFD034
Date Sampled	9/16/1998	9/16/1998	9/16/1998	9/16/1998
Ac-228	0.8956	0.8813	0.7016	0.6844
Ag-108m	-0.01034 U	0.01014 U	-0.0006191 U	-0.0294 U
Ag-110m	0.001064 U	0.004969 U	-0.005762 U	0 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140		0.2502		
Bi-212	1.035	0.5227	1.101	0.5051 U
Bi-214	0.491	0.4594	0.4713	0.4278
Ce-144	-0.05925 U	0.09864 U	-0.03727 U	0.1941 U
Co-58	-0.009632 U	-0.03266 U	-0.003564 U	-0.0432 U
Co-60	-0.01049 U	-0.01144 U	-0.01395 U	0.0117 U
Cs-134	-0.04456 U	-0.03834 U	-0.1938 U	0.01957 U
Cs-136				
Cs-137	0.03846	0.02778 U	0.03836	0.02154 U
Eu-152				
Fe-59	-0.0529 U	0.01279 U	0.006581 U	0.01977 U
I-131				
K-40	18.61	19.99	18.14	19.73
Kr-85				
La-140				
Mn-54	-0.004026 U	-0.005022 U	0.02413 U	0.008267 U
Nb-94				
Nb-95	0.01781 U	-0.004752 U	0.01351 U	0.06354
Np-239				
Pb-212	0.8019	0.6982	0.7919	0.778
Pb-214	0.5946	0.5578	0.55	0.524
Ra-226	1.602	2.056		2.584
Ru-103	0.02392 U	-0.02188 U	-0.01225 U	-0.0103 U
Ru-106	-0.2861 U	0.02445 U	-0.163 U	-0.1658 U
Sb-124	0.006252 U	0.005252 U	0.001245 U	0.0114 U
Sb-125				
Se-75				
Te-132				
Tl-208	0.737	0.7808	0.6437	0.7352
Zn-65	0.1262 U	0.07263 U	-0.06119 U	0.03751 U
Zr-95	0.01905 U	0.015 U	0.01423 U	0.04823 U
SOF	0.003		0.003	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG007-035 (163)	OG007-036 (164)	OG007-038 (165)	OG012-032 (944)
Sample ID	OG007GAFD035	OG007GAFD036	OG007GAFD038	OG012GUFD032
Date Sampled	9/16/1998	9/16/1998	9/16/1998	10/7/1998
Ac-228	0.8595	0.7329	0.8124	0.72
Ag-108m	-0.003293 U	-0.003973 U	0.009334 U	0.0183 U
Ag-110m	0.001453 U	-0.009949 U	-0.0141 U	-0.00164 U
Am-241	0 U	0 U	0 U	0 U
Ba-133				
Ba-140				
Bi-212	0.7888	0.753	1.147	0.61
Bi-214	0.4979	0.3382	0.465	0.439
Ce-144	-0.05387 U	-0.09032 U	-0.005151 U	0.0346 U
Co-58	0.003894 U	-0.01262 U	0.008762 U	-0.0192 U
Co-60	0.01015 U	0.01008 U	0.007892 U	0.0111 U
Cs-134	-0.007771 U	0.09627	-0.01753 U	-0.0128 U
Cs-136			0.5622	
Cs-137	0.03376 U	0.0577	0.03254 U	0.0895
Eu-152				
Fe-59	0.03133 U	-0.0194 U	0.002833 U	0.0517 U
I-131				
K-40	18.86	19.51	20.04	17.8
Kr-85				
La-140				
Mn-54	-0.002124 U	-0.01549 U	0.005553 U	0.0108 U
Nb-94				
Nb-95	0.04246 U	-0.03285 U	0.00692 U	0.0219 U
Np-239				
Pb-212	0.7511	0.6506	0.8105	0.729
Pb-214	0.5439	0.483	0.6034	0.492
Ra-226	1.344	1.293	1.553	1.36
Ru-103	-0.01079 U	0.002687 U	0.004337 U	0.00757 U
Ru-106	-0.02471 U	-0.2086 U	-0.1154 U	0.0929 U
Sb-124	0.001181 U	0.00424 U	0.002136 U	0.00603 U
Sb-125				
Se-75				0.0227 U
Te-132				
Tl-208	0.6843	0.7521		0.704
Zn-65	-0.08551 U	-0.009526 U	0.08271 U	0.0594 U
Zr-95	0.05396 U	-0.01226 U	-0.01626 U	0.0131 U
SOF		0.019		0.007

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG020-015 (974)	OG020-016 (975)	OG020-017 (976)	OG020-018 (977)	SE586 (3094)
Sample ID	OG020GUFD015	OG020GUFD016	OG020GUFD017	OG020GUFD018	SE586
Date Sampled	9/22/1998	9/22/1998	9/22/1998	9/22/1998	11/10/1998
Ac-228	0.795	0.698	0.911	0.861	0.4597
Ag-108m	-0.00491 U	0.00132 U	0.0284 U	0.0127 U	0.007678 U
Ag-110m	-0.0124 U	-0.0155 U	-0.00428 U	-0.00516 U	-0.0009584 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133	-0.0356 U				
Ba-140					0.602 U
Bi-212	0.905	1.07	0.883	1.09	0.444
Bi-214	0.424	0.548	0.442	0.538	0.4813
Ce-144	0.0922 U	-0.0379 U	-0.0862 U	-0.118 U	0.02405 U
Co-58	-0.0199 U	-0.00536 U	0.00669 U	-0.0116 U	-0.01665 U
Co-60	0.00955 U	-0.00445 U	0.0334	0.000937 U	-0.007599 U
Cs-134	0.00878 U	-0.0201 U	0.0161 U	-0.0221 U	-0.03785 U
Cs-136					
Cs-137	0.0356 U	0.0949	0.0636	0.0489	-0.007866 U
Eu-152					
Fe-59	-0.0456 U	0 U	0.0313 U	0.0312 U	-0.03491 U
I-131					
K-40	18.2	18.1	20.8	19.5	9.929
Kr-85					
La-140					
Mn-54	-0.00793 U	0.00761 U	-0.0188 U	0.021 U	-0.01119 U
Nb-94					
Nb-95	0.00612 U	-0.0458 U	0.0579	-0.0053 U	0.02574 U
Np-239					
Pb-212	0.628	0.754	0.814	0.788	0.3973
Pb-214	0.391	0.491	0.491	0.478	0.3776
Ra-226	2.26	1.62	1.06 U	1.66	
Ru-103	-0.031 U	-0.0106 U	0.002 U	-0.0185 U	0.0006074 U
Ru-106	-0.0601 U	-0.0155 U	0.103 U	0.307	0.02422 U
Sb-124	0.0158 U	0.00151 U	-0.0271 U	-0.00842 U	0.001163 U
Sb-125				-0.121 U	
Se-75					
Te-132					
Tl-208	0.638	0.759	0.669	0.731	0.4828
Zn-65	-0.0155 U	-0.0627 U	0.0348 U	-0.0891 U	0.03318 U
Zr-95	-0.0201 U	0.0231 U	-0.0184 U	0.00809 U	0.01432 U
SOF		0.008	0.012	0.008	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	SE587 (3095) SE587 11/10/1998	TS405 (3194) TS405A 10/22/1997	TS405 (3194) TS405B 10/22/1997	TS405 (3194) TS405C 10/22/1997	TS405 (3194) TS405D 10/22/1997	TS405 (3194) TS405E 10/22/1997
Ac-228	0.3858	0.5814	0.7521	0.8004	0.6224	0.6019
Ag-108m	0.006805 U	0.01435 U	-0.006968 U	-0.0002315 U	-0.02243 U	-0.002104 U
Ag-110m	0.002042 U	0.01131 U	0.0286 U	-0.01835 U	0.001335 U	0.01594 U
Am-241	0 U	0 U	0 U	0 U	0 U	0 U
Ba-133						
Ba-140						
Bi-212	0.5213	0.4518 U	0.8155	0.9429		0.4267 U
Bi-214	0.3693			0.4109		
Ce-144	0.07644 U	-0.06953 U	0.1079 U	-0.01974 U	-0.001111 U	0.01693 U
Co-58	-0.01724 U	-0.0203 U	-0.01053 U	0.009221 U	-0.01364 U	-0.003714 U
Co-60	-0.006939 U	0.01215 U	0.03386 U	0.03231 U	0.2533	0.00927 U
Cs-134	-0.08675 U	0.01305 U	-0.03516 U	-0.1703 U	0.03454 U	0.01769 U
Cs-136						
Cs-137	0.01149 U	0.02654 U	0.008091 U	0.03495	0.3754	0.005428 U
Eu-152		0.00005111 U				
Fe-59	-0.02192 U	-0.01778 U	0.01199 U	-0.01196 U	0.02691 U	-0.03288 U
I-131						
K-40	10.32	0 U	0.9427	0.7831	0.6173	-0.07905 U
Kr-85						
La-140						
Mn-54	-0.0005561 U	-0.01437 U	0.0285 U	0.01263 U	0.01538 U	0.004965 U
Nb-94						
Nb-95	0.004429 U	-0.007653 U	-0.001721 U	-0.007582 U	-0.02925 U	-0.01481 U
Np-239				-0.2367 U		
Pb-212	0.3215	0.7312	0.8602	0.715	0.7197	0.7338
Pb-214	0.2934	0.4016	0.4822	0.4639	0.4018	0.42
Ra-226			1.184			1.104
Ru-103	0.02478	0.02599 U	-0.002226 U	0.0009363 U	-0.01335 U	0.01682 U
Ru-106	-0.07939 U	-0.04424 U	-0.08943 U	0.04458 U	0.3765	-0.02893 U
Sb-124	-0.007437 U	0.01244 U	-0.01677 U	0.04779	-0.02958 U	0.03045 U
Sb-125			-0.05987 U			
Se-75						
Te-132						
Tl-208	0.2817	0.58	0.7417	0.7459	0.6349	0.583
Zn-65	-0.08563 U	-0.05327 U	-0.09423 U	0.1633	-0.02267 U	0.01745 U
Zr-95	0.003269 U	-0.01731 U	0.002764 U	0.017 U	-0.03878 U	0.07419 U
SOF				0.003	0.089	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	TS521 (3249)	TS522 (3250)	TS99.50 (3348)	TS99.55 (3353)	TS99.55 (3353)
Sample ID	TS521	TS522	TS99.50A	TS99.55A	TS99.55B
Date Sampled	8/3/1998	8/3/1998	6/3/1999	6/9/1999	6/9/1999
Ac-228	0.8826	0.8816	0.8575	0.8038	0.8059
Ag-108m	-0.009918 U	0.01856 U	-0.0008872 U	-0.02451 U	-0.01502 U
Ag-110m	0.005551 U	-0.02535 U	0.0267 U	-0.01188 U	-0.005401 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212	0.9896	0.9608	0.5043 U	1.146	0.5942
Bi-214	0.4384	0.3945	0.3456	0.4808	0.4921
Ce-144	0.0666 U	0.04375 U	-0.2246 U	-0.004707 U	0.01987 U
Co-58	0.002138 U	0.0175 U	0.006474 U	0.01291 U	0.006445 U
Co-60	0.04897	0.0239 U	-0.007475 U	-0.02597 U	0.01761 U
Cs-134	-0.1636 U	-0.006952 U	-0.1022 U	0.006262 U	-0.0611 U
Cs-136					
Cs-137	0.01447 U	0.01331 U	-0.002576 U	-0.0256 U	-0.009826 U
Eu-152				1.895 U	
Fe-59	0.02042 U	-0.0423 U	-0.0492 U	0.02304 U	-0.0492 U
I-131		0.03175 U			
K-40	18.45	18.08	15.56	16.37	15.49
Kr-85					
La-140					
Mn-54	-0.02221 U	-0.006634 U	-0.003437 U	0.0271 U	-0.002251 U
Nb-94				0.02416 U	
Nb-95	-0.005291 U	0.01689 U	0.009179 U	0.03347 U	0.01935 U
Np-239	-0.1064 U	-0.364 U		-0.3485 U	
Pb-212	0.8881	0.9933	0.8509	0.7801	0.83
Pb-214	0.5231	0.5456	0.5168	0.4514	0.462
Ra-226		1.405	1.33	0.8842 U	
Ru-103	-0.02881 U	-0.01801 U	-0.00004986 U	0.005422 U	-0.005012 U
Ru-106	-0.05031 U	-0.02172 U	-0.04307 U	0.1275 U	0.05507 U
Sb-124	-0.0251 U	0.01114 U	-0.02533 U	-0.01607 U	-0.01542 U
Sb-125					
Se-75					
Te-132					
Tl-208	0.7411	0.8244	0.7441	0.8052	0.8054
Zn-65	0.0685 U	-0.02945 U	-0.09394 U	0.02131 U	-0.01007 U
Zr-95	0.03129 U	0.03888 U	-0.01341 U	0.02426 U	0.03513 U
SOF	0.01				

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	TS99.55 (3353)	TS99.56 (3354)	TS99.56 (3354)	WSD06 (3406)	YG001.1 (3407)
Sample ID	TS99.55C	TS99.56A	TS99.56B	WSD06	YG001.1B
Date Sampled	6/9/1999	6/28/1999	6/28/1999	9/27/1999	9/24/1998
Ac-228	0.9256	0.5786	0.6004	0.311	0.8881
Ag-108m	-0.005938 U	0.01542 U	0.01044 U	0 U	-0.01426 U
Ag-110m	-0.01118 U	-0.008922 U	-0.04784 U	0.01076 U	-0.04486 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212	0.7482	0.6219	0.6617	0.4691	
Bi-214	0.5226	0.4373	0.4625	0.3216	0.4779
Ce-144	-0.05733 U	0.1065 U	-0.1168 U	0.009139 U	0.0714 U
Co-58	-0.01411 U	0.01964 U	-0.02232 U	-0.007698 U	0.01713 U
Co-60	-0.02152 U	0.008125 U	0.0151 U	0.09267	-0.01523 U
Cs-134	0.002018 U	0.004413 U	-0.05891 U	0.003698 U	-0.0603 U
Cs-136					
Cs-137	-0.004949 U	0.04311	0.01042 U	0.2604	-0.01577 U
Eu-152					
Fe-59	-0.04733 U	0.01713 U	-0.02926 U	0.009446 U	-0.04292 U
I-131					
K-40	16.14	16.4	14.38	10.22	17.64
Kr-85					
La-140					
Mn-54	-0.01403 U	-0.03443 U	0.0102 U	0.02301 U	0.005129 U
Nb-94					
Nb-95	0.01612 U	-0.04069 U	0.005812 U	0.005716 U	0.001167 U
Np-239	0.1964 U				
Pb-212	0.9416	0.7998	0.8274	0.3924	0.8725
Pb-214	0.4607	0.4519	0.4286	0.3105	0.5039
Ra-226		0.9628	1.208		1.042
Ru-103	-0.01087 U	0.008899 U	-0.03998 U	-0.005913 U	0.004686 U
Ru-106	0.167 U	0.01161 U	-0.1081 U	0.01877 U	-0.1308 U
Sb-124	-0.02071 U	-0.006058 U	0.01691 U	0.008034 U	-0.03975 U
Sb-125					
Se-75					
Te-132					
Tl-208	0.8845	0.6664	0.6546		0.6788
Zn-65	-0.08516 U	-0.07536 U	0.0229 U	-0.0103 U	-0.06138 U
Zr-95	0.02345 U	0.02468 U	0.05066 U	-0.01159 U	0.002815 U
SOF		0.004		0.04	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	YG001.2 (3408)	YG001.2 (3408)	YG001.3 (3409)	YG001.3 (3409)	YG001.4 (3410)
Sample ID	YG001.2A	YG001.2B	YG001.3A	YG001.3B	YG001.4A
Date Sampled	9/23/1998	9/24/1998	9/23/1998	9/23/1998	9/23/1998
Ac-228	0.169	0.8458	0.2318	0.8933	0.2899
Ag-108m	-0.01043 U	-0.0008614 U	-0.005587 U	0.003842 U	-0.01157 U
Ag-110m	-0.008361 U	0.004675 U	0.009241 U	0 U	0.006929 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					
Bi-212		0.9872		1.052	
Bi-214	0.2904	0.492	0.1977	0.4047	0.455
Ce-144	0.07455 U	-0.04324 U	0.09241 U	0.0246 U	0.05709 U
Co-58	-0.01035 U	-0.0005997 U	-0.004631 U	0.0007271 U	0.01144 U
Co-60	0.01539 U	0.02381 U	0.04692	0.01616 U	-0.004328 U
Cs-134	-0.03343 U	-0.0647 U	-0.06818 U	-0.024 U	0.06308 U
Cs-136					
Cs-137	0.1133	-0.02011 U	0.01622 U	0.02235 U	0.005973 U
Eu-152					0.3631 U
Fe-59	-0.01302 U	0.0244 U	0.001012 U	0.05164 U	0.02411 U
I-131				0.2035 U	
K-40	7.096	16.99	4.33	16.16	3.218
Kr-85		3.136 U			
La-140					
Mn-54	0.0119 U	-0.002505 U	0.009077 U	-0.01111 U	0.007295 U
Nb-94					
Nb-95	0.0005109 U	0.02286 U	-0.009364 U	0.01081 U	0.002982 U
Np-239					
Pb-212	0.227	0.9651	0.2526	0.9064	0.2574
Pb-214	0.2362	0.5788	0.2964	0.5632	0.3427
Ra-226		1.703			0.9338
Ru-103	0.01051 U	-0.0002123 U	0.01452 U	-0.01025 U	0.002339 U
Ru-106	0.07433 U	0 U	0.157 U	-0.07578 U	0.1063 U
Sb-124	-0.005896 U	-0.04264 U	0 U	-0.03078 U	0.0214 U
Sb-125			0.07133 U		
Se-75					
Te-132					
Tl-208	0.2021	0.8964	0.1975	0.6982	
Zn-65	0.007342 U	0.003044 U	0.0485 U	0.02052 U	-0.04391 U
Zr-95	0.003475 U	0.0267 U	0.01256 U	-0.002878 U	-0.01169 U
SOF	0.009		0.01		

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4

Rad

OOL-10 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	YG001.4 (3410)	YG001.5 (3411)	YG001.5 (3411)	YS001.7 (3417)	YS001.7 (3417)
Sample ID	YG001.4B	YG001.5A	YG001.5B	YS001.7A	YS001.7B
Date Sampled	9/23/1998	9/23/1998	9/24/1998	1/26/1999	1/26/1999
Ac-228	0.6008	0.2046	0.9132	0.7065	1.041
Ag-108m	0.003712 U	0.0007827 U	0.01398 U	0.02242 U	0.02598
Ag-110m	-0.03155 U	-0.0223 U	0.009065 U	-0.02084 U	0.04256
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133					
Ba-140					0.1208
Bi-212	0.5936		1.259	0.9541	0.9366
Bi-214	0.4591		0.4914	0.4416	0.4034
Ce-144	0.2499	-0.01212 U	-0.02047 U	-0.06937 U	-0.05391 U
Co-58	0.007091 U	0.003698 U	-0.02688 U	-0.02816 U	-0.01423 U
Co-60	-0.02996 U	0.02993 U	0.01154 U	-0.01473 U	-0.01745 U
Cs-134	0.1397	0.00855 U	0.003602 U	0.007334 U	0.01177 U
Cs-136					
Cs-137	-0.0155 U	0.09438	-0.005311 U	-0.01452 U	0.01445 U
Eu-152					
Fe-59	0.005814 U	-0.007987 U	0.0109 U	-0.03738 U	-0.03749 U
I-131					
K-40	16.37	7.942	17.17	16.22	15.64
Kr-85					23.24
La-140					
Mn-54	0.0003006 U	-0.006936 U	0.0005398 U	-0.004429 U	0.0416
Nb-94					
Nb-95	0.01279 U	-0.005081 U	0.02419 U	-0.007533 U	-0.0167 U
Np-239	0.1845 U				
Pb-212	0.7393	0.3021	0.9779	0.7912	0.8913
Pb-214	0.4373	0.264	0.4678	0.4321	0.3778
Ra-226			0.7968 U	1.011 U	
Ru-103	0.01621 U	-0.002256 U	-0.02533 U	0.0008506 U	-0.01062 U
Ru-106	0.02145 U	0.04526 U	0.08808 U	-0.0485 U	0.0009506 U
Sb-124	-0.00695 U	0.02874 U	0.01063 U	0.004997 U	-0.009631 U
Sb-125					
Se-75					
Te-132					0.02845 U
Tl-208	0.5681	0.2749	0.7522	0.7727	
Zn-65	0.007867 U	-0.06627 U	-0.1152 U	0.1001 U	-0.07365 U
Zr-95	-0.03383 U	-0.003156 U	0.07483	0.01153 U	0.01234 U
SOF	0.021	0.008			0.005

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

Blank results indicate chemical not analyzed

Table 4
Rad
OOL-10 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	YS001.7 (3417)
Sample ID	YS001.7C
Date Sampled	1/26/1999
Ac-228	0.646
Ag-108m	0.004894 U
Ag-110m	-0.009033 U
Am-241	0 U
Ba-133	
Ba-140	
Bi-212	
Bi-214	0.4489
Ce-144	-0.01814 U
Co-58	-0.01237 U
Co-60	-0.01074 U
Cs-134	-0.004026 U
Cs-136	
Cs-137	0.004941 U
Eu-152	
Fe-59	0.01037 U
I-131	
K-40	16.01
Kr-85	3.119 U
La-140	
Mn-54	-0.02059 U
Nb-94	
Nb-95	0.0026 U
Np-239	
Pb-212	0.819
Pb-214	0.4304
Ra-226	0.9256
Ru-103	0.008408 U
Ru-106	0.0213 U
Sb-124	-0.008779 U
Sb-125	
Se-75	
Te-132	
Tl-208	0.7518
Zn-65	-0.02559 U
Zr-95	0.03798 U
SOF	

Table 2
Statistical Data Summary – OOL-10 -- Water
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ag-108m	pCi/g	0	1	0.000				
Ag-110m	pCi/g	0	1	0.000				
Bi-212	pCi/g	0	1	0.000				
Bi-214	pCi/g	1	1	0.000		0.000	0.000	0.000
Ce-144	pCi/g	0	1	0.000				
Co-58	pCi/g	0	1	0.000				
Co-60	pCi/g	0	1	0.000				
Cs-134	pCi/g	0	1	0.000				
Cs-137	pCi/g	0	1	0.000				
Fe-59	pCi/g	0	1	0.000				
K-40	pCi/g	0	1	0.000				
Kr-85	pCi/g	0	1	0.000				
Mn-54	pCi/g	0	1	0.000				
Nb-95	pCi/g	0	1	0.000				
Pb-214	pCi/g	1	1	0.000		0.000	0.000	0.000
Ru-103	pCi/g	0	1	0.000				
Ru-106	pCi/g	0	1	0.000				
Sb-124	pCi/g	0	1	0.000				
Sb-125	pCi/g	0	1	0.000				
Se-75	pCi/g	0	1	0.000				
Zn-65	pCi/g	0	1	0.000				
Zr-95	pCi/g	0	1	0.000				

Table 4
Rad
OOL-10 -- Water (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG020-033 (129)
Sample ID	OG020GUFW033
Date Sampled	9/17/1998
Ag-108m	-0.000000005294 U
Ag-110m	0.000000005246 U
Bi-212	0.00000002618 U
Bi-214	1.049E-07
Ce-144	-0.000000005472 U
Co-58	-0.00000000156 U
Co-60	0.000000001081 U
Cs-134	-0.000000001064 U
Cs-137	-0.0000000006759 U
Fe-59	-0.000000001397 U
K-40	0.00000002717 U
Kr-85	0.0000002565 U
Mn-54	0 U
Nb-95	0.000000001548 U
Pb-214	1.006E-07
Ru-103	-0.000000001466 U
Ru-106	0.000000005513 U
Sb-124	0.00000000216 U
Sb-125	0.000000002316 U
Se-75	0.0000000007355 U
Zn-65	0.000000003541 U
Zr-95	-0.000000002187 U

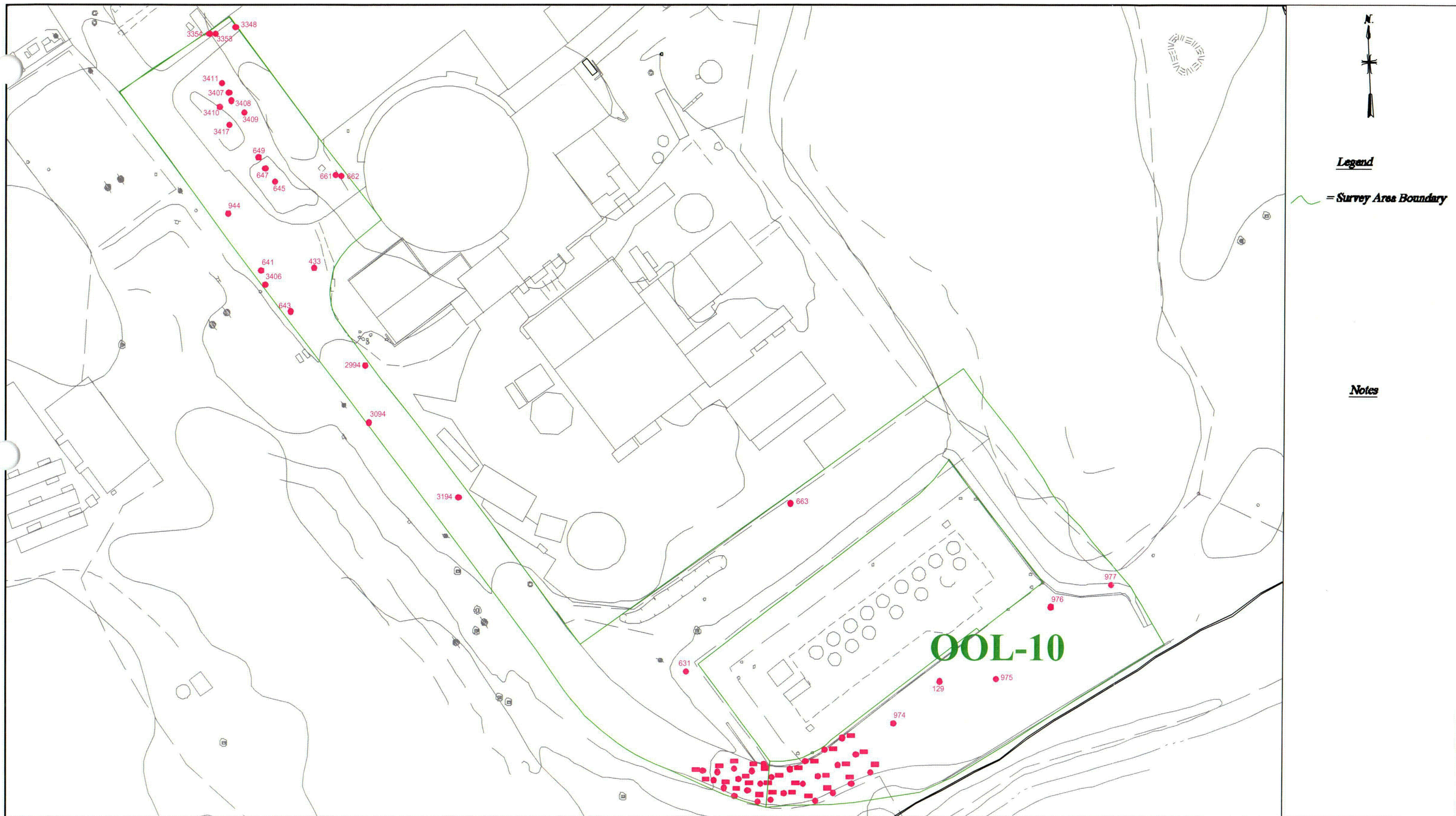
U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Underground Systems

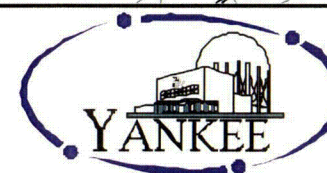
OOL-10				
Structure / System	Component	Description	Location	Impacted?
Storm Drains	WCB-005	depth = 51"; 4' dia at base, 2' at top; no ladder access; 18" corr pipe 34" from top going N, 18" corr pipe 34" from top going S; no bottom; fair condition	~140' S of WCB-004	
	WCB-006	depth = 4'; 4' dia at base, 18" at top; no ladder access; 4" PVC pipe 28" from top going NW, 18" corr pipe 35" from top going N, 18" corr pipe 35" from top going S; concrete bottom; good condition	~238' S of WCB-005	
	WCB-007	depth = 51"; 4' dia at base, 2' at top; no ladder access; 18" corr pipe 39" from top going ~20' NE then ~135' N to WCB-006, 18" corr pipe 39" from top going E, 18" corr pipe 39" from top going ~100' SE to B1 (see Fig. Z, OOL-05); concrete bottom; good condition	~190' S of WCB-006	
	WCB-010	depth = 12'; 4' dia at base, 2' at top; ladder access; 18" corr pipe 10'1" from top going ~30' N to WCB-011, 6" cast iron pipe 4'3" from top going SW to ???, 6" corr pipe 4'3" from top going up to 80' SSW to ???, 10" corr pipe 9'10" from top going ~125' SE to WCB-009, 8" corr pipe 9'8" from top going SE to ???, 8" perforated pipe 6'8" from top going SE to ???; brick bottom; fair condition, some loose bricks at top, base uneven	~18' N of NW corner of SI bldg	
	WCB-011	depth = 11'; 4' dia at base, 2' at top; ladder access; 18" corr pipe 8'9" from top going ~190' N to WCB-015, 18" corr pipe 8'9" from top going ~30' S to WCB-010; concrete bottom; good condition	~48' N of NW corner of SI bldg	
Abandoned Street Lighting	electric cable	from OOL-02 continuing along west side of road going S ~to a point on a line W of SW corner of SI bldg then curving SE then S then E		

Underground Systems

OOL-10				
Structure / System	Component	Description	Location	Impacted?
Water		from OOL-08 continuing E to a point just north of the middle of the north side of the SSS bldg; then later from NOL-03 S ~240' to an abandoned well	well - ~230' S of middle of new PCA Storage	
Security Lighting	underground cables	from HH1/1A (OOL-02) S to HH7; from HH7 E ~90', from HH7 SW ~20' to camera pole, from HH7 NE ~5' to ???, from HH7 S ~100' to HH8; from HH8 S ~140' to HH9; from HH9 ESE ~200' to HH10, from HH9 SE ~47' to light on fire pump house	HH7 - ~55' S and ~90' W of SW corner of TB; HH8 - ~40' W of SW corner of SI bldg; HH9 - ~20' S and ~20' W of NW corner of SSS bldg	
Electrical	duct trays	from the center of the south wall of new PCA storage going S to abandoned well		



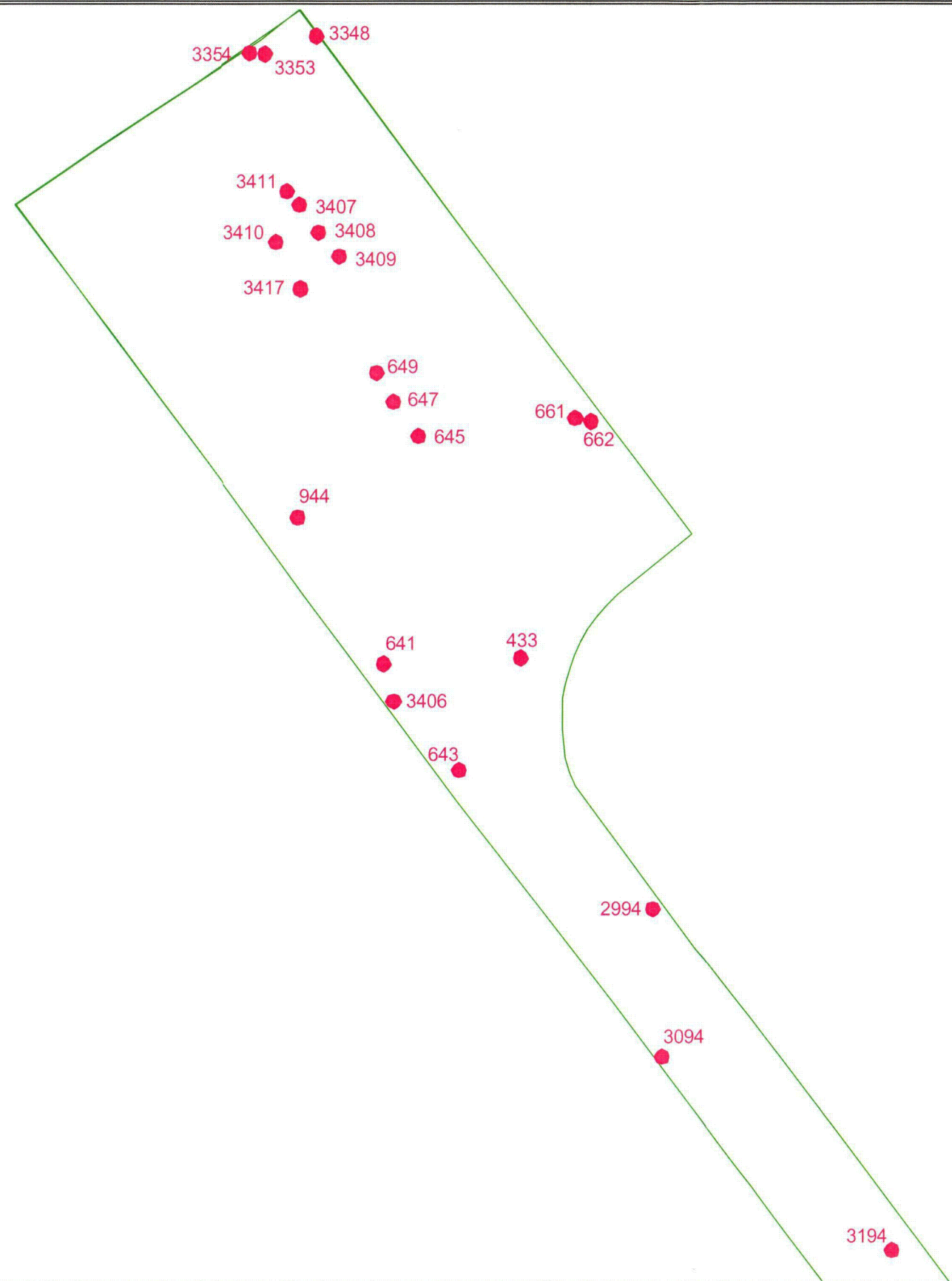
Yankee Atomic Power Company
Soil Sample Locations - OOL-10



Date: October 2003

Revision: 4

Figure: 11

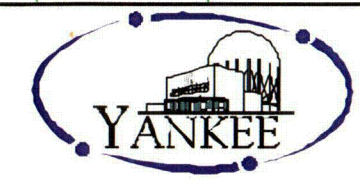


Legend

 = Survey Area Boundary

Notes

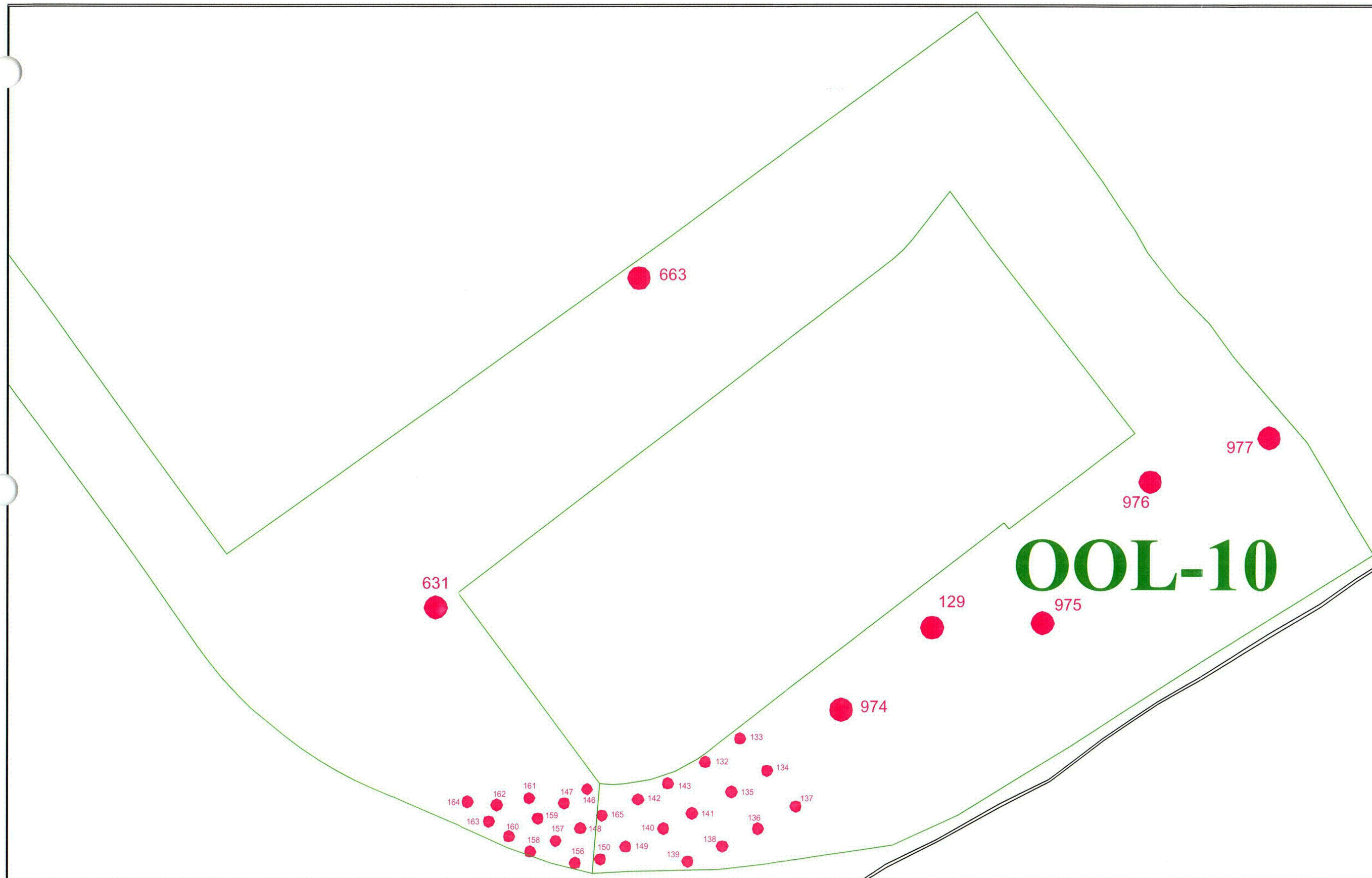
***Yankee Atomic Power Company
Open Land Survey Areas - OOL-10***



Date: October 2003

Revision: 4

Figure: 11A

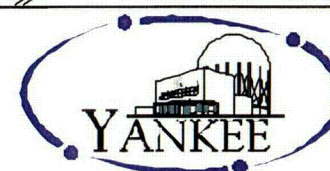


Legend

 = Survey Area Boundary

Notes

Yankee Atomic Power Company
Open Land Survey Areas - OOL-10



Date: October 2003

Revision: 4

Figure: 11B

Historical Site Assessment and Classification Summary

Survey Area Name: East RCA Buffer Zone

Designator: **OOL-11**

Survey Area Description

Survey area OOL-11 consists of land area that lies along the east boundary of the YNPS site RCA. Survey area OOL-11 contains about 1221 square meters of soil surface area.

Survey area OOL-11 is bounded by OOL-12 on the north, OOL-08 on the east, OOL-10 on the south and NOL-02 and NOL-03 on the west.

There are no sub-surface systems that traverse or connect within survey area OOL-11.

Items of note located within or adjacent to survey area OOL-11 include:

- The berm for the fuel oil storage tank
- The location of the temporary liquid waste evaporator and waste liquid storage tank.
- The permanent RCA boundary fence
- The location of the security fence

Historical Site Assessment and Classification Summary

Survey Area Name: East RCA Buffer Zone

Designator: **OOL-11**

Survey Area History

Survey area OOL-11 is not part of the RCA. There are no radioactive systems present in OOL-11. Survey area OOL-11 was not used for storing radioactive material or processing or packaging radioactive waste.

Survey Area OOL-11 represents a buffer zone around the Class 1 land survey areas within the posted RCA.

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 1).

Decommissioning

No decommissioning activities have been performed for survey area OOL-11.

Historical Site Assessment and Classification Summary

Survey Area Name: East RCA Buffer Zone Designator: **OOL-11**

Findings

Survey area OOL-11 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-11 is assumed to be minimally impacted the transport of the spent fuel. Survey area OOL-11 is likely to contain residual radioactivity concentrations at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-11 includes all radionuclides identified in the radioactive systems of the plant (Ref 2). The primary radionuclides of concern for survey area OOL-11 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

Survey area OOL-11 potentially may be further impacted by continued decommissioning activities. No sampling was conducted in this area.

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-11 is identified as a Class 2 area.

Historical Site Assessment and Classification Summary

Survey Area Name: East RCA Buffer Zone

Designator: **OOL-11**

Drawings

9699-FY-5A

Figure 7-1A

References

1.	YNPS Decommissioning Plan, Rev. 0.0.
2.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

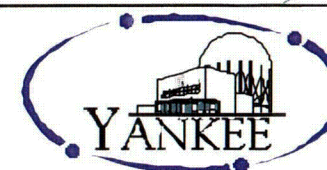


Legend

 = Survey Area Boundary

Notes

Yankee Atomic Power Company
Soil Sample Locations - OOL-11



Date: October 2003

Revision: 4

Figure: 12

Historical Site Assessment and Classification Summary

Survey Area Name: Railroad Spur at Warehouse

Designator: **OOL-12**

Survey Area Description

Survey area OOL-12 consists of asphalt covered land area adjacent to the RCA and contains about 882 square meters of surface area.

Survey area OOL-12 is bounded by SVC-03, OMB-04, OOL-02 and OOL-13 on the north, OOL-13 on the east, OOL-08 on the south and NOL-01 on the west.

Sub-surface systems that traverse or connect within OOL-12 include:

- The Auxiliary Service Water System (ASWS) water and electrical
- Fire Protection System Water
- Electrical grounding cables.
- Security lighting electrical conduits

Items of note located within OOL-12 include:

- A portion of the onsite railroad spur line running from the US Gen./ YAEC property line to the east end of the posted RCA.
- A portion of the Sherman Dam, flood control berm
- The warehouse loading dock structure (OMB-04)
- Security Light pole # 5
- A stacked, concrete block retaining wall.
- Permanently installed RCA boundary fence

Historical Site Assessment and Classification Summary

Survey Area Name: Railroad Spur at Warehouse

Designator: OOL-12

Survey Area History

The bounds of OOL-12 were established based upon the historical use of this area for transportation of radioactive waste such as spent fuel and irradiated hardware (control rods) via the railroad. Traffic of personnel and material into and out of the RCA may also have spread contamination into OOL-12. Additionally survey area OOL-12 is located down slope from the RCA and as so was and is susceptible to contamination resulting from surface water run-off from within the RCA. The eastern bound of OOL-12 is the property line between US Gen. and YAEC.

The railroad service to the plant was terminated prior to 1970. The railroad tracks within the YNPS site and two flat bed cars remained in service to support plant operations.

The construction of the service building annex in the mid 1970s made it so that vehicle traffic had to drive east, around the end of the garage building in order to access the east end of the RCA.

Events and activities that lead to the contamination within the RCA, which potentially migrated into survey area OOL-12 include:

- AOR 63-12, Shield Tank Cavity Shield Water Spill. (Ref 1)
- AOR 63-17, De-watering Pump Packing Leakage. (Ref 2)
- AOR 64-13, Leakage from the Ion Exchange Pit. (Ref 3)
- AOR 66-07, Spent Fuel Pit Water Spill (Ref 4)
- AOR 66-09, Hose Failure (Fuel Chute Pump-back System draining in progress) (Ref 5)
- PIR 75-07, Yard Area Contamination. (Ref 6)
- PIR 81-09, Contamination of Yard during Reactor Head Removal. (Ref 7)
- PIR 94-03, Leakage from Frozen Fuel Chute De-watering Line (Ref 8)
- PIR 94-09, Leakage from Frozen NST Telltale Lines (Ref 9)

Translocation Pathways

Modes and vectors of contamination transmigration include:

- Snow removal was necessary within the RCA in order to facilitate access to all areas. Snow removal likely moved contamination present on the surface of the RCA was to the locations where snow accumulated. When these locations would not accept additional snow the snow was loaded on to trucks and driven to remote storage locations. As the snow melted the snow accumulation locations will likely have a higher concentration of the radioactivity present due to deposition of additional radioactivity. Snow accumulation locations within OOL-12 typically were to either side of the railroad tracks. Survey area OOL-12 received snow pushed out of the RCA.

Historical Site Assessment and Classification Summary

Survey Area Name: Railroad Spur at Warehouse

Designator: **OOL-12**

- Surface water run-off resulting from rain and snowmelt is likely to have transported surface contamination into low areas where it would collect. Surface water run-off collection locations in OOL-12 include the low area along the railroad tracks in particular in the space between the railroad ties. Otherwise the surface water run-off pattern was east along the railroad tracks and into survey area OOL-13.
- Preparations and decontamination of spent fuel and high level waste shipping containers were performed in the areas adjacent to the SFP and the current FTE. These evolutions were likely contributors of radioactive contamination to the surface of the RCA during the early years of plant operations.

Modifications performed at the YNPS site during years of operation that changed the configuration of OOL-12 include:

- Paving of previously unpaved areas within the bounds of survey area OOL-12.
- Construction of the service building annex
- Closing of east storm drain, catch basin #3.
- Installation of the permanent RCA perimeter fence.
- Modification of the warehouse loading dock.
- Installation of security lighting pole #5
- Construction of the stacked concrete block retaining wall

Modifications performed at the YNPS site in support of decommissioning that changed the configuration of OOL-12 include:

- Installation of the ASWS water piping and electrical supply.

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan. (Ref 10) Additional scoping survey data was collected in support of the construction activities performed in OOL-12 associated with decommissioning activities.

Decommissioning

No decommissioning activities have been performed for survey area OOL-12.

Survey area OOL-12 has been affected by decommissioning activities performed on systems and structures within and adjacent to it.

Historical Site Assessment and Classification Summary

Survey Area Name: Railroad Spur at Warehouse

Designator: OOL-12

Findings

Survey area OOL-12 is a land area that is located adjacent to and down slope from the current configuration of YNPS RCA.

Contamination of survey area OOL-12 likely resulted from surface water run-off from within the RCA and potentially from transport of contaminated material and personnel traffic into and out of the RCA.

Although samples indicate low levels of activity, the primary contaminating events for this area, PIR 81-09, occurred during a major rainfall. The surface run-off would have carried the particulate activity down the rail bed, which was not paved over at the time. Such a translocation event may have resulted in activity lodged in the cracks and crevices of the rails, rail ties and ballast. Although the area was cleared quickly after the incident, the common mode of clearance (friskers) would not have been capable of detecting the embedded activity.

Survey area OOL-12 is impacted and potentially contains locations of residual radioactive contamination at levels greater the DCGL.

The radionuclide mix likely to be present in OOL-12 includes all radionuclides identified in the radioactive systems of the plant (Ref 11). The primary radionuclides of concern for survey area OOL-12 are Co-60, Cs-137, Ag-108m, Sr-90, and tritium.

Current Status

OOL-12 continues to be potentially impacted by personnel traffic, radioactive material transportation and by continued decommissioning activities.

A soil sample location map (Figure 13) has been prepared to show the distribution of sampling locations in OOL-12. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). Two survey media were assessed in OOL-12, Asphalt, Sod and Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL. There are separate sets of Tables 1-4 for each survey media. All are evaluated as fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-12 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Historical Site Assessment and Classification Summary

Survey Area Name: Railroad Spur at Warehouse Designator: OOL-12

Asphalt: Mean SOF is none detectable.

Maximum SOF for a single asphalt sample is none detectable.

Minimum SOF for a single asphalt sample is none detectable.

Soil: Mean SOF is 0.013.

Maximum SOF for a single soil sample is 0.013. (key# 639)

Minimum SOF for a single soil sample is 0.013. (key# 639)

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-12 is identified as a Class 1 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: Railroad Spur at Warehouse

Designator: **OOL-12**

Drawings

Figure 7-1A

References

1.	Abnormal Occurrence Report (AOR) 63-12, "Shield Tank Cavity Shield Water Spill," dated October 1, 1963.
2.	AOR 63-17, "De-watering Pump Packing Leakage," dated October 18, 1963.
3.	AOR 64-13, "High Level in IX Pit Resulting In Pit Leakage Coming Up Through the Blacktop," dated October 13, 1964.
4.	AOR 66-07, "Spent Fuel Pit Water Spill," dated September 27, 1966.
5.	AOR 66-09, "Plastic Garden Hose Failure," dated November 1, 1966.
6.	Plant Information Report (PIR) 75-07, "Yard Area Contamination," dated August 12, 1975.
7.	PIR 81-09, "Contamination of Yard during Reactor Head Removal," dated June 12, 1981.
8.	PIR 94-03, "Leakage from Frozen Fuel Chute De-watering Line," dated October 17, 1994.
9.	PIR 94-09, "Leakage from Frozen NST Telltale Lines," dated February 18, 1994.
10.	YNPS Decommissioning Plan, Rev. 0.0.
11.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

Table 1
Sum of Fractions
OOL-12 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Radionuclides for which SOF is calculated were not present in samples.

Table 2
Statistical Data Summary -- OOL-12 -- Asphalt
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Co-58	pCi/g	0	2	0.000				
Co-60	pCi/g	0	2	0.000				
Cs-134	pCi/g	0	2	0.000				
Cs-137	pCi/g	0	2	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-12 -- Asphalt
Yankee Nuclear Power Station Rowe, MA
DCGL Asphalt

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Co-58	0	2		pCi/g	0	
Co-60	0	2	4.84	pCi/g	0	
Cs-134	0	2	6.71	pCi/g	0	
Cs-137	0	2	12.24	pCi/g	0	

Table 4

Rad

OOL-12 -- Asphalt (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-52 (637)	IA-53 (639)
Sample ID	IAAS-52	IAAS-53
Date Sampled	5/17/1993	5/19/1993
Co-58	0.082 UM	0.064 UM
Co-60	0.0683 UM	0.0919 UM
Cs-134	0.065 UM	0.068 UM
Cs-137	0.0725 UM	0.0837 UM

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 1
Sum of Fractions
OOL-12 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions	
639	IA-53	IATS-53		0.013
			Min	0.013
			Max	0.013
			Mean	0.013

Table 2
Statistical Data Summary -- OOL-12 -- Soil
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Co-58	pCi/g	0	2	0.000				
Co-60	pCi/g	0	2	0.000				
Cs-134	pCi/g	0	2	0.000				
Cs-137	pCi/g	1	2	0.157		0.157	0.157	0.157

Table 3
Summary of Detected Results Above Criteria
OOL-12 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL_Soil

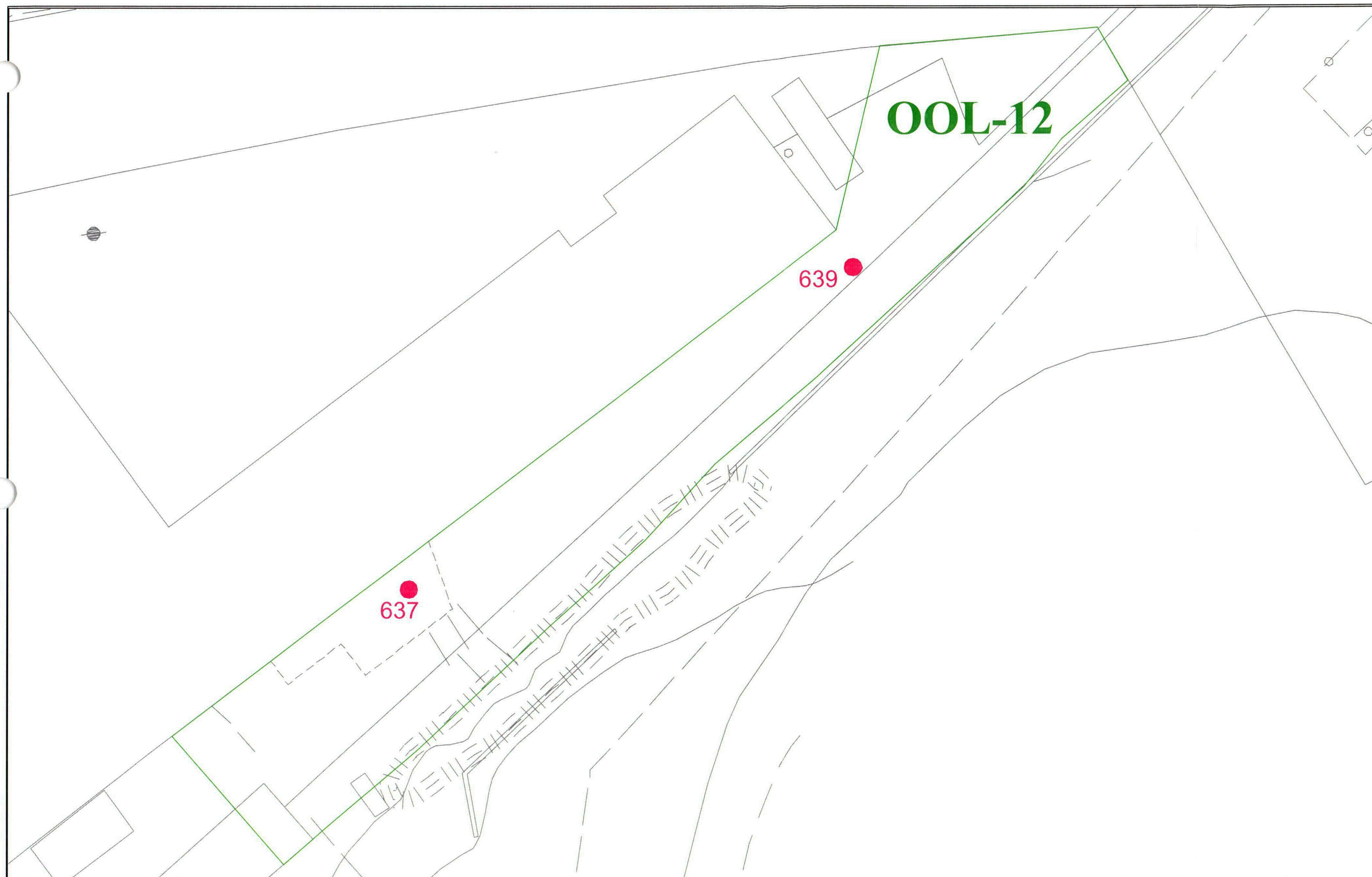
Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Co-58	0	2		pCi/g	0	
Co-60	0	2	4.84	pCi/g	0	
Cs-134	0	2	6.71	pCi/g	0	
Cs-137	1	2	12.24	pCi/g	0	0.16

Table 4
Rad
OOL-12 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-52 (637)	IA-53 (639)
Sample ID	IATS-52	IATS-53
Date Sampled	5/20/1993	5/19/1993
Co-58	0.087 UM	0.07 UM
Co-60	0.108 UM	0.13 UM
Cs-134	0.079 UM	0.074 UM
Cs-137	0.11 UM	0.157
SOF		0.013

Underground Systems

OOL-12				
Structure / System	Component	Description	Location	Impacted?
Storm Drains	ECB-002	depth = 61"; 4' dia at base, 2' at top; ladder access; 18" PACM (transite) pipe 46" from top going N to ECB-001, 18" corr pipe 51" from top going S to ECB-003, concrete bottom with sump area 2' dia x 18" deep; good condition	~40' N of ECB-003	
Aux. Service Water System	ASWS electric and water	from A2 going W ~135' to a point ~30 N of FSB then S to FTB; and going N to A1	A2 - ~10' S of SE corner of SB addition	
Water		from NOL-01 E to just SE of SE corner of SB then N ~118' (and under SB addition) to tee W8		

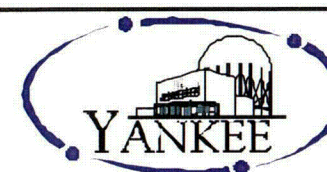


Legend

— Survey Area Boundary

Notes

Yankee Atomic Power Company
Soil Sample Locations - OOL-12



Date: October 2003

Revision: 4

Figure: 13

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Railroad Spur Terminus

Designator: **OOL-13**

Survey Area Description

Survey area OOL-13 consists of asphalt and soil covered land area and contains about 1159 square meters of surface area.

Survey area OOL-13 is bounded by OOL-01 on the north, OOL-15 on the east, OOL-14 on the south and OOL-12 and OOL-03 on the west.

There are no sub-surface systems that traverse or connect within survey area OOL-13.

Items of note located within OOL-13 include:

- A portion of the onsite railroad spur line running from the US Gen./ YAEC property line east to and including the main H T and W tracks that run through the YNPS site.
- The current configuration of the security fence
- Wheeler Brook
- The shore line of Sherman Reservoir

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Railroad Spur Terminus

Designator: **OOL-13**

Survey Area History

The bounds of OOL-13 were established based upon the historical use of this area for transportation of radioactive waste such as spent fuel and irradiated hardware (control rods) via the railroad and subsequent truck shipments made after the railroad was discontinued. Additionally survey area OOL-13 is located down slope from the RCA and as such was and is susceptible to contamination resulting from surface water run-off from within the RCA. The western bound of OOL-13 is the property line between US Gen. and YAEC.

The railroad service to the plant was terminated during the early 1970s. The railroad tracks within the YNPS site and two flat bed cars remained in service to support plant operations.

The construction of the service building annex in the mid 1970s made it so that vehicle traffic had to drive east, around the end of the warehouse/garage structure in order to access the east end of the RCA. The area east of the warehouse/garage structure lies within OOL-13.

Events and activities that lead to the contamination within the RCA, which potentially migrated into survey area OOL-13 include:

- AOR 63-12, Shield Tank Cavity Shield Water Spill. (Ref 1)
- AOR 63-17, De-watering Pump Packing Leakage. (Ref 2)
- AOR 64-13, Leakage from the Ion Exchange Pit. (Ref 3)
- AOR 66-07, Spent Fuel Pit Water Spill (Ref 4)
- AOR 66-09, Hose Failure (Fuel Chute Pump-back System draining in progress) (Ref 5)
- PIR 75-07, Yard Area Contamination. (Ref 6)
- PIR 81-09, Contamination of Yard during Reactor Head Removal. (Ref 7)
- PIR 94-03, Leakage from Frozen Fuel Chute De-watering Line (Ref 8)
- PIR 94-09, Leakage from Frozen NST Telltale Lines (Ref 9)

Translocation Pathways

Modes and vectors of contamination transmigration include:

- Snow removal was necessary within the RCA in order to facilitate access to all areas. Snow removal likely moved contamination present on the surface of the RCA was to the locations where snow accumulated. When these locations would not accept additional snow the snow was loaded on to trucks and driven to remote storage locations. As the snow melted the snow accumulation locations will likely have a higher concentration of the radioactivity present due to deposition of additional radioactivity. Snow accumulation locations within OOL-13 typically were to either side of the railroad tracks. Survey area OOL-13 received snow pushed out of the RCA.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Railroad Spur Terminus Designator: **OOL-13**

- Surface water run-off resulting from rain and snowmelt is likely to have transported surface contamination into low areas where it would collect. Surface water run-off collection locations in OOL-13 include the low area along the railroad tracks in particular in the space between the railroad ties. Otherwise the surface water run-off pattern was east along the railroad tracks and into survey area OOL-15.

Modifications performed at the YNPS site during years of operation that changed the configuration of OOL-13 include:

- Paving of previously unpaved areas within the bounds of survey area OOL-13.
- Construction of the service building annex
- Closing of east storm drain, catch basin #3.
- Expansion of the security fence to include the US Gen property east of the warehouse.
- Installation of the permanent RCA perimeter fence.

Survey area OOL-13 is currently used as a material storage area in support of various ongoing decommissioning activities.

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 10).

Decommissioning

No decommissioning activities have been performed for survey area OOL-13.

Survey area OOL-13 has been affected by decommissioning activities performed on systems and structures within and adjacent to it.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Railroad Spur Terminus

Designator: **OOL-13**

Findings

Survey area OOL-13 is a land area that is located adjacent to and down slope from the current configuration of YNPS RCA.

Contamination of survey area OOL-13 likely resulted from surface water run-off from within the RCA and potentially from transport of contaminated material and personnel traffic into and out of the RCA.

Survey area OOL-13 is impacted and potentially contains locations of residual radioactive contamination at levels greater the DCGL.

The radionuclide mix likely to be present in OOL-13 includes all radionuclides identified in the radioactive systems of the plant (Ref 11). The primary radionuclides of concern for survey area OOL-13 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

OOL-13 continues to be potentially impacted by personnel traffic, radioactive material transportation and by continued decommissioning activities.

A soil sample location map (Figure 14) has been prepared to show the distribution of sampling locations in OOL-13. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). One survey media was assessed in OOL-13, Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-13 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Soil: Mean SOF is 0.014.

Maximum SOF for a single soil sample is 0.031. (key# 79)

Minimum SOF for a single soil sample is 0.004. (key# 66)

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-13 is identified as a Class 1 Area.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Railroad Spur Terminus

Designator: **OOL-13**

Drawings

9699-FY-5A

Figure 7-1A

References

1.	Abnormal Occurrence Report (AOR) 63-12, "Shield Tank Cavity Fill Water Spill," dated October 1, 1963.
2.	AOR 63-17, "Dewatering Pump Packing Leakage," dated October 18, 1963.
3.	AOR 64-13, "High Level in IX Pit Resulting In Pit Leakage Coming Up Through the Blacktop," dated October 13, 1964.
4.	AOR 66-07, "Spent Fuel Pit Water Spill," dated September 27, 1966.
5.	AOR 66-09, "Plastic Garden Hose Failure," dated November 1, 1966.
6.	Plant Information Report (PIR) 75-07, Yard Area Contamination, dated
7.	PIR 81-09, "Contamination of Yard during Reactor Head Removal," dated June 12, 1981.
8.	PIR 94-03, "Leakage from Frozen Fuel Chute De-watering Line." dated October 17, 1994.
9.	PIR 94-09, "Leakage from Frozen NST Telltale Lines," dated February 18, 1994.
10.	YNPS Decommissioning Plan, Rev. 0.0.
11.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

Table 1
Sum of Fractions
OOL-13 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
84	OG002-038	OG002GUFD038	0.024
83	OG002-037	OG002GUFD037	0.005
79	OG002-031	OG002GUFD031	0.031
66	OG002-017	OG002GUFD017	0.004
63	OG002-014	OG002GUFD014	0.008
62	OG002-013	OG002GUFD013	0.010
		Min	0.004
		Max	0.031
		Mean	0.014

Table 2
Statistical Data Summary -- OOL-13 -- Soil
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	8	8	0.890	0.109	0.774	1.073	0.875
Ag-108m	pCi/g	1	10	0.031		0.031	0.031	0.031
Ag-110m	pCi/g	0	9	0.000				
Am-241	pCi/g	0	9	0.000				
Ba-133	pCi/g	0	1	0.000				
Bi-212	pCi/g	7	8	0.966	0.297	0.619	1.510	0.925
Bi-214	pCi/g	8	8	0.508	0.085	0.384	0.642	0.497
Ce-144	pCi/g	0	9	0.000				
Co-58	pCi/g	0	11	0.000				
Co-60	pCi/g	0	11	0.000				
Cs-134	pCi/g	2	11	0.161	0.069	0.112	0.209	0.161
Cs-137	pCi/g	5	11	0.074	0.022	0.049	0.097	0.077
Fe-59	pCi/g	0	9	0.000				
K-40	pCi/g	8	9	17.785	1.333	15.680	19.610	17.705
Mn-54	pCi/g	0	10	0.000				
Nb-95	pCi/g	0	9	0.000				
Pb-212	pCi/g	8	8	0.830	0.136	0.654	1.022	0.846
Pb-214	pCi/g	8	8	0.537	0.090	0.392	0.615	0.563
Ra-226	pCi/g	3	5	1.557	0.377	1.196	1.949	1.527
Ru-103	pCi/g	0	9	0.000				
Ru-106	pCi/g	0	9	0.000				
Sb-124	pCi/g	1	9	0.079		0.079	0.079	0.079
Tl-208	pCi/g	7	7	0.866	0.105	0.690	1.012	0.897
Zn-65	pCi/g	0	9	0.000				
Zr-95	pCi/g	0	9	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-13 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL_Soil

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	8	8		pCi/g	0	1.07
Ag-108m	1	10	8.52	pCi/g	0	0.03
Ag-110m	0	9		pCi/g	0	
Am-241	0	9	44.35	pCi/g	0	
Ba-133	0	1		pCi/g	0	
Bi-212	7	8		pCi/g	0	1.51
Bi-214	8	8		pCi/g	0	0.64
Ce-144	0	9		pCi/g	0	
Co-58	0	11		pCi/g	0	
Co-60	0	11	4.84	pCi/g	0	
Cs-134	2	11	6.71	pCi/g	0	0.21
Cs-137	5	11	12.24	pCi/g	0	0.10
Fe-59	0	9		pCi/g	0	
K-40	8	9		pCi/g	0	19.61
Mn-54	0	10	21.66	pCi/g	0	
Nb-95	0	9		pCi/g	0	
Pb-212	8	8		pCi/g	0	1.02
Pb-214	8	8		pCi/g	0	0.61
Ra-226	3	5		pCi/g	0	1.95
Ru-103	0	9		pCi/g	0	
Ru-106	0	9	68.21	pCi/g	0	
Sb-124	1	9		pCi/g	0	0.08
Tl-208	7	7		pCi/g	0	1.01
Zn-65	0	9		pCi/g	0	
Zr-95	0	9		pCi/g	0	

Table 4
Rad
OOL-13 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	IA-2 (619)	OF-240 (408)	OG002-013 (62)	OG002-014 (63)	OG002-015 (64)
Sample ID	IATS-2	OFTS-240	OG002GUFD013	OG002GUFD014	OG002GUFD015
Date Sampled	5/17/1993	11/22/1994	7/8/1998	7/8/1998	7/8/1998
Ac-228			0.7735	0.9068	0.9993
Ag-108m		0.044 UM	0.03129	-0.03025 U	-0.008048 U
Ag-110m			0.001331 U	-0.01843 U	-0.008517 U
Am-241			0 U	0 U	0 U
Ba-133					
Bi-212			0.4674 U	1.51	1.058
Bi-214			0.4332	0.553	0.4998
Ce-144			0.1533 U	0.04966 U	-0.1703 U
Co-58	0.073 UM	0.056 UM	-0.02375 U	-0.02474 U	-0.02612 U
Co-60	0.0775 UM	0.0844 UM	-0.009965 U	0.0306 U	-0.01432 U
Cs-134	0.069 UM	0.052 UM	0.01661 U	0.01187 U	0.02209 U
Cs-137	0.121 UM	0.0722 UM	0.07739	0.09679	0.02968 U
Fe-59			-0.007939 U	-0.02551 U	-0.00844 U
K-40			15.68	17.05	16.95
Mn-54		0.069 UM	0.02249 U	0.004562 U	0.02913 U
Nb-95			0.03736 U	-0.005617 U	0.03216 U
Pb-212			0.6768	0.9007	1.022
Pb-214			0.4066	0.61	0.5382
Ra-226				1.527	
Ru-103			0.008948 U	-0.009411 U	0.02391 U
Ru-106			-0.1111 U	0.2286 U	-0.2612 U
Sb-124			0 U	-0.03363 U	-0.03252 U
Tl-208				0.9062	0.8972
Zn-65			-0.08543 U	-0.05273 U	-0.1507 U
Zr-95			0.02763 U	0 U	0.05608 U
SOF			0.01	0.008	

U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Table 4

Rad

OOL-13 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG002-016 (65)	OG002-017 (66)	og002-018 (67)	OG002-031 (79)	OG002-037 (83)
Sample ID	OG002GUFD016	OG002GUFD017	og002gufd018	OG002GUFD031	OG002GUFD037
Date Sampled	7/9/1998	7/9/1998	7/9/1998	7/13/1998	10/21/1998
Ac-228	1.073	0.8433	0.7939		0.7921
Ag-108m	0.001574 U	0.006754 U	-0.01142 U	-0.0003995 U	-0.0292 U
Ag-110m	0.01011 U	-0.01582 U	-0.03246 U	-0.003053 U	0.01136 U
Am-241	0 U	0 U	0 U	0 U	0 U
Ba-133			0.03129 U		
Bi-212	0.8011	0.9249	0.6189		1.114
Bi-214	0.6423	0.5956	0.3841		0.4943
Ce-144	-0.1341 U	-0.009145 U	-0.04709 U	0.08107 U	0.1923 U
Co-58	-0.015 U	-0.01445 U	0.001596 U	-0.018 U	0.005845 U
Co-60	-0.01306 U	-0.03454 U	-0.01337 U	-0.03563 U	0.01565 U
Cs-134	0.08482 U	0.008715 U	0.00976 U	0.2093	-0.3099 U
Cs-137	0.02288 U	0.04851	0.0303 U	-0.01161 U	0.05527
Fe-59	0.03532 U	-0.05045 U	-0.02137 U	0.03977 U	0.02838 U
K-40	18.36	19.61	16.94	0 U	18.58
Mn-54	0.03238 U	-0.01408 U	-0.004649 U	-0.01153 U	0.01687 U
Nb-95	0.01842 U	0.01541 U	-0.007066 U	0.01195 U	-0.008347 U
Pb-212	0.7282	0.9284	0.7913		0.6539
Pb-214	0.5882	0.606	0.3923		0.536
Ra-226		1.444 U	1.949		1.196
Ru-103	0.01053 U	0.003127 U	0.006661 U	0.002869 U	-0.008316 U
Ru-106	0.1809 U	-0.02029 U	0.1926 U	-0.2836 U	0.2504 U
Sb-124	0.01318 U	0.02365 U	0.04011 U	0.07927	0.01446 U
Tl-208	0.771	0.8781	0.6899		1.012
Zn-65	-0.1494 U	-0.08548 U	-0.07574 U	0.05636 U	-0.06415 U
Zr-95	-0.004463 U	0.01112 U	0.03941 U	-0.07504 U	0.0165 U
SOF		0.004		0.031	0.005

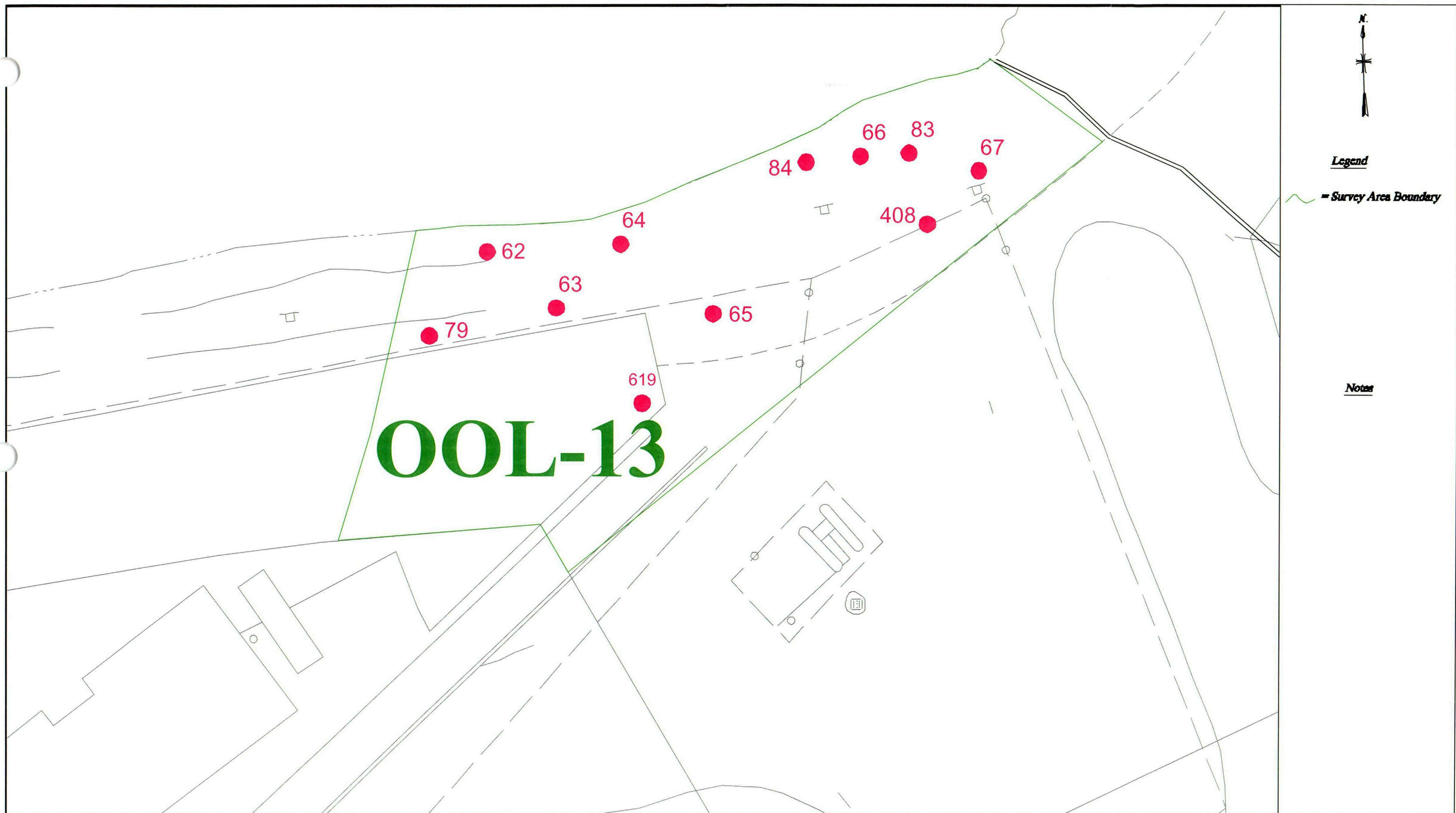
U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

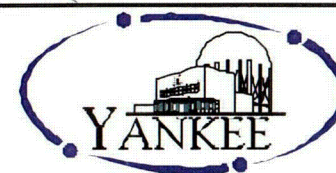
Blank results indicate chemical not analyzed

Table 4
Rad
OOL-13 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key)	OG002-038 (84)
Sample ID	OG002GUF038
Date Sampled	10/21/1998
Ac-228	0.9404
Ag-108m	0.01046 U
Ag-110m	-0.0008834 U
Am-241	0 U
Ba-133	
Bi-212	0.7342
Bi-214	0.4647
Ce-144	-0.0234 U
Co-58	-0.02077 U
Co-60	0.03771 U
Cs-134	0.1124
Cs-137	0.09251
Fe-59	-0.09038 U
K-40	19.11
Mn-54	0.01855 U
Nb-95	0.00106 U
Pb-212	0.9354
Pb-214	0.6149
Ra-226	0.9387 U
Ru-103	-0.007747 U
Ru-106	-0.1201 U
Sb-124	0.0312 U
Tl-208	0.9078
Zn-65	0.04341 U
Zr-95	0.05545 U
SOF	0.024



Yankee Atomic Power Company
Soil Sample Locations - OOL-13



Date: October 2003

Revision: 4

Figure: 14

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Wheeler Brook Frontage

Designator: **OOL-14**

Survey Area Description

Survey area OOL-14 consists of US Gen. owned land area that lies south of the and up slope from H T and W railroad track location in OOL-13. Survey area OOL-14 contains about 2398 square meters of soil surface area.

Survey area OOL-14 is bounded by OOL-13 on the north, OOL-15 and OOL-08 on the east, OOL-08 on the south and on the west.

There are no sub-surface systems that traverse or connect within survey area OOL-14.

Items of note located within or adjacent to survey area OOL-14 include:

- The various historical location of the security fence.
- The temporary, propane storage tanks

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Wheeler Brook Frontage

Designator: **OOL-14**

Survey Area History

Survey area OOL-14 is not part of the RCA. There are no radioactive systems present in OOL-14. Survey area OOL-14 was not used for storing radioactive material or processing or packaging radioactive waste.

Surveys Area OOL-14 represents a buffer zone around the Class 1 land survey area OOL-13.

Modifications performed at the YNPS site during years of operation that changed the configuration of OOL-14 include:

- Discontinuance of the H T and W railroad line.
- Modifications to the security perimeter fence.
- Installation of the temporary propane tanks.

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 1).

Decommissioning

No decommissioning activities have been performed for survey area OOL-14.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Wheeler Brook Frontage Designator: **OOL-14**

Findings

Survey area OOL-14 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-14 is assumed minimally impacted by site activities due to the fact that it is at a distance from the RCA was not accessible by vehicle traffic and is up slope from adjacent Class 1 survey area. Survey area OOL-14 is likely to contain residual radioactivity concentrations at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-14 includes all radionuclides identified in the radioactive systems of the plant (Ref 2). The primary radionuclides of concern for survey area OOL-14 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

Survey area OOL-14 potentially may be further impacted by continued decommissioning activities.

A soil sample location map (Figure 15) has been prepared to show the distribution of sampling locations in OOL-14. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). One survey media was assessed in OOL-14, Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-14 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Soil: Mean SOF is 0.014.

Maximum SOF for a single soil sample is 0.030. (key# 912)

Minimum SOF for a single soil sample is 0.004. (key# 914)

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-14 is identified as a Class 3 area.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Wheeler Brook Frontage

Designator: **OOL-14**

Drawings

9699-FY-5A

Figure 7-1A

References

1.	YNPS Decommissioning Plan, Rev. 0.0
2.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

Table 1
Sum of Fractions
OOL-14 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
911	OG009-003	OG009GUFU003	0.011
914	OG009-006	OG009GUFD006	0.004
912	OG009-004	OG009GUFD004	0.030
910	OG009-002	OG009GUFD002	0.020
76	og002-027	og002gufd027	0.006
			Min 0.004
			Max 0.030
			Mean 0.014

Table 2
Statistical Data Summary -- OOL-14 -- Soil
Yankee Nuclear Power Station Rowe, MA

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	8	8	0.777	0.276	0.302	1.172	0.773
Ag-108m	pCi/g	0	8	0.000				
Ag-110m	pCi/g	0	8	0.000				
Am-241	pCi/g	0	8	0.000				
Bi-212	pCi/g	5	7	0.901	0.277	0.572	1.336	0.868
Bi-214	pCi/g	8	8	0.432	0.092	0.229	0.517	0.459
Ce-144	pCi/g	1	8	0.358		0.358	0.358	0.358
Co-58	pCi/g	0	8	0.000				
Co-60	pCi/g	1	8	0.042		0.042	0.042	0.042
Cs-134	pCi/g	0	8	0.000				
Cs-137	pCi/g	5	8	0.149	0.099	0.053	0.266	0.108
Eu-152	pCi/g	0	1	0.000				
Fe-59	pCi/g	0	8	0.000				
K-40	pCi/g	8	8	16.910	2.600	11.200	19.780	17.650
Mn-54	pCi/g	1	8	0.039		0.039	0.039	0.039
Nb-95	pCi/g	0	8	0.000				
Pb-212	pCi/g	8	8	0.727	0.282	0.116	1.112	0.773
Pb-214	pCi/g	8	8	0.482	0.113	0.208	0.552	0.518
Ra-226	pCi/g	2	4	2.537	0.485	2.194	2.880	2.537
Ru-103	pCi/g	0	8	0.000				
Ru-106	pCi/g	0	8	0.000				
Sb-124	pCi/g	0	8	0.000				
Sb-125	pCi/g	0	2	0.000				
Tl-208	pCi/g	8	8	0.734	0.281	0.128	1.049	0.790
Zn-65	pCi/g	0	8	0.000				
Zr-95	pCi/g	0	8	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-14 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL_Soil

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	8	8		pCi/g	0	1.17
Ag-108m	0	8	8.52	pCi/g	0	
Ag-110m	0	8		pCi/g	0	
Am-241	0	8	44.35	pCi/g	0	
Bi-212	5	7		pCi/g	0	1.34
Bi-214	8	8		pCi/g	0	0.52
Ce-144	1	8		pCi/g	0	0.36
Co-58	0	8		pCi/g	0	
Co-60	1	8	4.84	pCi/g	0	0.04
Cs-134	0	8	6.71	pCi/g	0	
Cs-137	5	8	12.24	pCi/g	0	0.27
Eu-152	0	1	12.06	pCi/g	0	
Fe-59	0	8		pCi/g	0	
K-40	8	8		pCi/g	0	19.78
Mn-54	1	8	21.66	pCi/g	0	0.04
Nb-95	0	8		pCi/g	0	
Pb-212	8	8		pCi/g	0	1.11
Pb-214	8	8		pCi/g	0	0.55
Ra-226	2	4		pCi/g	0	2.88
Ru-103	0	8		pCi/g	0	
Ru-106	0	8	68.21	pCi/g	0	
Sb-124	0	8		pCi/g	0	
Sb-125	0	2	37.73	pCi/g	0	
Tl-208	8	8		pCi/g	0	1.05
Zn-65	0	8		pCi/g	0	
Zr-95	0	8		pCi/g	0	

Table 4

Rad

OOL-14 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	og002-022 (71) og002gufd022 7/9/1998	og002-027 (76) og002gufd027 7/13/1998	OG009-001 (909) OG009GUFD001 7/30/1998	OG009-002 (910) OG009GUFD002 7/30/1998	OG009-004 (912) OG009GUFD004 7/30/1998
Ac-228	0.776	1.172	0.302	0.915	0.769
Ag-108m	0.01652 U	-0.01276 U	0 U	-0.0106 U	-0.0105 U
Ag-110m	0.01969 U	-0.02051 U	0.0125 U	-0.0017 U	-0.0146 U
Am-241	0 U	0 U	0 U	0 U	0 U
Bi-212	54.89 U	1.336		47.6 U	0.81
Bi-214	0.5168	0.4797	0.229	0.394	0.474
Ce-144	-0.2941 U	-0.07008 U	-0.0157 U	0.0795 U	-0.115 U
Co-58	0.004544 U	0.02031 U	-0.00636 U	0.0275 U	0.00831 U
Co-60	0.003204 U	0.01342 U	-0.00335 U	-0.00311 U	0.042
Cs-134	-0.01192 U	0.01469 U	-0.0286 U	-0.0829 U	-0.166 U
Cs-137	0.03321 U	0.07292	0 U	0.243	0.266
Eu-152					
Fe-59	-0.07798 U	0.008654 U	-0.0388 U	-0.00747 U	0.0277 U
K-40	18.1	19.78	11.2	17.2	18.2
Mn-54	-0.01432 U	0.03802 U	0.0109 U	0.0186 U	-0.0449 U
Nb-95	-0.006838 U	0.02646 U	-0.00289 U	-0.0291 U	0.0588 U
Pb-212	0.8174	1.112	0.116	0.728	0.68
Pb-214	0.5518	0.5197	0.208	0.487	0.495
Ra-226	2.194			1.58 U	
Ru-103	-0.02547 U	0.01374 U	-0.00637 U	0.0132 U	-0.0669 U
Ru-106	-0.0417 U	0.09343 U	-0.0408 U	0.202 U	0 U
Sb-124	-0.1096 U	-0.04555 U	0.018 U	-0.0366 U	-0.0256 U
Sb-125				-0.152 U	-0.00643 U
Tl-208	0.8537	1.049	0.128	0.708	0.608
Zn-65	-0.01941 U	0.013 U	-0.00332 U	0.13 U	0.0658 U
Zr-95	-0.00458 U	0.01863 U	-0.0141 U	0.0145 U	-0.00434 U
SOF		0.006		0.02	0.03

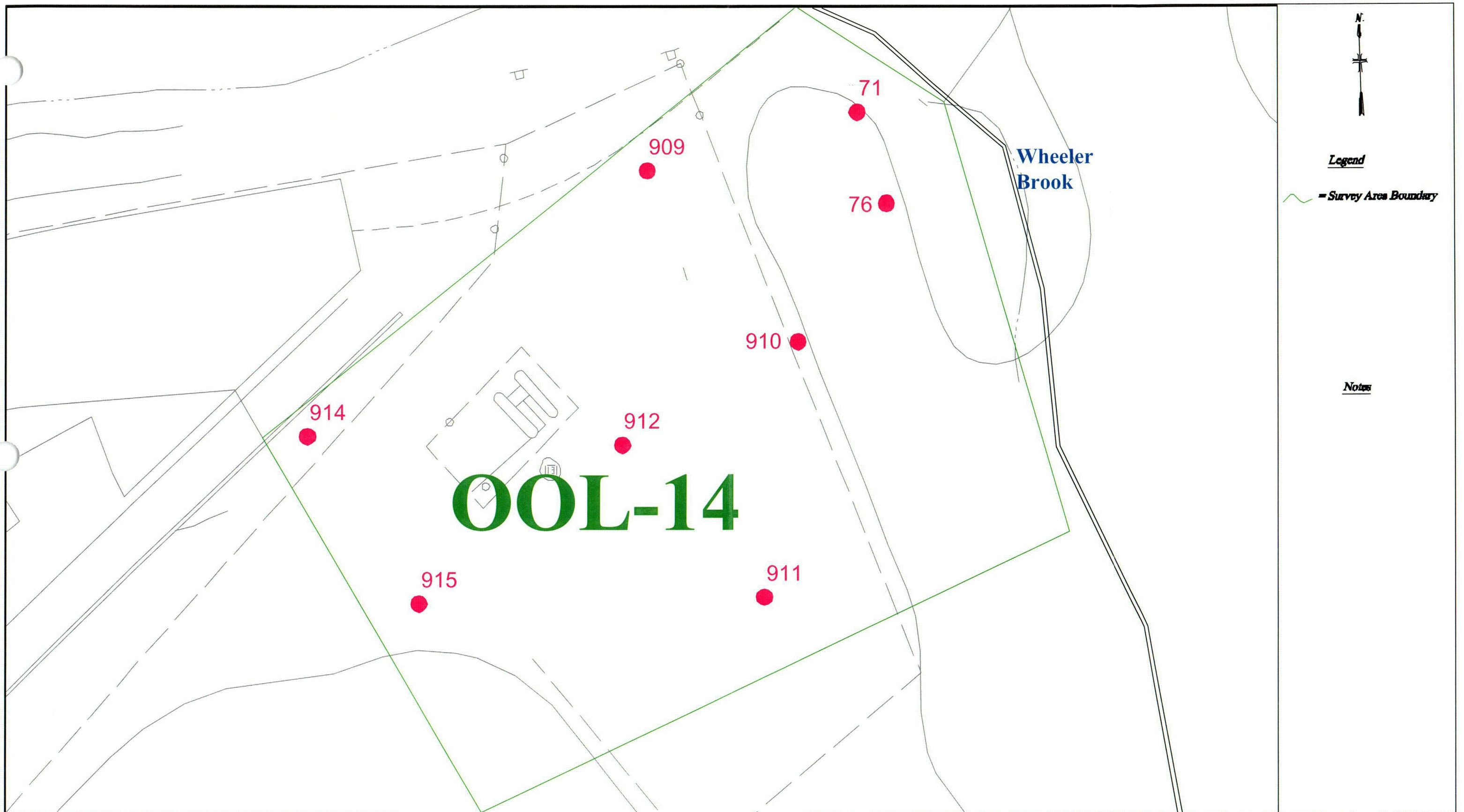
U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

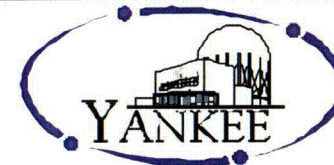
Blank results indicate chemical not analyzed

Table 4
Rad
OOL-14 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OG009-006 (914) OG009GUF006 7/30/1998	OG009-003 (911) OG009GUF003 7/30/1998	OG009-007 (915) OG009GUF007 7/30/1998
Ac-228	0.756	1.02	0.508
Ag-108m	0.00696 U	0.0229 U	-0.00787 U
Ag-110m	0.00829 U	0.0365 U	-0.00484 U
Am-241	0 U	0 U	0 U
Bi-212	0.868	0.921	0.572
Bi-214	0.502	0.419	0.443
Ce-144	0.00188 U	0.358	0.0298 U
Co-58	-0.0406 U	-0.0328 U	0.00318 U
Co-60	-0.0034 U	-0.00211 U	-0.0154 U
Cs-134	-0.0673 U	-0.111 U	-0.0792 U
Cs-137	0.0532	0.108	-0.0114 U
Eu-152			0.0864 U
Fe-59	-0.13 U	0.0218 U	-0.0198 U
K-40	17.3	18	15.5
Mn-54	-0.00796 U	0.0393	0.000875 U
Nb-95	0.0299 U	0.0326 U	0.0181 U
Pb-212	0.827	0.848	0.689
Pb-214	0.517	0.545	0.533
Ra-226	1.39 U		2.88
Ru-103	-0.00608 U	-0.0289 U	-0.034 U
Ru-106	0.0207 U	0.181 U	0.193 U
Sb-124	0.00336 U	0 U	0.0355 U
Sb-125			
Tl-208	0.726	0.915	0.883
Zn-65	-0.112 U	0.0918 U	0.0842 U
Zr-95	-0.00565 U	0.000841 U	0.0148 U
SOF	0.004	0.011	



Yankee Atomic Power Company
Soil Sample Locations - OOL-14



Date: October 2003

Revision: 4

Figure: 15

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Sherman Reservoir East Shoreline Designator: **OOL-15**

Survey Area Description

Survey area OOL-15 consists of US Gen. owned land area that lies along the east shoreline of Sherman Reservoir. Survey area OOL-15 contains about 2704 square meters of soil surface area.

Survey area OOL-15 is bounded by, non-impacted US Gen. Owned property on the north, OOL-08 on the east, OOL-13 and OOL-14 on the south and OOL-01 on the west.

There are no sub-surface systems that traverse or connect within survey area OOL-15.

Items of note located within or adjacent to survey area OOL-15 include:

- The various locations of the security fence
- The H T and W crossing of Wheeler Brook.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Sherman Reservoir East Shoreline Designator: **OOL-15**

Survey Area History

Survey area OOL-15 is not part of the RCA. There are no radioactive systems present in OOL-15. Survey area OOL-15 was not used for storing radioactive material or processing or packaging radioactive waste.

Survey Area OOL-15 represents a buffer zone around the Class 1 land survey area OOL-13.

Modifications performed at the YNPS site during years of operation that changed the configuration of OOL-15 include:

- Modifications to the security perimeter fence
- Repair of the H T and W crossing at Wheeler Brook after washout

Scoping/Characterization

Scoping surveys were performed and data collected used to develop the YNPS Decommissioning Plan (Ref 1).

Decommissioning

No decommissioning activities have been performed for survey area OOL-15.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Sherman Reservoir East Shoreline Designator: **OOL-15**

Findings

Survey area OOL-15 is a land area that is located in the non-RCA portion of the site.

Survey area OOL-15 is assumed minimally impacted by site activities due to the fact that it is at a distance from the RCA was not accessible by vehicle traffic and is outside of the YNPS site boundary. Survey area OOL-15 is likely to contain residual radioactivity concentrations at a small fraction of DCGL.

The radionuclide mix likely to be present in OOL-15 includes all radionuclides identified in the radioactive systems of the plant (Ref 2). The primary radionuclides of concern for survey area OOL-15 are Co-60, Cs-137, Ag-108m, Sr-90 and tritium.

Current Status

Survey area OOL-15 potentially may be further impacted by continued decommissioning activities.

A soil sample location map (Figure 16) has been prepared to show the distribution of sampling locations in OOL-15. Only samples representative of soils still present are included on the map (samples of soils representative of soils removed during remediation activities are not presented). One survey media was assessed in OOL-15, Soil. The results and analyses (Tables 1-4 in this section) of the samples plotted as "key numbers" on the map represent the radiological status at the time of sampling (a period spanning several years) as sums of fractions of the soil DCGL.

Only those samples with detectable results of the radionuclides of concern appear in Table 1. For this reason the number listed as minimum does not include samples that did not have detectable quantities of the radiological substances of concern. An assessment of the maximum, minimum and mean sum of fractions (SOF) for OOL-15 is presented at the end of Table 1 for each survey medium. The results are summarized below.

Soil: Mean SOF is 0.012.

Maximum SOF for a single soil sample is 0.017. (key# 3070)

Minimum SOF for a single soil sample is 0.007. (key# 3071)

Classification Statement

Based upon the historical use and radiological conditions associated with this survey area OOL-15 is identified as a Class 3 area.

Historical Site Assessment and Classification Summary

Survey Area Name: US Gen. Sherman Reservoir East Shoreline Designator: **OOL-15**

Drawings

9699-FY-5A

Figure 7-1A

References

1.	YNPS Decommissioning Plan, Rev. 0.0.
2.	"Radionuclides for Building Surfaces and Soil DCGL Determinations," YA-REPT-00-001-03

Table 1
Sum of Fractions
OOL-15 -- Soil
Yankee Nuclear Power Station Rowe, MA

Station Key	Station	Sample ID	Sum Of Fractions
3071	SE416	SE416	0.007
3070	SE415	SE415	0.017
69	og002-020	og002gufd020	0.013
		Min	0.007
		Max	0.017
		Mean	0.012

Table 2
Statistical Data Summary -- OOL-15 -- Soil
Yankee Nuclear Power Station Rowe, MA

Page 1 of 1

Parameter	Units	# Detects	# Sample Results	Mean	Std. Dev	Minimum	Maximum	Median
Ac-228	pCi/g	5	5	0.873	0.166	0.706	1.061	0.798
Ag-108m	pCi/g	0	5	0.000				
Ag-110m	pCi/g	0	5	0.000				
Am-241	pCi/g	0	5	0.000				
Bi-212	pCi/g	4	5	1.128	0.338	0.722	1.543	1.123
Bi-214	pCi/g	5	5	0.482	0.131	0.306	0.629	0.515
Ce-144	pCi/g	0	5	0.000				
Co-58	pCi/g	0	6	0.000				
Co-60	pCi/g	0	6	0.000				
Cs-134	pCi/g	1	6	0.085		0.085	0.085	0.085
Cs-137	pCi/g	2	6	0.144	0.086	0.083	0.204	0.144
Fe-59	pCi/g	0	5	0.000				
K-40	pCi/g	5	5	15.808	4.468	8.419	19.990	17.540
Mn-54	pCi/g	0	6	0.000				
Nb-95	pCi/g	0	5	0.000				
Pb-212	pCi/g	5	5	0.844	0.250	0.595	1.184	0.857
Pb-214	pCi/g	5	5	0.480	0.149	0.315	0.656	0.546
Ra-226	pCi/g	3	3	2.913	0.360	2.500	3.161	3.078
Ru-103	pCi/g	0	5	0.000				
Ru-106	pCi/g	0	5	0.000				
Sb-124	pCi/g	0	5	0.000				
Sb-125	pCi/g	0	1	0.000				
Tl-208	pCi/g	5	5	0.762	0.222	0.547	1.085	0.727
Zn-65	pCi/g	0	5	0.000				
Zr-95	pCi/g	0	5	0.000				

Table 3
Summary of Detected Results Above Criteria
OOL-15 -- Soil
Yankee Nuclear Power Station Rowe, MA
DCGL_Soil

Parameter	# Detects	# Sample Results	Criterion Concentration	Units	# Detects Above Criterion	Maximum Detected
Ac-228	5	5		pCi/g	0	1.06
Ag-108m	0	5	8.52	pCi/g	0	
Ag-110m	0	5		pCi/g	0	
Am-241	0	5	44.35	pCi/g	0	
Bi-212	4	5		pCi/g	0	1.54
Bi-214	5	5		pCi/g	0	0.63
Ce-144	0	5		pCi/g	0	
Co-58	0	6		pCi/g	0	
Co-60	0	6	4.84	pCi/g	0	
Cs-134	1	6	6.71	pCi/g	0	0.08
Cs-137	2	6	12.24	pCi/g	0	0.20
Fe-59	0	5		pCi/g	0	
K-40	5	5		pCi/g	0	19.99
Mn-54	0	6	21.66	pCi/g	0	
Nb-95	0	5		pCi/g	0	
Pb-212	5	5		pCi/g	0	1.18
Pb-214	5	5		pCi/g	0	0.66
Ra-226	3	3		pCi/g	0	3.16
Ru-103	0	5		pCi/g	0	
Ru-106	0	5	68.21	pCi/g	0	
Sb-124	0	5		pCi/g	0	
Sb-125	0	1	37.73	pCi/g	0	
Tl-208	5	5		pCi/g	0	1.09
Zn-65	0	5		pCi/g	0	
Zr-95	0	5		pCi/g	0	

Table 4

Rad

OOL-15 -- Soil (pCi/g)

Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	OF-72 (348) OFTS-72 6/14/1993	og002-019 (68) og002gufd019 7/9/1998	og002-020 (69) og002gufd020 7/9/1998	SE414 (3069) SE414 11/5/1997	SE415 (3070) SE415 11/5/1997
Ac-228		0.7057	1.042	0.7578	0.798
Ag-108m		0.01852 U	-0.002205 U	-0.003747 U	-0.00837 U
Ag-110m		0.0247 U	-0.004417 U	0.00739 U	0.03869 U
Am-241		0 U	0 U	0 U	0 U
Bi-212		0.722	1.071	1.07 U	1.175
Bi-214		0.629	0.5667	0.394	0.3063
Ce-144		0.02933 U	0.1663 U	-0.06047 U	-0.07843 U
Co-58	0.091 UM	-0.02064 U	-0.0256 U	-0.006475 U	-0.000000001397 U
Co-60	0.11 UM	0.00275 U	-0.007521 U	-0.03913 U	0.02025 U
Cs-134	0.079 UM	-0.01002 U	0.08459	-0.01043 U	-0.008865 U
Cs-137	0.0896 UM	0.002392 U	0 U	0.0112 U	0.2043
Fe-59		-0.02786 U	-0.07886 U	-0.07242 U	0.04351 U
K-40		19.99	17.54	17.9	8.419
Mn-54	0.098 UM	0.007817 U	0.02952 U	0.02374 U	0.006693 U
Nb-95		-0.1191 U	-0.008212 U	-0.02008 U	-0.0115 U
Pb-212		0.8572	0.9735	0.6089	0.595
Pb-214		0.5503	0.5456	0.3151	0.334
Ra-226		2.5	3.078		
Ru-103		-0.01009 U	-0.001304 U	-0.02134 U	0.0001909 U
Ru-106		0.08412 U	0.01427 U	-0.03816 U	0.2087 U
Sb-124		0.06145 U	0.001924 U	0.002357 U	-0.0188 U
Sb-125		-0.06493 U			
Tl-208		0.7267	0.8721	0.5777	0.5473
Zn-65		-0.04237 U	-0.05344 U	0.07287 U	-0.04716 U
Zr-95		0.01733 U	-0.01158 U	0.04307 U	0.053 U
SOF			0.013		0.017

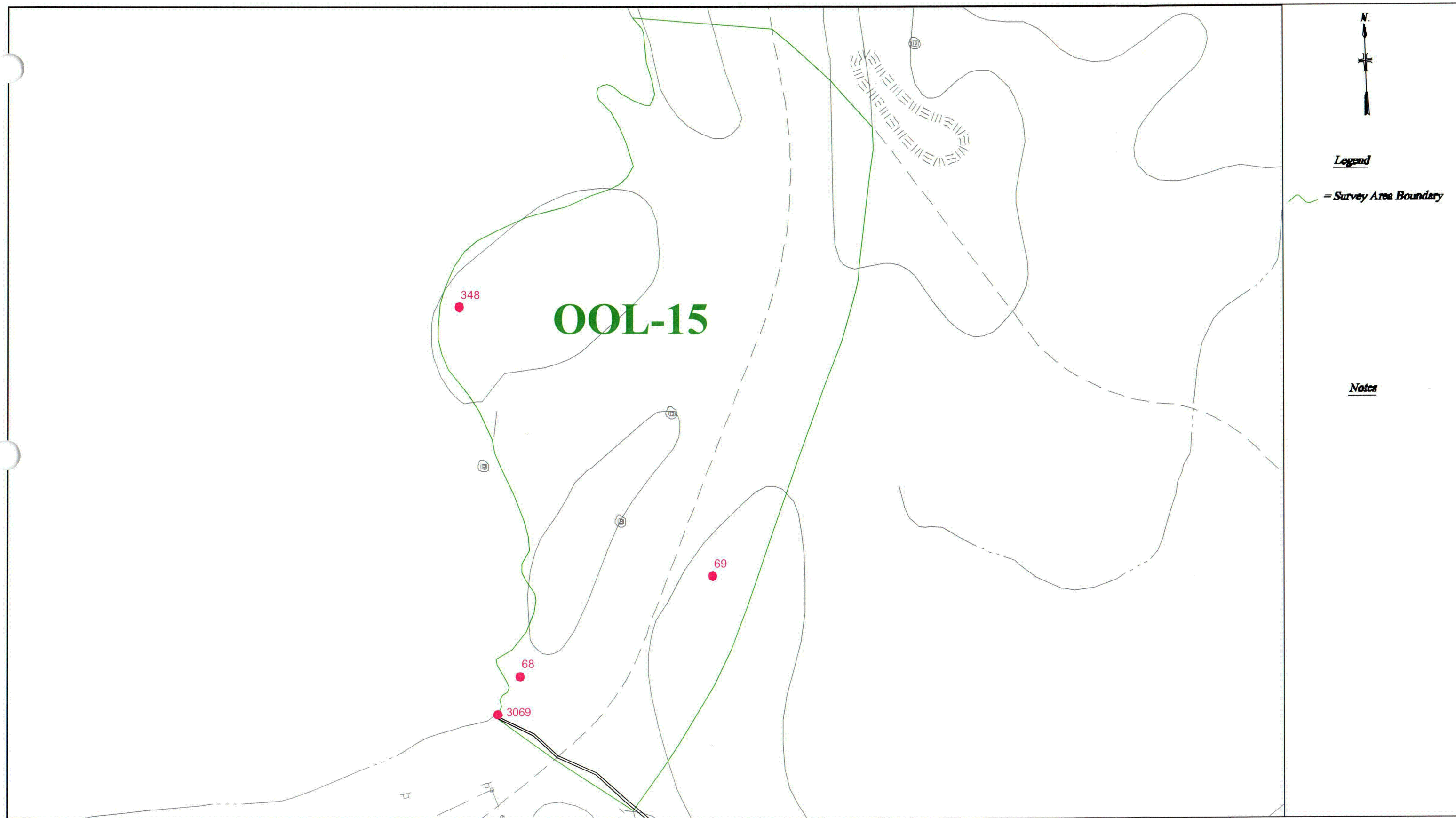
U-not detected (value is not greater than 2 sigma); UM-nondetect (value is equal to MDA)

Soil Basic Data 12/15/2003

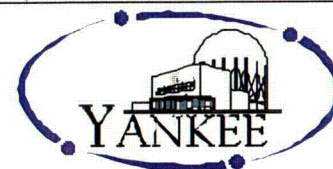
Blank results indicate chemical not analyzed

Table 4
Rad
OOL-15 -- Soil (pCi/g)
Yankee Nuclear Power Station Rowe, MA

Station (Key) Sample ID Date Sampled	SE416 (3071) SE416 11/5/1997
Ac-228	1.061
Ag-108m	-0.01787 U
Ag-110m	-0.02087 U
Am-241	0 U
Bi-212	1.543
Bi-214	0.5149
Ce-144	-0.07843 U
Co-58	0.01423 U
Co-60	0.009853 U
Cs-134	0.03986 U
Cs-137	0.08305
Fe-59	-0.01904 U
K-40	15.19
Mn-54	0.00541 U
Nb-95	-0.001705 U
Pb-212	1.184
Pb-214	0.6564
Ra-226	3.161
Ru-103	0.0006893 U
Ru-106	0.05482 U
Sb-124	-0.0238 U
Sb-125	
Tl-208	1.085
Zn-65	-0.0977 U
Zr-95	0.02388 U
SOF	0.007



Yankee Atomic Power Company
Soil Sample Locations - OOL-15



Date: October 2003

Revision: 4

Figure: 16